

Environmental Treatment Facility & Water Use Reduction

Public Involvement Report



Irving Pulp & Paper, Limited

REVERSING FALLS MILL

Saint John, NEW BRUNSWICK

5 MAY 2022



JOB FILE:	14972		
PROJECT TITLE:	Environmental Treatment Facility and Water Use Reduction Project Environmental Impact Assessment, Summary of Public Involvement		
VERSION	ISSUANCE DATE	PREPARED BY	REVIEWED BY
1.0	5 May 2022	MDA	CC, AKD
 <p>FUNDY Engineering</p> <p><i>Serving Our Clients' Needs First</i></p> <p><i>This report was prepared for the sole use of the Client. The material and observations presented reflects Fundy Engineering & Consulting Ltd.'s opinion and best judgment based on the information available. Fundy Engineering & Consulting Ltd. accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon the material, observations, and / or opinions by any third-party or for any damages suffered by any third-party resulting from the use of this report.</i></p>		<p>PROFESSIONAL SEAL:</p> 	

EXECUTIVE SUMMARY

The Irving Pulp & Paper (IPP) Reversing Falls Mill (*i.e.*, the Mill) near the mouth of the Saint John River is the anchor of the New Brunswick Forest Products Industry. The Mill has undergone numerous upgrades to become the world class pulp producing facility that it is today. With its modern, efficient, and sustainable environmental processes, the Mill currently produces a final process effluent that meets existing regulations.

As part of an on-going, long-term, multi-phase upgrade program to maintain the Mill's environmental sustainability and economic viability, IPP is proposing to install current best-available technology to build upon the existing pollution prevention strategy equipment at the Mill. This Environmental Impact Assessment (EIA) details the *Environmental Treatment Facility and Water Use Reduction* project (*i.e.*, the Project) planned for the Mill. The Project comprises installing and operating:

- an Environmental Treatment Facility (ETF): an onsite Moving Bed Biofilm Reactor (MBBR) to meet or exceed the existing Pulp and Paper Effluent Regulations (PPERs) [SOR / 92-269] under the *Fisheries Act* [R.S.C., 1985, c.F-14] and to accommodate any expected future changes to the PPERs; and
- a Water Use Reduction (WUR) system: a brackish water heat exchanger system that uses the cooling capacity of the Saint John River while coincidentally reducing the amount of freshwater drawn from the Spruce Lake Watershed by up to 50 %.

The Project was assessed through an EIA process [*Fundy Engineering, 2022*] and the EIA was registered with the New Brunswick Department of the Environment and Local Government (NBDELG) for review on 18 March 2022. A required component of the EIA review process is that the proponent consults with the public.

The public consultation plan for the Environmental Treatment Facility and Water Use Reduction EIA [*Fundy Engineering, 2022*] was developed in accordance with the process described in Section 6 and Appendix C of the document entitled, "A Guide to Environmental Impact Assessment in New Brunswick" [*NBDELG, 2018*].

IPP provided the public notification necessary, and took additional measures to ensure the public involvement process was maximized by including the optional items as identified in Steps 5, 6, and 7 within the EIA Guide. The opportunity for public involvement closed on 20 April 2022.

Written feedback was received from several members of the community. All public involvement activities are documented within this report, which will be made available for public viewing at the same locations at the EIA document was made available: the NBDELG's head office in Fredericton (Marysville Place); the NBDELG's Saint John Branch office (8 Castle Street); Fundy Engineering's Saint John Office (27 Wellington Row); and the Saint John Free Public Library (Market Square). Copies of the report are also available online at the NBDELG's website and the Proponent's Project hosted website:

https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

<https://www.ipmodernization.ca/>

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ACRONYMNS

ASB:	Aerated Stabilization Basin
AST:	Activated Sludge Treatment
CO _{2eq} :	carbon dioxide equivalent
COP:	Conference Of Parties
dB(A):	A-weighted decibels
<i>e.g.</i> :	(<i>exempli gratia</i>) for example
EIA:	Environmental Impact Assessment
ETF:	Environmental Treatment Facility
ha:	hectare
<i>i.e.</i> :	(<i>id est</i>) namely / that is
Inc.:	Incorporated
IPP:	Irving Pulp & Paper, Limited
JDI:	J.D. Irving, Limited

LED:	Light Emitting Diode
Ltd.:	Limited
MBBR:	Moving Bed Biofilm Reactor
MBR:	Membrane Biological Reactor
MLA:	Member of Legislated Assembly
MP:	Members of Parliament
<i>n.b.:</i>	<i>(nota bene)</i> take note / note well
NBDELG:	New Brunswick Department of the Environment and Local Government
NLBAS:	Nutrient Limited Biological Activated Sludge
PID:	Property Identifier
PM:	Particulate Matter
PPERs:	Pulp and Paper Effluent Regulations
SBR:	Sequential Biological Reactor

1.0 INTRODUCTION

The Irving Pulp & Paper (IPP) Reversing Falls Mill (*i.e.*, the Mill) near the mouth of the Saint John River is the anchor of the New Brunswick Forest Products Industry. The Mill has undergone numerous upgrades to become the world class pulp producing facility that it is today. With its modern, efficient, and sustainable environmental processes, the Mill currently produces a final process effluent that meets existing regulations.

As part of an on-going, long-term, multi-phase upgrade program to maintain the Mill's environmental sustainability and economic viability, IPP is proposing to install current best-available technology to build upon the existing pollution prevention strategy equipment at the Mill. This Environmental Impact Assessment (EIA) details the *Environmental Treatment Facility and Water Use Reduction* project (*i.e.*, the Project) planned for the Mill. The Project comprises installing and operating:

- an Environmental Treatment Facility: an onsite Moving Bed Biofilm Reactor to meet or exceed the existing Pulp and Paper Effluent Regulations (PPERs) [SOR / 92-269] under the *Fisheries Act* [R.S.C., 1985, c.F-14] and to accommodate any expected future changes to the PPERs; and
- a Water Use Reduction system: a brackish water heat exchanger system that uses the cooling capacity of the Saint John River while coincidentally reducing the amount of freshwater drawn from the Spruce Lake Watershed by up to 50 %.



Figure 1. Oblique view showing the general location of the environmental treatment facility and the water use reduction infrastructure proposed for the Reversing Falls Mill in Saint John, New Brunswick.

The Project described in *Fundy Engineering* [2022] was registered with the New Brunswick Department of Environment and Local Government (NBDELG) for EIA review on 18 March 2022.

Under Section 6(1) of the EIA Regulation [87-83] of the New Brunswick *Clean Environment Act* [R.S.N.B. 1973, c. C-6] the proponent of an undertaking subject to an EIA is required to demonstrate that those potentially affected by a proposed undertaking (e.g., individuals, companies, agencies, organizations, interest groups, etc.) are aware of the proposal, are able to obtain information about it, and express any concerns they may have.

The public consultation plan for the Environmental Treatment Facility and Water Use Reduction EIA [*Fundy Engineering*, 2022] was developed in accordance with the process described in Section 6 and Appendix C of the document entitled, “A Guide to Environmental Impact Assessment in New Brunswick” [NBDELG, 2018].

2.0 PUBLIC CONSULTATION PROCESS

As stated in Appendix C of the EIA Guide [NBDELG, 2018], Step 1 to Step 4 and Step 8 are considered the minimum public notification and involvement standards that must be addressed for all registered projects. The step-wise process completed for this Project is described within the sections that follow. As a good neighbour, IPP undertook additional actions to ensure the community was made aware of the proposed Project.

The EIA guide [NBDELG, 2018] notes that public consultation is not intended to be open-ended. Consultation activities should be completed and a report describing the process should be submitted to the NBDELG well in advance of the end of the EIA review.

2.1 STEP 1: DIRECT COMMUNICATION WITH ELECTED OFFICIALS AND SERVICE GROUPS

As stated in Step 1 of Appendix C of the EIA Guide [NBDELG, 2018], “The Proponent must communicate directly with elected officials (i.e., the MLA and mayor), local service districts, community groups, environmental groups, and other key stakeholder groups (companies, agencies, interest groups, etc.) as appropriate, enabling them to become familiar with the proposal and ask questions and / or raise concerns”.

In-person and virtual meetings were held with those individuals listed in Table 1 to make them more familiar with the proposed Project.

Table 1. Elected officials Irving Pulp & Paper, Limited representatives met with regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

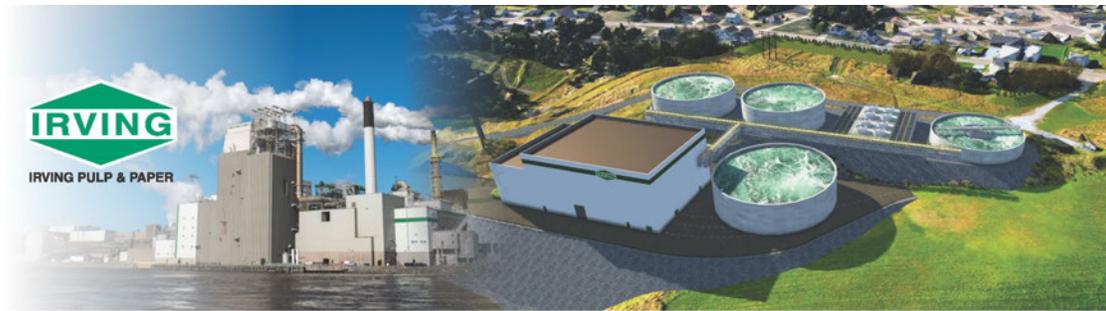
Name	Meeting Date	Address
MP Wayne Long*	14 March 2022	1 Market Square, Suite N306, Saint John, NB, E2L 4Z6
MLA Dorothy Shephard*	14 March 2022	640 Manawagonish Road, Saint John, NB, E2M 3W5
Minister Gary Crossman*	15 March 2022	PO Box 1212, Hampton, NB, E5N 8H2
Mayor Donna Reardon	16 March 2022	15 Market Square, P.O. Box 1971, Saint John, NB, E2L 4L1
City Manager John Collin	16 March 2022	15 Market Square, P.O. Box 1971, Saint John, NB, E2L 4L1
Commissioner Brent McGovern	16 March 2022	15 Market Square, P.O. Box 1971, Saint John, NB, E2L 4L1
Councillor Greg Norton	17 March 2022	15 Market Square, P.O. Box 1971, Saint John, NB, E2L 4L1
Councillor Joanna Killen	17 March 2022	15 Market Square, P.O. Box 1971, Saint John, NB, E2L 4L1

NOTES:

*Executive Assistants also attended: David Hickey (Wayne Long), Jason Sully (Dorothy Shephard) and Mel Vincent Jr. (Gary Crossman)

2.2 STEP 2: DIRECT COMMUNICATION WITH NEARBY RESIDENTS

A Project announcement postcard (Figure 2) was distributed through the mail by Canada Post to ~ 1 400 addresses on 15 March 2022. The properties included in the mailout are shown in Figure 3.



PULP MILL ENVIRONMENTAL TREATMENT FACILITY

Irving Pulp & Paper has proposed to construct a new environmental treatment facility using the latest technology on the current Saint John mill site.

The new facility will allow for increased recycling and reuse of filtered water at the Pulp Mill which will ultimately **reduce water consumption by up to 50%**. It will also result in **cleaner water** which has benefits for aquatic ecosystems and fish health.



QUESTIONS?

ATTEND OUR OPEN HOUSE!

Visit information kiosks and connect with the team behind our proposal. Learn how this project will benefit the environment and our community.

MARCH 23RD

St. Mark's United Church, 50 Dexter Dr, Saint John, NB

SESSIONS CAN BE BOOKED AT

IPPmodernization.com or by calling 1-800-518-7999

REGISTRATION IS REQUIRED

Figure 2. Copy of the Project announcement postcards mailed to area residents on Tuesday 15 March 2022 regarding Irving Pulp & Paper, Limited's proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

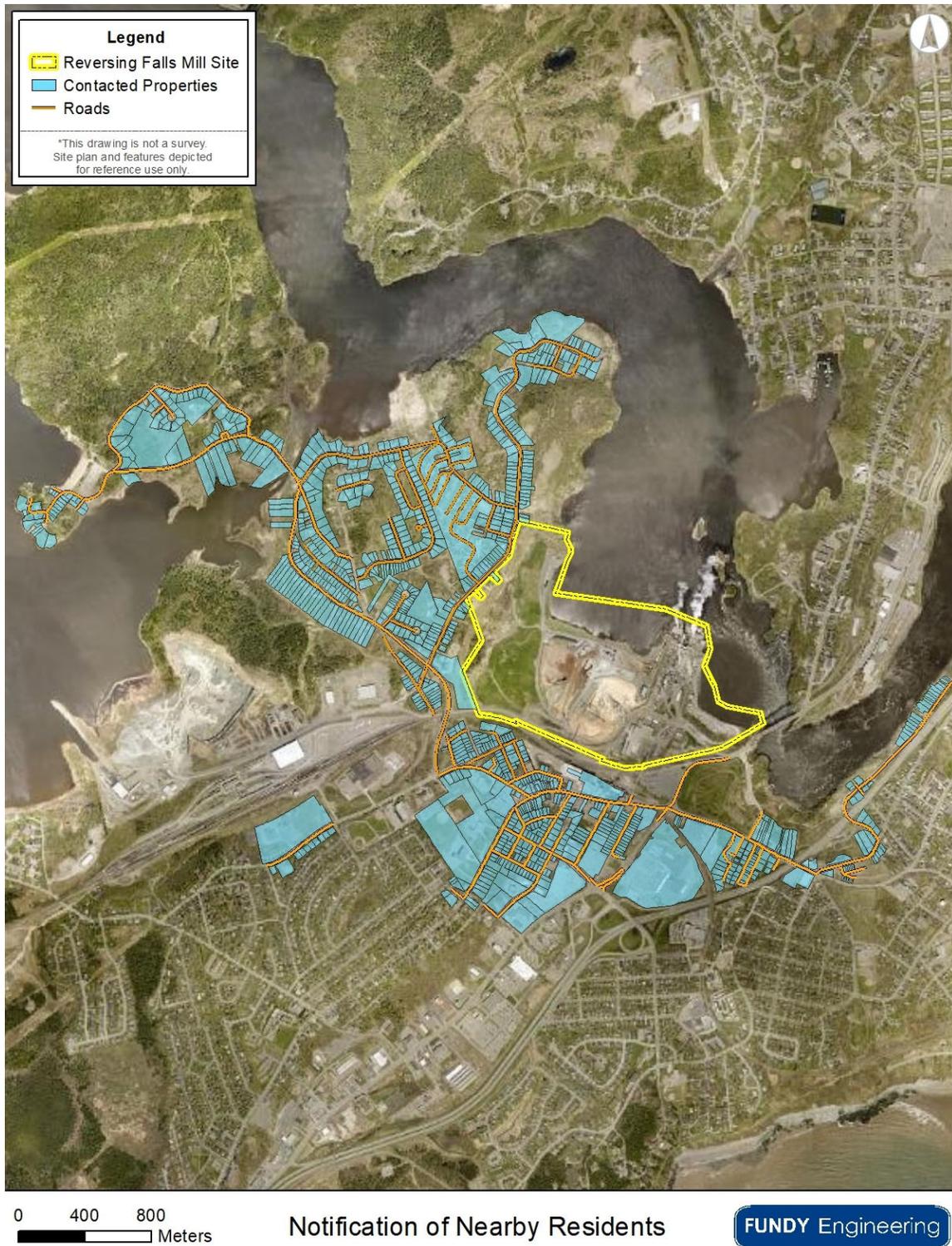


Figure 3. Properties near Irving Pulp and Paper, Limited's Reversing Falls Mill in Saint John, New Brunswick where postcards were delivered using Canada Post regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

2.3 STEP 3: NBDELG WEBSITE NOTIFICATION AND HEAD OFFICE AVAILABILITY

The document was formally registered with the NBDELG on Friday 18 March 2022. The EIA document was uploaded to the NBDELG's website at:

https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

Two hardcopies of the registration document were sent to the EIA Project Manager and were made available for public review at the NBDELG's head office:

20 McGloin Street
2nd Floor
Fredericton, New Brunswick

2.4 STEP 4: DOCUMENT AVAILABILITY WITH STAKEHOLDER AND NBDELG OFFICES

Copies of the Registration document were made available for public review at the NBDELG's district office:

8 Castle Street
Saint John, New Brunswick

Copies of the Registration document were also provided to any interested member of the public, and / or stakeholder. Only one hardcopy was issued to a member of the public.

2.5 STEP 5: PUBLIC NOTICE ANNOUNCEMENTS

Public announcements regarding the EIA registration were placed in the *Telegraph Journal*. The advertisement format paralleled the standard notice presented in Appendix C of the EIA Guide [NBDELG, 2018]. A public notice appeared on page C3 of the *Telegraph Journal* on Saturday 19 March 2022 (Figure 4) and a public notice appeared on page C3 of the *Telegraph Journal* on Saturday 9 April 2022 (Figure 5).

NOTICE

Registration of Undertaking Environmental Impact Assessment Regulation Clean Environment Act, Opportunity for Public Comment

On March 17, 2022, Irving Pulp & Paper, Limited, submitted for registration the following activity with the Department of Environment and Local Government in accordance with Section 5(1) and Schedule "A" of the Environmental Impact Assessment Regulation: "Environmental Impact Assessment: Effluent Treatment Plant and Cooling Water Reduction Project".

The Irving Pulp & Paper Mill is located at Reversing Falls in Saint John, New Brunswick. The Project is necessary for the continued operation of Saint John's Mill. Moving bed biofilm reactor technology will be employed to produce effluent compliant with anticipated future pulp and paper effluent regulations. The cooling water reduction component of the Project will allow the new effluent treatment plant to be built and operated entirely at the Mill site. Water currently used from Spruce Lake for cooling processes at the Mill will be reused so that overall water used can be reduced by up to half.

A public open house will be held on March 23rd, 2022 at St. Mark's United Church, 50 Dexter Drive, Saint John, New Brunswick. Pre-registration is required at: www.ipmodernization.com.

The Proponent's registration document can be examined at:

Fundy Engineering 27 Wellington Row Saint John, NB	Saint John Free Public Library Market Square Saint John, NB
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and at:

NBDELG Regional Office 8 Castle Street Saint John, NB	NBDELG Head Office 20 McGloin Street, 2nd floor Fredericton, NB
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Any comments should be submitted directly to the Proponent at:

Irving Pulp & Paper
c/o Fundy Engineering
27 Wellington Street
Saint John, NB
matt.alexander@fundyeng.com

Receipt of comments is requested on or before April 20, 2022. Additional information about the proposal and the public involvement process is available at:

https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/registrations.html

Notice placed by: Irving Pulp & Paper, Limited.

Figure 4. Copy of the public notice announcement that appeared on page C3 of the *Telegraph Journal* on Saturday 19 March 2022 regarding Irving Pulp & Paper, Limited's proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

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Registration of Undertaking Environmental Impact Assessment Regulation Clean Environment Act, Opportunity for Public Comment

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The Irving Pulp & Paper Mill is located at Reversing Falls in Saint John, New Brunswick. The Project is necessary for the continued operation of Saint John's Mill. Moving bed biofilm reactor technology will be employed to produce effluent compliant with anticipated future pulp and paper effluent regulations. The cooling water reduction component of the Project will allow the new effluent treatment plant to be built and operated entirely at the Mill site. Water currently used from Spruce Lake for cooling processes at the Mill will be reused so that overall water used can be reduced by up to half.

A public open house was held on March 23rd, 2022 at St. Mark's United Church, 50 Dexter Drive, Saint John, New Brunswick. Questions and comments can still be submitted at :
www.ipmodernization.com.

The Proponent's registration document can be examined at:

Fundy Engineering
27 Wellington Row
Saint John, NB

Saint John Free Public Library
Market Square
Saint John, NB

and at:

NBDELG Regional Office
8 Castle Street
Saint John, NB

NBDELG Head Office
20 McGloin Street, 2nd floor
Fredericton, NB

Any comments should be submitted directly to the Proponent at:

Irving Pulp & Paper
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Notice placed by: Irving Pulp & Paper, Limited.

Figure 5. Copy of the public notice announcement that appeared on page C3 of the *Telegraph Journal* on Saturday 9 April 2022 regarding Irving Pulp & Paper, Limited's proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

2.6 STEP 6: LOCAL AVAILABILITY OF THE REGISTERED DOCUMENT

In addition to copies being made available at the Saint John and Fredericton NBDELG offices, the EIA Registration document was also made available at two additional locations as indicated in the public notices (*i.e.*, Figure 4 and Figure 5).

2.7 STEP 7: OPEN HOUSE AND / OR PUBLIC MEETING

Although there is no requirement to host a public meeting, an Open House was held on Wednesday 23 March 2022 at St. Mark's United Church, 50 Dexter Drive in West Saint John between 3PM and 8PM. An advertisement regarding the Open House was placed on page B3 of the *Telegraph Journal* on Tuesday 22 March 2022 (Figure 6).

PULP MILL ENVIRONMENTAL TREATMENT FACILITY

Irving Pulp & Paper has proposed to construct a new environmental treatment facility using the latest technology on the current site of Saint John's mill.

This project will result in cleaner water leaving the mill and a reduction in water consumption by up to 50%



QUESTIONS?

ATTEND OUR OPEN HOUSE!

Visit information kiosks and connect with the team behind our proposal. Learn how this project will benefit the environment and our community.

MARCH 23RD

ST. MARK'S UNITED CHURCH,

50 Dexter Dr,
Saint John, NB

REGISTRATION IS REQUIRED

SESSIONS CAN BE BOOKED AT

ippmodernization.com or by calling 1-800-518-7999

Figure 6. Copy of the Open House advertisement that appeared on page B3 of the *Telegraph Journal* on Tuesday 22 March 2022 regarding Irving Pulp & Paper, Limited's proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

Those wishing to attend the Open House were asked to register. This was done to spread out the amount of attendees during each hour of the event for social distancing reasons (*i.e.*, due to COVID-19). Although attendees were asked to register, those who showed up without having pre-registered were still permitted to attend. All told, 48 people attended the Open House.

Upon entering the Open House, attendees were provided a Project Overview brochure (Figure 7), a Feedback Postcard (Figure 8), and an information pamphlet on the EIA process (Figure 9). KN95 masks and hand sanitizer were also made available for those who wished.

A series of information kiosks were setup at the Open House. Photographs of each kiosk are included in Appendix I. Each kiosk was staffed by one or two members of the Project Team so attendees could connect with them and ask specific questions.

Comments and concerns gathered through the Open House were recorded and are part of the public involvement reporting for this Project.



Pulp Mill Environmental Treatment Facility

PROJECT OVERVIEW

PROJECT BENEFITS



MEETS OR EXCEEDS
EXISTING AND ANY FUTURE DISCHARGE REGULATIONS

FITS ENTIRELY → ← ON MILL SITE



UP TO 50% REDUCTION
IN WATER DRAWN FROM SPRUCE LAKE WATERSHED



\$150 MILLION
CAPITAL COST

AFTER REVIEWING MANY TECHNOLOGIES, IRVING PULP & PAPER WILL BE AMONG THE GLOBAL LEADERS IN PROCESS WATER USE AND EFFLUENT TREATMENT PERFORMANCE.



HISTORY

Irving Pulp and Paper has operated a bleached Kraft pulp mill at Reversing Falls near the mouth of the Saint John River in Saint John, New Brunswick since the late 1940s when it was purchased from the Port Royal Pulp & Paper Co. Ltd.

The Mill has undergone numerous upgrades to become the world class pulp producing and tissue producing facility that it is today. In fact, over \$600 million has been invested in Mill upgrades since 2005. With a staff of between 350-400, the Mill is the anchor of the New Brunswick Forest Products Industry.

The Reversing Falls Mill was the first pulp mill in the world to install a reverse osmosis system. This system provides increased recycling and reuse of filtered water at the Mill.

WHY THE PROJECT IS NEEDED



To produce cleaner water leaving the mill and reducing water usage by up to 50%;



To address a new enforcement approach to federal environmental regulations;



To modernize technology to improve efficiency, cost-competitiveness, and environmental performance;



To remove, reuse, and recycle pulp-making materials.

INVESTMENT

J.D. Irving, Limited will invest over **\$150 million** in this project with the objective of reducing the Pulp Mill's water usage and its overall environmental footprint.



LABOUR REQUIRED FOR THE PROJECT

Construction and installation of the new equipment is expected to generate:



120 person years of work



60 contractor jobs averaged with peaks of **120** contractors



over a **2-2.5** year period

WE WANT YOUR FEEDBACK

We invite questions and comments about our proposal. We're committed to working with the community, our neighbours and different levels of government to develop an approach that works for everyone.

www.ipmodernization.com

info@jdirving.com

Toll free: 1-800-518-7999

Figure 7. Copy of the Project Overview brochure handed out during the Open House on Wednesday 23 March 2022 regarding Irving Pulp & Paper, Limited's proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.



IRVING PULP & PAPER

IRVING PULP & PAPER (IPP) ENVIRONMENTAL TREATMENT FACILITY

Thank you for joining us!

We hope you gained value from our March 23 information session, and that we answered your questions to the best of our ability.



PLEASE PROVIDE FEEDBACK.

RESPOND TO OUR SURVEY BY
SCANNING THE QR CODE WITH
YOUR SMARTPHONE CAMERA.

WANT MORE INFO?

Fill out the below, leave it with us and we will be in touch!

NAME: _____

NUMBER: _____

QUESTION/COMMENT: _____

Figure 8. Copy of the Feedback Postcards handed out during the Open House on Wednesday 23 March 2022 regarding Irving Pulp & Paper, Limited's proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.



March 23, 2022
The Environmental Impact Assessment Process

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on the proposed Environmental Treatment Facility and Water Use Reduction (the Project) Environmental Impact Assessment (EIA). This Open House is being done voluntarily by IPP to help members of our community learn about the proposed Project and meet members of the Project team.

We understand you may need time to read through the Project's technical documents. We have set up a website that summarizes the Project and provides a link to the EIA. If you have questions or comments, we encourage you to submit them in writing through the form at the bottom of our website.

The Provincial government's EIA process is a proactive, preventative approach to environmental management and protection. The process is done early in the planning process of a Project and identifies steps that can be taken to avoid negative environmental impacts or reduce them to acceptable levels before they occur.

IPP is following the Province's EIA process and public consultation is a part of that process. The process also involves review of all technical documents by a Technical Review Committee that includes government representatives that are experts in their field. Comments from the public are requested within 30 days of Project registration to ensure they are included in the Public Involvement Summary submitted to the Province. If you have questions after the 30 days, you can still submit them.

All questions submitted through our website or to the government will be answered in writing as part of the public review process. Your comments will be taken into consideration during the EIA review process and as the Project advances. We thank you for your participation.

Figure 9. Copy of the information pamphlet on environmental impact assessment process handed out during the Open House on Wednesday 23 March 2022 regarding Irving Pulp & Paper, Limited's proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

2.8 STEP 8: DOCUMENTATION OF PUBLIC CONSULTATION ACTIVITIES

This report satisfies Step 8 listed in Section 6 and Appendix C of the EIA Guide [NBDELG, 2018]. The public involvement report will be made available for public viewing at the NBDELG locations listed in Section 2.4 and the locations listed in Section 2.6. Copies of the report will also be provided to any interested member of the public, and / or stakeholder upon request.

3.0 ADDITIONAL VOLUNTARY CONSULTATION ACTIVITIES

3.1 PROJECT WEBSITE

IPP voluntarily hosted a website for this proposed Project at:

www.IPPmodernization.com

The website provided an overview of the proposed Project and indicated how interested parties could submit questions. A link on the website also allowed visitors to download a copy of the EIA registration document. As of 26 April 2022, the website received ~ 1 300 engagements.

Prior to the voluntary Open House, any interested party could register for the Open House. Following the Open House, a document on Frequently Asked Questions was posted to the website. Those questions along with the answers are provided below.

The EIA Process and Community consultation

1. Why is IPP building this?

The Mill routinely undergoes upgrades to maintain it as a world class pulp producing and tissue producing facility. More specifically for this Project, IPP is building it to:

- produce cleaner water leaving the Mill and reducing water usage by up to 50%;
- address a new enforcement approach to federal environmental regulations;
- modernize technology to improve efficiency, cost-competitiveness, and environmental performance; and
- remove, reuse, and recycle pulp-making materials.

2. How can I see IPP's reports?

The **EIA registration document**, prepared by Fundy Engineering, is publicly available at the following locations:

- **Online**, electronically, at the following locations:
 - www.IPPmodernization.ca, and
 - The "New Brunswick EIA" website when you select 'Projects Under Review' and navigate to the link for '2022' (https://www2.qnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment.html)
- **Physical paper** copies have also been placed at the following locations:
 - The Saint John Library (Market Square)
 - The NBDELG Saint John Office (8 Castle Street)
 - Fundy Engineering's head office (27 Wellington Row, off Union Street)
- **Upon request**, if you send us your name and address

3. Why are we only hearing about this now?

The proposed Project was registered for Environmental Impact Assessment (EIA) review by the Provincial Department of the Environment who has regulatory authority over the Project. The Open House was done voluntarily by IPP to enhance advertisement of the proposed Project, to help members of the community learn more, to meet members of the Project team, and to ask initial questions. The Open House marked the beginning of the Public consultation process.

4. I missed the Open House. How can I submit questions or comments?

The public consultation period continues throughout the review process completed by the New Brunswick Department of Environment's Technical Review Committee.

Please share any comments or questions with Matt Alexander from Fundy Engineering (matt.alexander@fundyengineering.com). Also, there is a comment and question submission form on our Project website (www.IPPmodernization.ca).

Construction

1. When will construction of the facility begin?

Construction is expected to begin immediately following the granting of a successful Environmental Impact Assessment determination from the New Brunswick Department of Environment and issuance of other applicable permits.

2. Will there be a lot of noise during construction?

IPP will take steps to reduce sound emissions during construction. Those steps include breaking rock instead of blasting, having vehicles access the site through the Mill's main entrance off Mill Street and then using internal roadways, and informing neighbours a week in advance of any pile driving activity.

3. When will blasting start?

No rock will be blasted for this Project. Rock will be broken using pneumatic hammers. That work will be done over approximately 2 months during regular business hours (730AM-5PM).

4. Will there be increased truck traffic during construction?

Yes, there will be increased truck traffic during construction, but that traffic will not use Milford Road.

5. Why are you building a landscaped berm?

We take our role as community stewards seriously and want to do everything we can to improve the look of the property. That includes planting trees and maintaining the property by constructing a landscaped berm adjacent to Milford Road.

6. How many jobs will be created for construction? What about down the road?

On average, IPP expects 60 contractor jobs with peaks of up to 120 for the construction period. In terms of long-term employment, IPP currently has almost

400 employees working at the Mill. It is expected that the facility will be operated using existing employees.

7. How will the project be accessed during construction, and operation? Will Green Head road and Milford road be impacted?

Construction and operational traffic will access the Project site using the Mill's main entrance off Mill Street and then use internal roadways as is done for other Mill activities. Traffic will not use Milford Road or Green Head Road.

8. Will there be any material removed from the site, and if so, where will it be deposited?

Some rock will be broken to make the bedrock level for this Project. That broken rock material will be used to fill low areas on the mill site. Some loose materials may require excavation and all general and suitable material will be reused onsite.

9. What happens when there is upset conditions, or shutdowns, and start-ups?

To protect from upset conditions, start-ups, and shutdowns, a diversion basin with an 8 hour flow capacity has been designed into the Project. Any water that does not meet treatment specifications can be sent to that diversion basin. That water would be slowly introduced to the system for treatment. The technology selected by IPP to treat the effluent (MBBR) recovers the quickest from upset conditions when compared to other all technologies available.

Redundancy has been built into the Project to treatment to continue while various parts of the system are taken offline to be maintained.

10. Will the project require demolition of homes?

No, the Project will be built entirely on the Mill's property and will be located over 100 m from the nearest home.

11. Will this project require Rezoning?

No, the Project will be fully built and operated on Mill property, which is zoned heavy industrial and has been for decades.

Potential Impact Mitigation

1. Will there be noise or odour coming from the facility?

This facility is not expected to generate additional noise or odour.

2. Why are the tanks not covered?

Irving Pulp & Paper is a modern mill with a strong environmental culture, which is reflected in mill collection and reuse systems that ensure a clean effluent with very little odour. We do not anticipate odour from the tanks.

3. Will the cooling towers create plumes and other cooling tower effects?

The effluent will be cooled using indirect cooling whereby the mill effluent will not directly come into contact the circulating air. This non-contact technology will ensure no odour release from the cooling system. The indirect air coolers will include additional technology to ensure minimal visible vapour plumes.

4. Are these the same kind of towers as the ones that cause legionnaires disease in Moncton?

No, the indirect air coolers will have a constant introduction of fresh water, instead of recirculating the same water. Operators of the indirect air coolers, who work on-site 24/7, will monitor the water quality closely to be sure.

5. What will be released into the air? What type of emissions will there be? Will there be any smokestacks?

This is a water treatment facility, which treats *water only*. Because the water is warm, there could, at times, be some light water vapour visible near the surface of the tanks.

Ventilation from the process building will be tempered, to prevent any dust, odours, or particulate matter from that part of the treatment process from leaving the building.

There are no “smokestacks” associated with this type of project.

6. Will this new facility generate a lot of light and make it difficult for us to sleep?

There is minimal lighting associated with this Project. For employee safety and for process and security monitoring, there will be some lighting. Those lights will be designed to downwards and limit the amount of light that can spill into adjacent areas.

7. Why doesn't IPP build this someplace else?

Several locations were reviewed for building and operating this Project. After a careful and detailed assessment, this was determined to be the most suitable location. IPP is investing a significant amount of money in better technology to avoid building a large lagoon at a different site that would require more land use and pipe infrastructure construction, which would cause greater disruption for IPP's neighbours.

8. Why was the project not located at Bald Mountain instead?

Bald Mountain was included in the list of potential locations for building and operating the Project. That site was ruled out for the following reasons:

- Bald Mountain is an operating quarry and putting the Project there would conflict with operations;
- there is no approved outfall at the Bald Mountain site and any new outflow would be very close to Dominion Park beach;
- there is no access to reliable power at Bald Mountain and could affect operations in the event of a power outage;
- Bald Mountain is a remote site to the operation and IPP and therefore more difficult to monitor its operation 24 / 7;

- the property at Bald Mountain is not zoned appropriately for an industrial water treatment plant;
- the construction of the pipeline to Bald Mountain would require the pipeline to run above ground for 150 to 200 metres; and
- the construction of a new pipeline from the Mill to Bald Mountain could result in greater disruption for motorists and local residents.

9. What are the impacts to visibility, air quality, odours, and noise for tourists trying to enjoy Reversing Falls?

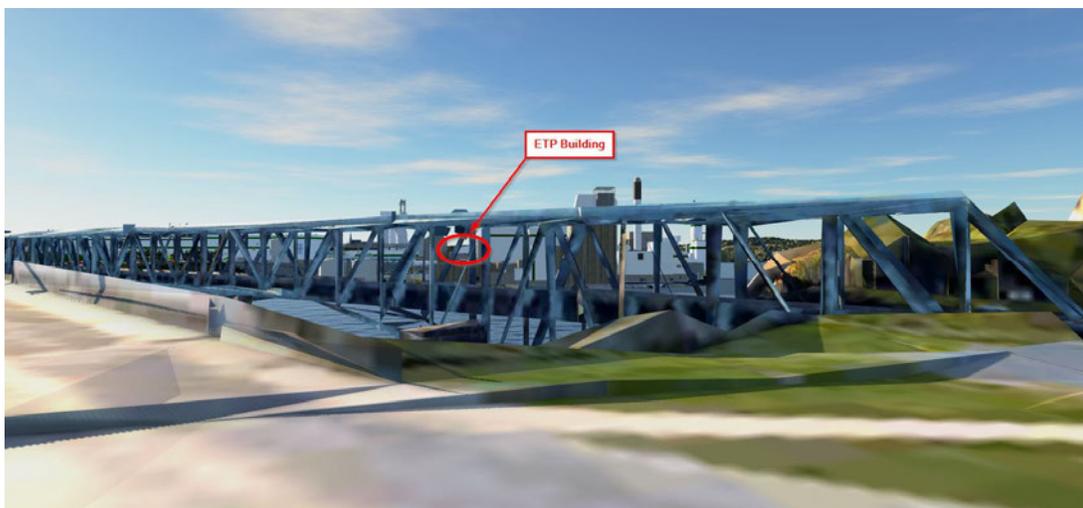
This is a water quality improvement project along with water use reduction.

While the project *can* be seen from Falls View Park (see renderings below), this project will not cause any changes to noise, odour, or air quality leaving the mill site.

Project as seen from Fallsview Park:



Project as seen from Harbour Passage Entrance at Reversing Falls Bridge:



10. You say you don't operate a landfill. What happens with waste products generated from the mill?

Ash generated from burning bark, lime, and other wood-based residuals can be used to help condition soils. Those materials are sent to a composting facility, which is preferred over landfilling because benefits can be realized from their reuse. All residuals from the Mill's processes, which are approved for reuse by the Canadian Food Inspection Agency, are either used as an organic feedstock in composting and / or applied to farmers' fields.

3.2 NEWS RELEASE

On 21 March 2022, a news release was issued on *Globe Newswire* and is provided below.

Irving Pulp & Paper seeing community feedback on new environmental project

Irving Pulp & Paper, Limited will invest over \$150 million in environmental improvements at the Saint John mill.

The project was the focus of an Environmental Impact Assessment (EIA) which Irving Pulp & Paper recently filed with the provincial Department of Environment and Local Government.

"The construction of this new on-site facility using world class technology will help us continue to achieve our long-term environmental objectives by substantially improving water quality while reducing water consumption by up to 50 percent," said Mark Mosher, Vice President of Pulp & Paper. "We have been operating at the west side location since 1946, so we value the feedback of our neighbours in the community and we look forward to hearing from them through this process."

This project will modernize the current water treatment being done in the mill to remove, re-use and recycle materials created during the pulping process which need to be treated in an environmentally friendly manner. It will also help Irving Pulp & Paper to comply with a new enforcement approach to federal regulations and reduce the water currently being sourced from Spruce Lake by up to 50 percent.

Irving Pulp & Paper invites questions and comments about the proposal. An open house for nearby residents will be held on March 23rd. Residents must pre-register in order to attend. To register or find more information on the proposal, please visit www.IPPmodernization.com.

4.0 IN THE MEDIA

The 21 March 2022 news release about the proposed Project generated several online, print, and radio stories, which are summarized in Table 2.

Table 2. Summary of media articles regarding Irving Pulp & Paper, Limited's proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

Date	Media	Link
21 March 2022	CHSJ Country 94.1	https://tinyurl.com/2b64bh95
21 March 2022	97.3 The Wave	https://tinyurl.com/2a4hvfzx
22 March 2022	Telegraph Journal	https://ij.news/greater-saint-john/101826621
22 March 2022	Huddle	https://tinyurl.com/3fyrrzzz
22 March 2022	AllNewBrunswick	
23 March 2022	Toronto Star	https://tinyurl.com/vc89vdpv
24 March 2022	CBC News Online	https://tinyurl.com/37wamah9
24 March 2022	CBC Information Morning Saint John	https://tinyurl.com/4dhkprx

5.0 DISPOSITION OF PUBLIC COMMENTS RECEIVED

Questions and comments were received from 17 members of the public. Those questions and comments were received via comment cards handed out at the Open House, the email provided on the hosted website, the environmental consultants' email, and submitted letters. Several of those individuals made several submissions as shown in Figure 10.

All comments received were responded to accordingly. Table 3 provides the disposition of comments received. For full transparency, the correspondence received and issued with respect to those comments is provided in Appendix II.

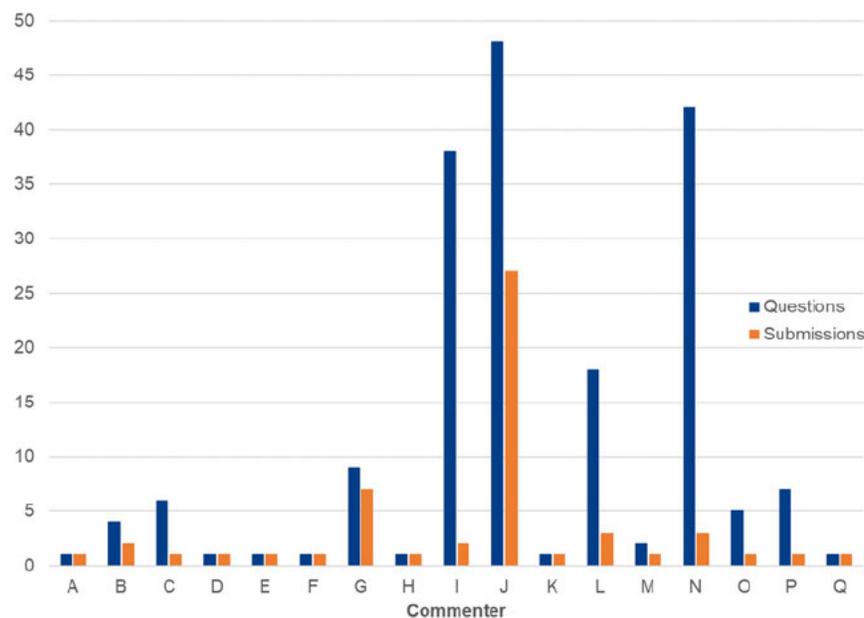


Figure 10. Summary of comments received from the public regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

Table 3. Disposition of comments received from the public regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill in Saint John, New Brunswick.

	Comment	Response
COMMENTER A - 21 MARCH 2022 EMAIL		
PC-1	What role will the Bald Hill quarry location play in the long term plan for the proposed water treatment plan?	The Bald Mountain Quarry is located in South Bay about 1 km from the location of the proposed Environmental Treatment Facility (ETF). As noted in <i>Section 2.8.2.2 Services and Excavations</i> of the EIA document (page 65), approximately 24 000 m ³ of clean rock and / or pit run gravel will be required to build up some of the ETF site. It is further noted that the source of that material will most likely be the Bald Mountain Quarry. There is a private roadway that extends from the Irving Pulp & Paper, Limited Reversing Falls Mill site to the Bald Mountain Quarry. That roadway will be used for transporting material from the quarry to the ETF site, which will minimize traffic on local roadways (Please see the attached figure in Commenter A of Appendix II). There is no long-term plan for the Bald Mountain Quarry associated with this Project.
COMMENTER B - 21 MARCH 2022 EMAIL		
PC-2	Can you confirm that no new noise or air pollution will be created once construction is complete. If no please give specific details. Example : increase in potential noise and air pollution.	<p>The Project team has worked diligently to design a Project that yields substantial benefits. This was done by reviewing many technologies, selecting the leader, and then developing best-management operating practices. The Project team has also incorporated several best-in-class technologies that will yield additional environmental benefits and will ensure the Mill continues to be socially responsible and a good neighbour.</p> <p>There is little risk of loud sounds being emitted during Project operations. Equipment that will generate loud sounds, such as air blowers, pumps, and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds.</p> <p>The facility should not produce additional odour for residents. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool and process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.</p> <p>The indirect air coolers will be equipped with a plume abatement system. This will involve the post-heating of warmed cooling air to ensure it is not saturated with water vapour, thereby minimizing visible water vapour plumes being produced.</p>
PC-3	We have contacted the mill numerous times concerning noise concerns and air quality concerns. The noise from the mill makes sitting in our backyard less enjoyable and in some occasions awoken my children at night. I have had numerous incidents with white flakes on my car due to air pollution. Some adjustments have been made and I did have the chance to speak with a lovely person at the mill but still today I believe this could be improved.	IPP appreciates you contacting Mill representatives when you have concerns related to noise and air quality. All complaints are recorded, investigated, responded to, and reported to the Regulator (New Brunswick Department of Environment and Local Government). IPP annually publishes the number of complaints received within their sustainability report. The 2020 sustainability report can be found at: https://dirvingsustainability.com/globalassets/esq/pdfs/esq-report--2020--final--en.pdf Page 119 of that document summarizes the complaints received in 2020.
PC-4	I read part of the Environmental Impact Assessment and found this part interesting: Although the Mill is located in a traditional heavy industrial area of west Saint John, some residential properties do exist in the area (p. 168). The mill is surrounded by a residential area and many residential housings are located next to the mill. I hope that this is taken in consideration because the assessment does not seem to understand that basic fact.	The Project team has incorporated features into the overall design to be socially responsible and a good neighbour. An additional feature that has been included within the Project is a landscaped berm. That berm will be established between the Environmental Treatment Facility and Milford Road. It will reduce the amount of infrastructure that can be seen by neighbours in Milford and it will also help diminish existing sound emissions from the Mill because the vegetation will absorb some of the sound.
COMMENTER C - 24 MARCH 2022 EMAIL		
PC-5	We live at 263 Milford Rd. and have resided there for the last 16 years. Over those years we have endured the constant noise from the existing mill, that always seems to be even louder at night. ie: constant industrial humming, backup alarms, tailgates slamming shut, loud speaker announcements etc.	The Mill is a heavy industrial site and loud sounds, such as those emitted from backup alarms, are required for worker safety while others are related to general operations, such as humming from equipment. There is no outdoor loudspeaker system at the Mill and no dump trucks are used on the Mill site through the course of normal operations. We are unsure on the source of loud speaker announcements and tailgates slamming shut. As a socially responsible company and good neighbour, Irving Pulp & Paper, Limited (IPP) is committed to reviewing the audible alarm system to determine if there are options for reducing impacts offsite. One of the components of the project, the landscaped berm adjacent to Milford Road, will help mitigate sound emissions from the Mill because vegetation absorbs sound waves. In addition to the landscaped berm adjacent to Milford Road, there may be options to build other landscaped berms or plant trees on IPP owned land to further absorb sound waves.
PC-6	As a resident of Milford we have put up with the industrialization of our community. According to Mark "the west side is in fact industrial" I was not aware of that.	Large sections of west Saint John are zoned for industrial activity. The Mill site is zoned heavy industrial activity and has been the site of that type of activity since 1836 when the St. John Mills and Canal Company constructed and started operating the Cunnabells Sawmill. In 1875, we note that there were other industrial activities present along the shoreline between Lee Cove and Deep Cove, such as the J.W. Spurr New Brunswick Distillery, the Woodman and Miller Saw Mill, and the E.C.B. Bakers Saw Mill as shown in the figure below.
PC-7	The pipe line that was laid meters behind our homes caused so much grief in regards to constant noise, muddy streets from truck traffic, traffic jams getting in and out of the neighborhood, and cracked foundations from blasting. We were never able to get compensated for our foundation being cracked. We were told it was existing and not leaking. Even though less than a year later we had to pay 10K to have our foundation wrapped due to leaks from those same cracks. Then shortly after that we were faced with the cell phone tower	The pipeline belongs to the Emera Brunswick Pipeline Company, which has a 30 m wide right-of-way (easement) across the Mill property. The cellphone tower located at 244 Milford Road belongs to Bell Aliant.

	Comment	Response
	being installed only a few hundred meters from the streets again. More noise and construction. Now it sits in our skyline for all to see.	
PC-8	In regards to the waste water treatment facility. We expressed to you and Mark our concerns with noise, construction, and traffic.	Your concerns, as were those of others, were recorded by notetakers during the Open House. Construction and operational traffic will access the Mill site through the main gate along Mill Street. Those vehicles will then use internal roadways to access the Environmental Treatment Facility (ETF). Construction and commissioning activity is expected to occur over a period of 30 months. During construction, there may be periods of increased sound emissions from the ETF site. As noted in the Environmental Impact Assessment (EIA) document, "Loud construction activity (e.g., pile driving and rock breaking, etc.) should be scheduled / planned to occur during normal workday / daylight hours (i.e., 7 AM through 7 PM Monday through Saturday), where possible, to limit any potential annoyance to residential receptors. Loud activities should be scheduled to occur concurrently and all loud activity should conform to the City of Saint John's By-Law Respecting the Prevention of Excessive Noise in the City of Saint John [M-22]." Additionally, the EIA document goes on to note that "nearby residents and businesses should be notified one week prior to the start of pile driving activities."
PC-9	We also have many more concerns with it. I propose that Irving take another approach to our community and address us as a whole. I have talked to many of our neighbors about this. Firstly, many of them were not even aware of the project. And most want to be addressed as a community so we can express our concerns together as a whole. I'm reaching out to our ward 1 councilors Greg and Joanna for some support and guidance so we can seek out more options in what we can do to halt this project and look for a better solution that will not impact our community yet again.	The EIA process is administered by the New Brunswick Department of Environment and Local Government (NBDELG). More information on the EIA process can be found on the Province's website (https://www2.qnb.ca/content/qnb/en/departments/elg/environment/content/environmental_impactassessment.html). Under the Province's EIA Determination Review process, IPP is only required to publish a notice in the newspaper regarding the submission of their EIA document to the Province. Members of the public, according to the Province's process, then have 30 days to submit written questions on the Project. The Open House was done voluntarily by IPP to enhance advertisement of the proposed Project, help members of the community learn more, meet members of the Project team, and ask initial questions. IPP understands that members of the community may need time to read through the EIA document so they have setup a website (www.ipmodernization.com) that summarizes the Project and allows questions and comments to be submitted. Questions, like yours, are being tracked and addressed. Those comments and responses are being shared with NBDELG representatives for consideration during their review of the EIA document. The EIA process is the first step in the Project approval process. Several other permits / approvals will be required from the three levels of government. With respect to the City of Saint John's involvement, IPP will have to apply for a building permit.
PC-10	In my particular area of Milford Rd. 6 homes including my own are in the process of upgrades in the hopes of taking advantage of the current real estate market. This project will destroy any hopes of us selling our homes. Especially during the 2+ years of construction. I really hope Irving will make the right decision here and maybe think about options instead of putting the MILL before the people.	IPP, as noted in the EIA document, reviewed several different locations for building and operating the ETF. The site selected is considered the most suitable, not the least of which include: access to an approved outfall; access to a reliable and uninterrupted power supply; and optimum subsurface (i.e., geological) conditions.
COMMENTS D - 23 MARCH 2022 EMAIL		
PC-11	Hello - is it too late to register for the open house tonight?	Thank you for your interest in attending the Open House regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Although the Open House was held on Wednesday 23 March 2022, there are still opportunities for you to engage with the Project Team. A summary of the Project can be found at www.ipmodernization.com . Mid-way down the page it says "Click here to read the EIA Registration Document" where more detailed information can be found on the proposed Project. If you prefer to view a hardcopy of the document, there is one located at the front desk of the Saint John Library in Market Square or at the front desk of Fundy Engineering's office at 27 Wellington Row. If you have questions or comments you would like to submit, you can email them directly to Matt Alexander at matt.alexander@fundyeng.com or to the information email for the proposed Project at info@idirving.com . If you prefer to submit your questions in person, you can drop off your comments to Matt Alexander at Fundy Engineering's front desk.
COMMENTS E - 23 MARCH 2022 COMMENT CARD		
PC-12	Would like to see some extra trees on mill property. Ones that can survive the winter.	Thank you for bringing this to Irving Pulp & Paper, Limited's (IPP) attention. As a socially responsible company and good neighbour, IPP is committed to reviewing where trees hardy enough to survive harsh winter conditions can be planted on the Mill site.
COMMENTS F - 23 MARCH 2022 COMMENT CARD		
PC-13	I see this project as a good thing. The mill looks fantastic. Appreciate the sense of pride and ownership.	Thank you for your comment. Irving Pulp & Paper, Limited takes a significant amount of pride and ownership in the Reversing Falls Mill and believes community stewardship is important. Continued investments in the Mill ensure it is maintained as a world class Kraft pulp producer.
COMMENTS G - 23 MARCH 2022 COMMENT CARD		
PC-14	Please provide information on 2 other locations on JDI site that this treatment facility could be located. "Should be down on the hill to the water and off Milford Road top of hill".	The current location (Mill West) and Lee Cove were the two locations considered for building and operating the Project onsite. Three offsite locations were also considered as described in the EIA document: Saint's Rest; Gault Road; and Bald Mountain. Soils at the Lee Cove location, which comprise about 100 m of silts and sands sitting atop bedrock, are unsuitable for placing weight loads of the magnitude associated with this Project (i.e., the tanks and building would sink through the silts and sands). Although hundreds to thousands of piles could be driven to bedrock to support the weight loads vertically, there would be no way to accommodate lateral load shifting, which could occur even during minor earthquakes or routine settling. The facility must be designed and built to withstand specific seismic conditions and placing the facility at the Lee Cove location would not allow those conditions to be met. Moving the Project further down the hill towards the Saint John River at the Mill West location presents the same issues as the Lee Cove location. The bedrock there is also deep with about 100 m of silts and sands sitting above.

	Comment	Response
		Solid and strong bedrock exists at or very near the surface of the Mill West location described in the EIA document. That bedrock is more than sufficient to accommodate the weight loads of the Project. That bedrock is also able to meet the shaking conditions produced during potential seismic events.
COMMENTER H - 23 MARCH 2022 COMMENT CARD		
PC-15	Wonderful work being done to improve water usage and protect the environment.	Thank you for your comment. Irving Pulp & Paper, Limited's Project team has spent considerable time and effort developing a Project that will yield substantial benefits and protect the environment.
COMMENTER I - 23 MARCH 2022 COMMENT CARD		
PC-16	Are you sure your mitigation steps to deal with impact of climate change intense rain events like in Australia, BC will be sufficient to protect your infrastructure?	For potential extreme precipitation impacts on the Project, Irving Pulp & Paper, Limited's Project team has considered the largest possible storm event (i.e., a 1 in 100 year 24 hour event) as per existing design standards. Atmospheric Rivers, such as those that were recently experienced in the Fraser River Basin during November 2021 and in eastern Australia also during 2021, are bands of water in the atmosphere several thousand kilometers long and only a few hundred meters wide. According to researchers, these are rare atmospheric events that appear to have decreased slightly over the past century in both number and intensity. Typically, atmospheric rivers originate over tropical oceans and produce intense rainfall and subsequent flooding. They are most prominent along the west coasts of North America and northern Europe. Although these events have occurred in Atlantic Canada, atmospheric rivers here tend to be short in duration and tend to sweep across the coast quickly since the warm, moist waterbodies where they form are located south of the land mass. At this time, it is believed that designing to a 1 in 100 year 24 hour event, which is the current design standard, is sufficient for this Project.
COMMENTER J - 3 EMAILS 26 MARCH 2022		
PC-17	I was told that questions and answers that were made will be made public. Where do I find that information? I can't find a link on the website.	The Project website (www.ipmodernization.ca) contains a clickable FAQ link near the bottom. Here is the direct link to the most recent version of the Frequently Asked Questions: https://www.ipmodernization.ca/wp-content/uploads/2022/03/PPD-EIA-QA-8.5x11-V3.pdf
PC-18	Will you please provide me with the contact information for the Department of the Environment person?	The representative with the New Brunswick Department of Environment and Local Government that has been assigned as Project Manager to this Project is Patrick Mbaya. His contact information is as follows: Phone: (506) 444-5382; Email: patrick.mbaya@qnb.ca
PC-19	Will you please provide me with the Social and Economic Study for this project?	The Socio-Economic baseline assessment is provided in Section 3.3 of the Environmental Impact Assessment (EIA) document. The Potential Project Impacts and Proposed Mitigation are provided in Section 4.4.4 of the EIA document. The EIA document can be downloaded from the Province's EIA website at: https://www2.qnb.ca/content/qnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html
COMMENTER K - 2 EMAILS 29 MARCH 2022		
PC-20	What sector specific guidelines were used for the EIA?	As noted in Section 2.3 of the Environmental Impact Assessment (EIA) document, the "EIA meets the requirements of the NBDELG [2018] guide to EIAs and the NBDELG [2004] Sector Guidelines for Wastewater Treatment Projects."
PC-21	Will you please send me the sector specific guidelines used when the EIA was submitted?	The NBDELG's EIA information and guidelines can be found at: https://www2.qnb.ca/content/qnb/en/departments/elg/environment/content/environmental_impactassessment.html The Sector Guidelines for Wastewater Treatment Projects can be found under the <i>Sector Guidelines</i> tab (they have also been attached to this email for your reference – please refer to Commenter K in Appendix II for a copy). Please note that these are guidelines and are meant to help the proponent prepare the EIA document for review. Also, please note that this proposed Project is with respect to an industrial treatment system, not a municipal system and there can be considerable differences between those two types of projects and effluents. Much of the aforementioned guideline is not applicable to this project because it is strictly for treating industrial effluent. The assessment of potential environmental impacts for all EIAs is based on the scope and complexity of the proposed Project. The scope and complexity of this proposed Project are described within Section 2 of the EIA document. The potential environmental impacts and definition of Valued Environmental Components were determined by overlaying the Project on top of the baseline environment.
COMMENTER B - 26 MARCH 2022 EMAIL		
PC-22	What level of noise are you expecting in terms of decibels and other than odor what type of air pollution if any will be produced?	Detailed engineering design for the proposed Project is still underway. The pieces of equipment closest to nearby residences along Milford Road will be the cooler fans on the indirect air coolers. There is little risk of loud sounds being emitted during Project operations. Equipment that will generate loud sounds, such as air blowers, pumps, and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds. Sound modelling will be completed as detailed engineering design advances to ensure that sound emissions at the nearest residential receptor from this Project will be at or below existing background levels. The facility should not produce additional odour for residents. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the coolers and process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours. This is a facility for treating water only. Because the water will be warm, there could, at times, be some light water vapour visible near the surface of the tanks. Ventilation from the process building will be tempered to prevent any dust, odours, or particulate matter from that part of the treatment process from leaving the building.

	Comment	Response
COMMENTER J - 3 EMAILS 29 MARCH 2022		
PC-23	Will you please provide me with the Social and Economic Study for this project?	As noted in the response to PC-19 above, the Socio-Economic baseline assessment is provided in Section 3.3 of the Environmental Impact Assessment (EIA) document. The Potential Project Impacts and Proposed Mitigation are provided in Section 4.4.4 of the EIA document. The EIA document can be downloaded from the Province's EIA website at: https://www2.qnb.ca/content/qnb/en/departments/elq/environment/content/environmental_impactassessment/1578.html
PC-24	I understand that the federal government provides funding for Indigenous communities, individuals, and organizations to take part in the federal EIA process. Does the Provincial Government have funding for the provincial EIA process for individuals, organizations or Indigenous communities?	In some instances, the Impact Agency of Canada does provide funding to support various groups, including members of the public, scientists, and Indigenous peoples to play a more active role in assessments and policy development of the Impact Assessment process under the federal <i>Impact Assessment Act</i> [SC 2019, c. 28, s. 1]. There are no known funding processes to support the provincial environmental impact assessment process for individuals, organizations, or Indigenous communities.
PC-25	Of the 5 PIN noted on the EIA, which PIN's are volatile heavy and which ones are offensive heavy? Will you please describe what the difference is?	<p>There are five Property IDentification (PID) numbers that make up the Reversing Falls Mill site: 55162416; 55223739; 55232649; 55232656; and 55233001. All of those properties are zoned for heavy industrial use. Definitions for a volatile industrial use and an offensive industrial use from the City of Saint John's Zoning By-Law are provided below.</p> <p>A volatile industrial use is where the type of material used, produced, or stored and or the type of manufacturing process involved may be harmful or detrimental to a person's health and or property due to the potential of fire, explosion, or the accidental release of toxic gases, fumes, or otherwise, and without limiting the generality of the foregoing, shall include, but not be limited to, a chemical plant, crude import and or export terminal, fertilizer manufacture and storage, liquefied natural gas terminal, petro-chemical plant, or petroleum refinery, but not a nuclear power plant, nuclear storage facility, or a nuclear enrichment plant.</p> <p>An offensive industrial use is where the type of manufacturing process involved or the type of material used, produced, or stored may cause a dangerous gas or fume, dust, objectionable odour, noise or vibration, or the unsightly storage of goods, wares, merchandise, salvage, junk, waste, or other material to a condition that could be hazardous or injurious as regards to a person's health or safety, or which prejudices the character of the surrounding neighbourhood, or could interfere with the normal enjoyment of any land, building, or structure, and shall include, but not be limited to, a brewery, pulp and paper mill or a scrap or salvage yard.</p> <p>Based on the definitions above, all five of the properties zoned for heavy industrial owned by Irving Pulp & Paper, Limited are for an offensive industrial use, which is appropriate for siting the proposed Project.</p>
COMMENTER G - 28 MARCH 2022 EMAIL		
PC-26	Please provide me with the reports showing the alternative locations would be affected by the seismic activity you mentioned as being the factor to discount the alternative sites. I have been told that the seismic activity created by the current blasting at Bald Hill could not cause any damage to the areas homes. Not sure why such conflicting information	<p>The seismic activity referred to is not related to controlled blasting occurring at Bald Mountain. The 2015 National Building Code of Canada requires that the Project's structures be designed to withstand specific magnitude earthquakes within a specific return period.</p> <p>Although controlled blasts and earthquakes can both release a large amount of energy very quickly and both can be recorded by seismic instruments, the forces involved in each are very different and the waveforms that each creates look different. Controlled blasts are done very near the surface of the earth where all of the energy is released in a small area. Earthquakes are typically several to many kilometers beneath the surface of the Earth and the energy is released from the fault surface, which can be several to many kilometers long depending on the size of the fault and the energy is released over a very large area. Controlled blasting generates ground motions that are much lower in amplitude, far shorter in duration, and higher in frequency than earthquakes. Controlled blasting is designed to not cause damage to surrounding structures. Earthquakes can happen at any time, they are uncontrolled, and often cause damage to structures across a broad area.</p> <p>As noted previously for the alternative sites you asked about (<i>i.e.</i>, Bald Mountain and Lee Cove), have ground conditions that are unsuitable for placing weight loads of the magnitude associated with this Project. Furthermore, the facility must be designed and built to withstand specific seismic conditions and by placing the facility at those locations, the conditions cannot be met. This was determined based on expertise and knowledge of the geotechnical engineers based on their extensive experience with other Projects in the Saint John region.</p>
COMMENTER K - 29 MARCH 2022 EMAIL		
PC-27	is this gonna bring down house prices I was planning on selling my house and it directly across the street from me in video look over at pulp mill on Milford Rd that would be my house that whoever or drone is talking video is behind them I'm a hundred feet from powerlines on even side of road tried to sell once but they were doing construction on natural gas and cause of that the buyers backed out. So was just asking if this is gonna hurt market.	<p>It is not believed that this Project will negatively affect property assessment values in the area. This is based on our detailed review of the local property assessment values presented below. The majority of these homes have existed adjacent to the Mill site since 1951 and their values have continued to increase. The Project team also believes that the beautification work along Milford Road will improve aesthetics of the area.</p> <p>NB Property Assessment determines an assessed value for each real property in New Brunswick on an annual basis. A property's assessment reflects the property's market value. Market value is the price the property would likely sell for on the open real estate market on January 1 of each assessment year for which the assessment was made. The Province's assessment process is the most common method of property assessment used in North America. It is based on market value because it is transparent, easy to understand, and a fair and realistic measure of a property's value. The Province's assessors look at a variety of factors when assessing the value of a property including lot size, sale prices of homes and properties in the area, property condition, age of buildings, and any recent renovations and/or improvements made to the property. More information on how a property is assessed can be found on the Province's website at: https://www2.snb.ca/content/snb/en/sites/property-assessment/understanding/valued.html</p> <p>The 2022 assessed values of New Brunswick properties reflect a strong real estate market provincially. While 28 % of properties showed no change in assessed value when compared to 2021, 28 % of properties increased by up to 5 %, and 23 % increased ranging from 5 % to 10 %. While 19 % increased by greater than 10 %, 77 % of those are protected by the Province's Spike Protection Mechanism whereby the increase is phased in over time to make assessment growth much more stable and predictable.</p>

	Comment	Response
		<p>Within the Milford and Randolph areas of west Saint John, there are approximately 659 properties (i.e., vacant land, residential, institutional, commercial, and industrial) within the Service New Brunswick database. Of those, 85 % (i.e., 562) saw a property assessment increase between 2021 and 2022, 1 % (i.e., 6) experienced a decrease, and 14 % (i.e., 91) showed no change. These data suggest that property values in the Milford and Randolph areas grew more, on average, than New Brunswick as a whole.</p> <p>Because property assessments were frozen across the Province between 2020 and 2021, assessment changes over the past five years were also reviewed. Those data show that 82 % (i.e., 542) of those same properties showed an assessment increase, 5 % (i.e., 34) experienced a decrease, and 13 % (i.e., 83) saw no change. On average, assessments increased by 19 % over those five years (i.e., 2018 to 2022).</p> <p>The Saint John Real Estate Board reported on 13 January 2022 that Saint John 2021 MLS® home sales smashed the record set in 2020. During 2021, 3 142 residential units were sold. Sales were up in 2021 by 21 % over the 2020 annual sales setting record. Buyers are fiercely competing over a low inventory, which is driving price growth; the composite benchmark price extended the streak of double-digit year-over year percentage gains to 15 months in December 2021. The average price of homes sold in December 2021 was \$249 527, up 31 % from December 2020.</p> <p>Looking specifically at single-family residential, there are 519 properties in the Milford and Randolph area. Within the past five years (i.e., 2018 to 2022), the average assessment for those properties increased by almost 13 %. The average value of a single-family residential property increased from about \$151 850 in 2018 to \$167 160 in 2022. The Saint John Real Estate Board expects record sales prices to continue in the foreseeable future.</p>
COMMENTER L - 30 MARCH 2022 EMAIL		
PC-28	What was the lot size (dimensions) of the land purchased with the mill in 1946?	The Mill site as it existed during a 1951 survey is attached (please refer to Commenter L of Appendix II for a copy) and shows that the lot size is fairly similar today; however, some additional lands were acquired by Irving Pulp & Paper, Limited (IPP) over the years along the eastern boundary in the vicinity of the "School Lot" shown in the 1951 survey.
PC-29	What was the total square footage of the mill buildings?	Although an exact plan is not available for 1946, it is estimated that the buildings occupied a footprint of 25 000 m ² .
PC-30	What was the zoning in 1946?	<p>As described in Section 3.3.5 of the Environmental Impact Assessment (EIA) document, a Mill has existed at Union Point since at least 1836 when the St. John Mills and Canal Company constructed and operated the Cunnabells Sawmill. Over the next century, the site underwent process changes, expansions, and ownership changes. In 1946, K.C. Irving purchased Port Royal Pulp & Paper Co. that was operated as Saint John Sulphite Ltd. at Union Point. In 1951, the Mill was renamed IPP.</p> <p>The attached survey plan from 10 December 2002 (please refer to Commenter L of Appendix II for a copy) shows the current boundaries of the Mill site. It encompasses the lands along Milford Road up to civic 317 and includes all the lands where the Project is proposed to be located. Parcels of land are identified in the New Brunswick Geographical Corporation's database using a Parcel Identifier (PID). Today, the Mill site is made up of five PIDs as noted in the EIA document: 55162416; 55223739; 55232649; 55232656; and 55233001.</p> <p>The attached survey plan from 30 July 1951 (please refer to Commenter L of Appendix II for a copy) shows the boundaries when the Mill underwent renaming to IPP. The accompanying deed indicates that the lands along Milford Road to the property boundary with civic 317 were purchased by IPP from Investment Securities, Limited. Those lands, which were identified as Parcel "A" were originally part of the land grant from the Crown issued to Phineas Lovitt. The survey confirms that the lands along Milford Road were amalgamated in to the overall Mill property in 1951.</p> <p>The attached survey from 1996 (please refer to Commenter L of Appendix II for a copy) also confirms that the lands along Milford Road between civic 453 and 317 are part of the Mill property. That survey indicates that a 30 m strip of land of PID 55162416 adjacent to Milford Road is zoned two-unit residential while the remaining portion of the PID 55162416 is zoned heavy industrial. That swath of R-2 zoned land is also shown in the attached City of Saint John zoning map.</p> <p>Community planning legislation was first enacted in New Brunswick in 1912 under the statute <i>An Act Relating to Town Planning</i>. That <i>Act</i>, which was renamed in 1917 as <i>The Town Planning Act</i>, did not allow for zoning or land use control. In 1922, a plan to guide development was prepared for Saint John. In 1936, <i>The New Brunswick Town Planning Act</i> was introduced. Although the 1936 <i>Act</i> allowed for the provision of zoning by-laws, Saint John did not appear to implement any zoning by-laws that year but they did update their Master Plan in 1936 to guide development, which was further updated in 1945. The 1946 Master Plan for Saint John noted that Saint John had zoning by-laws in place. In 1952, all previous amendments to the <i>Act</i> were consolidated and planning then was more about preserving the <i>status quo</i> (i.e., zoning land as it had been developed). In 1961, the <i>Act</i> was renamed the <i>Community Planning Act</i> and revised in 1973. The 1966 comprehensive community plan for Saint John identified three zones for industrial activity: heavy industrial; light industrial; and restricted industrial. The current <i>Community Planning Act</i> [S.N.B. 2017, c. 19] was assented on 5 May 2017. Saint John's current Zoning By-Law designates industrial zones as either: heavy industrial; medium industrial; light industrial; pit and quarry; transportation; utility service; and utility service landfill.</p> <p>Although the exact dates are not known when the lands along Milford Road were zoned Heavy Industrial or when the narrow strip along Milford Road was zoned two-unit residential, they have been that way since at least 1996 (i.e., the earliest available survey available showing the zoning designations) and most likely since IPP had the survey done on 30 July 1951 around the time when land use was being preserved as the <i>status quo</i> under <i>The New Brunswick Town Planning Act</i>.</p>
COMMENTER M - 30 MARCH 2022 EMAIL		
PC-31	I have resided in Milford for many years. I remember many houses on Milford Rd. When did Irving purchase the parcels of land from the end of Milford Rd. to Kingsville Rd.?	As shown in the 1953, 1962, 1976, 1984, 1994, and 2011 historical aerial photographs within Section 3.3.5 of the Environmental Impact Assessment (EIA) document, there have only ever been residences on civic 397 and 423 since at least 1951 along the stretch of Milford Road between the houses located at civic 453 and 317. Civic 397 and 423 were purchased by Irving Pulp & Paper, Limited (IPP) in 1951 from Investment Securities, Limited. Civic 423 continued as a long-term lease until the lease ended sometime between 1976 and 1984 and the building was demolished. Civic 397 continues to be leased. Civic 303 was purchased in December 2021.

	Comment	Response
PC-32	Secondly, what was the zoning on the property before it was purchased?	Civic 397 and 423 continue to be zoned two-unit residential. Civic 303 is zoned as neighbourhood community facility; however, it has conditional zoning for light industrial. That was a historical dumpsite for construction waste and debris and at one time contained a waste incinerator (<i>n.b.</i> , all before IPP owned the property). Since IPP purchased that property, it is being cleaned up.
COMMENTER G - 31 MARCH 2022 EMAIL		
PC-33	As requested can you please provide the reports on the seismic activity that were used to discount the 2 mentioned alternative sites.	The responses sent previously address the reasoning around seismic activity and why the Lee Cove and Bald Mountain sites were not selected for building the proposed Project. Bedrock has the best seismic response within the 2015 National Building Code of Canada while silts are at the other end of the scale with respect to seismic response. Silts and other soft soils are also subject to liquefaction during earthquakes. Therefore, they are not suitable to withstand seismic response due to earthquakes. There are no reports to share.
COMMENTER J - 4 EMAILS 31 MARCH 2022		
PC-34	A Guide to Environmental impact assessment in New Brunswick 2(c) "describe the market potential, benefit to society, economic benefits, job creation benefit, consumer and/or industrial demand, and other relevant issues that make the proposal viable and desirable for the local and/or New Brunswick economy". I understand that the IPP mill has considerable benefits, and that treating the industrial waste water has benefits. My concern is the location. What I don't see in the report are the benefits of this location to the residents. What are the benefits to the residents that reside within a 2km radius?	<p>This Project is of Provincial importance. As noted in Section 2.2 the Environmental Impact Assessment (EIA) document, Irving Pulp & Paper, Limited's Reversing Falls Mill is the anchor of New Brunswick's forest products industry. In 2022, J.D. Irving, Limited (JDI), Irving Pulp & Paper, Limited's (IPP) parent company, had 4 925 full-time employees working within their forest products industry. Those jobs are linked to the IPP's Reversing Falls Mill. That same year, JDI spent \$1.63 billion on local suppliers. The Mill complex in Saint John directly employs 480, many of whom reside in the Greater Saint John area and some who reside in the Milford and Randolph area of West Saint John. IPP is mandated to install an Environmental Treatment Facility (ETF) at the Reversing Falls Mill. If the ETF is not built and operated, it would cause the Mill to be shutdown and affect the livelihood of thousands of New Brunswickers and hundreds of Saint Johners.</p> <p>Section 2.4 of the EIA document provides additional information on how New Brunswick's Forest Products Industry is an integral component of the Province's natural resource-based industry and how Saint John is the industry's hub. As the EIA document notes, the proposed Project represents \$150 million in capital expenditure that is 100 % funded by JDI. Approximately 120 person years of construction employment will be generated and it is expected that many of the contractors working on the Project will be from Greater Saint John.</p> <p>In conjunction with this Project, there is an opportunity to build a landscaped berm along Milford Road, which the Project team believes will improve the aesthetics of the street landscape for local residents.</p>
PC-35	How many residential properties are within a 2km radius of the proposed site?	<p>It is understood that Gardner Pinfold Consultants Inc. prepared a report in 2020 for the Greater Saint John Regional Task Force Analysis. It is also understood that a comparison was drawn between Fredericton, Moncton, and Saint John, three New Brunswick cities, which have vastly different socioeconomic characteristics. The report suggested that the value of residential properties within 2 km of industrial properties is negatively impacted by comparing Saint John that has industry within the core to Moncton and Fredericton that have industry at their outskirts. The relevance of the report is not recognized for this Project. The Mill, in various forms, has existed since 1836. Residential development has continued to grow and in some instances densify around the Mill site since that time.</p> <p>It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000.</p>
PC-36	What is the forecasted impact to property values within a 2 km radius over the life of the project? Reference material please for calculation	<p>During preparation of the Environmental Impact Assessment (EIA) document, the Project team reviewed the property assessments and sales records for 519 single-family residential properties within the Milford and Randolph Area. The attached Google Earth image (please refer to Commenter J of Appendix II for a copy) shows the single-family residential properties that were reviewed (<i>i.e.</i>, red polygon) and a 2 km radius (<i>i.e.</i>, red circle) around the Project site (<i>i.e.</i>, yellow pushpin). Overall, no negative impacts to property values were identified, which is the reason why it was not included in the EIA document.</p> <p>It is not believed that this Project will negatively affect property assessment values in the area. This is based on our detailed review of the local property assessment values presented below. The majority of these homes have existed adjacent to the Mill site since 1951 and their values have continued to increase. The Project team also believes that the beautification work along Milford Road will improve aesthetics of the area.</p> <p>NB Property Assessment determines an assessed value for each real property in New Brunswick on an annual basis. A property's assessment reflects the property's market value. Market value is the price the property would likely sell for on the open real estate market on January 1 of each assessment year for which the assessment was made. The Province's assessment process is the most common method of property assessment used in North America. It is based on market value because it is transparent, easy to understand, and a fair and realistic measure of a property's value. The Province's assessors look at a variety of factors when assessing the value of a property including lot size, sale prices of homes and properties in the area, property condition, age of buildings, and any recent renovations and/or improvements made to the property. More information on how a property is assessed can be found on the Province's website at: https://www2.snb.ca/content/snb/en/sites/property-assessment/understanding/valued.html</p> <p>The 2022 assessed values of New Brunswick properties reflect a strong real estate market provincially. While 28 % of properties showed no change in assessed value when compared to 2021, 28 % of properties increased by up to 5 %, and 23 % increased ranging from 5 % to 10 %. While 19 % increased by greater than 10 %, 77 % of those are protected by the Province's Spike Protection Mechanism whereby the increase is phased in over time to make assessment growth much more stable and predictable.</p> <p>Within the Milford and Randolph areas of West Saint John, there are approximately 659 properties (<i>i.e.</i>, vacant land, residential, institutional, commercial, and industrial) within the Service New Brunswick database. Of those, 85 % (<i>i.e.</i>, 562) saw a property assessment increase between 2021 and 2022, 1 % (<i>i.e.</i>, 6) experienced a decrease, and 14 % (<i>i.e.</i>, 91) showed no change. These data suggest that property values in the Milford and Randolph areas grew more, on average, than New Brunswick as a whole.</p>

	Comment	Response
		<p>Because property assessments were frozen across the Province between 2020 and 2021, assessment changes over the past five years were also reviewed. Those data show that 82 % (i.e., 542) of those same properties showed an assessment increase, 5 % (i.e., 34) experienced a decrease, and 13 % (i.e., 83) saw no change. On average, assessments increased by 19 % over those five years (i.e., 2018 to 2022).</p> <p>The Saint John Real Estate Board reported on 13 January 2022 that Saint John 2021 MLS® home sales smashed the record set in 2020. During 2021, 3 142 residential units were sold. Sales were up in 2021 by 21 % over the 2020 annual sales setting record. Buyers are fiercely competing over a low inventory, which is driving price growth; the composite benchmark price extended the streak of double-digit year-over year percentage gains to 15 months in December 2021. The average price of homes sold in December 2021 was \$249 527, up 31 % from December 2020.</p> <p>Looking specifically at single-family residential, there are 519 properties in the Milford and Randolph area. Within the past five years (i.e., 2018 to 2022), the average assessment for those properties increased by almost 13 %. The average value of a single-family residential property increased from about \$151 850 in 2018 to \$167 160 in 2022. The Saint John Real Estate Board expects record sales prices to continue in the foreseeable future.</p> <p>Attached are the records that were used to calculate the above information (please refer to Commenter J of Appendix II for a copy).</p>
PC-37	What is the 30 to 50 year forecasted decrease in property tax revenue to the City of Saint John? Reference material please for calculation	This question would best be directed to New Brunswick's property assessors. The Project team does not anticipate a decrease in property tax revenue to the City of Saint John as a result of this proposed Project. Property taxes on the Mill property will increase as a result of the proposed Project, which will generate more property tax revenue for the City of Saint John.
PC-38	What is the benefit for the residents that reside within 2 km of the proposed site? Reference material please for calculation	Please refer to the response to PC-36 above.
PC-39	What do the residents of Saint John benefit from this site location? Calculation please	Please refer to the response to PC-36 above.
PC-40	Does IPP meets the current PPER requirements?	Absolutely IPP meets the 1992 Pulp and Paper Effluent Regulations (PPERs). This is demonstrated in the data included within Table 8 of the EIA document. If the Mill was not meeting the 1992 PPERs, it would not be permitted to operate.
PC-41	There was a court ordered mandate? Under what regulations were the court orders completed? Copies of the court documents and mandates please	<p>IPP is committed to the long-term environmental sustainability and economic viability of the Mill. This proposed Project will prepare the Mill for expected future changes to environmental regulations and that is beneficial for the community, the environment, and the Mill.</p> <p>IPP was fined under the federal <i>Fisheries Act</i> related to self-reported environmental incidents. None of those self-reported incidents resulted in observed environmental harm or damage to the Saint John River watershed, nor were there any observed or reported fish deaths. Although part of the court agreement, as reported in the media, is to build a new ETF, IPP has been considering building a facility since 1992. This ETF design and technology goes above and beyond that necessary within the court agreement. The detailed court agreement is not a public document.</p>
PC-42	The property on Milford Road was rezoned in the early 2000's for the LNG pipeline. Special restrictions were put on that parcel of land at that time that restricted further development. When were those restrictions lifted? I'd like to have minutes to the zoning meetings please?	<p>There was no rezoning on IPP's property for the LNG pipeline built in the early 2000s; however, in July 2003, Maritimes & Northeast Pipeline Limited Partnership (M&NPP) registered a 30 m wide easement / right-of-way on the Mill property. The Mill property where the pipeline easement was placed was already zoned heavy industrial, which was appropriate zoning for installing the pipeline.</p> <p>Property re-zoning is all done within the public realm and in Saint John comprises public meetings with the Planning Approval Committee and Common Council. No rezoning was required so there are no rezoning meeting minutes available.</p> <p>With respect to M&NPP's 30 m pipeline right-of-way, there are restrictions as to what activities can occur. Permanent structures are prohibited because the ability to access and maintain the pipeline must not be impaired. Permanent structures include, but are not limited to, houses, trailers, mobile homes, poles, decks, tool sheds, garages, swimming pools, leaching fields, and septic tanks. Although fences may be placed on the right-of-way, fence posts must be located a minimum of 1.5 m from the pipeline. Driveways, road, and parking lots are generally permitted if they are built to M&NPP's standards. The National Energy Board of Canadian Standards Association regulations require that M&NPP maintain a safe amount of cover over the pipeline. Accordingly, the grade over the pipeline cannot be reduced or increased without permission from M&NPP. Shrubs and bushes may be planted on the right-of-way provided they are less than 1.2 m in height at maturity and are not within 3 m of the pipeline. Plants and trees that grow taller than 1.2 m are not permitted because they inhibit access and hinder aerial surveillance of the right-of-way.</p> <p>IPP is committed to working within the existing guidelines for maintaining pipeline integrity.</p>
PC-44	I believe that the court order were a result of DFO charges. If so, does the EIA have a federal component since DFO is involved?	<p>EIA approval is the first step in the environmental permitting process. As described in Section 6 of the EIA document, there are several federal, provincial, and municipal permits, authorizations, or approvals that may be required for various components of the proposed Project. Federal Regulators, such as the Department of Fisheries and Oceans and Environment and Climate Change Canada, are included as members of the EIA Technical Review Committee.</p> <p>No federal approvals are required for building and operating the ETF component of the Project. Federal permit, authorizations, or approvals are only required for the water use reduction component of the Project.</p>
COMMENTER J - 1 APRIL 2022 EMAIL		

	Comment	Response
PC-45	Sheldon's point was not a considered location during this EIA. Why?	Section 2.6.2 of the Environmental Impact Assessment (EIA) document describes five locations in west Saint John that were considered for constructing and operating the environmental treatment facility: Bald Mountain; Gault Road; Saint's Rest; Mill West; and Lee Cove. The Saint's Rest site is the exact same location as the Sheldon Point location considered in 1992 for the process water treatment system.
PC-46	Your current report states that this proposed (northwest of the mill – Milford) site is still within 100M of residential homes. Please provide me with engineered specific analysis of the rationale for the change between 1993 and today?	<p>In 1992, Irving Pulp & Paper, Limited (IPP) was proposing to build and operate a process water treatment system comprising an Aerated Stabilization Basin (ASB) / lagoon. At that time, ASBs and Activated Sludge Treatment (AST) were the standard for treating process water from pulp and paper mills. Technology has advanced considerably in the 30 years between 1992 and 2022.</p> <p>For this Project, six different treatment technologies were considered: ASB; AST; Moving Bed Biofilm Reactor (MBBR); Nutrient Limited Biological Activated Sludge (NLBAS); Sequential Batch Reactors (SBR); and Membrane Biological Reactors (MBR). As described in Section 2.6.3 of the EIA document, the six technologies were assessed in detail. ASB, AST, and MBR technology did not meet the current needs assessment for IPP. SBR technology was considered too complex in its design and was dropped for further consideration. The remaining two technologies, MBBR and NLBAS, were further assessed through bench-top studies and piloting (<i>i.e.</i>, operating small-scale treatment systems onsite using actual process water). MBBR was the clear leader and selected for this Project because it is easy to operate, recovers quickly from upsets, uses tanks with a small footprint, integrates well within the existing pollution prevention systems, and IPP is familiar with the technology having operated a small MBBR onsite since 1993.</p> <p>Although ASB technology can achieve treatment levels required under the 1992 Pulp and Paper Effluent Regulations (PPERs), it will not be able to achieve treatment levels under proposed future changes to the PPERs. Another advantage of MBBR over ASB is the reduction in overall facility footprint.</p> <p>The ASB treatment facility proposed in 1992 would have had a footprint over three times the size of the technology being proposed today as part of this Project. That footprint size is why the Milford Road site was discounted in 1992 because there was insufficient space to build and operate an ASB.</p>
COMMENTER G - 4 APRIL 2022 EMAIL		
PC-47	I have been informed that there were 2 other sites considered for these wastewater treatment tanks and part of the process for discounting these sites was due to seismic activity. I am requesting the report(s) that show this seismic activity.	Please refer to the responses to PC-14 , PC-26, and PC-33 provided above.
PC-48	I would like the copies of the correspondence outlined in Appendix XIII be made public.	Conversations with Aboriginal communities is confidential. Conversations to date have not been part of the regulatory process as they were done prior to registration of the Environmental Impact Assessment (EIA) document. The conversations have been part of a voluntary process to build trust with meaningful early engagement. While participation in this process has provided valuable information for the regulatory process prior to registration of the EIA document, it is incumbent on Irving Pulp & Paper, Limited (IPP) to maintain confidentiality of those conversations to preserve trust throughout the engagement process. Since the EIA document was registered, no correspondence has been received from any Aboriginal community. The Provincial Aboriginal Affairs Secretariat can provide more information with respect to the engagement process with Aboriginal communities.
PC-49	As Fundy Engineering is contracted by the proponent of this EIA submission and due to the fact the Province of New Brunswick Department of the Environment is relying on a contracted agent of the proponent to collect and submit all information on behalf of the community, I request that the contract between JDI/IPP and Fundy Engineering be made public. Sadly the optics of having a firm contracted by the proponent recording, responding and reporting information from the community to the Province of New Brunswick's Department of Environment presents potential conflict of interest.	During the EIA process, it is the responsibility of either the proponent or the proponent's consultant to record and respond to all public questions. Those questions and responses are also provided to the EIA Project Manager for distribution to the Technical Review Committee for their review and consideration during the EIA review process. The EIA process is administered by the New Brunswick Department of the Environment and Local Government (NBDELG), not the proponent and / or their consultant; it is the NBDELG's process that IPP is following. Any contracts between the proponent and their consultant are private business matters between two private companies.
COMMENTER J - 5 APRIL 2022 EMAIL		
PC-50	My follow up questions depends on the answer I received. Will that time be available?	<p>As indicated within the notice placed in the <i>Telegraph Journal</i> on 19 March 2022 comments from the public are requested on or before 20 April 2022. As indicated within the materials distributed at the Open House on 23 March 2022, Irving Pulp & Paper Ltd. (IPP) is following the Province's Environmental Impact Assessment (EIA) process that includes public consultation. All questions received related to the Environmental Impact Assessment before 20 April 2022 will be included along with answers within the Public Involvement Summary submitted to the Province that is scheduled for release on or before 20 May 2022.</p> <p>All questions submitted through IPP's website (www.ipmodernization.com), to the consultant, and to the EIA Project Manager will be answered in writing as part of the public review process. Those questions and answers will be taken into consideration during the EIA process and as the Project advances.</p> <p>If you have questions after 20 April 2022, you can still submit them.</p>
PC-51	Is there any opportunity for consultation with you regarding incomplete or unanswered questions?	As was offered to you at the Open House on 23 March 2022, IPP representatives and the consultant will sit down with you and have a discussion regarding the proposed Project. If you are agreeable to this, please provide some times and dates that will work for you.
COMMENTER N - 31 MARCH 2022 LETTER VIA COMMENTER J EMAIL		

	Comment	Response
PC-52	Will there be noise or odour coming from the facility?	<p>As noted within the Executive Summary of the Environmental Impact Assessment (EIA), there is little risk of loud sounds being emitted during Project operation. Equipment that will generate loud sounds, such as air blowers, pumps, and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds.</p> <p>Also noted within the Executive Summary of the EIA, there is a negligible risk of odours being released from the Project. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool air and the process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.</p> <p>Any exterior motors are being specified from vendors as low-noise.</p>
PC-53	Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional noise?	<p>All mechanical equipment is expected to emit sounds < 80 dBA at 1 m based on equipment vendor data. The Inverse Square Law can be used to estimate a sound pressure level at a distance. The principle of the Law is that a point source emits a sound wave uniformly in all directions and the sound wave energy at any given point away from the source is diminished as function of the total surface area of a sphere coincident with that point. The formula to calculate sound attenuation over a distance for a point source is:</p> $Lp(r_2) = Lp(r_1) - 20 \text{ Log}_{10} (r_2 \div r_1)$ <p>Where:</p> <ul style="list-style-type: none"> Lp(r₁) = known sound pressure level at the first location (typically equipment vendor data) Lp(r₂) = unknown sound pressure level at the second location r₁ = distance from the sound source to location of known sound pressure level r₂ = distance from sound source to the second source <p>The distance between the boundary of the proposed Project to the nearest non-JDI owned residential property is 90 m. The attenuated sound pressure level for that location would be 41 dBA. It is important to note that this would be for fully exposed equipment.</p> <p>There is minimal mechanical equipment associated with this proposed Project. None of the equipment that will emit sound, such as blowers, pumps, and fans, will be exposed. The Project Team is specifying low sound emission equipment (<i>i.e.</i>, < 80 dBA at 1 m). Additionally, loud equipment, as noted within the EIA document, will either be located within insulated wall rooms of buildings, or have shrouds attached to them for mitigating sound emissions.</p> <p>A landscaped berm is also being included as part of the proposed Project. That landscaped berm will be constructed adjacent to Milford Road and will also serve to mitigate sound emissions from the Project site.</p>
PC-54	What are the current levels of noise at the various receptors (residences, businesses <i>etc.</i>) in very close proximity and within 2 kilometres at different times of day throughout the year?	<p>It is unknown how measuring and reporting current sound levels at various receptors within a 2 km radius at different times of the day throughout the year is applicable to this proposed Project. As noted in Section 3.1.3 of the EIA document, Saint John has pockets of heavy industrialized areas and some dense urban residential neighbourhoods are found surrounding those industrialized areas because historically people wanted to be close to their places of work. Sound emissions will vary based on land-use and activity. A broad range of land uses and activities are found within a 2 km radius of the Mill site, including: rural; single-family residential; two-family residential; low-rise residential; mid-rise residential; high-rise residential; urban centre residential; parkland; neighbourhood community facility; major community facility; general commercial; corridor commercial; light industrial; medium industrial; transportation (highway and railway); and utility service.</p>
PC-55	What are ambient noise levels from these sources?	Please refer to the response to PC-54.
PC-56	Where are these levels measured?	<p>Every 18 months, the Mill undergoes a shutdown where the Mill is taken offline for routine inspection and maintenance is conducted on many of the key Mill systems not normally taken out of service under everyday operation. A sound level monitoring program is being undertaken as a component of the Mill shutdown that will occur in May 2022 because it provides a unique period to measure sound levels when the Mill is idle. Sound meters were placed at three locations in the Milford Road area as part of the sound level monitoring program. Those meters are currently monitoring sound levels at nearby receptors and are expected to be in place until a few weeks after the Mill shutdown is complete. This monitoring program will allow sound levels to be compared prior to, during, and after the shutdown. The meters are setup to record equivalent continuous sound levels.</p>
PC-57	What are the levels at nearby receptors?	Please refer to the response to PC-57.
PC-58	What time of day are these levels measured?	Please refer to the response to PC-57.
PC-59	What is top of berm elevation?	<p>The exact top of berm elevation will be determined during detailed engineering design. It is expected that the berm will be about 2.5 m tall. The approximate elevation of Milford Road is 30 m, which means the top of berm elevation will be about 32.5 m. As shown in the conceptual images of Section 4.4.4.4.2 of the EIA document, trees with an approximate initial elevation of about 2 m will be planted along and atop the berm (<i>i.e.</i>, top elevation of 34.5 m). Those trees are expected to grow up to 1 m in height per year.</p>
PC-60	Is it higher than process building?	No, the elevation of the top of the berm (<i>n.b.</i> , not the top of the planted trees) will not be higher than the process building.

	Comment	Response
PC-61	Is the berm to be included or not?	We thank you for pointing this out. The Note in the caption of Figure 93 and 94 of the EIA document should not have been included. During the initial conceptual design, the Project team considered the berm optional; however, it has since changed to be a required part of the overall Project as the Project team believes it will improve the aesthetics along the east side of Milford Road adjacent to the Mill.
PC-62	What will the noise levels be at the residence receptors in close proximity when all of the new equipment is included in the analysis?	Please refer to the response to PC-53.
PC-63	What will the noise levels be once the new facility and associated equipment is operational?	<p>It is also important to note, as indicated in materials distributed at the Open House held on 23 March 2022, the Provincial government's EIA process is a proactive, preventative approach to environmental management and protection. The process is done early in the planning process of a Project and identifies steps that can be taken to avoid negative environmental impacts or reduce them to acceptable levels before they occur.</p> <p>The landscaped berm is considered an environmentally-friendly sound abatement solution for this Project. It is believed that the landscaped berm will be more aesthetically pleasing than a sound wall of equal height. The natural appearance of the landscaped berm will allow it to blend into the surroundings and the sloping sides will reduce the perceived height and the feeling of confinement when travelling along Milford Road.</p> <p>Sound barriers prevent direct line-of-sight propagation between sound sources and receivers. There are many types of sound barriers used, including: noise walls; rows of trees; hedges and shrubs; earthen berms; and gabions. Diffraction of sound over the horizontal edges of sound barriers typically dominates the sound field behind the barrier.</p> <p>Earthen berms can be nearly as effective as sound walls erected at the same height. Research completed at the University of British Columbia found that earthen berms provide about 2 dBA less reduction in sound emissions than sound walls of the same height and position. Numerical modelling by others demonstrated that acoustically soft earthen berms should be chosen over vertically erected noise walls, where possible.</p> <p>Vegetation planted along earthen berms absorbs some of the sound energy and redistributes and redirects some of the remaining sound energy. Coniferous species are best when incorporating vegetation because they provide year-round mitigation.</p> <p>Should the reader be interested in learning more about landscaped berms and their use in the mitigation of sound emissions, the references below are offered.</p> <p>Barry, T.M. and J.A. Reagan. 1978. FHWA highway traffic noise prediction model. FHWA-RD-77-108, Washington D.C. US Department Transportation Federal Highway Administration.</p> <p>McPherson, E.G. 1988. Functions of buffer plantings in urban environments. <i>Agriculture, Ecosystems and Environment</i>, 22/23: 281-298.</p> <p>Busch, T. 1997. Scale-model investigation of highway traffic noise barriers. <i>Masters Thesis in Mechanical Engineering</i>, University of British Columbia. 184p.</p> <p>Busch, T., M Hodgson, and C. Wakefield. 2003. Scale-model study of the effectiveness of highway noise barriers. <i>Journal of the Acoustical Society of America</i>, 114: 1947-1954.</p> <p>Fang, C.-F. and D.-L. Ling. 2003. Investigation of the noise reduction provided by tree belts. <i>Landscape and Urban Planning</i>, 63: 187-195.</p> <p>Fang, C.-F. and D.-L. Ling. 2005. Guidance for noise reduction provided by tree belts. <i>Landscape and Urban Planning</i>, 71: 29-34.</p> <p>Van Renterghem, T., D. Botteldooren, and K. Verheyen. 2012. Road traffic noise shielding by vegetation belts of limited depth. <i>Journal of Sound and Vibration</i>, 331: 2404-2425.</p> <p>Van Renterghem, T. and D. Botteldooren. 2012. On the choice between walls and berms for road traffic noise shielding including wind effects. <i>Landscape and Urban Planning</i>, 105: 199-210.</p> <p>Oltean-Dumbrava, C., G. Watts, and A. Miah. 2013. Transport infrastructure: making more sustainable decisions for noise reduction. <i>Journal of Cleaner Production</i>, 42: 58-68.</p> <p>Van Renterghem, T. 2014. Guidelines for optimizing road traffic noise shielding by non-deep tree belts. <i>Ecological Engineering</i>, 69: 276-286.</p> <p>Young Hong, J. and J. Yong Jeon. 2014. The effects of audio-visual factors on perceptions of environmental noise barrier performance. <i>Landscape and Urban Planning</i>, 125: 28-37.</p> <p>Van Renterghem, T., J. Forssén, K. Attenborough, P. Jean, J. Defrance, M. Hornikx, and J. Kang. 2015. Using natural means to reduce surface transport noise during propagation outdoors. <i>Applied Acoustics</i>, 92: 86-101.</p> <p>Margaritis, E. and J. Kang. 2016. Relationship between urban green spaces and other features of urban morphology with traffic noise distribution. <i>Urban Forestry & Urban Greening</i>, 15: 174-185.</p>
PC-64	Will an engineered acoustic report be issued to properly determine noise levels at nearby receptors?	Based on the minimal sound emissions for the proposed Project, it is not believed that an engineered acoustic report is warranted. Rationale is provided in the response to PC-53.
PC-65	Will this new facility generate a lot of light and make it difficult for us to sleep?	No, this new facility will not generate light at levels that will make it difficult for residents to sleep. Artificial lighting technology has changed considerably over the past few decades. For example, exterior luminaries for this proposed Project will be Light-Emitting Diodes (LEDs) that shine downwards. LED technology has only been commercially available for about the past decade. Streetworks OVF lighting, which is proposed for this Project, will minimize the effect on the environment and neighbours. The lighting will be designed to

	Comment	Response
		only light the area that needs it, be no brighter than necessary, minimize blue light emissions, and be full shielded. These features are not only important for mitigating impacts to residential neighbours, but protecting against attracting birds to avoid collisions. This area is not a designated dark sky preserve. There are street lights on every second powerline pole along Milford Road and additional street lights at intersections, such as Violet Street and Williams Street. Those street lights, which are either sat-m or sat-s Satellite™ series luminaries, are placed for pedestrian and vehicle safety. Similar to the lights proposed for this Project, those street lights are modern and minimize sky glow, spill light, and glare.
PC-66	How will the light at night impact the neighbourhood?	It is not expected that the artificial lighting from the proposed Project will impact the surrounding neighbourhood.
PC-67	Will an engineered photometric lighting study be completed and mitigation implemented to ensure actual minimal specified lighting levels on nearby residences?	As described in Section 2.7.1.8.1.8 of the EIA document, artificial lighting will be limited to that necessary for employee safety and for process and security monitoring. The landscaped berm constructed adjacent to Milford Road will further mitigate light reaching nearby residences.
PC-68	Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?	It is important to note that this Project will be used to polish industrial effluent that has already undergone pollution prevention processing within the Mill. As noted in Section 2.7.1 of the Environmental Impact Assessment (EIA) document, the existing in-Mill pollution prevention equipment, save for the small Moving Bed Biofilm Reactor, will remain in service after this proposed Project is operational. The Mill's existing pollution prevention system is described in Section 2.2.1 and Appendix III of the EIA document. The effluent from the existing in-Mill pollution prevention system meets the current Pulp and Paper Effluent Regulations (PPERs) and does not produce any offensive odours. This proposed Project will polish the effluent from the existing pollution prevention system to allow IPP to meet or exceed any expected future changes to the PPERs. As such, there is a negligible risk of odours being released from the Project.
PC-69	The Statement regarding TRS does not address the odours generated by operations at the waste water facility but rather odour from the further away mill facility. Will the new waste water facility produce odours that will affect nearby residences?	As noted within the Executive Summary of the EIA, there is a negligible risk of odours being released from the Project. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool air and the process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours. Up close, the additional concentrated solids removed by this proposed Project and contained within the Processing building will have an earthy smell as they are comprised of soluble wood materials.
PC-70	What are the current odours at nearby receptors (residences, businesses, churches, day care etc.) and not just at the monitoring station?	Odours at nearby receptors, such as residences, businesses, churches, day cares, etc. would vary based on activities occurring at those properties.
PC-71	What level are the odours going to be limited to?	Please refer to the response to PC68. Additionally, while reviewing the six effluent technologies, members of the Project team visited operating treatment plants at other locations around the world, which is described within Section 2.6.3.7.1 of the EIA document. Visits to facilities with identical technology proposed for this Project revealed minimal earthy odours at or within a few meters of the tanks only and discussions with operators of those facilities revealed no operational issues with odours. It is important to note that those other facilities do not have an upstream pollution prevention system in place. The upstream pollution prevention system is unique to the Reversing Falls Mill. The ETF will be used for polishing the effluent before discharge.
PC-72	What liability does IPP have to ensure the nearby residences are not affected by odour?	IPP is one of the few pulp mills and paper mills operating in an urban setting. As a good neighbour, IPP has invested considerably in technology to ensure little to no odour affects nearby residences. As shown at the open house, Total Reduced Sulphur (i.e., odour causing compounds) emissions have been reduced by 99.5 % since 1980, and SO ₂ emissions have been reduced by 85 % since 1994. In the early 2000s, an exhaust stack scrubber was added at the Mill to further lower emissions. The Reversing Falls Mill is one of the lowest odour-emitting mills in the world. IPP is committed to continue being a socially responsible company and good neighbour. IPP has an existing process for monitoring, investigating, managing, and tracking odour complaints from the Mill and are reported annually within J.D. Irving, Limited's Forest Products Sustainability Report. IPP commits to adhering to that process with respect to the proposed Project.
PC-73	Where is the technical engineered analysis and modelling determining odour levels at nearby receptors (residential, business, churches, day care, recreational municipal sports facilities etc).	Odour modelling was not done as part of the EIA because odour was not identified during the review to be an issue of major concern. The following are the primary reasons why odour was not identified as an issue of major concern with this proposed Project: it will be polishing effluent that has already undergone pollution prevention processing; visits to other facilities with identical technology identified minimal earthy odours at or within a few meters of the tanks only; and discussions with operators of other facilities with identical technology revealed no operational issues with odours.
PC-74	What assurances can be provided to ensure IPP is responsible and liable to ensure nearby residential zoned properties are not negatively affected by odour?	Please refer to the response to PC-72.
PC-75	Clean effluent and very little odour are subjective terms. What engineered data supports this?	Please refer to the responses to PC-73 for odour and PC-68 for effluent.
PC-76	Can this be quantified?	Please refer to the response to PC-73.
PC-77	The area is zoned as heavy industrial not water treatment. Is rezoning required?	No, rezoning of the heavy industrial lands is not required for the environmental treatment facility and this has been confirmed with representatives from the City of Saint John.

	Comment	Response
PC-78	The first statement that the facility “treats water only” is misleading. The process treats effluent from the mill which contains water, other materials/substances and chemicals. If it was pure water it would not need treatment. What are the actual emissions?	Please refer to the response to PC-68. As noted in the EIA document, there will be some substances and chemicals added during the polishing of the industrial effluent. Those substances include sulfuric acid and sodium hydroxide for pH control, nitrogen and phosphorous will be added to support microorganism growth, and a polymer may be added to aid with solids removal. The water discharge from the Reversing Falls Mill meets the 1992 PPERs that are in force today. This proposed Project will ensure the Mill meets or exceeds expected future changes to the Pulp and Paper Effluent Regulations.
PC-79	There is no data or engineered analysis to quantify emissions to nearby receptors in the EIA. There is no modelling or dispersion information to indicate what the emissions (type and level) will be at nearby receptors and in the general area. Where is the information to quantify actual emissions?	There are no emissions to air from this proposed Project. Emissions related to this proposed Project are to waters of the Saint John River. As noted in Section 4.4.2.3.2 and Appendix XII of the EIA document, IPP contracted the Ocean, Coastal, and River Engineering Research Centre of the National Research Council to conduct modelling and assessment of the effluent discharge from the Mill on the Saint John River. The hydrodynamic modelling results show that the intensely turbulent flows through the Reversing Falls rapidly disperse the effluent plume. Reducing the effluent volume and extent, combined with the enhanced effluent quality through this proposed Project will be beneficial to the Saint John River.
PC-80	What are the emissions?	The emissions are to waters of the Saint John River. Characteristics of the feed to and discharge from the proposed environmental treatment facility are presented in Table 7 and Table 8 of the EIA document.
PC-81	Will the air quality levels in the affected areas and within 2 km of the waste water facility for all emissions be established and presented?	The NBDELG issues Approvals To Operate for facilities under the Air Quality Regulation [97-133] of the <i>Clean Air Act</i> [S.N.B. 1997, c. C-5.2] and the Water Quality Regulation [82-125] of the <i>Clean Environment Act</i> [R.S.N.B. 1973, c. C-6]. For this proposed Project, there are no emissions to air that will require approval under the <i>Clean Air Act</i> (i.e., there are no vents or stacks emitting substances to the air).
COMMENTER N - 2 APRIL 2022 LETTER VIA COMMENTER J EMAIL		
PC-82	Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?	It is important to note that this Project will be used to polish industrial effluent that has already undergone pollution prevention processing within the Mill. As noted in Section 2.7.1 of the Environmental Impact Assessment (EIA) document, the existing in-Mill pollution prevention equipment, save for the small Moving Bed Biofilm Reactor, will remain in service after this proposed Project is operational. The Mill's existing pollution prevention system is described in Section 2.2.1 and Appendix III of the EIA document. The effluent from the existing in-Mill pollution prevention system meets the current Pulp and Paper Effluent Regulations (PPERs) and does not produce any offensive odours. This proposed Project will polish the effluent from the existing pollution prevention system to allow IPP to meet or exceed any expected future changes to the PPERs. The PPERs require that daphnia must be able to survive for 48 hours and rainbow trout must be able to survive 96 hours within the Mill's effluent. The Mill currently meets those requirements.
PC-83	What will the odour impact from the proposed waste water facility be on the neighbourhood? It must be determined that these sensitive areas will not be affected by odour. Will information be provided to confirm the odour impact on the adjacent neighbourhood?	Please refer to the response to PC-82.
PC-84	Due to the sensitive adjacent receptors in very close proximity to the proposed facility, it is imperative that the requirement of the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants to provide an odour impact analysis within 500 m be met. This is not included in the EIA. Where is this information?	The NBDELG's, <i>A Guide to Environmental Impact Assessment in New Brunswick</i> , and the 2004 Sector Guidelines for Wastewater Treatment Plants are designed to assist proponents and / or their consultant with the preparation of an Environmental Impact Assessment (EIA) registration document. Those documents are guidelines, which are recommended, non-mandatory, optional procedures. The following are the primary reasons why odour was not identified as a major concern with this proposed Project: it will be polishing effluent that has already undergone pollution prevention processing; visits to other facilities with identical technology identified minimal earthy odours at or within a few meters of the tanks only; and discussions with operators of other facilities with identical technology revealed no operational issues with odours.
PC-85	How will an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property be provided as required (certified and stamped by a Professional Engineer or Scientist)?	Please refer to the response to PC-84.
COMMENTER G - 7 APRIL 2022 EMAIL		
PC-86	is Fundy Engineering's compensation dependent on success of EIA process and timelines?	Fundy Engineering & Consulting Ltd.'s compensation for this work is on a time and materials basis only.
COMMENTER J - 10 APRIL 2022 EMAIL		
PC-87	What % of the \$150 capital investment will be spent with organizations outside NB?	Detailed design for this Project has not been completed and vendors have not yet been selected. As a result, it is unknown what percentage of the overall \$150 million capital investment will be spent on organizations outside New Brunswick. Irving Pulp & Paper, Limited, where possible and practical, desires to spend locally.
PC-88	120 person years = 60 temporary contractors What is the forecasted dollars spent on these temporary positions?	It is estimated that the amount spent on contractors during construction will range between \$7.5 million and \$9 million. Contracts have not been awarded for the proposed Project so a definitive value is unable to be provided.
PC-89	There is zero new jobs or long term net new economic benefit to Saint John or NB – yes/no?	There are no direct new long-term positions being created as a result of this proposed Project because as described within the Environmental Impact Assessment document, it is believed the proposed Project can be operated using Irving Pulp & Paper, Limited's current compliment of employees at the Mill.

	Comment	Response
		As noted in Section 3.3.2 of the EIA document, J.D. Irving, Limited, the parent company of IPP, is one of the largest employers in the southwest economic region of New Brunswick and the Mill is a considerable direct economic generator for the City of Saint John. The 2020 annual spend on the Mill's 400 employees was \$28.6 million. There will be indirect local jobs created as a result of this proposed Project. Those indirect jobs include: the shipping of collected solids to the compost facility in Clarendon, New Brunswick; the delivery of nutrients and polymers used in the treatment process; third-party monitoring of the treatment process; and contractors required for routine inspection and maintenance activities.
PC-90	No economic benefit to the city or residents from this project (excluding the mill and the forestry industry). Yes or No?	Yes, this proposed Project will provide economic benefits to residents of the City of Saint John. The Project is required to support the ongoing operation of the Mill, which directly employs 400 people. The proposed Project will generate new property taxes for the City of Saint John; however, it is not currently known what that value will be until the proposed Project is built and assessed by the Province's assessors. As noted in the response to PC-89, there will be indirect jobs associated with this proposed Project. Those indirect employees will likely spend some money locally, such as at local food establishments and local service stations.
COMMENTER L - 30 MARCH 2022 EMAIL		
PC-91	On the IPP "plan of property" it lists parcels of land A to K What was the zoning of that land before it was acquired by IPP by parcel?	As noted in response to PC-30, zoning by-laws only began being implemented in Saint John around 1946. In 1952, all previous amendments to <i>The New Brunswick Town Planning Act</i> (i.e., the precursor to the existing <i>New Brunswick Community Planning Act</i> [S.N.B. 2017, c. 19]) were consolidated and planning then was more about preserving the <i>status quo</i> (i.e., zoning land as it had been developed). Parcel A and Parcel B, which are the areas where the proposed Project will be built and operated, were acquired in 1951 by Irving Pulp & Paper, Limited (IPP). Those Parcels, as were all other future parcels that were acquired by IPP, were amalgamated into the overall Mill site that is zoned for heavy industrial (n.b., there is a 30 m strip of land along Milford Road that is zoned for two-family residential).
PC-92	What other properties were acquired after 1951? Specific PIN please?	The 1951 survey and deed described in the response to PC-30 shows that the lands the proposed Project will be built and operated on were acquired in 1951. Other properties, which were acquired after 1951 are not part of the lands where the proposed Project will be built and operated. Nevertheless, the lands (i.e., PID 55162416), save for a 30 m strip along Milford Road zoned for two-family residential, are currently zoned for heavy industrial use as described within the Environmental Impact Assessment document. An interactive zoning map for the City of Saint John that provides current zoning can be viewed online at: https://catalogue-saintjohn.opendata.arcgis.com/datasets/SaintJohn::zoning/about
PC-93	What was the original zoning of the parcels acquired after 1951?	As noted in response to PC-30, it is believed Parcel A and Parcel B were zoned for heavy industrial use when they were acquired by IPP in August 1951 and amalgamated into the Mill's overall site footprint.
PC-94	When were they zoned?	Please refer to the response to PC-30. The lands are zoned appropriately to allow the proposed Project to be built and operated. To the Project Team's knowledge and based on a review of records, the lands for the proposed Project have never been rezoned.
PC-95	What special restrictions/conditions were placed on each parcel?	No special restrictions or conditions are known to exist other than those restrictions established in July 2003 with respect to Maritimes & Northeast Pipeline Limited Partnership's 30 m pipeline right-of-way. A description of those restrictions is provided within the response to PC-42.
ANONYMOUS QUESTIONS AND COMMENTS RECORDED BY IPP MEMBERS DURING THE OPEN HOUSE ON 23 MARCH 2022		
PC-86	The area has been a wasteland for years and causing noise issues at surrounding properties.	Thank you for bringing this to Irving Pulp & Paper, Limited's (IPP) attention. The Mill is a heavy industrial site and loud sounds, such as those emitted from backup alarms, are required for worker safety while others are related to general operations, such as humming from equipment. Historical photographs from 1953, 1962, 1976, 1984, 1994, and 2011 that are included within Section 3.3.5 of the Environmental Impact Assessment (EIA) were reviewed. Over the years, it appears that some tree cover on the Mill's land along Milford Road has been reduced during such projects as the installation of the natural gas pipeline across the property. It also appears that bedrock outcrops were lowered in elevation. The trees and bedrock outcroppings would have provided some mitigation for sound emissions from the Mill. As a socially responsible company and good neighbour, IPP is committed to reviewing options for reducing impacts offsite. One of the components of the project, the landscaped berm adjacent to Milford Road, will help mitigate sound emissions from the Mill because vegetation absorbs sound waves. In addition to the landscaped berm adjacent to Milford Road, there may be options to build other landscaped berms or plant trees on IPP owned land to further absorb sound waves.
PC-87	This Project will cause a decrease in property values.	Please refer to the response to PC-36.
PC-88	Why don't you build at a lower elevation so it can't be seen from Milford Road?	Bedrock at the site of the Environmental Treatment Facility (ETF) is at or near the ground surface. Building at a lower elevation would require the bedrock to be blasted.
PC-89	Seems like a done deal – why not involve public sooner?	The proposed Project was registered for EIA review by the Provincial Department of the Environment and Local Government who has regulatory authority over the Project. The Open House was done voluntarily by IPP to enhance advertising of the proposed Project, to help members of the community learn more, to meet members of the Project team, and to ask initial questions. The Open House marked the beginning of the Public consultation process. Additional information is provided in the response to PC-9.

	Comment	Response
PC-90	Great project – happy about water use cut in half.	Thank you. IPP is committed to environmental sustainability.
PC-91	Start date in July makes it seem like a done deal.	As part of the EIA process, the proponent is asked to include proposed dates within the registration document. The tentative start date for construction of July 2022 is a best-case scenario and assumes the granting of a successful EIA determination and issuance of all applicable construction permits by then.
PC-92	Excited to see investment in Saint John.	Thank you. IPP is committed to the economic viability of the Mill, which includes regular and on-going capital investment.
PC-93	Besides BOD and TSS, what else does this treat/remove from the water (i.e., nutrients)?	As noted in the EIA document, there will be some substances and chemicals added during the polishing of the industrial effluent. Those substances include sulfuric acid and sodium hydroxide for pH control, nitrogen and phosphorous will be added to support microorganism growth, and a polymer may be added to aid with solids removal. The majority of those additives will either be used by the microorganisms or be retained within the removed solids.
PC-94	How can you say you're using less water if you're taking it from Reversing Falls?	There will be an overall net reduction in the amount of freshwater extracted from the Spruce Lake watershed and used at the Reversing Falls Mill as a result of this proposed Project. The water drawn from the Saint John River will be a once through system. The water will be drawn in, used to cool process water, and then returned to the Saint John River. That water will not come in direct contact with any Mill processes, as such, it is not considered consumed as part of the process.
PC-95	Concern RE air quality	Please refer to the response to PC-81.
PC-96	It would be nice to see a comparison of views before and after the project	Section 4.4.4.4.2 of the EIA document provides some views before and after along Milford Road.
PC-97	Appreciate efforts around odour reduction over past 10 years	Please refer to the response to PC-72.
PC-98	Don't want ETF next to a house – you are cheating the EIA	As described in the EIA document, five different locations were reviewed for building and operating the proposed ETF. The Milford Road site was identified to be the most ideal location.
PC-99	What if there's a toxic spill or need to evacuate Milford Road?	To protect from upset conditions, start-ups, and shutdowns, a diversion basin with an 8 hour flow capacity has been designed into the Project. Any water that does not meet treatment specifications can be sent to that diversion basin. The water would be slowly introduced to the system for treatment. The technology selected by IPP to treat the effluent recovers the quickest from upset conditions when compared to all other technologies available. Redundancy has been built into the Project for treatment to continue while various parts of the system are taken offline to be maintained. There will be no need to evacuate Milford Road, which is at a higher elevation than the base of the treatment tanks.
PC-100	Noise, smell	As described in the EIA document, the proposed Project is not expected to generate additional noise or odour. Please refer to the response to PC-22 for additional information.
PC-101	I support this project	Thank you for your comment.
PC-102	Glad to see investment – no one investing in North America besides JDI	Thank you. IPP is committed to the economic viability of the Mill, which includes regular and on-going capital investment.
PC-103	Bald Mountain preferred from Milford residents	Bald Mountain was included in the list of potential location for building and operating the proposed Project. That site was ruled out for the following reasons: Bald Mountain is an operating quarry and putting the Project there would conflict with quarry operations; there is no approved outfall at the Bald Mountain site and any new outflow would be very close to Dominion Park Beach; there is no access to reliable power or other services at Bald Mountain and could affect operations in the event of a power outage; Bald Mountain is a remote site to the operation of IPP, which would make it more difficult to monitor its operation 24 / 7; the property at Bald Mountain is not zoned appropriately for an industrial water treatment plant; the construction of a pipeline to Bald Mountain would require the pipeline to run above ground for 150 m to 200 m; and the construction of a pipeline from the Mill to Bald Mountain could result in disruption for motorists and local residents.
PC-104	Finding more visibility/noise from pulp mill lately	Please refer to the response to PC-86.
PC-105	Recommend reaching out to elderly local residents	Postcards were distributed by Canada Post to all homes within the Milford and Randolph area and an Open House was held on 23 March 2022 at St. Mark's United Church. IPP hosts a Project website that provides additional information: www.ipmodernization.ca The EIA registration document is available online at the Project website and the NBDELG's EIA website: https://www2.qnb.ca/content/qnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html Paper copies are available for review at the Saint John Library in Market Square, the NBDELG's Saint John office (8 Castle Street), and Fundy Engineering's head office in Saint John (27 Wellington Row).
PC-106	Will there be any more odour monitoring?	IPP is one of the few pulp mills and paper mills operating in an urban setting. As a good neighbour, IPP has invested considerably in technology to ensure little to no odour affects nearby residences. As presented at the open house, Total Reduced Sulphur (i.e., odour causing compounds) emissions have been reduced by 99.5 % since 1980, and SO ₂ emissions have been reduced by 85 % since 1994. In the early 2000s, an exhaust stack scrubber was added at the Mill to further lower emissions. The Reversing Falls Mill is one of the lowest odour-emitting mills in the world. As noted within the Executive Summary of the EIA, there is a negligible risk of odours being released from the Project. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool air and the process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.

	Comment	Response
		IPP has a public complaints process in place. All complaints are recorded, investigated, responded to, and reported to the Regulator (New Brunswick Department of Environment and Local Government). IPP annually publishes the number of complaints received within their sustainability report. The 2020 sustainability report can be found at: https://dirivingsustainability.com/globalassets/esg/pdfs/esg-report--2020--final--en.pdf Page 119 of that document summarizes the complaints received in 2020.
PC-107	City bylaws on easement (150m)?	Please refer to the response to PC-42.
PC-108	What about blasting?	No rock will be blasted for this proposed Project. The limited rock that needs to be excavated will be broken using pneumatic hammers.
PC-109	How to ensure tanks won't rupture or slide down hill?	The tanks are being built on a solid surface of bedrock. The tanks will be engineered to more than withstand the maximum forces exerted on them when full.
PC-110	Why not Sheldon Point?	Sheldon Point was the site proposed for the process water treatment facility in 1992. That project involved constructing and operating an aerated stabilization basin that would have had a footprint over three times the size of the technology being proposed today as part of this Project. The overall footprint size is why the Milford Road site was discounted in 1992; because there was insufficient space to build and operate an aerated stabilization basin. As described in the EIA document, five different locations were reviewed for building and operating the proposed ETF. The Milford Road site was identified to be the most ideal location. The Sheldon's Point / Saint's Rest location ranked the lowest out of the five sites.
PC-111	Working hours and lighting.	As noted in the EIA document, onsite activities will be continuous during construction. Loud work that has the potential to disturb neighbours (<i>i.e.</i> , pile driving and rock breaking), will normally be done between the regular work hours of 7 AM to 7 PM Monday through Friday. Crews working outside of those regular work hours will be sensitive to neighbours and will, whenever practical, confine loud work to regular work hours. With respect to lighting, please refer to the response to PC-65.
PC-112	How long will project take to build?	As described in the EIA document, it is anticipated that it will take about 30 months to build, commission, and startup the proposed Project.
PC-113	What is zoning of the site?	The Mill property, save for a 30 m strip along Milford Road, is zoned Heavy Industrial. The 30 m strip along Milford Road is zoned for two-family residential.
PC-114	Are recent property sales related to treatment plant?	IPP has recently purchased a few properties along Milford Road, including the site of the former landfill / incinerator at civic 303. Purchasing of those properties is not related to this proposed Project. As shown and described within the EIA document, the proposed Project will fit entirely within the Mill's existing site boundaries.
PC-115	Good news overall.	Thank you for your comment.
PC-116	Deer will eat the trees on the landscaped berm.	Deer in the area may forage on trees planted on the landscaped berm. As a socially responsible company and good neighbour, IPP commits to ensuring the trees planted on the landscaped berm adjacent to Milford Road are maintained. Any trees that are severely damaged by deer will be replaced. If damage by deer becomes excessive, then mitigation measures, such as erecting a fence along the toe of the berm, may be considered.
PC-117	Horns are pointing at my neighbour, look at the side of mill that faces Milford.	Please refer to the response to PC-5.
PC-118	Should be fenced to keep kids out.	A security fence will be erected around the ETF for security and safety reasons.
PC-119	What can be done to the community?	As a socially responsible company and good neighbour, IPP is always willing to discuss options that may benefit the local community.
COMMENTER J - 3 EMAILS 12 APRIL 2022		
PC-120	<p>The following statement was extracted from your email dated April 7, 2022: "It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000"</p> <p>Appendix IX of the EIA documents does not include any documentation for the financial loss incurred by the city and residents as a result of this project; 11% drop in value as noted in the attached report published in 2015 (please refer to Commenter J of Appendix II for a copy).</p> <p>Based on the information you provided and the 11% decrease in value</p> <ul style="list-style-type: none"> • Impact to property owners <ul style="list-style-type: none"> ○ \$40,000,000 to \$70,000,000 drop in value to the residents • Impact to residential property tax to the city <ul style="list-style-type: none"> ○ Annually = \$688,000 to \$1,204,000 ○ 50-year decrease = \$34,400,000 to \$60,200,000 	<p>The following research paper provided was reviewed:</p> <p>Currie, J., L. Davis, M. Greenstone, and R. Walker. 2015. Environmental health risks and housing values: evidence from 1 600 toxic plant openings and closing. <i>American Economic Review</i>, 105(2): 678-709.</p> <p><i>Currie et al.</i> [2015] assessed "toxic" plant openings and closings. They assessed a different set of parameters than for the proposed Project. "Toxic" within <i>Currie et al.</i> [2015] refers to airborne pollutants that are harmful to human health and are widely believed to cause cancer, birth defects, and damage to the brain and reproductive systems. The New Brunswick Department of Environment and Local Government (NBDELG) issues Approvals To Operate for facilities under the Air Quality Regulation [97-133] of the <i>Clean Air Act</i> [S.N.B. 1997, c. C-5.2]. For this proposed Project, there are no emissions to air that will require approval under the <i>Clean Air Act</i> (<i>i.e.</i>, there are no vents or stacks emitting substances to the air).</p> <p>Although the proposed Project is a new component of the Reversing Falls Mill site, the overall site would not be considered an "opening" by <i>Currie et al.</i> [2015], which means a new industrial facility emitting toxic pollutants. The land along Milford Road was incorporated within the overall Mill site in 1951.</p> <p>The work by <i>Currie et al.</i> [2015] is focused on plants that present clear and present health and safety risks for the environment. As noted throughout the EIA document, this proposed Project will yield substantial environmental benefits.</p>

	Comment	Response
	<ul style="list-style-type: none"> • Combined impact <ul style="list-style-type: none"> ○ Between \$74,000,000 to \$130,200,000 <p>How will the residents be compensated for the decrease in property values excluded Appendix IX?</p>	
PC-121	How will the City be compensated for the decrease in property values?	Please refer to the response to PC-120.
PC-122	<p>In the EIA report, the zoning of the proposed site is identified as Heavy Industry.</p> <p>Table 12-1 page 186 on the attached document (please refer to Commenter J of Appendix II for a copy) identifies "Wastewater Treatment and Water Treatment" as requiring zoning of "US". Pages 211 and 212 outline the specifics of the "US" zoning requirements.</p> <p>Has a rezoning application been made to the City to change the zoning HI to US as required by the attached zoning by-laws (please refer to Commenter J of Appendix II for a copy)?</p>	<p>A rezoning application has not been made to the City of Saint John to change the zoning Heavy Industry to Utility Service.</p> <p>As noted in Section 6.3.1 of the Environmental Impact Assessment (EIA) document, the current zoning is most likely appropriate and will not have to be rezoned. This has been confirmed with the representatives from the City of Saint John. Wastewater treatment facility under the Utility Service zoning refers to municipal or sanitary wastewater. The Environmental Treatment Facility will be strictly for polishing effluent from a heavy industrial facility.</p> <p>It is worth noting that Irving Paper's aerated stabilization basin in east Saint John that treats effluent from the manufacturing of paper is located on a property that is zoned Heavy Industrial and not Utility Service, Irving Oil's treatment facility in east Saint John that treats process water is located on a property that is zoned Heavy Industrial and not Utility Service, there is a facility in the Spruce Lake Industrial Park that treats contaminated soils that is zoned Medium Industrial and not Utility Service.</p>
PC-123	If not, when will that application happen?	<p>At this time, the Project Team has identified no issues with the zoning of the property as it is Heavy Industrial; however, representatives with the City of Saint John will confirm this. Representatives with the City of Saint John's Community Planning Department are members of the EIA Technical Review Committee. If the City's representatives see any issues with the current zoning during their review, they will identify them.</p> <p>The lands are currently zoned Heavy Industrial and several recent upgrades, such as the new pulp dryer (2019 - 2022) and the continuous cooking digester and chip handling project (2014 - 2016), which both underwent EIA review were completed on the same property (i.e., PID 55162416). City representatives on the TRC during those EIA reviews did not identify any zoning issues or concerns.</p>
PC-124	How often are the questions and answers posted onto the website? I am looking for answers to questions residents have sent, but do not see the question or the answer.	<p>The Frequently Asked Questions posted on Irving Pulp & Paper, Limited's (IPP) website for this Project (www.ipmodernization.ca) were generated based on information collected at the Public Open House held on 23 March 2022 at St. Mark's United Church, 50 Dexter Drive in West Saint John from 3PM to 8PM.</p> <p>There is no requirement to have a Project website, nor is there a requirement to provide continuous updates of questions asked and the responses provided. IPP hosting a website and an Open House are voluntary to help the public learn more about the proposed Project.</p> <p>The Project Team is following the NBDELG's EIA process. As noted in Section 5 of the EIA document, it is standard practice for the proponent to receive questions during the first 30 days after the Project has been registered with the NBDELG. The EIA was registered on 17 March 2022 and public questions are requested before 20 April 2022.</p> <p>On or before 60 days have elapsed since registration, the proponent issues a Public Involvement report with all questions received and answers provided. That report, which is due for submission on 20 May 2022, will form part of the TRC's review. The Public Involvement report will be posted to the Project website (www.ipmodernization.ca) and the NBDELG's portal for this Project: https://www2.qnb.ca/content/qnb/en/departments/elq/environment/content/environmental_impactassessment/1578.html</p>
PC-125	When will those questions be posted and the answers provided?	All questions asked by the public before 20 April 2022 and the proponent's responses will be included in a Public Involvement report that is due for submission to the NBDELG on 20 May 2022. The Public Involvement report will be posted to the Project website (www.ipmodernization.ca) and the NBDELG's portal for this Project: https://www2.qnb.ca/content/qnb/en/departments/elq/environment/content/environmental_impactassessment/1578.html
PC-126	How long after sending the answer is the question and answer posted on the website?	Please refer to the response to PC-124 and PC-125.
COMMENTER G - 13 APRIL 2022 EMAIL		
PC-127	Please provide the dates of purchases of the properties that now comprise the property between Milford Road and the Falls and the dates of the rezoning by Common Council along with all conditions attached.	<p>Please refer to the response to PC-30.</p> <p>The Project Team is not aware of any rezoning that has occurred for the properties that now comprise the Mill site. Representatives with the City of Saint John's Community Planning Department are members of the Environmental Impact Assessment Technical Review Committee. If there are any issues with the current zoning, the City's representatives will identify them during their review.</p> <p>No special restrictions or conditions are known to exist at the Project site other than those restrictions established in July 2003 with respect to Maritimes & Northeast Pipeline Limited Partnership's 30 m pipeline right-of-way. A description of those restrictions is provided within the response to PC-42.</p>
COMMENTER O - 13 APRIL 2022 EMAIL		
PC-128	Will there be more noise and odour coming from this waste plant?	Please refer to the response to PC-52.
PC-129	Is there some sort of information to say that there will be no noise from this plant?	The EIA document provides details on the proposed Project. A copy of the EIA document can be viewed online at the Project website (www.ipmodernization.ca) or the New Brunswick Department of Environment and Local Government's EIA portal: https://www2.qnb.ca/content/qnb/en/departments/elq/environment/content/environmental_impactassessment/1578.html

	Comment	Response
		Paper copies are available for review at the Saint John Library in Market Square, the NBDELG's Saint John office (8 Castle Street), and Fundy Engineering's head office in Saint John (27 Wellington Row).
PC-130	Will this create a lot of light?	As described in Section 2.7.1.8.1.8 of the EIA document, artificial lighting will be limited to that necessary for employee safety and for process and security monitoring. The design and selection of exterior lighting balances employee safety criteria with requirements to minimize the effects on the environment and neighbours. The lighting will be designed to only light the area that needs it, be no brighter than necessary, minimize blue light emissions, and be full shielded. These features are not only important for mitigating impacts to residential neighbours, but protecting against attracting birds to avoid collisions. There are street lights on every second powerline pole along Milford Road and additional street lights at intersections, such as Violet Street and Williams Street. Those street lights, which are either sat-m or sat-s Satellite™ series luminaries, are placed for pedestrian and vehicle safety. Similar to the lights proposed for this Project, those street lights are modern and minimize sky glow, spill light, and glare.
PC-131	How will this light at night impact the neighbourhood?	Please refer to the response to PC-130.
PC-132	How much odour will come from this plant?	Please refer to the response to PC-71.
COMMENTER N - 14 APRIL 2022 EMAIL		
PC-133	It is now 2 weeks since I submitted my questions (March 31, April 1, 2022) When can I expect a response from you to my questions ?	The Project Team is following the New Brunswick Department of the Environment and Local Government's Environmental Impact Assessment (EIA) process. As noted in Section 5 of the EIA document, it is standard practice for the proponent to receive questions during the first 30 days after the Project has been registered with the NBDELG. The EIA was registered on 17 March 2022 and public questions are requested before 20 April 2022. On or before 60 days have elapsed since registration, the proponent issues a Public Involvement report with all questions received and answers provided. That report, which is due for submission on 20 May 2022, will form part of the TRC's review. The Public Involvement report will be posted to the Project website (www.ipmodernation.ca) and the NBDELG's portal for this Project: https://www2.qnb.ca/content/qnb/en/departments/elq/environment/content/environmental_impactassessment/1578.html
COMMENTER G - 18 APRIL 2022 EMAIL		
PC-134	Thank you for the reply. So as you state, you are unaware if the purchased properties were rezoned when PINs were amalgamated. Thus, portions of the lands may in fact not be properly zoned. Who brings this to the attention of the city's representatives, please?	As noted in a previous response, representatives with the City of Saint John's Community Planning Department are members of the Environmental Impact Assessment (EIA) Technical Review Committee. If there are any issues with the current zoning, the City's representatives will identify them during their review of the EIA document.
COMMENTER P - 18 APRIL 2022 LETTER VIA EMAIL		
PC-135	Is baseline data and projected operational data available from a third party (Air, Sound, Light and quality of life) for the EIA to be completed?	Fundy Engineering & Consulting Ltd. (Fundy Engineering) was contracted by Irving Pulp & Paper, Limited to conduct the Environmental Impact Assessment. Fundy Engineering is an independent engineering and scientific consultant experienced in completing Environmental Impact Assessments (EIAs) in New Brunswick. Baseline information was included in the document for air quality (Section 3.1.2), sound (Section 3.1.3), and quality of life (Section 3.3). Impacts were assessed in Sections 4.4.2.1 (air quality), 4.4.2.2 (sound emissions), 4.4.4 (light), and 4.4.4 (quality of life). Operational data contained throughout the document were provided by various sources, including potential vendors and other engineering consultants.
PC-136	What are the sound levels at Milford road and Church Ave. expected to be from driving 210 piles and for what duration?	Sound levels are expected to be < 80 db(A) at 453 Milford Road and < 70 db(A) at the cul-de-sac of Church Avenue. As noted in Section 2.8.2.3 of the EIA document, it is anticipated that the piles would be driven over a one month period and suitable notification will be provided to neighbours in advance of the work (i.e., one week advance notice as noted in Section 4.4.2.2.3). As noted in Section 2.8.2.4, loud work, such as pile driving, will be done between the regular work hours of 7 AM to 7 PM Monday through Friday.
PC-137	What accommodations will be in place to ensure traffic disruptions occur at night to not add to heavy traffic in the daytime. Harbour bridge will be reduced to 2 lanes each year resulting in extreme traffic congestion during peak hours.	The Proponent and their consultants are aware of the lane reductions on Harbour Bridge and the conditions of The Reversing Falls Bridge. As noted in Section 2.8.2.7 of the EIA document, reasonable efforts will be made to ensure that increased traffic loads on local truck routes are confined to non-peak travel times (i.e., not during morning or evening rush hour traffic). During the movement of overs-sized and / or heavy loads, there may be a requirement to have traffic controls in place, such as flagging crews or police escorts. Operating oversized loads on local truck routes requires approval from the New Brunswick Department of Transportation and Infrastructure (DTI) through special permits. Representatives from DTI are members of the Technical Review Committee for the EIA. Those representatives are aware of this proposed Project and the current conditions of Harbour Bridge and the Reversing Falls Bridge and will consider that information while reviewing any permit applications submitted for the proposed Project. As stated in the EIA document, the largest amount of traffic associated with construction of this Project will travel on internal roadways.
PC-138	Where is the off site compost facility located and what volume of solids are expected?	The offsite compost facility is Envirem Organics Inc. located in Clarendon, New Brunswick. On average, a total daily volume of 15.5 tonnes is expected (n.b., this is at 20 % solids), which when dried equates to approximately 3 tonnes per day.
PC-139	How will they be moved to off site, and what volume per day?	The solids will be transported to the offsite compost facility using semi-truck hoppers. On average, it is expected that one truck every two days will transport solids offsite.
PC-140	Will there be a separate EIA for the compost of waste fibres and solids?	No, there will not be a separate EIA for the compost of waste fibres and solids as it is included in the scope of the proposed Project.

	Comment	Response
PC-141	What information will be publicly available on mishaps and how will it be accessed?	<p>IPP's Mill operates under various approvals issued by the provincial and federal government. IPP is required to meet specific conditions to operate under those approvals.</p> <p>The Mill's Air Quality Approval To Operate under the Clean Air Act can be viewed online at: https://www2.qnb.ca/content/qnb/en/departments/elg/environment/content/air_quality/clean_air/approvals/class_1.html</p> <p>The federal government issues an annual report with respect to the Pulp and Paper Effluent Regulations. The most recent report (i.e., 2019), can be viewed online at: https://publications.gc.ca/site/eng/9.898066/publication.html</p> <p>Both approvals require notification of any and all mishaps.</p> <p>Annually, J.D. Irving, Limited publishes a sustainability report. The 2020 forest products sustainability report, which includes operation of IPP's Reversing Falls Mill can be viewed at: https://www.jdirvingsustainability.com/en/</p> <p>The Appendix provides information on a broad range of categories including environmental compliance (page 129), environmental fines (page 130), and waste generation (page 131).</p>
COMMENTER N - 18 APRIL 2022 LETTER VIA EMAIL		
PC-142	Your reference to anecdotal, unsupported, and undocumented evidence from other operators regarding odour does not constitute documented rigorous engineered analysis. What are the actual odour effects on various nearby specific residential receptors?	<p>The Environmental Treatment Facility will be strictly for polishing effluent that has already undergone pollution prevention within the Mill. The effluent to be polished already meets the current Pulp and Paper Effluent Regulations. There are no issues with odours from the current effluent or the existing pollution prevention system.</p> <p>The facility should not produce additional odour for residents. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool and process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.</p>
PC-143	What are the effects on air quality at nearby specific residential receptors?	<p>The NBDELG issues Approvals To Operate for facilities under the Air Quality Regulation [97-133] of the <i>Clean Air Act</i> [S.N.B. 1997, c. C-5.2] and the Water Quality Regulation [82-125] of the <i>Clean Environment Act</i> [R.S.N.B. 1973, c. C-6]. For this proposed Project, there are no emissions to air that will require approval under the <i>Clean Air Act</i> (i.e., there are no vents or stacks emitting substances to the air). Because there are no air quality approvals required for this proposed Project, an assessment of the effects on air quality at nearby residential receptors was not deemed necessary as part of the EIA submission.</p> <p>Section 3.1.2 of the EIA document describes the baseline air quality in the area.</p> <p>The Environmental Treatment Facility will be strictly for polishing effluent that has already undergone pollution prevention within the Mill. The effluent to be polished already meets the current Pulp and Paper Effluent Regulations. There are no air quality issues with respect to the current effluent or the existing pollution prevention system.</p>
PC-144	Your response does not state what the actual increased lighting levels will be from the new IPP facility lighting at the property line and at nearby specific residential receptors along Milford Road. What are the changes in lighting levels at the IPP property line and nearby residential receptors from the new lighting?	<p>The Provincial government's EIA process is a proactive, preventative approach to environmental management and protection. The process is done early in the planning process of a Project and identifies steps that can be taken to avoid negative environmental impacts or reduce them to acceptable levels before they occur. The detailed lighting package will be completed during detailed engineering design, which will be completed at a later date. The goal of that package will be to limit artificial lighting to that necessary for employee safety and for process and security monitoring as described in Section 2.7.1.8.1.8 of the EIA document. As an added mitigative measure, a landscaped berm will be constructed adjacent to Milford Road.</p> <p>Please refer to the response to PC-65 for additional information.</p>
PC-145	An engineered photometric lighting study is required to establish lighting levels along the IPP property line and at nearby specific receptors on Milford Road. The environmental impact of IPP lighting on nearby specific residences cannot be determined and there is no commitment from IPP to meet specific lighting performance targets. When will this engineered photometric lighting study be done?	A photometric lighting study was not deemed necessary as part of the EIA submission for the reasons discussed in response to PC-144.
PC-146	The specific noise levels from the new IPP equipment and processes has not been determined at the various specific nearby residential receptors at various times of the day. The potential impact of the proposed landscaped berm for noise mitigation to the nearby specific residential receptors is unknown as an acoustic engineered study has not been completed. A proper assessment of the noise impact from the IPP facility to the specific nearby neighbourhood receptors cannot be made without an engineered acoustic noise study. Monitoring noise at a later date at the mill property as discussed does not allow for a proper acoustic environmental assessment at this time and does not commit IPP to meet specific acoustic performance targets. An acoustic study is needed as part of the EIA submission so when will it be done?	<p>There is minimal mechanical equipment associated with this proposed Project. None of the equipment that will emit sound, such as blowers, pumps, and fans, will be exposed. The Project Team is specifying low sound emission equipment (i.e., < 80 dBA at 1 m). Additionally, loud equipment, as noted within the EIA document, will either be located within insulated wall rooms of buildings, or have shrouds attached to them for mitigating sound emissions.</p> <p>A landscaped berm is also being included as part of the proposed Project. That landscaped berm will be constructed adjacent to Milford Road and will also serve to mitigate sound emissions from the Project site.</p> <p>Using the Inverse Square Law, sound pressure levels at the property line resulting from this proposed Project will be < 45 dBA. Those levels are considered below acceptable levels from an industrial facility. Therefore, an acoustic study was not deemed necessary as part of the EIA submission.</p>
PC-147	In Section 2.3 of the EIA, you state: "this EIA meets the requirements of the NBDELG (2018) Guide to EIAs and the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants".	Please refer to the response to PC-84. Should you have additional questions regarding the use of those documents, they should be directed to representatives with the NBDELG EIA Branch.

	Comment	Response
	In response to my question specific to the impact of odour within 500 m of a residence (Question 33), you state: "Those documents are guidelines, which are recommended, non-mandatory, optional procedures." Is this the approach the residents can expect for future IPP development along Milford Road?	IPP adheres to all conditions contained within their permits, approvals, and / or authorizations issued by various provincial and federal regulators to operate the Reversing Falls Mill.
COMMENTER J - 19 APRIL 2022 EMAIL		
PC-148	Where is the engineering analysis to support your statement and the findings of the EIA report?	There is scientific and engineering analysis, where warranted, throughout the Environmental Impact Assessment document that supports the findings.
PC-149	How can the report be objective as required by 1.8 [of the Association of Professional Engineers and Geoscientists of New Brunswick (APEGNB) Code of Ethics] if the engineering analysis is not completed as identified by Mr. Steels?	Differences of opinion are welcomed and are part of the open and transparent EIA review process. The NBDELG uses a Technical Review Committee comprised of federal, provincial, and municipal government representatives. The TRC's role is to review the project details and identify and assess proposed impacts and mitigation. The TRC will take all information under consideration during their review, including comments from the public.
PC-150	How can the regard for the welfare of the public who may be affected by the work for which they are responsible outlined in 3.2 [of the APEGNB Code of Ethics] be considered if the engineering analysis is not completed as identified by Mr. Steels?	The regard for the welfare of the public has been considered within the EIA document.
PC-151	How can the authors be informed of the facts relating thereto as required in 3.5 [of the APEGNB Code of Ethics] if there is no analysis to support the findings as identified by Mr. Steels?	Please refer to PC-149.
PC-152	How can this report meet this requirement if there is no engineering analysis as identified by Mr. Steels?	Please refer to PC-149.
PC-153	How can this report meet the "objective and truthful manner" required in 4.17 [of the APEGNB Code of Ethics] without engineered analysis or objective third party studies as identified by Mr. Steels and me?	Please refer to PC-149.
PC-154	EIA purpose – is the following an accurate statement? The purpose of an EIA is to determine the potential environmental, social, and health effects of a proposed development, so that those who take the decisions in developing the project and in authorising the project are informed about the likely consequences of their decisions before they take those decisions.	The Province of New Brunswick defines Environmental Impact Assessment (EIA) as a process through which the environmental impacts potentially resulting from a proposed project are identified and assessed early in the planning process. EIA identifies steps that can be taken to avoid negative environmental impacts or reduce them to acceptable levels before they occur. EIA therefore, represents a proactive, preventative approach to environmental management and protection.
PC-155	How can the TRC be informed if the engineering analysis or independent studies are not included?	The Technical Review Committee is comprised of federal, provincial, and municipal government representatives. Composition of the TRC is tailored to each individual project. The TRC's role is to review the project details and identify and assess proposed impacts and mitigation. The TRC has the opportunity, during the review process, to ask the Proponent to provide additional information.
PC-156	At the open house in March, I was informed by a group, of which you were one, that no study was done because only benefits of the project were required as part of the Economic Impact Statement calculation. After requesting specifics in writing, I received a summary analysis that the "project team" did using historical increases in property values and the forecast for the market. Nothing was included regarding heavy industry's impact on property values. When was this analysis completed?	The analysis was completed in winter 2021 / 2022 during preparation of the EIA document.
PC-157	Who were the member of the project team that did it?	Fundy Engineering & Consulting Ltd. completed the analysis.
PC-158	How are realtors subject matter experts on Economic impact?	Realtors are regulated professionals in their field, which includes knowledge about housing in specific neighbourhoods, monitoring market trends, assessing market conditions, and identifying price points for properties. The majority of information provided previously related to property values was obtained from Service New Brunswick databases. The property values, as previously indicated, were determined by the Province's Property Assessors.
PC-159	Which statement is true? There was no study done because only benefits were required? or the "project's teams" analysis/opinion on property value not changing?	Please refer to the response to PC-36. It is the Project team's opinion that property values will not be negatively affected based on the analysis provided.
PC-158	The reports done by subject matter experts were dismissed. Two were provided. There are many others available that state a similar outcome. Who are the members of the "project team"?	The rationale as to why those reports were discounted by the Project Team are described in the response to PC-35 and PC-120. There are many members of the Project team from Fundy Engineering, IPP, J.D. Irving, and several other engineering and scientific consultants.

	Comment	Response
PC-159	What are their [Project Team's] professional credentials?	Members of the Project team have a variety of professional credentials, including being technologists, scientists, professional engineers, professional geoscientists, lawyers, project management professionals, etc.
PC-160	Why should the residents and the TRC accept the "project team's opinion" and not the studies completed by objective subject matter experts?	Please refer to PC-149.
COMMENTER L - 19 APRIL 2022 EMAIL		
PC-161	Was Union Point the existing site of the Pulp and Paper Mill when zoning was implemented in 1946?	Union Point was the site of the Pulp and Paper Mill in 1946. Mill operations have expanded ever since the Cunnabells Sawmill was first opened at Union Point in 1836.
PC-162	Were the parcels A (Lovill – excluding Union Point) through K were one of the following in 1946 and 1951: a. Vacant land b. Farmland c. Residential/City vacant land d. School lot	Part of the Grant from the Crown to Phineas Lovitt, Parcel "A", that was purchased by IPP in 1951 have been zoned for heavy industrial for over 70 years. Prior to that, zoning by-laws did not exist as previously noted in response to PC-30. Review of aerial photographs from 1953 within the EIA document suggests that the lands were primarily vacant at that time, though there may have been some rock removal activity occurring. Mapping from 1875 and included as Figure 98 of the EIA document shows that the JW Spurr New Brunswick Distillery, the Woodman & Miller Saw Mill, and the F.C. Baker Saw Mill were all located on the lands identified as Parcel "A" of the 1951 survey. As per current zoning by-laws, those uses would have all been industrial.
PC-163	Is the Union Point footprint in 1946 approximately 1/6 th of the current PIN?	The Union Point footprint in 1946 was ~ 35 % smaller than the 2022 Mill footprint.
PC-164	Will you please provide the rezoning information from 1951 to date for parcels A (Lovill) through K including minutes of the meetings and special conditions attached to the land excluding Union Point?	As noted previously, there was no zoning attached the lands in 1951 that can be identified. When IPP purchased the lands in 1951, they became part of the Mill site. At that time, the lands came under the heavy industrial zoning. There are no known minutes of any meetings or special conditions attached to the lands. Representatives with the City of Saint John's Community Planning Department are members of the EIA Technical Review Committee. During their review of the proposed Project, the City's representatives will identify if there are any issues with the current zoning, such as any special conditions being attached to the lands.
PC-165	Will you please provide the rezoning information from 1946 uses including minutes of the meetings and special conditions attached to the land for the land acquired after 1951?	Please refer to the response to PC-164.
PC-166	Will you please provide the rezoning information from 1946 uses including minutes of the meetings and special conditions attached to the land noted as parcel A through K?	Please refer to the response to PC-164.
PC-167	Zoning for Water Treatment and Wastewater treatment falls under by-law zoning US per the Saint John Bylaws. How do you support the statement above that the project is zoned appropriately? Please provide supporting documentation.	As noted in Section 6.3.1 of the Environmental Impact Assessment (EIA) document, the current zoning is most likely appropriate and will not have to be rezoned. This has been confirmed with the representatives from the City of Saint John. Wastewater treatment facility under the Utility Service zoning refers to municipal or sanitary wastewater. The Environmental Treatment Facility will be strictly for polishing effluent from a heavy industrial facility. It is worth noting that Irving Paper's aerated stabilization basin in east Saint John that treats effluent from the manufacturing of paper is located on a property that is zoned Heavy Industrial and not Utility Service, Irving Oil's treatment facility in east Saint John that treats process water is located on a property that is zoned Heavy Industrial and not Utility Service, there is a facility in the Spruce Lake Industrial Park that treats contaminated soils that is zoned Medium Industrial and not Utility Service. At this time, the Project Team has identified no issues with the zoning of the property as it is Heavy Industrial; however, representatives with the City of Saint John will confirm this. Representatives with the City of Saint John's Community Planning Department are members of the EIA Technical Review Committee. If the City's representatives see any issues with the current zoning during their review, they will identify them. The lands are currently zoned Heavy Industrial and several recent upgrades, such as the new pulp dryer (2019 - 2022) and the continuous cooking digester and chip handling project (2014 - 2016), which both underwent EIA review were completed on the same property (i.e., PID 55162416). City representatives on the TRC during those EIA reviews did not identify any zoning issues or concerns.
PC-168	Are you saying that this land has never been rezoned since it was purchased in 1951? Yes or No please?	Yes, it is the Project Team's understanding that the lands have never been rezoned since they were purchased in 1951 from Investment Securities, Limited. However, should this be incorrect, representatives with the City of Saint John's Community Planning Department, who are members of the EIA Technical Review Committee, will identify this during their review of the proposed Project. The Project Team fails to understand the relevance of requesting information from > 70 years ago with respect to land zoning. The lands are currently zoned heavy industrial, which are appropriate for this Project.
PC-169	Will you please provide the information and records the "project team reviewed" in to support the project team's statement?	The information and records the Project Team used to support the statement were provided in a previous response.

	Comment	Response
PC-170	Will you please provide the documents to support the statement "the project team's knowledge" please?	Please refer to the response to PC-169.
COMMENTER 1 - 21 APRIL 2022 LETTER		
PC-171	For reference the March 22, 2002 Public Notice on page B3 did not include time line 30 day end period. Also the four page "Project Overview" also did not mention the 30 day end date deadline only says want your feedback. The small card available at Open House did not identify deadline date of April 20 th in order to be included in the Public Involvement Summary. Finally, I was one date late as I was involved in Holy Week religious events that delayed me from completing my submission. I am enclosing public notices and associated info from Open House to illustrate my point on the deadline date April 20 th .	We apologize for this oversight. Two notices identical to that shown in Figure 110 of the Environmental Impact Assessment (EIA) document were published in the <i>Telegraph Journal</i> : Saturday 19 March 2022 (Page C3) and Saturday 9 April 2022 (Page C3). Those notices complied with the New Brunswick Department of Environment and Local Government's (NBDELG's) public notice announcements and indicated that receipt of comments was requested on or before 20 April 2022. The advertisement in the <i>Telegraph Journal</i> on Tuesday 22 March 2022 (Page B3) was done voluntarily to enhance announcements of the Open House. The four page "Project Overview" document and postcards handed out at the Open House were only designed to provide additional information on the Project. In hindsight, those materials could have included the request for public comments on or before 20 April 2022.
PC-172	Section 4.3 titled "Overview of Valued Environmental Component Analysis" is an excellent description and analysis of what is valued. One part missing from the context of this analysis is an analysis of the current impact of what is the overall impact on the current massive industrial complex on this site.	The purpose of this EIA is to assess the impact of the proposed Project, the environmental treatment facility and the water use reduction project, on the existing environment.
PC-173	I would request the applicant to review the Minister's responses to my issues of concern to determine whether you have covered these on page 165 in your list of potential impacts associated with air quality. Yes, there is the list under VOCs not broken down. Please list all the VOCs. It is the same as Schedule B in the current Air Quality Approval? If so, please describe what emission controls will deal with these. You list PM with no breakdown as to PM10 or PM2.5 (microns per cubic meter).	Please refer to response to PC-172. For this proposed Project, Volatile Organic Compounds (VOCs) are related to diesel and gasoline within mobile equipment used for construction and operation (<i>i.e.</i> , product deliveries and hauling away of recovered solids). With respect to Particulate Matter (PM) within the assessment, it is for both 2.5 microns and 10 microns (PM _{2.5} and PM ₁₀).
PC-174	Even though this Project is not expected to be a major air polluter not like the main operation the emissions and potential impacts have to be understood and studied within the entire operational "source". Both together. Why wasn't that done? This EIA on air quality has to be understood in the full context of this large industrial source.	This was not done because there will be no cumulative impact as a result of the proposed Project. There are no regulated air emissions associated with the proposed Project.
PC-175	The public is aware of problems in Moncton with and linking of airborne bacteria diseases outbreak to industrial direct cooling towers. As the EIA document states in Table 49 Page 189. Direct cooling towers can release aerosolized water to the atmosphere and if bacteria are present, the aerosolized water can spread the bacteria over several kilometers. This type of adverse potential impact is a concern despite the mitigation efforts by the applicant. I understand the kind of technology being used for this Project is different from the kind of equipment used in those Moncton cooling towers. Please explain the difference and why your design is superior to the traditional cooling tower technology.	<p>As noted, there was a bacterial outbreak in the Greater Moncton Region in 2019 followed by another outbreak in 2021. The 2019 Greater Moncton outbreak was determined to be the result of an improperly maintained cooling tower. The 2021 outbreak has been attributed to more than one cause and the sources were undetermined. The following are the most common factors leading to outbreaks, such as those that occurred in Moncton:</p> <ul style="list-style-type: none"> ➤ lack of using biocide; ➤ improper use of biocide; ➤ infrequent testing for microbiological contamination; ➤ improper use or maintenance of drift eliminators (<i>i.e.</i>, preventing water droplets and mist from escaping the cooling tower); and ➤ lack of a total system cleaning for towers shutdown for an extended period of time. <p>Due to these outbreaks the Province is developing a registry for cooling towers in order to better manage those outbreaks.</p> <p>The probability that the Project will disperse bacteria into the airshed when exhausting air through the indirect air coolers is negligible. That is because the spray water that will be in direct contact with the air circulated through the coolers will be clean water. Furthermore, the indirect air coolers proposed for this Project will have an oxidant injected into the clean spray water to inhibit bacterial growth. To ensure the coolers remain free of bacteria, regular monitoring will be undertaken. Contingency plans will be developed to monitor, control, and eliminate bacterial growth during operation of the Project. The indirect air coolers will also be included in the New Brunswick registry.</p>
PC-176	The Province of New Brunswick has first issued steps to develop or has developed new standards for these cooling standards. See recent media/print story in Telegraph Journal just prior to Easter. Will these cooling towers meet these new standards as they were not announced prior to this EIA being written and registered? Will your Project exceed these new or proposed standards?	Yes, the indirect air coolers associated with this proposed Project will meet and exceed the standards for cooling technology the Province of New Brunswick recently announced, which involves the registration of these systems.
PC-177	This writer was pleased to see the following mitigation step included: "Emergency response and contingency plans should be designed to prevent any major and/or sustained environmental damage during any errors, mishaps, and/or unforeseen events. Good to see this included. Does sustained mean permanent or long lasting? Please explain what you	In this instance, sustained refers to medium-term, definitely not permanent. Anything longer than that would not be considered an error, mishap, or unforeseen event. The emergency response and contingency plans will also apply to short and moderate periods.

	Comment	Response
	mean by "sustained". What about other environmental damage short or moderate term periods? Will the emergency responses and contingency plans apply?	
PC-178	Further comments on Section 4.4.2.1.3. Reference to a Project specific environmental protection plan will be developed. This EIA does not provide what is the plan for the public to review. Why isn't it or at least terms of reference on a plant outline provided? I recommend at least an outline. Please provide at least a plant outline/parameters of the plan.	It is expected that development of a Project-specific Environmental Protection Plan (EPP) will be a condition of EIA approval. That EPP will be created by the Proponent and then subsequently reviewed and approved by the NBDELG before construction begins. Section 6.2.2 of the EIA document provides details on the EPP. The most important component within the EPP will be datasheets for describing best management practices. As noted in Section 6.2.2 of the EIA document, those datasheets will include: aquatic flora and fauna protection; archaeological discovery; concrete wash water management; environmental incidents reporting guidelines; hazardous materials management; pile driving sound emissions; rock check dams; sanitary waste management; sediment filter bag; sediment traps; silt fences; solid waste management; spill prevention and control; spills or leaks emergency response procedures; stockpile management; storm drain inlet protection; straw bale barriers; terrestrial flora and fauna protection; vehicle and equipment cleaning; vehicle and equipment fueling; and vehicle and equipment maintenance.
PC-179	This EIA fails to recognize or acknowledge Canada's new Clean Fuels Act. This new Federal legislation will have important implications for large industrial/energy generation users. Why wasn't it in the EIA? If it was included please correct this writer's comment.	The Clean Fuel Standard is an important part of Canada's climate plan to reduce emissions, accelerate the use of clean technologies and fuel, and create jobs in a diversified economy. The Clean Fuel Standard, as it currently stands, is applicable to fuel producers who need to provide innovative solutions and new fuel options to consumers. It is not recognized how the standard is applicable to this Project other than the construction and maintenance equipment will have to use progressively cleaner fuels over time. The proposed regulations for the Clean Fuel Standard were published in the Canada Gazette on 18 December 2021. Final regulations are targeted for publication in spring 2022.
PC-180	Reference to "recovered fibers and or dewatered should be incinerated in the onsite power boiler to generate electricity and offset that required for purchases from NB Power." Please see my commentary on IPP's Public Review of its Air Quality approval on reference to particulate emissions – PM2.5. I object to this proposed mitigation cited above. NB Power electricity is clean either from Pt. Lepreau, hydroelectric from Quebec Hydro. The mitigation proposed is inconsistent with the applicant's goals to minimize environmental impact on the air side. As well as on the water side of their new Project. This mitigation step needs to be reworked. When there is a cleaner way to generate electricity to power onsite boilers to generate electricity, it needs to be used in this case, its clean power from NB Power sources as noted above. Economic reasons and not the ones to predominate an important environmental consideration. Recommend words "as a last resort" or "under exceptional conditions" will recovered fibre or dewatered solids be allowed to be incinerated.	IPP currently maximizes power generation capacity within its onsite generators, which allows the Mill to operate using over 99.9 % of renewable energy. Currently, there is no capacity to utilize any additional biomass within the onsite generators that is produced from this Project. Instead, the recovered fibers and / or dewatered solids will be directed to an offsite compost facility. As the Mill continues to develop, it is always looking to increase its capacity for renewable energy.
PC-181	Years ago a community member told me a story of a diver discovered small caves, tunnels, opening on the rock bases where this mill was constructed. Apparently years ago old junk cars would be dumped into this area. This is why a diver had been sent into this area to assess this problem to take steps to remove them. This is when the diver discovered these fractures, small caves, tunnels, crevices in the rock side adjacent to the rushing water. This may be total "malarky" to use ancient description or a "wives' tale" or just complete nonsense; however, force of high volume of water hitting against the natural rock could potentially create fissures, broken down that could bigger over the centuries. Water can seep through and undermine the integrity of the rock base?	IPP is not aware of any underwater caves, caverns, or tunnels that have been created through the erosive powers of the Saint John River. The Project infrastructure will be constructed on solid ground. Additionally, all Project infrastructure is being founded on solid footings, some supported by steel piles that extend from the footings to competent bedrock. All of the foundation design is being completed by structural and geotechnical engineers with a competent understanding of the site geology and subsurface conditions. Detailed geotechnical inspections always occur prior to installing any new infrastructure.
PC-182	Another dimension to this is the fact that a lot of pile driving has occurred along the water edge of this complex over the years. To what extent has driving these steel posts into the rock base created cracks, fissures where water could penetrate the rock base where main structures sit? This one may be more plausible. Therefore, I would recommend the following: (1) a geological subject matter review and the rock impact of water pressure flow hitting up against it for thousands of years; (2) geological testing to determine if water is seeping into the rock base below the IPP facility; (3) send dive team or underwater submarines into the area to see if there are any of these tunnels, cave, opening, large crevices evident; (4) consult history experts such as David Goss or Harold Wright to see if any of these possible far fetches stories have any merit. They could add local historical and anecdotal information. There may be no merit to these assumptions, stories but better for an assessment to be made before more pile driving and construction takes place. Won't hurt to commence some kind of review on this topic.	Please refer to the response to PC-181.
PC-183	Comment on Section 4.4.2.1 Air Quality Page 163, 164. Refers to global efforts (emissions of greenhouse gases). Now this EIA cites outdated international agreements, conventions, and protocols. One outdated one is Paris agreement of the United Nations Framework Convention	These comments are noted. The EIA document was prepared between June 2021 and March 2022. The <i>Glasgow Climate Pact</i> from the Conference of the Parties (COP) 26 aims to turn the 2020s into a decade on climate action and support. Part of the package of decisions from COP26 is a rulebook for the <i>Paris Agreement</i> as it relates to market mechanisms and non-market approaches and the transparent reporting of climate actions and support provided or received, including for loss and damage. Section 4.5 of the EIA

	Comment	Response
	on Climate Change. This EIA should have included more recent ones such as last years' COP21 Agreement which exceeds the targets set out in the Paris Agreement. The Paris Agreement did not go far enough compared to (a) COP21 as well as the most recent and alarming IPPC Report which is even more alarming with even more aggressive GHG emission reduction targets. None of these more current protocols, etc. were identified. Why not? When was this EIA written? Yes it was registered in March 2022 but it should have been updated and refreshed on this critically important area. Please provide updated analysis.	document provides additional information on climate change and potential impacts and mitigation. That section includes current information, such as that from the Intergovernmental Panel on Climate Change Working Group's assessments from 2021. The <i>Paris Agreement</i> is still valid as it strengthens the global response to climate change and reaffirms the goal of limiting global temperature increase to well below 2 °C above pre-industrial levels, while pursuing efforts to limit that increase to 1.5 °C. More recent agreements, etc. build upon the <i>Paris Agreement</i> .
PC-184	Just recently the government of Canada passed new climate change greenhouse gas reduction plan legislation up to 2030 targets. How will this Project be impacted by such new current legislation, protocols, agreements? Also, Province of New Brunswick is completing its own Climate Change Plan soon to be released after extensive legislature hearings, etc. Await this plans release and then assess how this Project will be impacted.	On 22 March 2022, after the EIA was registered, the Prime Minister announced the release of the 2030 Emissions Reduction Plan: Canada's Next Steps for Clean Air and a Strong Economy. The 2030 Emissions Reduction Plan is an ambitious and achievable sector-by-sector approach for Canada to reach its new climate target of cutting emissions by 40 % below 2005 levels by 2030 to put Canada on track toward its goal of achieving net-zero emissions by 2050. Key components of the plan include: making it easier for Canadians to switch to electric vehicles; greening Canada's homes and buildings; helping industries to adopt to clean technology and transition to net-zero emissions; making Canada's grid even cleaner; reducing oil and gas emissions; supporting farmers in building a clean, prosperous future; empowering communities to take climate action; and embracing the power of nature to fight climate change. New Brunswick's Climate Change Action Plan <i>Transitioning to a Low-Carbon Economy</i> that was launched in December 2016 is still in place. The New Brunswick <i>Climate Change Act [S.N.B. 2018, c.11]</i> requires that the Province's Action Plan be renewed ever five years. Public comments on the plan were accepted up until 24 February 2022. As a point of reference, IPP is very proud of its initiatives to reduce GHG emissions. Between 2005 and 2021, our pulp and paper mills have reduced GHG emissions on a gross output basis by 53 % and by 51 % on an intensity basis, far surpassing the reductions discussed above.
PC-185	The cited NB Climate Change Action Plan (PNB 2016) is outdated. This particular Climate Change Action Plan PNB cited that states "all projects constructed in New Brunswick must adhere to the Province's air emissions guidelines and climate change action plan". The new CC Action Plan for NB and Federal legislation need to be applied to this Project in regards to emission reduction not old outdated regulatory objectives, guidelines.	Please refer to the response to PC-184.
PC-186	The days of guidelines, voluntary actions are over, its hardball time now with Federal legislation driving the GHG emission reductions. Please explain how this Project plan to comply with them. Please start by listing them all and provide an explanation on how they impact this Project. Same for NB Water Strategy Actions and or other Federal DFO legislation coming along. I assume of course this Project is most consistent with NB Water Strategy approved about five years ago. No doubt exceeds any standards in it?	The applicable legislation, municipal, provincial, and federal are described and discussed throughout the EIA document. In December 2017, the Province of New Brunswick released the document <i>A Water Strategy for New Brunswick 2018-2028</i> . The strategy was prepared in recognition that water is a precious resource and in order for New Brunswick's existing surface water and groundwater resources to provide New Brunswickers with abundant clean water now and into the future, they need to be protected and managed responsibly to ensure their long-term sustainability. This Project aligns with that strategy.
PC-187	Page 170 RE: pneumatic rock breaking structures and pile driving. See my comments above for this issues of concern. How many piles to be drilled? Limitations needed re how current allowable too long. Notice to residents need to be given. Mail box delivery. 7AM too early same for 7PM, not Saturday. Shrouds should be used at all times not just "where possible".	As noted in Section 2.8.2.3 of the EIA document, it is estimated that 210 piles will be required for the Project and that those piles would be driven over a one month period and suitable notification will be provided to neighbours in advance of the work (<i>i.e.</i> , one week advance notice as noted in Section 4.4.2.2.3). It is expected that notification will be done through the mail system as was done for notice of the EIA public house. As noted in Section 2.8.2.4, loud work, such as pile driving, will be done between the regular work hours of 7AM to 7PM Monday through Friday.
PC-188	Table 19 Emissions Data circa 2019 (page 78). How will this Project impact IPP's reduction or increase in air emissions? Will there be an overall total decrease? Slight or moderate increases? Please provide a projection.	Emissions related to effluent treatment in 2018, 2019, and 2020 were, respectively, 4 438 tonnes CO _{2eq} , 4 338 tonnes CO _{2eq} , and 3 362 tonnes CO _{2eq} . It is estimated that once this Project is operation, the emissions related to effluent treatment will be 2 937 tonnes CO _{2eq} , which is about a 13 % decrease from 2020 emissions.
PC-189	Page 78, last paragraph. This EIA again uses outdated information. GHGRP in March 2004 that's a 17 year old reference. Now into a reporting requirement where all facilities that emit the equivalent of 50,000 tonnes or more of GHGs are required to report. Has this reporting threshold of 50,000 tonnes changed or about to change? Any new reporting requirements expected?	We thank the commenter for their level of review. The 17 year old reference was strictly to note that Canada's Greenhouse Gas Reporting program was introduced in March 2004. The reporting threshold for facilities has now decreased from 50 000 tonnes of CO _{2eq} to 10 000 tonnes of CO _{2eq} . Reporting requirements change from time to time as do the prescribed methodologies for calculating emissions.
PC-190	What about all that white vapour observed from this site especially in the cooler periods with the water treatment open roof tanks will there be an increase in current vapour emissions? Are there GHGs that is the water vapour? Please breakdown what is in all this water vapour. List all contaminants in this water vapour.	As discussed in Section 4.4.4.2 of the EIA document, some visible water vapour plumes may be created as a result of evaporation at the surface of the tanks particularly during low temperature or high humidity periods. The indirect air coolers will be equipped with a plume abatement system to minimize visible water vapour plumes from being produced. The Mill's existing operations are not within scope of this EIA, which is constrained to the environmental treatment facility and water use reduction project.
PC-191	What ever happened to that heat/steam capture Project to provide nearby industries with heat such as Moosehead Brewery? This could be done. Please comment on why not a possibility as was proposed about 15 years ago. I would recommend such a Project be reinstated.	That Project was an initiative of the City of Saint John, not the Proponent, and was put on hold in 2011 due to the City's financial constraints. In October 2021, Saint John Common Council approved an application for submission to Natural Resources Canada to fund a feasibility study for exploring how waste energy from some industries could be used to heat buildings in the uptown core.

	Comment	Response
PC-192	P. 11 Project Benefits. I did notice the indirect air coolers will also be equipped with a plume abatement system minimizing the visible water vapour plumes from being produced. This is positive.	Thank you. Yes, several best-in-class technologies were included in the overall Project design to yield additional environmental benefits and to ensure IPP continues to be socially responsible and a good neighbour.
PC-193	Fish impingement and entrainment will be nearly eliminated. This is most positive. Will a Fish Authorization Permit be still required? If so, will an application to DFO be needed to commence prior to this Project starting including construction stages?	As noted in Section 6.1.1 of the EIA document, it is believed that a <i>Fisheries Act</i> Authorization will be required to construct and operate the intake structure for the water use reduction component of the Project. Representatives from the Department of Fisheries and Oceans are members of the Technical Review Committee and they will confirm if this is a requirement. An application for the Authorization would be made prior to constructing that component of the Project.
PC-194	3.1.6 Geology. Additional comment to my comments above. This section describes the surficial geology in the vicinity of the Reversing Falls Mill but fails to mention whether water permeability or seepage could penetrate into these various rock formations as stated above. At least such a statement such as "it's absolutely impossible for water flowing by the mill could seep or leak into such solid rock formations or even with manmade pile driving drilling now or in the past could such water enter into such rock formations". Some analysis, reassurance needed here.	The bedrock that the Mill sits atop is metamorphic and igneous. Those rock types would have extremely low primary porosity / permeability. Detailed geotechnical inspections always occur prior to installing any new infrastructure.
PC-195	See my File B Documentation attached. Section 6.2.5 Approval to Operate, 6.2.5.1 Water Quality. An important approval was left out, namely Air Quality Approval under Clean Air Act. This Project has a section on air quality/emissions from this Project apart from transportation related which are not subject to this Air Quality Approval. Only fixed industrial sources. This Project is a "source" under the current and new draft emissions described in this Project. Section 4.4.2.1 fall under definition "Mill Complex Emission Sources" and therefore should have been addressed in this EIA. Please respond to this point.	There are no new point source emissions related to this Project. An Approval To Operate under the Air Quality Regulation [97-133] of the New Brunswick <i>Clean Air Act</i> [S.N.B. 1997, c. C-5.2] is not required. The Mill's existing Approval To Operate under the Water Quality Regulation [82-126] of the New Brunswick <i>Clean Environment Act</i> [R.S.N.B. 1973, c. c-6] will require amendment.
PC-196	Note in new Draft Schedule A Description and Location of Source (Page 1 of 16 of Draft). One area of Provincial regulatory concern is the fact that the timing of this EIA registration March 23, 2022 to commence the Public Review period process. Now is it a random decision to register this EIA at that time? The reason I ask is based on the timing of the public review of this industry's Air Quality Approval January 10, 2022 ending April 1, 2022 just a few days before this EIA was registered.	There is no connection between the registration of the EIA document and the public review of the Mill's Air Quality Approval to Operate. The EIA was registered when it was completed.
PC-197	There should have been more integration and information on air emission side included in both information documents. Question unless there any discussion with the DELG as to the timing of the EIA registration? Both processes (Air Quality Approval and EIA) should have integrated related air emission information provisions. Please explain why it did not occur. The DELG may also need to respond to this as part of this public engagement review process.	Please refer to the response to PC-195.
PC-198	Table 4 Page 124. On reviewing the various including the three that ranked acceptable did you use upset conditions or unexpected technical events as one of the criteria before you made your final decision? Some technologies are more susceptible to upset events/technology breakdowns. How does the one you selected stack up against the other acceptable ones using this criteria? My concern is that despite being best under your criteria, its somewhat newer and it could be subject to glitches, system errors, mishaps, or mechanical malfunctions due to operator error. Is that possible? Is it a concern? Was the human or mechanical error analysis analyzed?	As noted in Section 2.6.3.7.5 of the EIA document, the technology selected, Moving Bed Biofilm Reactor (MBBR), has the ability to respond faster from upset events. Overall, it was the best technology available for the Project. Yes, human and mechanical errors were analyzed as part of the assessment summarized in Table 5 of the EIA document. IPP understands the technology well as a small MBBR has been operated as a component of the pollution prevention strategy at the Mill since 1999.
PC-199	Will there be less vapour, same or reduced vapour coming off this facility? I assume this treatment plant is not at all like the ABS one near Irving Paper Mill, correct? I understand this water treatment system is far superior to the one used at Irving Paper?	Please refer to the response to PC-190. This treatment plant is not like the treatment lagoon at Irving Paper. The treatment technology selected was determined to be the clear leader of the six technologies reviewed. The footprint of this Project is considerably smaller than the Irving Paper treatment lagoon, which is one of the benefits of this technology.
PC-200	Table 66 does a good job identifying assessment of potential impacts on aesthetics of this proposed project. My concern is as the EIA notes in Table 66 "depending on meteorological conditions, e.g., temperature, wind direction, speed, humidity (you forgot low cloud cover, inversion) water vapour plumes may be visible from the exhaust fans of the indirect air coolers and the exterior process tanks". I assume then more white vapour will be added to the current amount now observed? Please confirm.	The reviewer is correct, low cloud cover and inversions could have been included in Table 66 as meteorological conditions that could affect visibility of water vapour in the air. With the mitigation measures proposed, such as the plume abatement system on the exhaust fans of the indirect air coolers, there should be minimal additional visible water vapour plumes being produced.

	Comment	Response
PC-201	It is reassuring to read "when the system is operating normally there should be little to no odour associated with the environmental treatment facility". Good	Best-in-class technologies have been included within the environmental treatment facility design to yield additional environmental benefits and to ensure IPP continues to be socially responsible and a good neighbour.
PC-202	Pleased to read a several meter high and wide berm will be made to half mask the view of the infrastructure associated with the environmental treatment facility. I suspect new permanent Project lighting will create an even more adverse impact on those living nearby. All this current and new lighting has the potential to adversely impact sleep patterns of residents in Milford Road area along with the sound from these air exchangers. One can hear these at IOL for those walking along Grandview Avenue.	<p>The landscaped berm will mask the view of infrastructure and help mitigate sound emissions.</p> <p>As described in Section 2.7.1.8.1.8 of the EIA document, artificial lighting will be limited to that necessary for employee safety and for process and security monitoring. The design and selection of exterior lighting balances employee safety criteria with requirements to minimize the effects on the environment and neighbours. The lighting will be designed to only light the area that needs it, be no brighter than necessary, minimize blue light emissions, and be full shielded. These features are not only important for mitigating impacts to residential neighbours, but protecting against attracting birds to avoid collisions.</p> <p>There are street lights on every second powerline pole along Milford Road and additional street lights at intersections, such as Violet Street and Williams Street. Those street lights, which are either sat-m or sat-s Satellite™ series luminaries, are placed for pedestrian and vehicle safety. Similar to the lights proposed for this Project, those street lights are modern and minimize sky glow, spill light, and glare.</p> <p>There is minimal mechanical equipment associated with this proposed Project. None of the equipment that will emit sound, such as blowers, pumps, and fans, will be exposed. The Project Team is specifying low sound emission equipment (<i>i.e.</i>, < 80 dBA at 1 m). Additionally, loud equipment, as noted within the EIA document, will either be located within insulated wall rooms of buildings, or have shrouds attached to them for mitigating sound emissions.</p>
PC-203	Under Mitigation Table 66 its unacceptable to allow construction work during the evening, or worse overnight and or weekends. Such activity must be prohibited by Minister in Approval to Construct.	<p>As noted in Section 2.8.2.4 of the EIA document, loud work that has the potential to disturb neighbours (<i>e.g.</i>, pile driving, <i>etc.</i>), will normally be done between the regular work hours of 7 AM to 7 PM Monday through Friday. Crews working outside of those regular work hours will be sensitive to neighbours and will, whenever practical, confine loud work to regular work hours.</p> <p>A reduced construction crew may be used when working on Saturdays, Sundays, and evenings. Tie-in work (<i>i.e.</i>, connecting the new units to the Mill), which requires Mill shutdowns, will be completed 24 hours · day⁻¹, seven days a week in order to limit shutdown duration.</p>
PC-204	Please describe current public complaint procedure that needs a complete upgrade and enhancement.	Complaints received are recorded on an incident complaint form. As per the Approvals to Operate, complaints from the public regarding unfavourable environmental impacts require reporting to the NBDELG with details including date, time, nature of the complaint, and action taken to verify the complaint and mitigate any impacts. IPP complies with the Regulators' complaints process. Complaints that are deemed to not be associated with the Mill are turned back over to the Regulator to handle.
PC-205	This is the first time I have ever heard of the public having to book a time to attend an Open House. Restrictions and Mandates were lifted at this time. The Open House was informative. I had the opportunity to learn about the Project. There were some community members at the March 23 rd Open House. How many attended this or any other Open Houses? How many "hits" on the ipppmodernization.com website?	Registration was done for the Open House in order to limit the number of attendees during each hour of the event for social distancing reasons (<i>i.e.</i> , COVID-19). A total of 48 people attended the Open House. The website has received ~ 1 300 engagements as of 26 April 2022.
PC-206	I did make some constructive recommendations to enhance and broaden public engagement process. I suggested a virtual digital Zoom like public presentation session be organized during this 30 day public engagement process. It would be an Open House online with PowerPoint presentations question/answer using that format. I attended such an information session on SMRs where 346 people attended. An official from JDI (government relations) thought my suggestion had merit and value. Said he would take it under review. Did such a session occur? If not please provide an explanation as to why not. It was a good idea under pandemic conditions. May I suggest that such online Open House be added to the public consultation process?	A hybrid Open House format was not completed for this Project, but could be considered for future projects. The voluntary Open House was structured such that physical distancing was maintained so that members of the public could attend safely. KN95 masks were made available as was hand sanitizer. Information packages about the Project were delivered to all homes in the Milford and Randolph area. The Project Team believes the Open House was a success with a good turnout. The website was also useful in disseminating information.
PC-207	Perhaps the Department can recommend such for future EIA Open Houses in addition to the traditional onsite format that are potentially more COVID challenging. This Open House was helpful to those community members who were able to attend, however it was limiting and restrictive in that there was no presentation or opportunity for the public to ask questions where everyone hears the question and able to hear the answers from the Proponent. It would have been live streamed on the sited ipppmodernization.com website. Was this done? Why not?	IPP has conducted many open houses for a variety of projects in communities that they have operations. It is their experience that the type of open house format used for this Project is the most beneficial because attendees are able to have one-on-one interactions with the Project Team. There were many great conversations that lasted a long time during the Open House, which would not have occurred in a presentation-type format open house.
COMMENTS Q - 25 APRIL 2022 EMAIL		
PC-208	I'm a local resident on the west side, and am inquiring today to ask whether any construction has commenced yet on the new Environmental Treatment Facility. I am asking as it feels as though there has been an unusual amount of shaking/swaying/vibrations in my home on the west side. I'm wondering whether this might be related to the EFT project (or alternatively	Construction will not commence on the Environmental Treatment Facility until Regulatory approval has been received. It is anticipated that approval may take at least another month or longer to receive.

	Comment	Response
	<p>whether I have a very bad case of vertigo!!) Any details you might have about possible cause and/or timeline would be so appreciated!</p>	<p>The construction season has begun in Saint John and there are several other projects near lower West Saint John that could be causing noise and perhaps vibrations. That work includes maintenance work on the Harbour Bridge, maintenance work on highway structures of the Saint John Throughway West near the Lancaster Avenue overpass, DP World Terminal wharf work at Port Saint John, breakwater installation at Long Wharf Slip, and work on the green covered Petroleum Coke Storage Shed at Port Saint John.</p>

6.0 SUMMARY

IPP, as part of the formal EIA review, conducted a Public Involvement Process that was developed in accordance with the process described in Section 6 and Appendix C of the document entitled, “A Guide to Environmental Impact Assessment in New Brunswick” [NBDELG, 2018]. That process involved direct written communications with local residents and stakeholders, a formal public announcement, local availability of the EIA Registration Document for public viewing, delivery of the EIA Registration Document upon request, and a voluntary Open House. Having been provided complete information about the Undertaking to review, the public was also directed to contact Fundy Engineering to express any concerns and / or questions regarding the Project. Several comments were received from the public related to the Project and all comments were responded to accordingly.

7.0 REFERENCES

Fundy Engineering and Consulting Ltd. 2022. *Environmental Treatment Facility & Water Use Reduction Environmental Impact Assessment*. The document can be obtained online at:

https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

New Brunswick Department of Aboriginal Affairs. 2019. Interim proponent guide, a guide for proponents engaging with Aboriginal Peoples in New Brunswick. The document can be obtained online at:

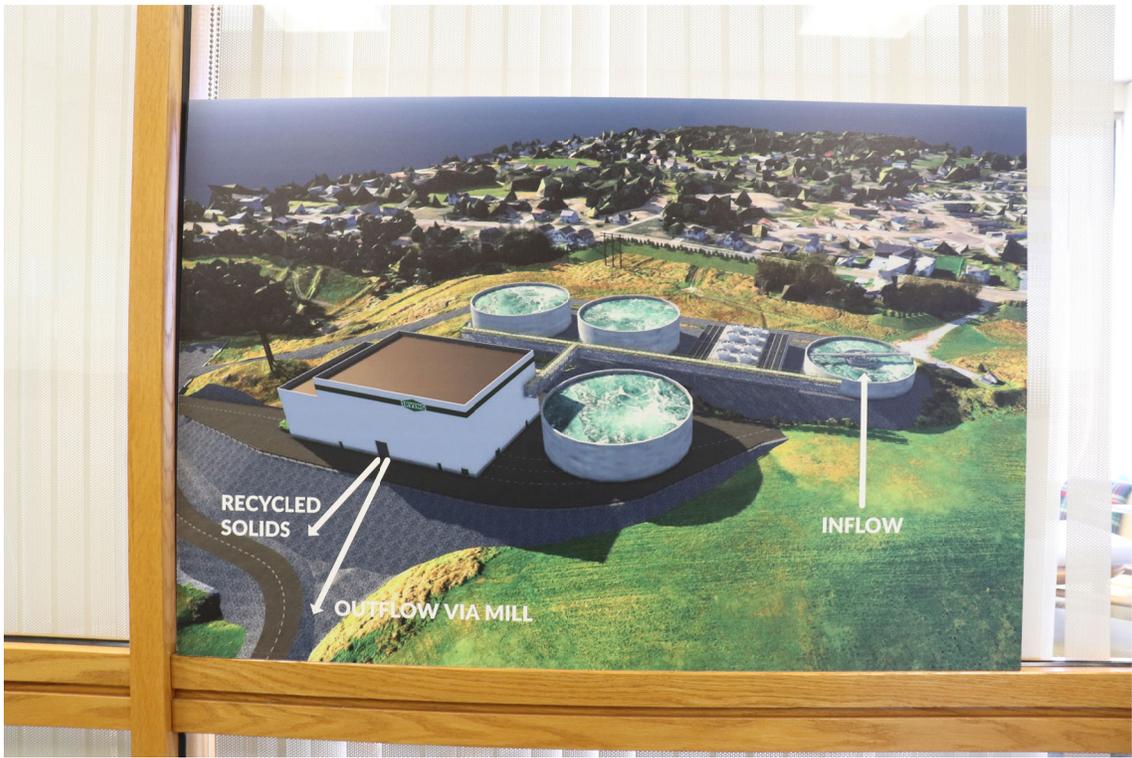
<https://www2.gnb.ca/content/dam/gnb/Departments/aas-saa/pdf/ProponentGuide-Excel/InterimProponentGuide.pdf>

New Brunswick Department of Environment and Local Government. 2018. *A Guide to Environmental Impact Assessment in New Brunswick*. The document can be obtained online at:

<https://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/EIA-EIE/GuideEnvironmentalImpactAssessment.pdf>

Appendix I:

Photographs Documenting Kiosks from the 23 March 2022 Open House



OCTOBER 2022 - MARCH 2023



JULY - SEPTEMBER 2023



APRIL - JUNE 2023



KEY QUANTITIES:
• STRUCTURAL STEEL : 1.0 MILLION LBS.
(1,100 PIECES)

OCTOBER 2023 - MARCH 2024



KEY QUANTITIES:
• PROCESS PIPING : 32,000 FEET
• ELECTRICAL CABLE: 170,000 FEET

APRIL - SEPTEMBER 2024



- KEY QUANTITIES
- 120 PERSON YEARS OF CONSTRUCTION
 - \$100 MILLION IN LOCAL SPEND





PROJECT SUMMARY

GOOD FOR THE ENVIRONMENT GOOD FOR THE COMMUNITY

LESS WATER

The project will reduce the overall quantity of freshwater sourced from Spruce Lake and reduce the Mill's treated process water volume. Ultimately, the project will place IPP among the Canadian leaders in the manufacture of pulp by reducing water consumption by about 50%.

CLEANER WATER

This system provides increased recycling and reuse of filtered water at the Mill. It has also led to benefits for aquatic ecosystems and fish.

CONSTRUCTION ON SITE

We are proposing to build the new facility at the existing Pulp Mill site where the impact on the community will be minimized and major digging and construction work will not be required.

LABOUR REQUIRED FOR THE PROJECT

Construction and installation of the new equipment is expected to generate:



120 person years
of work



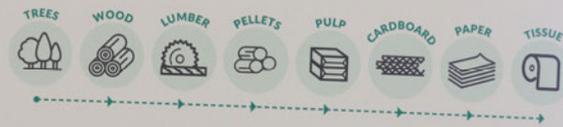
60 contractor jobs
averaged with peaks of
120 contractors



over a **2-2.5** year period



IRVING FOREST PRODUCTS VALUE CHAIN






COMMITTED TO TREE PLANTING

Since 1957, we have planted over **a billion trees** and we're still at it. We plant about 25 per cent of harvested areas with six different species of native spruces and pines, allowing for abundant natural regeneration on the remaining 75 per cent of harvested lands.

12,693,827 SEEDLINGS PLANTED IN 2020




MITIGATING THE IMPACT ON THE LOCAL COMMUNITY

FACILITY WILL **NOT** PRODUCE ADDITIONAL ODOUR FOR RESIDENTS. WE'D BE HAPPY TO ARRANGE TOURS OF A SIMILAR SITE TO ADDRESS ANY CONCERNS.

FACILITY WILL **NOT** PRODUCE EXTRA NOISE AFTER CONSTRUCTION.

NO ADDITIONAL TRUCK TRAFFIC DURING CONSTRUCTION. SITE WILL BE ACCESSED VIA MILL PROPERTY.



WHY THE PROJECT IS NEEDED



To produce cleaner water leaving the mill and reducing water usage by up to 50%;



To address a new enforcement approach to federal environmental regulations;



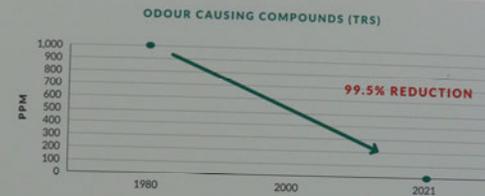
To remove, reuse, and recycle chemicals and other pulp-making materials;



To modernize technology to improve efficiency, cost-competitiveness, and environmental performance;

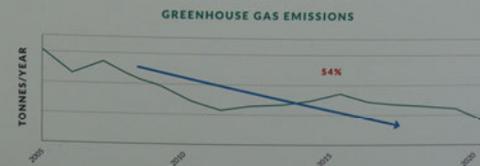
REDUCING ODOUR, REDUCING GREENHOUSE GASES

SAINT JOHN'S MILL IS ONE OF LOWEST
ODOUR-EMITTING MILLS IN THE WORLD.



GREENHOUSE GASES

The Pulp & Paper division has reduced greenhouse gasses by **54 percent** since 2005 **exceeding Canada's 2030 climate targets.**





NOTHING GOES TO WASTE

This starts with precision harvesting where computer controlled and satellite connected harvesters cut wood with millimeter precision. Our manufacturing facilities use the latest scanning and imaging technology to maximize yields.

With advancing technologies like these, we continually strive to add value to all byproducts produced by our manufacturing operations, seeking new markets and product development lines.

3% SHAVINGS
4% SAWDUST
15% BARK

34% LUMBER

44% CHIPS



WORLD CLASS SAWMILLS

The Irving Sawmills have a long-standing tradition for producing quality lumber. The first Irving sawmill began in 1882 and now the company has sawmill and woodland operations in New Brunswick, Nova Scotia, and Maine, USA.

1,139,636
MILLION FOOT BOARD MEASURE
PRODUCED IN 2020 AS PRODUCTS SUCH AS
STRUCTURAL LUMBER & APPEARANCE GRADE LUMBER





PULP & PAPER

The Pulp and Paper division produces no solid waste from its manufacturing process; it is the only pulp and paper company in North America that operates without a solid waste landfill. This means no solid waste from the manufacturing process (other than what would be considered household waste) is sent to the landfill.

KRAFT PULP
346,611
TONNES
PRODUCED IN 2020.

PRINTING PAPER
381,266
TONNES
PRODUCED IN 2020.

CONTRIBUTIONS TO OUR COMMUNITY



SPONSORSHIP OF CARS IN THE
APEGNB SAINT JOHN SOAP BOX DERBY



SUPPORT FOR FAMILIES THROUGH THE
PALS HOLIDAY HAMPERS PROGRAM



EMPLOYEE DONATIONS TO THE CANADIAN RED CROSS'
"UKRAINE HUMANITARIAN CRISIS APPEAL" WERE
MATCHED BY THE COMPANY
(PHOTO COURTESY OF THE RED CROSS)

IRVING
IRVING PULP & PAPER

CONTRIBUTIONS TO OUR COMMUNITY

Employees (Full Time Equivalents)	397
Local Purchases (2021)	\$156 Million
Capital Investments (2017 - 2021)	\$345 Million

**VISIT OUR WEBSITE:
IPPMODERNIZATION.COM**

OUR FOREST PRODUCTS

Our forest products value chain is designed to maximize the value from the naturally diverse forests where we operate. This allows us to maintain a healthy, diverse, and resilient forest while providing quality forest products that exceed our customers' expectations.

CORRUGATED BOX MATERIAL 186,932 TONNES PRODUCED IN 2020.	BATH AND FACIAL TISSUE, AND PAPER TOWEL 343,891 TONNES PRODUCED IN 2020.
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Appendix II:

Public Questions, Comments, and Feedback, and Proponent Responses

Please Note:

Commenters are Identified Anonymously in the Attached Correspondence and the Labels Used Throughout Correspond to the Labels Used Within the Disposition Table of the Report

Matthew Alexander

From: [REDACTED]
Sent: March 21, 2022 7:46 PM
To: Info
Subject: Input on the proposed water treatment system

External Email Alert

Caution: This email originated from outside the organization. If you suspect this email is suspicious, please forward the email to phishing@jdirving.com to notify JDI Security

Question to be presented at the upcoming forum regarding the proposed water treatment facility in Milford: What role will the Bald Hill quarry location play in the long term plan for the proposed water treatment plan?

Sent from [Mail](#) for Windows

COMMENTER A

Matthew Alexander

From: Matthew Alexander
Sent: March 25, 2022 8:01 AM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: Location of Bald Mountain Quarry.jpg

Hi Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

The Bald Mountain Quarry is located in South Bay about 1 km from the location of the proposed Environmental Treatment Facility (ETF). As noted in *Section 2.8.2.2 Services and Excavations* of the EIA document (page 65), approximately 24 000 m³ of clean rock and / or pit run gravel will be required to build up some of the ETF site. It is further noted that the source of that material will most likely be the Bald Mountain Quarry. There is a private roadway that extends from the Irving Pulp & Paper, Limited Reversing Falls Mill site to the Bald Mountain Quarry. That roadway will be used for transporting material from the quarry to the ETF site, which will minimize traffic on local roadways (Please see the attached figure). There is no long-term plan for the Bald Mountain Quarry associated with this Project.

Thanks,

Matt Alexander

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FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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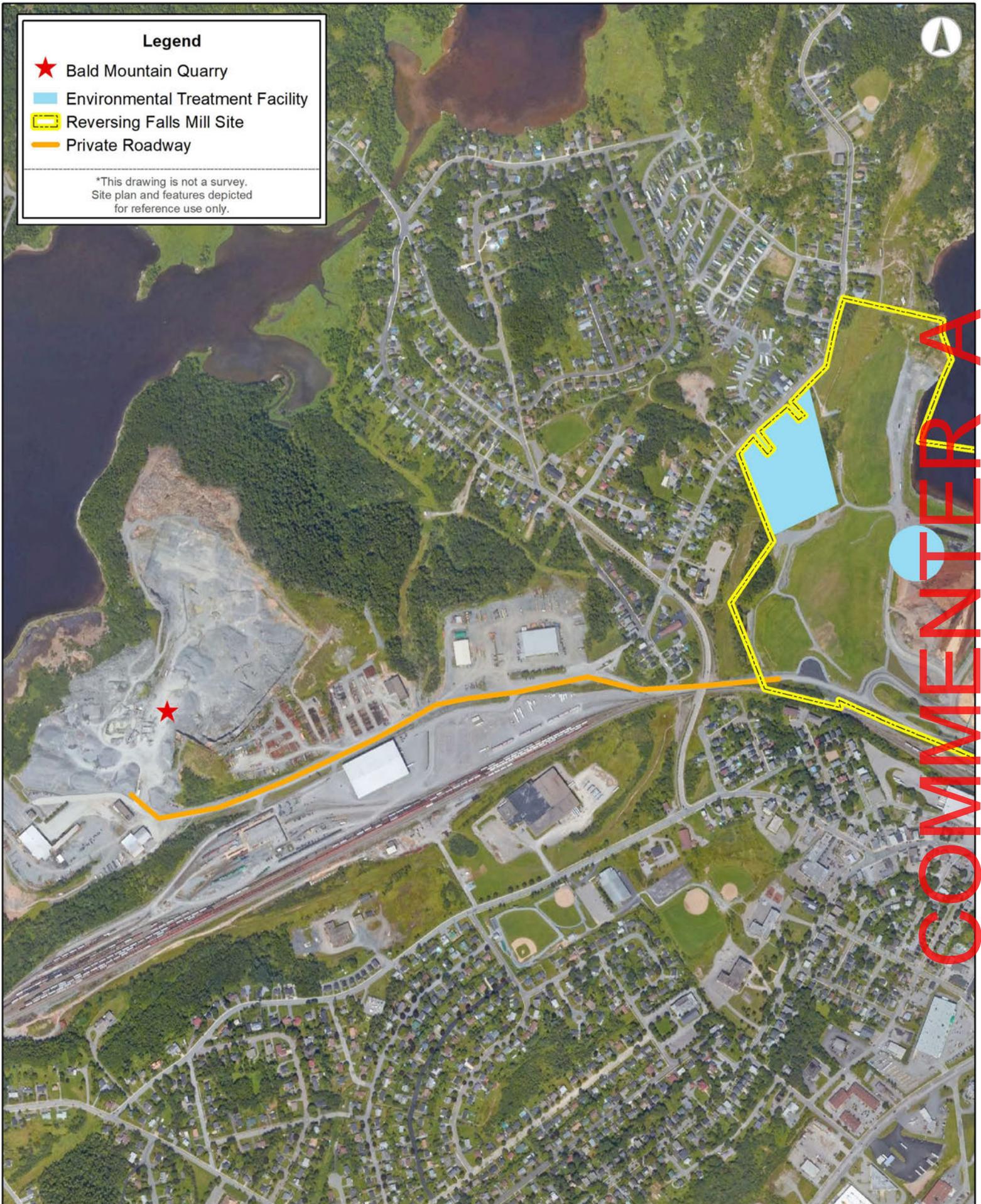
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COMMENTER A

Legend

- ★ Bald Mountain Quarry
- Environmental Treatment Facility
- Reversing Falls Mill Site
- Private Roadway

*This drawing is not a survey.
Site plan and features depicted
for reference use only.



0 250 500
Meters

Location of Bald Mountain Quarry

FUNDY Engineering

COMMENTER A

Matthew Alexander

From: [REDACTED]
Sent: March 21, 2022 6:15 PM
To: Info
Subject: Pulp and Paper Mill Upgrade

External Email Alert

Caution: This email originated from outside the organization. If you suspect this email is suspicious, please forward the email to phishing@jdirving.com to notify JDI Security

Hello,

My name is [REDACTED] and I live on [REDACTED] Brunswick Place.

I have read the information provided concerning the upgrade proposed for the mill and I would like to have a confirmation based on what I could read.

Can you confirm that no new noise or air pollution will be created once construction is complete. If no please give specific details. Example : increase in potential noise and air pollution.

We have contacted the mill numerous times concerning noise concerns and air quality concerns. The noise from the mill makes sitting in our backyard less enjoyable and in some occasions awaken my children at night. I have had numerous incidents with white flakes on my car due to air pollution. Some adjustments have been made and I did have the chance to speak with a lovely person at the mill but still today I believe this could be improved.

I read part of the Environmental Impact Assessment and found this part interesting : Although the Mill is located in a traditional heavy industrial area of west Saint John, some residential properties do exist in the area (p. 168). The mill is surrounded by a residential area and many residential housings are located next to the mill. I hope that this is taken in consideration because the assessment does not seem to understand that basic fact.

Thank you
[REDACTED]

COMMENTER B

Matthew Alexander

From: Matthew Alexander
Sent: March 25, 2022 8:02 AM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

The Project team has worked diligently to design a Project that yields substantial benefits. This was done by reviewing many technologies, selecting the leader, and then developing best-management operating practices. The Project team has also incorporated several best-in-class technologies that will yield additional environmental benefits and will ensure the Mill continues to be socially responsible and a good neighbour.

There is little risk of loud sounds being emitted during Project operations. Equipment that will generate loud sounds, such as air blowers, pumps, and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds.

The facility should not produce additional odour for residents. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool and process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.

The indirect air coolers will be equipped with a plume abatement system. This will involve the post-heating of warmed cooling air to ensure it is not saturated with water vapour, thereby minimizing visible water vapour plumes being produced.

Thanks,

Matt Alexander

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FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

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COMMENTER B

Matthew Alexander

From: Matthew Alexander
Sent: March 25, 2022 8:08 AM
To: [REDACTED]
Subject: ****Updated Response: - Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill****

Hi Mr. [REDACTED]:

I apologize, I hit send before I respond to all of your questions. Please see below for a full response.

The Project team has worked diligently to design a Project that yields substantial benefits. This was done by reviewing many technologies, selecting the leader, and then developing best-management operating practices. The Project team has also incorporated several best-in-class technologies that will yield additional environmental benefits and will ensure the Mill continues to be socially responsible and a good neighbour.

There is little risk of loud sounds being emitted during Project operations. Equipment that will generate loud sounds, such as air blowers, pumps, and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds.

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The indirect air coolers will be equipped with a plume abatement system. This will involve the post-heating of warmed cooling air to ensure it is not saturated with water vapour, thereby minimizing visible water vapour plumes being produced.

IPP appreciates you contacting Mill representatives when you have concerns related to noise and air quality. All complaints are recorded, investigated, responded to, and reported to the Regulator (New Brunswick Department of Environment and Local Government). IPP annually publishes the number of complaints received within their sustainability report. The 2020 sustainability report can be found at: <https://idirvingsustainability.com/globalassets/esg/pdfs/esg-report---2020---final---en.pdf> Page 119 of that document summarizes the complaints received in 2020.

The Project team has incorporated features into the overall design to be socially responsible and a good neighbour. An additional feature that has been included within the Project is a landscaped berm. That berm will be established between the Environmental Treatment Facility and Milford Road. It will reduce the amount of infrastructure that can be seen by neighbours in Milford and it will also help diminish existing sound emissions from the Mill because the vegetation will absorb some of the sound.

Thanks,

Matt Alexander

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COMMENTER B

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COMMENTER B

Matthew Alexander

From: [REDACTED]
Sent: March 26, 2022 2:21 PM
To: Matthew Alexander
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hello Mr. Alexander,

What level of noise are you expecting in terms of decibels and other than odor what type of air pollution if any will be produced.

Thank you

From: Matthew Alexander <matt.alexander@fundyeng.com>
Sent: Friday, March 25, 2022 08:02
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

The Project team has worked diligently to design a Project that yields substantial benefits. This was done by reviewing many technologies, selecting the leader, and then developing best-management operating practices. The Project team has also incorporated several best-in-class technologies that will yield additional environmental benefits and will ensure the Mill continues to be socially responsible and a good neighbour.

There is little risk of loud sounds being emitted during Project operations. Equipment that will generate loud sounds, such as air blowers, pumps, and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds.

The facility should not produce additional odour for residents. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool and process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.

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Thanks,

Matt Alexander

COMMENTER B

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COMMENTER B

Matthew Alexander

From: Matthew Alexander
Sent: March 29, 2022 4:23 PM
To: [REDACTED]
Subject: RE: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Detailed engineering design for the proposed Project is still underway. The pieces of equipment closest to nearby residences along Milford Road will be the cooler fans on the indirect air coolers. There is little risk of loud sounds being emitted during Project operations. Equipment that will generate loud sounds, such as air blowers, pumps, and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds. Sound modelling will be completed as detailed engineering design advances to ensure that sound emissions at the nearest residential receptor from this Project will be at or below existing background levels.

The facility should not produce additional odour for residents. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the coolers and process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.

This is a facility for treating water only. Because the water will be warm, there could, at times, be some light water vapour visible near the surface of the tanks. Ventilation from the process building will be tempered to prevent any dust, odours, or particulate matter from that part of the treatment process from leaving the building.

Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

FUNDY Engineering

[Bio-Resources](#) | [Building Systems](#) | [Environmental](#) | [Geotechnical & Surveying](#) | [Project Management](#)

From: [REDACTED]
Sent: March 26, 2022 2:21 PM
To: Matthew Alexander <matt.alexander@fundyeng.com>
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hello Mr. Alexander,

What level of noise are you expecting in terms of decibels and other than odor what type of air pollution if any will be produced.

COMMENTER B

Thank you

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Sent: Friday, March 25, 2022 08:02

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COMMENTER B

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com>
Sent: March 24, 2022 10:42 AM
To: Matthew Alexander
Subject: FW: Milford Road Project - Email received this morning

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: Price, Matthew <Price.Matthew@jdirving.com>
Sent: Thursday, March 24, 2022 9:32 AM
To: Morais, Renee <Morais.Renee@jdirving.com>; Clark, Chris <Clark.Chris@irvingforest.com>
Cc: Langille, Brendan <Langille.Brendan@jdirving.com>
Subject: FW: Milford Road Project

Just wanted to forward this email from two attendees from the open house last night. I believe in this email, he meant to send this to another "Matt". I presume the engineer?

Sincerely,

Matthew Price
Executive Assistant, Corporate Communications
Office: 506-633-5313
Cell: 506-434-4888
www.jdirving.com
300 Union Street, Saint John, NB, E2L 4M3



From: [REDACTED]
Sent: Thursday, March 24, 2022 9:01 AM
To: Price, Matthew <Price.Matthew@jdirving.com>; [REDACTED]
Subject: Milford Road Project

External Email Alert

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Good day Matt

COMMENTER C

My name is [REDACTED]. My wife [REDACTED] and I attended the open house at St. Marks Church yesterday. We spoke briefly. We live at [REDACTED] Milford Rd. and have resided there for the last 16 years. Over those years we have endured the constant noise from the existing mill, that always seems to be even louder at night. ie: constant industrial humming, backup alarms, tailgates slamming shut, loud speaker announcements etc. As a resident of Milford we have put up with the industrialization of our community. According to Mark "the west side is in fact industrial" I was not aware of that. The pipe line that was laid meters behind our homes caused so much grief in regards to constant noise, muddy streets from truck traffic, traffic jams getting in and out of the neighborhood, and cracked foundations from blasting. We were never able to get compensated for our foundation being cracked. We were told it was existing and not leaking. Even though less than a year later we had to pay 10K to have our foundation wrapped due to leaks from those same cracks. Then shortly after that we were faced with the cell phone tower being installed only a few hundred meters from the streets again. More noise and construction. Now it sits in our skyline for all to see. In regards to the waste water treatment facility. We expressed to you and Mark our concerns with noise, construction, and traffic. We also have many more concerns with it. I propose that Irving take another approach to our community and address us as a whole. I have talked to many of our neighbors about this. Firstly, many of them were not even aware of the project. And most want to be addressed as a community so we can express our concerns together as a whole. I'm reaching out to our ward 1 councilors Greg and Joanna for some support and guidance so we can seek out more options in what we can do to halt this project and look for a better solution that will not impact our community yet again. In my particular area of Milford Rd. 6 homes including my own are in the process of upgrades in the hopes of taking advantage of the current real estate market. This project will destroy any hopes of us selling our homes. Especially during the 2+ years of construction. I really hope Irving will make the right decision here and maybe think about options instead of putting the MILL before the people.

Sincerely

[REDACTED]

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COMMENTER

Matthew Alexander

From: Matthew Alexander
Sent: March 25, 2022 8:05 AM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

The Mill is a heavy industrial site and loud sounds, such as those emitted from backup alarms, are required for worker safety while others are related to general operations, such as humming from equipment. There is no outdoor loudspeaker system at the Mill and no dump trucks are used on the Mill site through the course of normal operations. We are unsure on the source of loud speaker announcements and tailgates slamming shut. As a socially responsible company and good neighbour, Irving Pulp & Paper, Limited (IPP) is committed to reviewing the audible alarm system to determine if there are options for reducing impacts offsite. One of the components of the project, the landscaped berm adjacent to Milford Road, will help mitigate sound emissions from the Mill because vegetation absorbs sound waves. In addition to the landscaped berm adjacent to Milford Road, there may be options to build other landscaped berms or plant trees on IPP owned land to further absorb sound waves.

Large sections of west Saint John are zoned for industrial activity. The Mill site is zoned heavy industrial activity and has been the site of that type of activity since 1836 when the St. John Mills and Canal Company constructed and started operating the Cunnabells Sawmill. In 1875, we note that there were other industrial activities present along the shoreline between Lee Cove and Deep Cove, such as the J.W. Spurr New Brunswick Distillery, the Woodman and Mille Saw Mill, and the E.C.B. Bakers Saw Mill as shown in the figure below.

The pipeline belongs to the Emera Brunswick Pipeline Company, which has a 30 m wide right-of-way (easement) across the Mill property. The cellphone tower located at 244 Milford Road belongs to Bell Aliant.

Your concerns, as were those of others, were recorded by notetakers during the Open House. Construction and operational traffic will access the Mill site through the main gate along Mill Street. Those vehicles will then use internal roadways to access the Environmental Treatment Facility (ETF). Construction and commissioning activity is expected to occur over a period of 30 months. During construction, there may be periods of increased sound emissions from the ETF site. As noted in the Environmental Impact Assessment (EIA) document, "Loud construction activity (*e.g.*, pile driving and rock breaking, *etc.*) should be scheduled / planned to occur during normal workday / daylight hours (*i.e.*, 7 AM through 7 PM Monday through Saturday), where possible, to limit any potential annoyance to residential receptors. Loud activities should be scheduled to occur concurrently and all loud activity should conform to the City of Saint John's By-Law Respecting the Prevention of Excessive Noise in the City of Daint John [M-22]." Additionally, the EIA document goes on to note that "nearby residents and businesses should be notified one week prior to the start of pile driving activities."

The EIA process is administered by the New Brunswick Department of Environment and Local Government (NBDELG). More information on the EIA process can be found on the Province's website (https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment.html). Under the Province's EIA Determination Review process, IPP is only required to publish a notice in the newspaper regarding the submission of their EIA document to the Province. Members of the public, according to the Province's process, then have 30 days to submit written questions on the Project. The Open House was done voluntarily by IPP to enhance advertisement of the proposed Project, help members of the community learn more, meet members of the

COMMENTER C

Project team, and ask initial questions. IPP understands that members of the community may need time to read through the EIA document so they have setup a website (www.ippmodernization.com) that summarizes the Project and allows questions and comments to be submitted. Questions, like yours, are being tracked and addressed. Those comments and responses are being shared with NBDELG representatives for consideration during their review of the EIA document. The EIA process is the first step in the Project approval process. Several other permits / approvals will be required from the three levels of government. With respect to the City of Saint John's involvement, IPP will have to apply for a building permit.

IPP, as noted in the EIA document, reviewed several different locations for building and operating the ETF. The site selected is considered the most suitable, not the least of which include: access to an approved outfall; access to a reliable and uninterrupted power supply; and optimum subsurface (*i.e.*, geological) conditions.

Thanks,

Matt Alexander

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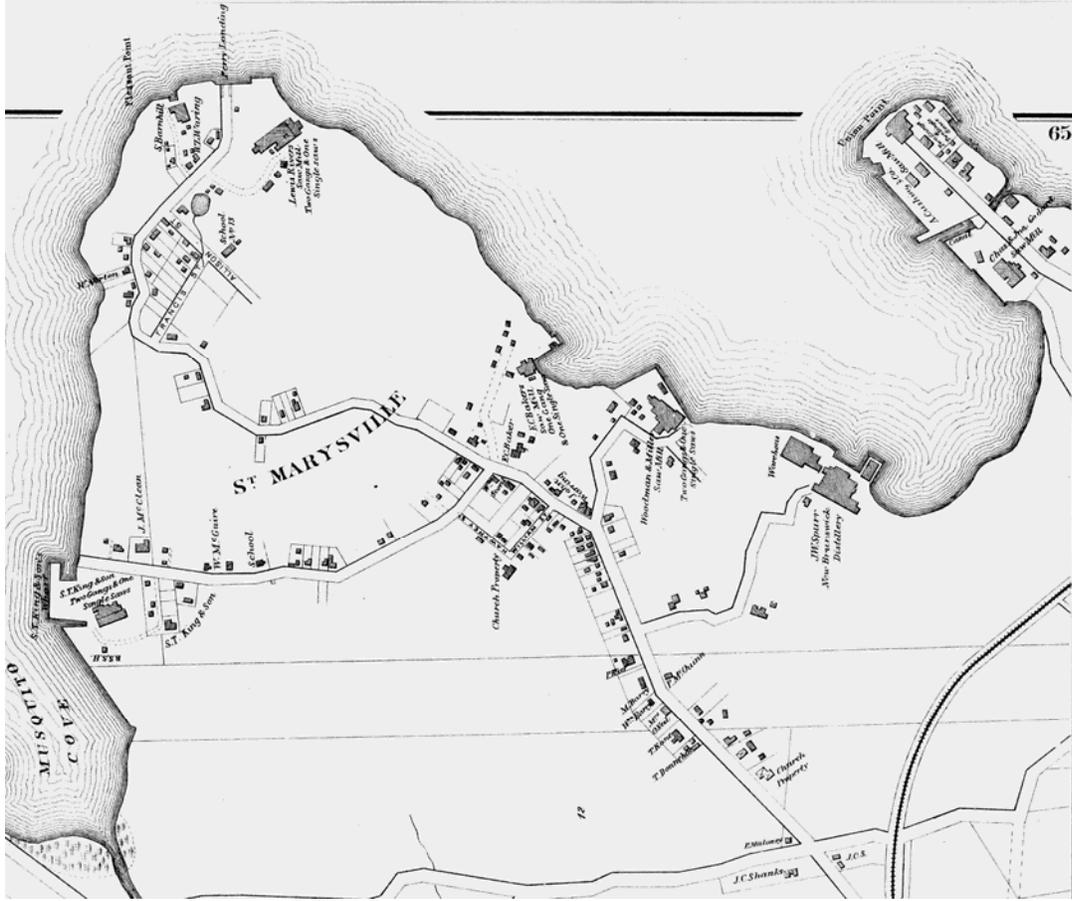
Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

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COMMENTER C



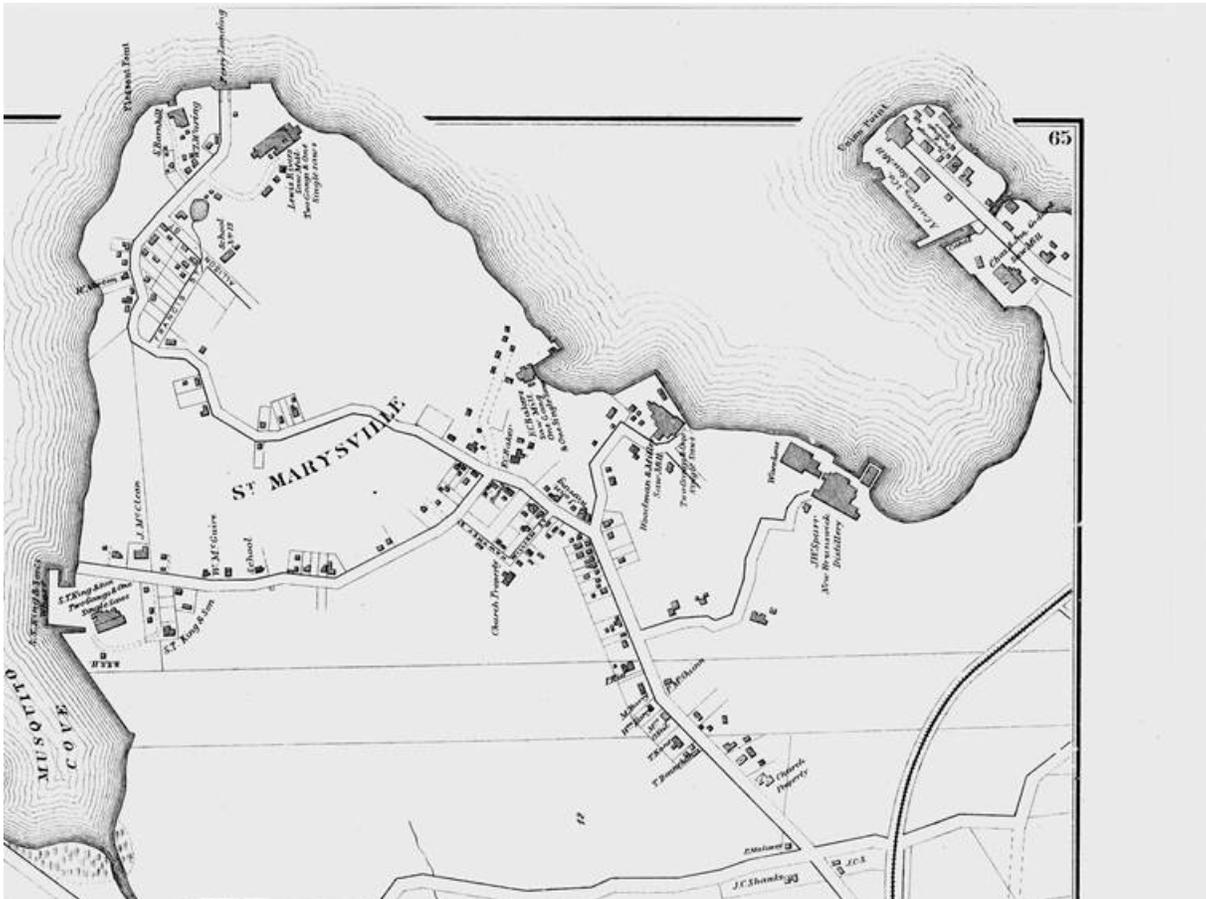
COMMENTER C

Matthew Alexander

From: Matthew Alexander
Sent: March 25, 2022 8:44 AM
To: [REDACTED]
Subject: Missing Figure

Hi [REDACTED]:

This is the figure that I noted in my earlier response.



Thanks,

Matt Alexander

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Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

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COMMENTER C

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COMMENTER C

Matthew Alexander

From: [REDACTED]
Sent: March 23, 2022 5:08 PM
To: Info
Subject: Environmental Treatment Facility Open House

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Hello - is it too late to register for the open house tonight?

Thanks,

[REDACTED]

COMMENTER D

Matthew Alexander

From: Matthew Alexander
Sent: March 25, 2022 8:09 AM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

Thank you for your interest in attending the Open House regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Although the Open House was held on Wednesday 23 March 2022, there are still opportunities for you to engage with the Project Team. A summary of the Project can be found at www.ippmodernization.com. Mid-way down the page it says "Click here to read the EIA Registration Document" where more detailed information can be found on the proposed Project. If you prefer to view a hardcopy of the document, there is one located at the front desk of the Saint John Library in Market Square or at the front desk of Fundy Engineering's office at 27 Wellington Row. If you have questions or comments you would like to submit, you can email them directly to Matt Alexander at matt.alexander@fundyeng.com or to the information email for the proposed Project at info@jdirving.com. If you prefer to submit your questions in person, you can drop off your comments to Matt Alexander at Fundy Engineering's front desk.

Thanks,

Matt Alexander

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FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

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COMMENTER D

WANT MORE INFO?

Fill out the below, leave it with us and we will be in touch!

NAME: 

NUMBER: _____

QUESTION: *Would like to see some extra trees on mill property. Ones that can survive the winter.*

COMMENTER E

Matthew Alexander

From: Matthew Alexander
Sent: March 28, 2022 1:45 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on 23 March 2022 regarding the proposed Project and thank you for submitting the following comments below.

Would like to see some extra trees on mill property. Ones that can survive the winter.

Thank you for bringing this to IPP's attention. As a socially responsible company and good neighbour, IPP is committed to reviewing where trees hardy enough to survive harsh winter conditions can be planted on the Mill site.

Thanks,

Matt Alexander

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Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

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COMMENTER E

Matthew Alexander

From: [REDACTED]
Sent: March 29, 2022 4:15 PM
To: Matthew Alexander
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: 2db9334f-5f55-4e61-9f33-b7d75b039544.png

Hey thanks Matt!

This tree line image was captured at the adjacent Moosehead Brewery.



Hope this helps! 😊

Feel free to reach out if you have any further comments.

Regards,
[REDACTED]

From: Matthew Alexander <matt.alexander@fundyeng.com>
Sent: March 28, 2022 1:44 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

COMMENTER E

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on 23 March 2022 regarding the proposed Project and thank you for submitting the following comments below.

Would like to see some extra trees on mill property. Ones that can survive the winter.

Thank you for bringing this to IPP's attention. As a socially responsible company and good neighbour, IPP is committed to reviewing where trees hardy enough to survive harsh winter conditions can be planted on the Mill site.

Thanks,

Matt Alexander

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Environmental Sciences Manager

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COMMENTER E

WANT MORE INFO?

Fill out the below, leave it with us and we will be in touch!

NAME:

[REDACTED]

NUMBER:

[REDACTED]

QUESTION/COMMENT: I SEE THIS PROJECT
AS A GOOD THING. THE MILL LOOKS
FANTASTIC. APPRECIATE THE SENSE
OF PRIDE & OWNERSHIP.

COMMENTER F

Matthew Alexander

From: Matthew Alexander
Sent: March 28, 2022 1:47 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on 23 March 2022 regarding the proposed Project and thank you for submitting the following comments below.

I see this project as a good thing. The mill looks fantastic. Appreciate the sense of pride and ownership.

Thank you for your comment. Irving Pulp & Paper, Limited takes a significant amount of pride and ownership in the Reversing Falls Mill and believes community stewardship is important. Continued investments in the Mill ensure it is maintained as a world class Kraft pulp producer.

Thanks,

Matt Alexander

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Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

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COMMENTER F

WANT MORE INFO?

Fill out the below, leave it with us and we will be in touch!

NAME:

[REDACTED]

NUMBER:

[REDACTED]

QUESTION/COMMENT:

Please provide information on 2 other locations on JVI site that this treatment facility could be located.

"Should be lower on the hill to the western end off National Road top of hill"

COMMENTER G

Matthew Alexander

From: Matthew Alexander
Sent: March 28, 2022 1:53 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on 23 March 2022 regarding the proposed Project and thank you for submitting the following comments below.

Please provide information on 2 other locations on JDI site that this treatment facility could be located. "Should be down on the hill to the water and off Milford Road top of hill".

The current location (Mill West) and Lee Cove were the two locations considered for building and operating the Project onsite. Three offsite locations were also considered as described in the EIA document: Saint's Rest; Gault Road; and Bald Mountain.

Soils at the Lee Cove location, which comprise about 100 m of silts and sands sitting atop bedrock, are unsuitable for placing weight loads of the magnitude associated with this Project (*i.e.*, the tanks and building would sink through the silts and sands). Although hundreds to thousands of piles could be driven to bedrock to support the weight loads vertically, there would be no way to accommodate lateral load shifting, which could occur even during minor earthquakes or routine settling. The facility must be designed and built to withstand specific seismic conditions and placing the facility at the Lee Cove location would not allow those conditions to be met.

Moving the Project further down the hill towards the Saint John River at the Mill West location presents the same issues as the Lee Cove location. The bedrock there is also deep with about 100 m of silts and sands sitting above.

Solid and strong bedrock exists at or very near the surface of the Mill West location described in the EIA document. That bedrock is more than sufficient to accommodate the weight loads of the Project. That bedrock is also able to meet the shaking conditions produced during potential seismic events.

Thanks,

Matt Alexander

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Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

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COMMENTER G

Matthew Alexander

From: [REDACTED]
Sent: March 28, 2022 2:40 PM
To: Matthew Alexander
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: image001.jpg

Thank you for your email.

Please provide me with the reports showing the alternative locations would be affected by the seismic activity you mentioned as being the factor to discount the alternative sites.

I have been told that the seismic activity created by the current blasting at Bald Hill could not cause any damage to the areas homes. Not sure why such conflicting information.

Thank you
[REDACTED]

On Mon, Mar 28, 2022, 1:53 PM Matthew Alexander <matt.alexander@fundyeng.com> wrote:

Hi Mr. [REDACTED]:

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on 23 March 2022 regarding the proposed Project and thank you for submitting the following comments below.

Please provide information on 2 other locations on JDI site that this treatment facility could be located. "Should be down on the hill to the water and off Milford Road top of hill".

The current location (Mill West) and Lee Cove were the two locations considered for building and operating the Project onsite. Three offsite locations were also considered as described in the EIA document: Saint's Rest; Gault Road; and Bald Mountain.

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COMMENTER G

Moving the Project further down the hill towards the Saint John River at the Mill West location presents the same issues as the Lee Cove location. The bedrock there is also deep with about 100 m of silts and sands sitting above.

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Thanks,

Matt Alexander

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Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

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COMMENTER G

Matthew Alexander

From: Matthew Alexander
Sent: March 31, 2022 2:00 PM
To: [REDACTED]
Subject: RE: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

The seismic activity referred to is not related to controlled blasting occurring at Bald Mountain. The 2015 National Building Code of Canada requires that the Project's structures be designed to withstand specific magnitude earthquakes within a specific return period.

Although controlled blasts and earthquakes can both release a large amount of energy very quickly and both can be recorded by seismic instruments, the forces involved in each are very different and the waveforms that each creates look different. Controlled blasts are done very near the surface of the earth where all of the energy is released in a small area. Earthquakes are typically several to many kilometers beneath the surface of the Earth and the energy is released from the fault surface, which can be several to many kilometers long depending on the size of the fault and the energy is released over a very large area. Controlled blasting generates ground motions that are much lower in amplitude, far shorter in duration, and higher in frequency than earthquakes. Controlled blasting is designed to not cause damage to surrounding structures. Earthquakes can happen at any time, they are uncontrolled, and often cause damage to structures across a broad area.

As noted previously for the alternative sites you asked about (*i.e.*, Bald Mountain and Lee Cove), have ground conditions that are unsuitable for placing weight loads of the magnitude associated with this Project. Furthermore, the facility must be designed and built to withstand specific seismic conditions and by placing the facility at those locations, the conditions can not be met. This was determined based on expertise and knowledge of the geotechnical engineers based on their extensive experience with other Projects in the Saint John region.

Thanks,

Matt

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

FUNDY Engineering

[Bio-Resources](#) | [Building Systems](#) | [Environmental](#) | [Geotechnical & Surveying](#) | [Project Management](#)

From: [REDACTED]
Sent: March 28, 2022 2:40 PM
To: Matthew Alexander <matt.alexander@fundyeng.com>
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Thank you for your email.

COMMENTER G

Please provide me with the reports showing the alternative locations would be affected by the seismic activity you mentioned as being the factor to discount the alternative sites.

I have been told that the seismic activity created by the current blasting at Bald Hill could not cause any damage to the areas homes. Not sure why such conflicting information.

Thank you

On Mon, Mar 28, 2022, 1:53 PM Matthew Alexander <matt.alexander@fundyeng.com> wrote:

Hi Mr. [REDACTED]:

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on 23 March 2022 regarding the proposed Project and thank you for submitting the following comments below.

Please provide information on 2 other locations on JDI site that this treatment facility could be located. "Should be down on the hill to the water and off Milford Road top of hill".

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Thanks,

COMMENTER G

Matt Alexander

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Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

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COMMENTER G

Matthew Alexander

From: [REDACTED]
Sent: March 31, 2022 2:05 PM
To: Matthew Alexander
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Mr. Alexander,

Thank you for the reply.

As requested can you please provide the reports on the seismic activity that were used to discount the 2 mentioned alternative sites.

Thank you
[REDACTED]

On Thu, Mar 31, 2022 at 1:59 PM Matthew Alexander <matt.alexander@fundyeng.com> wrote:

Hi Mr. [REDACTED]:

The seismic activity referred to is not related to controlled blasting occurring at Bald Mountain. The 2015 National Building Code of Canada requires that the Project's structures be designed to withstand specific magnitude earthquakes within a specific return period.

Although controlled blasts and earthquakes can both release a large amount of energy very quickly and both can be recorded by seismic instruments, the forces involved in each are very different and the waveforms that each creates look different. Controlled blasts are done very near the surface of the earth where all of the energy is released in a small area. Earthquakes are typically several to many kilometers beneath the surface of the Earth and the energy is released from the fault surface, which can be several to many kilometers long depending on the size of the fault and the energy is released over a very large area. Controlled blasting generates ground motions that are much lower in amplitude, far shorter in duration, and higher in frequency than earthquakes. Controlled blasting is designed to not cause damage to surrounding structures. Earthquakes can happen at any time, they are uncontrolled, and often cause damage to structures across a broad area.

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COMMENTER G

Thanks,

Matt

Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

FUNDY Engineering

Bio-Resources | Building Systems | Environmental | Geotechnical & Surveying | Project Management

From: [REDACTED]
Sent: March 28, 2022 2:40 PM
To: Matthew Alexander <matt.alexander@fundyeng.com>
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Thank you for your email.

Please provide me with the reports showing the alternative locations would be affected by the seismic activity you mentioned as being the factor to discount the alternative sites.

I have been told that the seismic activity created by the current blasting at Bald Hill could not cause any damage to the areas homes. Not sure why such conflicting information.

Thank you

[REDACTED]

On Mon, Mar 28, 2022, 1:53 PM Matthew Alexander <matt.alexander@fundyeng.com> wrote:

COMMENTER G

Hi Mr. [REDACTED]:

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on 23 March 2022 regarding the proposed Project and thank you for submitting the following comments below.

Please provide information on 2 other locations on JDI site that this treatment facility could be located. "Should be down on the hill to the water and off Milford Road top of hill".

The current location (Mill West) and Lee Cove were the two locations considered for building and operating the Project onsite. Three offsite locations were also considered as described in the EIA document: Saint's Rest; Gault Road; and Bald Mountain.

Soils at the Lee Cove location, which comprise about 100 m of silts and sands sitting atop bedrock, are unsuitable for placing weight loads of the magnitude associated with this Project (*i.e.*, the tanks and building would sink through the silts and sands). Although hundreds to thousands of piles could be driven to bedrock to support the weight loads vertically, there would be no way to accommodate lateral load shifting, which could occur even during minor earthquakes or routine settling. The facility must be designed and built to withstand specific seismic conditions and placing the facility at the Lee Cove location would not allow those conditions to be met.

Moving the Project further down the hill towards the Saint John River at the Mill West location presents the same issues as the Lee Cove location. The bedrock there is also deep with about 100 m of silts and sands sitting above.

Solid and strong bedrock exists at or very near the surface of the Mill West location described in the EIA document. That bedrock is more than sufficient to accommodate the weight loads of the Project. That bedrock is also able to meet the shaking conditions produced during potential seismic events.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

COMMENTER G

Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER G

Matthew Alexander

From: Matthew Alexander
Sent: April 6, 2022 3:32 PM
To: [REDACTED]
Subject: RE: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

The responses sent previously address the reasoning around seismic activity and why the Lee Cove and Bald Mountain sites were not selected for building the proposed Project. Bedrock has the best seismic response within the 2015 National Building Code of Canada while silts are at the other end of the scale with respect to seismic response. Silts and other soft soils are also subject to liquefaction during earthquakes. Therefore, they are not suitable to withstand seismic response due to earthquakes. There are no reports to share.

Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

FUNDY Engineering

[Bio-Resources](#) | [Building Systems](#) | [Environmental](#) | [Geotechnical & Surveying](#) | [Project Management](#)

From: [REDACTED]
Sent: March 31, 2022 2:05 PM
To: Matthew Alexander <matt.alexander@fundyeng.com>
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Mr. Alexander,

Thank you for the reply.

As requested can you please provide the reports on the seismic activity that were used to discount the 2 mentioned alternative sites.

Thank you
[REDACTED]

On Thu, Mar 31, 2022 at 1:59 PM Matthew Alexander <matt.alexander@fundyeng.com> wrote:

Hi Mr. [REDACTED]:

COMMENTER G

The seismic activity referred to is not related to controlled blasting occurring at Bald Mountain. The 2015 National Building Code of Canada requires that the Project's structures be designed to withstand specific magnitude earthquakes within a specific return period.

Although controlled blasts and earthquakes can both release a large amount of energy very quickly and both can be recorded by seismic instruments, the forces involved in each are very different and the waveforms that each creates look different. Controlled blasts are done very near the surface of the earth where all of the energy is released in a small area. Earthquakes are typically several to many kilometers beneath the surface of the Earth and the energy is released from the fault surface, which can be several to many kilometers long depending on the size of the fault and the energy is released over a very large area. Controlled blasting generates ground motions that are much lower in amplitude, far shorter in duration, and higher in frequency than earthquakes. Controlled blasting is designed to not cause damage to surrounding structures. Earthquakes can happen at any time, they are uncontrolled, and often cause damage to structures across a broad area.

As noted previously for the alternative sites you asked about (*i.e.*, Bald Mountain and Lee Cove), have ground conditions that are unsuitable for placing weight loads of the magnitude associated with this Project. Furthermore, the facility must be designed and built to withstand specific seismic conditions and by placing the facility at those locations, the conditions can not be met. This was determined based on expertise and knowledge of the geotechnical engineer based on their extensive experience with other Projects in the Saint John region.

Thanks,

Matt

Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

FUNDY Engineering

Bio-Resources | Building Systems | Environmental | Geotechnical & Surveying | Project Management

COMMENTER G

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COMMENTER G

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COMMENTER G

--
[Redacted]

Matthew Alexander

From: [REDACTED]
Sent: April 4, 2022 2:21 PM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL)
Subject: EIA 4561-3-1578

Mr Alexander,

I have been trying to find a contact within the Province of New Brunswick to submit questions in relation to this IPP EIA 4561-3-1578, the Wastewater Treatment Plant.

I have been directed as per below

"As being a stakeholder, [REDACTED], you have the opportunity to address your concerns about the project to the proponent, Irving Pulp and Paper, who has contracted Fundy Engineering to manage the EIA for them, including the Public Consultation process (integral part of the EIA review Process)

All the questions from any stakeholder from the public that Dr. Matt Alexander receives with regard to this specific project EIA 4561-3-1578 IPP Environmental Treatment Facility & Water Use Reduction must be recorded, responded, reported by the proponent to the TRC for review.

So I will invite you to send those questions to him and copy me in your correspondence if you wish to. This will actually help me to verify whether your questions form part of the Public Consultation Report that IPP will submit as part of this EIA process".

I have 3 requests in relation to this project;

1. I have been informed that there were 2 other sites considered for these wastewater treatment tanks and part of the process for discounting these sites was due to seismic activity. I am requesting the report(s) that show this seismic activity.
2. I would like the copies of the correspondence outlined in Appendix XIII be made public.
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Thank you

--
[REDACTED]

COMMENTER G

Matthew Alexander

From: Matthew Alexander
Sent: April 6, 2022 3:32 PM
To: [REDACTED]; Mbaya, Patrick (ELG/EGL)
Subject: RE: EIA 4561-3-1578

Hi Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. In response to your questions, please see below.

1. Please refer to the emails previously sent to you.
2. Conversations with Aboriginal communities is confidential. Conversations to date have not been part of the regulatory process as they were done prior to registration of the Environmental Impact Assessment (EIA) document. The conversations have been part of a voluntary process to build trust with meaningful early engagement. While participation in this process has provided valuable information for the regulatory process prior to registration of the EIA document, it is incumbent on Irving Pulp & Paper, Limited (IPP) to maintain confidentiality of those conversations to preserve trust throughout the engagement process. Since the EIA document was registered, no correspondence has been received from any Aboriginal community. The Provincial Aboriginal Affairs Secretariat can provide more information with respect to the engagement process with Aboriginal communities.
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Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

FUNDY Engineering

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COMMENTER G

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So I will invite you to send those questions to him and copy me in your correspondence if you wish to. This will actually help me to verify whether your questions form part of the Public Consultation Report that IPP will submit as part of this EIA process".

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Thank you

--
[REDACTED]

COMMENTER G

Matthew Alexander

From: [REDACTED]
Sent: April 7, 2022 8:58 AM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL)
Subject: Re: EIA 4561-3-1578

Thank you again for the reply, follow up below.

[REDACTED]

On Wed, Apr 6, 2022 at 3:31 PM Matthew Alexander <matt.alexander@fundyeng.com> wrote:

Hi Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. In response to your questions, please see below.

1. Please refer to the emails previously sent to you.

The original response to my question on discounting these locations.. "The facility must be designed and built to withstand specific seismic conditions and placing the facility at the Lee Cove location would not allow those conditions to be met" I understand that the cost may be outside of the budget for the the proponent to meet it's court ordered settlement but not sure how one can reference seismic activity without factual data.

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Thank you

Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

FUNDY Engineering

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COMMENTER G

Thank you

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COMMENTER G

Matthew Alexander

From: Matthew Alexander
Sent: April 7, 2022 11:31 AM
To: [REDACTED] Mbaya, Patrick (ELG/EGL)
Subject: RE: EIA 4561-3-1578

Hi Mr. Ryan:

Fundy Engineering & Consulting Ltd.'s compensation for this work is on a time and materials basis only.

Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

FUNDY Engineering

Bio-Resources | Building Systems | Environmental | Geotechnical & Surveying | Project Management

From: [REDACTED]
Sent: April 7, 2022 8:58 AM
To: Matthew Alexander <matt.alexander@fundyeng.com>; Mbaya, Patrick (ELG/EGL) <patrick.mbaya@gnb.ca>
Subject: Re: EIA 4561-3-1578

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COMMENTER G

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COMMENTER G



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Attachments: image005.jpg

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COMMENTER G

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COMMENTER G

Matthew Alexander

From: [REDACTED]
Sent: April 11, 2022 12:39 PM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL); Harty, Crystale (ELG/EGL)
Subject: Public Meeting re IPP EIA - 4561-3-1578

A public community meeting on this project has been scheduled. Please accept this as your invitation and if you wish to attend and to speak, please let me know so that I can forward onto those organizing.

Public Meeting
Wednesday April 13th 6-8pm
Milford Community Center

Regarding the Proposed IPP Wastewater Treatment Plant for Milford Road,
To allow you to learn and better understand neighbors opinions and concerns.

Wednesday April 13th, 6-8pm
Milford Community Center

--
[REDACTED]

COMMENTER G

Matthew Alexander

From: Matthew Alexander
Sent: April 11, 2022 5:09 PM
To: [REDACTED]; Mbaya, Patrick (ELG/EGL); Harty, Crystale (ELG/EGL)
Subject: RE: Public Meeting re IPP EIA - 4561-3-1578

Hi Mr. [REDACTED]:

Thank you for the invitation to attend the public community meeting scheduled for Wednesday 13 April 2022 at the Milford Community Center from 6PM-8PM. Unfortunately, I am unavailable to attend the scheduled meeting.

Organizationally, it may be beneficial for those attending the meeting to nominate a spokesperson/chairperson that can record any new questions regarding the proposed Project and then have them send the new questions along to me for answering. Having a chairperson may assist everyone attending the meeting getting the answers they are looking for.

Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

FUNDY Engineering

[Bio-Resources](#) | [Building Systems](#) | [Environmental](#) | [Geotechnical & Surveying](#) | [Project Management](#)

From: [REDACTED]
Sent: April 11, 2022 12:39 PM
To: Matthew Alexander <matt.alexander@fundyeng.com>; Mbaya, Patrick (ELG/EGL) <patrick.mbaya@gnb.ca>; Harty, Crystale (ELG/EGL) <Crystale.Harty@gnb.ca>
Subject: Public Meeting re IPP EIA - 4561-3-1578

A public community meeting on this project has been scheduled. Please accept this as your invitation and if you wish to attend and to speak, please let me know so that I can forward onto those organizing.

Public Meeting
Wednesday April 13th 6-8pm

Milford Community Center

Regarding the Proposed IPP Wastewater Treatment Plant for Milford Road,

To allow you to learn and better understand neighbors opinions and concerns.

Wednesday April 13th, 6-8pm

Milford Community Center

--

COMMENTER G



COMMENTER G

Matthew Alexander

From: [REDACTED]
Sent: April 13, 2022 6:14 AM
To: Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL); Harty, Crystale (ELG/EGL)
Subject: IPP EIA 4561-3-1578

Mr. Alexander,

In relation to the project 4561-3-1578, when these properties were all acquired and merged into what is referenced as heavy industrial is a question that has yet to be answered..

According to Crystale Harty these answers are to be provided by the proponent;

" Zoning, dates of rezoning and conditions attached to the properties that now make up the property are in question, these are not technical questions, who is responsible to provide these answers?

Zoning related questions should be directed to the proponent and they will respond."

Please provide the dates of purchases of the properties that now comprise the property between Milford Road and the Falls and the dates of the rezoning by Common Council along with all conditions attached.

Thank you

--
[REDACTED]

COMMENTER G

Matthew Alexander

From: Matthew Alexander
Sent: April 14, 2022 1:24 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: 14972 Mill Site and Zoning.pdf

Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the response below to your question.

Please provide the dates of purchases of the properties that now comprise the property between Milford Road and the Falls and the dates of the rezoning by Common Council along with all conditions attached.

As described in Section 3.3.5 of the Environmental Impact Assessment (EIA) document, a Mill has existed at Union Point since at least 1836 when the St. John Mills and Canal Company constructed and operated the Cunnabells Sawmill. Over the next century, the site underwent process changes, expansions, and ownership changes. In 1946, K.C. Irving purchased Port Royal Pulp & Paper Co. that was operated as Saint John Sulphite Ltd. at Union Point. In 1951, the Mill was renamed Irving Pulp & Paper, Limited (IPP).

The attached survey plan from 10 December 2002 shows the current boundaries of the Mill site. It encompasses the lands along Milford Road up to civic 317 and includes all the lands where the Project is proposed to be located. Parcels of land are identified in the New Brunswick Geographical Corporation's database using a Parcel Identifier (PID). Today, the Mill site is made up of five PIDs as noted in the EIA document: 55162416; 55223739; 55232649; 55232656; and 55233001.

The attached survey plan from 30 July 1951 shows the boundaries when the Mill underwent renaming to IPP. The accompanying deed indicates that the lands along Milford Road to the property boundary with civic 317 were purchased by IPP from Investment Securities, Limited. Those lands, which were identified as Parcel "A" were originally part of the land grant from the Crown issued to Phineas Lovitt. The survey confirms that the lands along Milford Road were amalgamated in to the overall Mill property in 1951.

The attached survey from 1996 also confirms that the lands along Milford Road between civic 453 and 317 are part of the Mill property. That survey indicates that a 30 m strip of land of PID 55162416 adjacent to Milford Road is zoned two-unit residential while the remaining portion of the PID 55162416 is zoned heavy industrial. That swath of R-2 zoned land is also shown in the attached City of Saint John zoning map.

Community planning legislation was first enacted in New Brunswick in 1912 under the statute *An Act Relating to Town Planning*. That *Act*, which was renamed in 1917 as *The Town Planning Act*, did not allow for zoning or land use control. In 1922, a plan to guide development was prepared for Saint John. In 1936, *The New Brunswick Town Planning Act* was introduced. Although the 1936 *Act* allowed for the provision of zoning by-laws, Saint John did not appear to implement any zoning by-laws that year but they did update their Master Plan in 1936 to guide development, which was further updated in 1945. The 1946 Master Plan for Saint John noted that Saint John had zoning by-laws in place. In 1952, all previous amendments to the *Act* were consolidated and planning then was more about preserving the *status quo* (i.e., zoning land as it had been developed). In 1961, the *Act* was renamed the *Community Planning Act* and revised in 1973. The 1966 comprehensive community plan for Saint John identified three zones for industrial activity: heavy industrial; light industrial; and restricted industrial. The current *Community Planning Act* [S.N.B. 2017, c. 19] was

COMMENTER G

assented on 5 May 2017. Saint John's current Zoning By-Law designates industrial zones as either: heavy industrial; medium industrial; light industrial; pit and quarry; transportation; utility service; and utility service landfill.

Although the exact dates are not known when the lands along Milford Road were zoned Heavy Industrial or when the narrow strip along Milford Road was zoned two-unit residential, they have been that way since at least 1996 (*i.e.*, the earliest available survey available showing the zoning designations) and most likely since IPP had the survey done on 30 July 1951 around the time when land use was being preserved as the *status quo* under *The New Brunswick Town Planning Act*.

The Project Team is not aware of any rezoning that has occurred for the properties that now comprise the Mill site. Representatives with the City of Saint John's Community Planning Department are members of the Environmental Impact Assessment Technical Review Committee. If there are any issues with the current zoning, the City's representatives will identify them during their review.

No special restrictions or conditions are known to exist at the Project site other than those restrictions established in July 2003 with respect to Maritimes & Northeast Pipeline Limited Partnership's 30 m pipeline right-of-way. With respect to M&NPP's 30 m pipeline right-of-way, there are restrictions as to what activities can occur. Permanent structures are prohibited because the ability to access and maintain the pipeline must not be impaired. Permanent structures include, but are not limited to, houses, trailers, mobile homes, poles, decks, tool sheds, garages, swimming pools, leaching fields, and septic tanks. Although fences may be placed on the right-of-way, fence posts must be located a minimum of 1.5 m from the pipeline. Driveways, road, and parking lots are generally permitted if they are built to M&NPP's standards. The National Energy Board of Canadian Standards Association regulations require that M&NPP maintain a safe amount of cover over the pipeline. Accordingly, the grade over the pipeline cannot be reduced or increased without permission from M&NPP. Shrubs and bushes may be planted on the right-of-way provided they are less than 1.2 m in height at maturity and are not within 3 m of the pipeline. Plants and trees that grow taller than 1.2 m are not permitted because they inhibit access and hinder aerial surveillance of the right-of-way.

IPP is committed to working within the existing guidelines for maintaining pipeline integrity.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.



Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

Serving Our Clients' Needs First

The content of this email is confidential and intended for the recipient specified in the message only. It is strictly forbidden to share any part of this message with any third-party, without a written consent of the sender. If you received this message by mistake, please reply to this message and follow with its deletion. This will ensure such a mistake does not occur in the future.

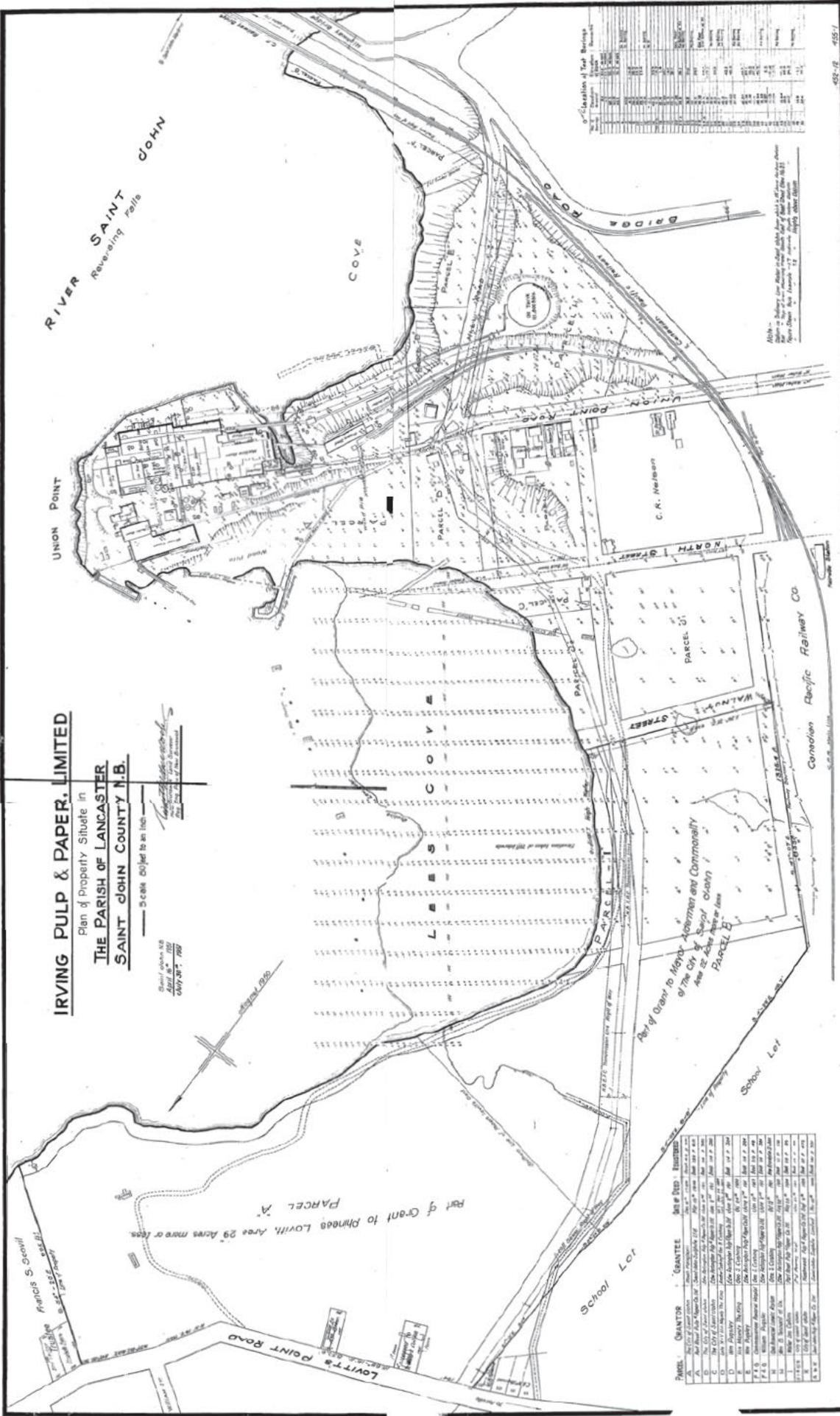
COMMENTER G

IRVING PULP & PAPER, LIMITED

Plan of Property Situate in
THE PARISH OF LANCASTER
SAINTE JOHN COUNTY N.B.

Scale 50 feet to an inch

Surveyed by
 JOHN S. COVILL
 CIVIL ENGINEER



PARCEL	GRANTOR	GRANTEE	DATE	RECORD	INSTRUMENT
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
T
U
V
W
X
Y
Z

NO.	DESCRIPTION	ELEVATION
1
2
3
4
5
6
7
8
9
10

Although the Survey has been made in accordance with the provisions of the Survey Act, the Surveyor is not responsible for any error or omission which may have occurred in the Survey, unless it is shown to be the result of fraud or gross negligence on the part of the Surveyor.

COMMENTER G

DEED NO. 152010 - INVESTMENT SECURITIES, LIMITED - TO - IRVING PULP & PAPER, LIMITED
For Plan See: Drawer 6-#34.

THIS INDENTURE made this 9th day of August in the year of our Lord one thousand nine hundred and fifty-one under and by virtue of "The Property Act" of the Province of New Brunswick, BY AND BETWEEN INVESTMENT SECURITIES, LIMITED, a company duly incorporated by virtue of letters patent issued under the authority of The New Brunswick Companies Act and having its head office and chief place of business at the City of Saint John in the Province of New Brunswick, hereinafter called "the grantor" of the first part, AND IRVING PULP & PAPER, LIMITED, a company duly incorporated by virtue of letters patent issued under the authority of The New Brunswick Companies Act and having its head office and chief place of business at the City of Saint John in the Province of New Brunswick, hereinafter called "the grantee" of the second part.

WITNESSETH that the grantor for and in consideration of the sum of ONE DOLLAR of lawful money of Canada to it in hand well and truly paid by the grantee at or before the ensembling and delivery of these presents (the receipt whereof is hereby acknowledged) has granted, bargained, sold, aliened, released, conveyed and confirmed and by these presents does grant, bargain, sell, alien, release, convey and confirm unto the grantee its successors and assigns:

Those two certain lots, pieces or parcels of land situate, lying and being in the Parish of Lancaster, in the City and County of Saint John and Province aforesaid, the first thereof designated by the letter "A" and being a portion of the Grant from the Crown to Phineas Lovitt, and the second of the said lots being designated by the letter "B" and being a portion of the Grant to The Mayor, Aldermen and Commonalty of the City of Saint John, the whole having been conveyed from Walter Leo Collins to the aforesaid Company by Indenture bearing date the 6th day of April A. D. 1951, registered in the Office of the Registrar of Deeds in and for the aforesaid City and County of Saint John in Book 294 of Records, page 7, the two said parcels designated by the letters "A" and "B" being bounded and described in whole as follows, viz:-

"Beginning on the northwestern side line of Walnut Street or prolongation thereof, at the intersection thereof by the northeastern boundary of the Right of Way of the Canadian Pacific Railway, being also the southwestern line of a Reserved Street of fifty (50) feet in width laid out along the said boundary of the said Right of Way; going thence north forty seven (47) degrees seven (7) minutes west along the said boundary of the said Right of Way eight hundred and thirty three (833) feet to the eastern line of the "School Lot" so called; thence north four (4) degrees twenty nine (29) minutes west along the said line of the said School Lot, four hundred and sixteen and seven tenths (416.7) feet to an angle therein, continuing thence along the said line of the said lot north four (4) degrees nine (9) minutes west six hundred and forty eight (648) feet to another angle therein, continuing thence along the said line north five (5) degrees twenty four (24) minutes east two hundred and sixteen (216) feet to another angle in the said line, continuing thence along the said line north one (1) degrees thirty one (31) minutes west five hundred and forty four (544) feet to the southeastern line of Lovitt's Point Road; thence north sixty eight (68) degrees fifteen (15) minutes east along the said line of the said road eight hundred and fifty three and six tenths (853.6) feet to an angle in the said line of the said road, continuing thence along the said line of the said road north thirty one (31) degrees sixteen (16) minutes east two hundred and twenty five and eight tenths (225.8) feet to another angle in the said line of the said road, continuing thence north thirty nine (39) degrees five (5) minutes east along the line of the said road one hundred and sixty and two tenths (160.2) feet, continuing thence north forty two (42) degrees eighteen (18) minutes east ninety and seven tenths (90.7) feet to the line of division between the lands hereby conveyed and the adjoining property to the northeast thereof owned by the Trustee of the late Francis S. Scovil, thence along the said line south fifty four (54) degrees twenty (20) minutes east six hundred and ninety five (695) feet more or less to the bank or shore of Lee's Cove in the River Saint John; thence southwestwardly along the said bank or shore of the said river following

COMMENTER G

the various courses thereof to the aforesaid northwestern line of Walnut Street or its prolongation herein first described and thence south thirty six (36) degrees twenty eight (28) minutes west along the said line of the said street six hundred and thirty five (635) feet more or less to the place of beginning.

SAVING AND EXCEPTING thereout and therefrom that certain strip of land of forty (40) feet in width conveyed from the aforesaid Walter Leo Collins to Fort Royal Pulp & Paper Company Limited by Indenture bearing date the 25th day of May A. D. 1934, registered in Book 215 of Records page 99.

SUBJECT also to a certain Easement described in a conveyance from the aforesaid Walter Leo Collins to The New Brunswick Electric Power Commission dated the 16th day of September A. D. 1936, registered in Book 219 of records page 415.

SUBJECT also to a certain Easement conveyed from the aforesaid Walter Leo Collins to the Municipality of the City and County of Saint John and dated the 14th day of February, A. D. 1948, registered in Book 270 of Records page 212.

SUBJECT also to a certain Indenture of Lease described in an Assignment from Florence V. Ager to Audrey Madelyn Green dated the 19th day of August A. D. 1941, registered in Book 77 of Records page 516.

SUBJECT also to another lease from Investment Securities Limited to the aforesaid Walter Leo Collins, both of which said leases front on the Lovitts Point Road.

The total area of the aforesaid lots "A" and "B" exclusive of the forty foot strip along the shore of Lee's Cove, containing an area of fifty one (51) acres more or less.

Together with the right, title and interest of the grantors in the Reserved Roads and Streets included within the aforesaid Parcel "B".

The two said Parcels "A" and "B" hereby conveyed being shewn within red shading on a plan of the said property bearing date the 30th day of July A. D. 1951, filed in the Office of the Registrar of Deeds in and for the aforesaid City and County of Saint John."

TOGETHER with the appurtenances to the same belonging or in any manner appertaining.

TO HAVE AND TO HOLD the said land and premises hereby conveyed with the appurtenances unto and to the use of the grantee its successors and assigns, FOR EVER.

IN WITNESS WHEREOF the said grantor has caused these presents to be signed on its behalf by its duly authorized officers and its corporate seal to be hereunto affixed the day and year first above written.

SIGNED SEALED AND DELIVERED
in the presence of
SGD. COLIN B. MACKAY

L. S.

INVESTMENT SECURITIES, LIMITED
SGD. L. McC. RITCHIE, President
SGD. H. A. PORTER, Secretary

PROVINCE OF NEW BRUNSWICK - COUNTY OF THE CITY AND COUNTY OF SAINT JOHN SS

I, HORACE A. PORTER of the Village of Rothesay in the County of Kings and Province of New Brunswick, barrister, make oath and say:

1. That I am the Secretary of Investment Securities, Limited, a duly incorporated company maintaining an office in the City of Saint John in the said Province, and have the custody of the seal of the company.
2. That the president and secretary of Investment Securities, Limited, are authorized to execute the documents in the name and on behalf of the company.
3. That the seal affixed to the foregoing Indenture is the corporate seal of Investment Securities, Limited, and was so affixed by the authority of the directors of the company.
4. That the signature "L. McC. Ritchie" to the foregoing indenture is the signature of the president of Investment Securities, Limited, and the signature "Horace A. Porter" is in the proper handwriting of me the said Horace A. Porter, and that the signatures were subscribed to the said indenture for the purposes of the execution thereof.

COMMENTER G

SWORN TO at the City of Saint John
in the Province of New Brunswick,
this 9th day of August, A. D. 1951.
BEFORE ME

SGD. H. A. PORTER

SGD. COLIN B. MACKAY a Commissioner for taking affidavits to be read in the Supreme Court.

Registered August 9th A. D. 1951
Hour 4 P. M.

P. H. Lawell
Deputy Regr.

60 DEED NO. 152011 - MARY MAUD STEPHENSON - TO - M. JEAN SAUNDERS

THIS INDENTURE made this Fifth day of April in the year of our Lord, one thousand nine hundred and forty-seven BETWEEN MARY MAUD STEPHENSON of Golden Grove, in the County of the City and County of Saint John and Province of New Brunswick, Widow, hereinafter called the Grantor of the first part; AND M. JEAN SAUNDERS of the City of Saint John, in the County of the City and County of Saint John, and Province of New Brunswick, wife of Ronald M. Saunders of the said City of Saint John, Accountant, hereinafter called the Grantee of the Second Part

WITNESSETH, that the said Grantor for and in consideration of the sum of ONE DOLLAR of lawful money of Canada, to her in hand well and truly paid at or before the ensealing and delivery of these presents, by the said Grantee the receipt whereof is hereby acknowledged, has granted, bargained, sold, aliened, released, conveyed and confirmed, and by these presents does grant, bargain, sell, alien, release, convey and confirm unto the said Grantee, her heirs and assigns

"ALL that certain lot, piece or parcel of land situate, lying and being in the Parish of Simonds, in the City and County of Saint John and Province of New Brunswick, comprising the western portion of the lot designated by the letter "A" originally granted by the Crown to Moses H. Perley and bounded and described as follows, viz: - Beginning on the northern bank or shore of Lower Loch Lomond at the intersection thereof by the western line of the aforesaid lot "A", going thence along the said line north twenty nine (29) degrees west by the magnet of A. D. 1939 thirty eight (38) chains of four (4) poles each and fifty (50) links more or less to the northern line of the aforesaid lot; thence north sixty (60) degrees east along the said line twenty (20) chains twenty nine and one half (29½) links to a point midway between the eastern and western lines of the aforesaid lot "A"; thence south twenty nine (29) degrees east to the aforesaid bank or shore of Loch Lomond and thence westwardly along the same following the various courses thereof to the place of beginning, containing an area of eighty (80) acres more or less and being a portion of those certain lands or premises described in a certain conveyance from Nicholas Stephenson and Ellen his wife to T. Albert Stephenson under the name of Albert Stephenson and George Frederick Stephenson bearing date the fifth day of November A. D. 1906 and registered in the Office of the Registrar of Deeds in and for the aforesaid City and County of Saint John in Book "117" of Records page "204"."

Together with all houses, outhouses, barns, buildings, edifices, fences, improvements, profits privileges, and appurtenances, to the same belonging, or in any manner appertaining; and the reversion and reversions, remainder, remainders, rents, issues and profits thereof---and also, all the estate, right, title, right and title, homestead, dower, right and title to dower interest, use, possession, property claim and demand, the said either at Law or in Equity of the Grantor of, in, or out of the same and every Part and Parcel thereof with the Appurtenances.

TO HAVE AND TO HOLD the said lot, piece or parcel of land and premises hereby granted, bargained and sold, or meant, mentioned, or intended so to be, and every part and parcel thereof, with the Appurtenances, unto the said Grantee her Heirs and Assigns, to the only proper use, benefit and behoof of the said Grantee her Heirs and Assigns, FOREVER.

IN WITNESS WHEREOF, the said Grantor has hereunto set her Hand and Seal the day and year first above written.

COMMENTER G

SIGNED, SEALED AND DELIVERED
in presence of
SGD. E. N. HUESTIS

SGD. MARY MAUD STEPHENSON

L. S.

PROVINCE OF NEW BRUNSWICK - COUNTY OF THE CITY AND COUNTY OF SAINT JOHN SS.

I, ERNEST N. HUESTIS, a Notary Public in and for the Province of New Brunswick, duly commissioned, appointed and sworn, residing and practising in the City of Saint John in the said Province, DO HEREBY CERTIFY that Mary Maud Stephenson the Grantor named in the foregoing Indenture personally appeared before me, at the City of Saint John on the fifth day of April in the year of our Lord one thousand nine hundred and forty seven and acknowledged that she signed, sealed, executed and delivered the same as and for her act and deed to and for the uses and purposes therein expressed and contained.

IN TESTIMONY WHEREOF, I, the said Notary Public, have hereunto subscribed my name and affixed my Official Seal, at The City of Saint John aforesaid, the day and year last above written.

L. S.

SGD. ERNEST N. HUESTIS
Notary Public.

Registered August 10th A. D. 1951
Hour 11.10 A. M.

R. h. Sawell.
Deputy Regr.

Ed

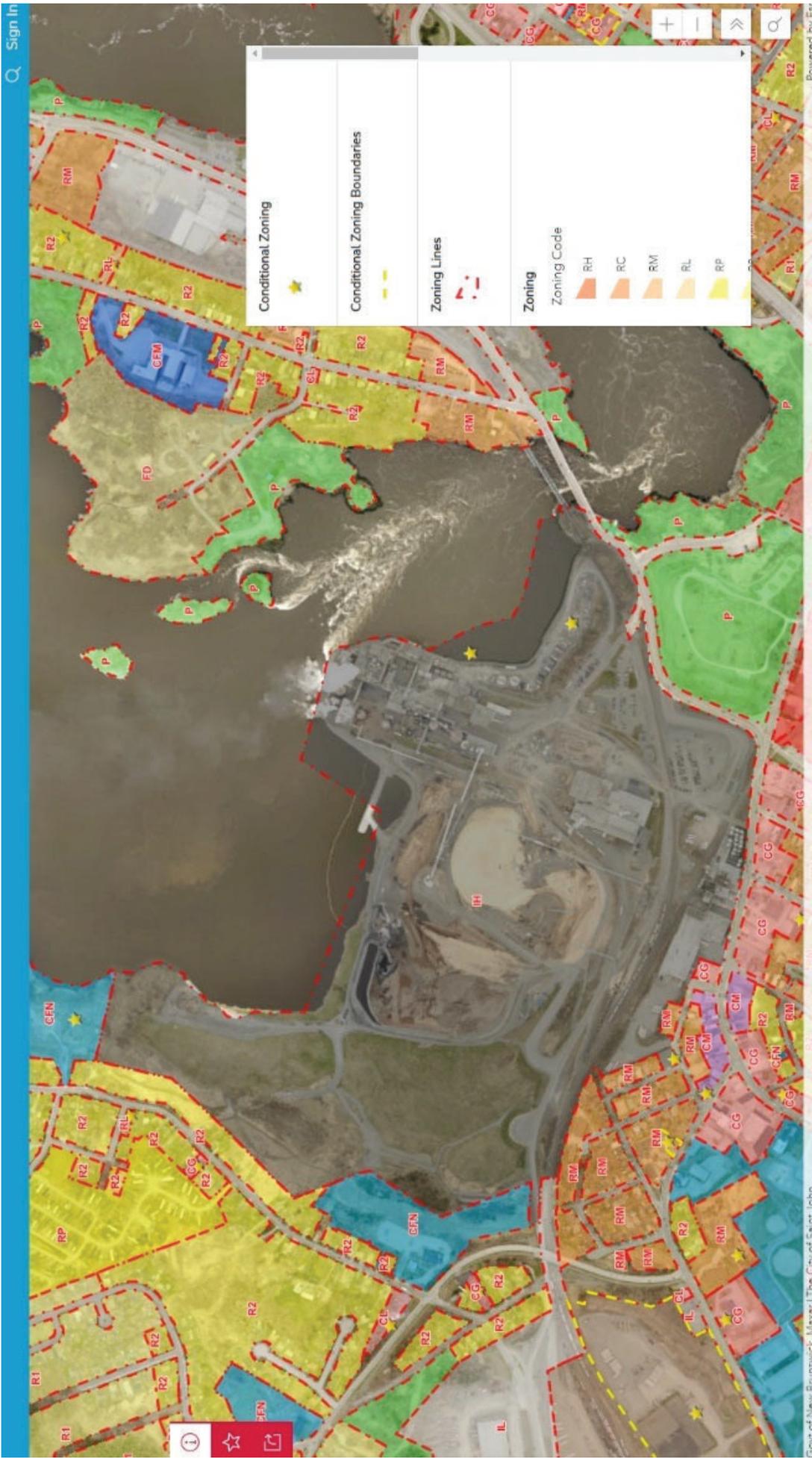
DEED NO. 152012 - MARY MAUD STEPHENSON - TO - M. JEAN SAUNDERS

THIS INDENTURE made this Fifth day of April in the year of our Lord one thousand nine hundred and forty seven BETWEEN MARY MAUD STEPHENSON of Golden Grove, in the County of the City and County of Saint John and Province of New Brunswick, Widow, hereinafter called the Grantor of the first part; AND M. JEAN SAUNDERS of the City of Saint John, in the County of the City and County of Saint John, and Province of New Brunswick, wife of Ronald M. Saunders of the said City of Saint John, Accountant, hereinafter called the Grantee of the second part'

WITNESSETH, that the said Grantor for and in consideration of the sum of ONE DOLLAR of lawful money of Canada, to her in hand well and truly paid at or before the ensealing and delivery of these presents, by the said Grantee the receipt whereof is hereby acknowledged, has granted, bargained, sold, aliened, released, conveyed and confirmed, and by these presents does grant, bargain, sell, alien, release, convey and confirm unto the said Grantee, her heirs and assigns

ALL that certain lot, piece and parcel of land situate lying and being in the Parish of Simonds, in the City and County of Saint John, being the western half of the eastern half of a lot of land described in a certain Deed made between Walter A. McFate and Hester J. McFate his wife of the one part, and Nicholas Stephenson of the other part, bearing date the thirteenth day of September A. D. 1890 and duly recorded in the office of the Registrar of Deeds in and for the City and County of Saint John in Libro 64, folio 382 and 383 of said records, as all the easterly half part of the lot of land situate in the Parish of Simonds heretofore sold and conveyed by William A. Quinton and wife to the said Walter A. McFate, and dated the twentieth day of May A. D. 1886 and recorded in the office of the said Registrar of Deeds in Libro XXII, folio 242 and 243 the part hereby conveyed being bounded and described as follows; beginning at a point ten chains four poles each distant from a marked spruce tree or the rear line of the above mentioned lot; thence along the said rear line by the magnet 1817 north fifty three degrees east ten chains of four poles each or to the southwest line of lot No. 5 granted to one William Marks, thence along the said south-west line of lot No. 5 north thirty seven degrees west one hundred and ten chains to the south easterly line of the grant to the subscribers for the Westmorland road so-called; and thence along that line south fifty three degrees west ten chains or to a cedar stake distant ten chains from said south west line; thence south thirty-seven degrees east one hundred and ten chains or to the place of beginning and containing one hundred

COMMENTER G



COMMENTER G

Matthew Alexander

From: [REDACTED]
Sent: April 18, 2022 8:09 AM
To: Matthew Alexander
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Dr. Alexander,

Thank you for the reply. So as you state, you are unaware if the purchased properties were rezoned when PINs were amalgamated.

Thus, portions of the lands may in fact not be properly zoned. Who brings this to the attention of the city's representatives, please?

Thank you
[REDACTED]

On Thu, Apr 14, 2022 at 1:23 PM Matthew Alexander <matt.alexander@fundyeng.com> wrote:

Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the response below to your question.

Please provide the dates of purchases of the properties that now comprise the property between Milford Road and the Falls and the dates of the rezoning by Common Council along with all conditions attached.

As described in Section 3.3.5 of the Environmental Impact Assessment (EIA) document, a Mill has existed at Union Point since at least 1836 when the St. John Mills and Canal Company constructed and operated the Cunnabells Sawmill. Over the next century, the site underwent process changes, expansions, and ownership changes. In 1946, K.C. Irving purchased Port Royal Pulp & Paper Co. that was operated as Saint John Sulphite Ltd. at Union Point. In 1951, the Mill was renamed Irving Pulp & Paper, Limited (IPP).

The attached survey plan from 10 December 2002 shows the current boundaries of the Mill site. It encompasses the lands along Milford Road up to civic 317 and includes all the lands where the Project is proposed to be located. Parcels of land are identified in the New Brunswick Geographical Corporation's database using a Parcel Identifier (PID). Today, the Mill site is made up of five PIDs as noted in the EIA document: 55162416; 55223739; 55232649; 55232656; and 55233001.

COMMENTER G

The attached survey plan from 30 July 1951 shows the boundaries when the Mill underwent renaming to IPP. The accompanying deed indicates that the lands along Milford Road to the property boundary with civic 317 were purchased by IPP from Investment Securities, Limited. Those lands, which were identified as Parcel “A” were originally part of the land grant from the Crown issued to Phineas Lovitt. The survey confirms that the lands along Milford Road were amalgamated in to the overall Mill property in 1951.

The attached survey from 1996 also confirms that the lands along Milford Road between civic 453 and 317 are part of the Mill property. That survey indicates that a 30 m strip of land of PID 55162416 adjacent to Milford Road is zoned two-unit residential while the remaining portion of the PID 55162416 is zoned heavy industrial. That swath of R-2 zoned land is also shown in the attached City of Saint John zoning map.

Community planning legislation was first enacted in New Brunswick in 1912 under the statute *An Act Relating to Town Planning*. That *Act*, which was renamed in 1917 as *The Town Planning Act*, did not allow for zoning or land use control. In 1922, a plan to guide development was prepared for Saint John. In 1936, *The New Brunswick Town Planning Act* was introduced. Although the 1936 *Act* allowed for the provision of zoning by-laws, Saint John did not appear to implement any zoning by-laws that year but they did update their Master Plan in 1936 to guide development, which was further updated in 1945. The 1946 Master Plan for Saint John noted that Saint John had zoning by-laws in place. In 1952, all previous amendments to the *Act* were consolidated and planning then was more about preserving the *status quo* (i.e., zoning land as it had been developed). In 1961, the *Act* was renamed the *Community Planning Act* and revised in 1973. The 1966 comprehensive community plan for Saint John identified three zones for industrial activity: heavy industrial; light industrial; and restricted industrial. The current *Community Planning Act* [S.N.B. 2017, c. 19] was assented on 5 May 2017. Saint John’s current Zoning By-Law designates industrial zones as either: heavy industrial; medium industrial; light industrial; pit and quarry; transportation; utility service; and utility service landfill.

Although the exact dates are not known when the lands along Milford Road were zoned Heavy Industrial or when the narrow strip along Milford Road was zoned two-unit residential, they have been that way since at least 1996 (i.e., the earliest available survey available showing the zoning designations) and most likely since IPP had the survey done on 30 July 1951 around the time when land use was being preserved as the *status quo* under *The New Brunswick Town Planning Act*.

The Project Team is not aware of any rezoning that has occurred for the properties that now comprise the Mill site. Representatives with the City of Saint John’s Community Planning Department are members of the Environmental Impact Assessment Technical Review Committee. If there are any issues with the current zoning, the City’s representatives will identify them during their review.

No special restrictions or conditions are known to exist at the Project site other than those restrictions established in July 2003 with respect to Maritimes & Northeast Pipeline Limited Partnership’s 30 m pipeline right-of-way. With respect to M&NPP’s 30 m pipeline right-of-way, there are restrictions as to what activities can occur. Permanent structures are prohibited because the ability to access and maintain the pipeline must not be impaired. Permanent structures include, but are not limited to, houses, trailers, mobile homes, poles, decks, tool sheds, garages, swimming pools, leaching fields, and septic tanks. Although fences may be placed on the right-of-way, fence posts must be

COMMENTER G

located a minimum of 1.5 m from the pipeline. Driveways, road, and parking lots are generally permitted if they are built to M&NPP's standards. The National Energy Board of Canadian Standards Association regulations require that M&NPP maintain a safe amount of cover over the pipeline. Accordingly, the grade over the pipeline cannot be reduced or increased without permission from M&NPP. Shrubs and bushes may be planted on the right-of-way provided they are less than 1.2 m in height at maturity and are not within 3 m of the pipeline. Plants and trees that grow taller than 1.2 m are not permitted because they inhibit access and hinder aerial surveillance of the right-of-way.

IPP is committed to working within the existing guidelines for maintaining pipeline integrity.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER G



COMMENTER G

Matthew Alexander

From: Matthew Alexander
Sent: April 18, 2022 11:15 AM
To: [REDACTED]
Subject: RE: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Mr. [REDACTED]:

As noted in the previous response, representatives with the City of Saint John's Community Planning Department are members of the Environmental Impact Assessment (EIA) Technical Review Committee. If there are any issues with the current zoning, the City's representatives will identify them during their review of the EIA document.

Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

FUNDY Engineering

Bio-Resources | Building Systems | Environmental | Geotechnical & Surveying | Project Management

From: [REDACTED]
Sent: April 18, 2022 8:09 AM
To: Matthew Alexander <matt.alexander@fundyeng.com>
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Dr. Alexander,

Thank you for the reply. So as you state, you are unaware if the purchased properties were rezoned when PINs were amalgamated.

Thus, portions of the lands may in fact not be properly zoned. Who brings this to the attention of the city's representatives, please?

Thank you
[REDACTED]

On Thu, Apr 14, 2022 at 1:23 PM Matthew Alexander <matt.alexander@fundyeng.com> wrote:

Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the response below to your question.

COMMENTER G

Please provide the dates of purchases of the properties that now comprise the property between Milford Road and the Falls and the dates of the rezoning by Common Council along with all conditions attached.

As described in Section 3.3.5 of the Environmental Impact Assessment (EIA) document, a Mill has existed at Union Point since at least 1836 when the St. John Mills and Canal Company constructed and operated the Cunnabells Sawmill. Over the next century, the site underwent process changes, expansions, and ownership changes. In 1946, K.C. Irving purchased Port Royal Pulp & Paper Co. that was operated as Saint John Sulphite Ltd. at Union Point. In 1951, the Mill was renamed Irving Pulp & Paper, Limited (IPP).

The attached survey plan from 10 December 2002 shows the current boundaries of the Mill site. It encompasses the lands along Milford Road up to civic 317 and includes all the lands where the Project is proposed to be located. Parcels of land are identified in the New Brunswick Geographical Corporation's database using a Parcel IDentifier (PID). Today, the Mill site is made up of five PIDs as noted in the EIA document: 55162416; 55223739; 55232649; 55232656; and 55233001.

The attached survey plan from 30 July 1951 shows the boundaries when the Mill underwent renaming to IPP. The accompanying deed indicates that the lands along Milford Road to the property boundary with civic 317 were purchased by IPP from Investment Securities, Limited. Those lands, which were identified as Parcel "A" were originally part of the land grant from the Crown issued to Phineas Lovitt. The survey confirms that the lands along Milford Road were amalgamated in to the overall Mill property in 1951.

The attached survey from 1996 also confirms that the lands along Milford Road between civic 453 and 317 are part of the Mill property. That survey indicates that a 30 m strip of land of PID 55162416 adjacent to Milford Road is zoned two-unit residential while the remaining portion of the PID 55162416 is zoned heavy industrial. That swath of R-2 zoned land is also shown in the attached City of Saint John zoning map.

Community planning legislation was first enacted in New Brunswick in 1912 under the statute *An Act Relating to Town Planning*. That Act, which was renamed in 1917 as *The Town Planning Act*, did not allow for zoning or land use control. In 1922, a plan to guide development was prepared for Saint John. In 1936, *The New Brunswick Town Planning Act* was introduced. Although the 1936 Act allowed for the provision of zoning by-laws, Saint John did not appear to implement any zoning by-laws that year but they did update their Master Plan in 1936 to guide development, which was further updated in 1945. The 1946 Master Plan for Saint John noted that Saint John had zoning by-laws in place. In 1952, all previous amendments to the Act were consolidated and planning then was more about preserving the *status quo* (i.e., zoning land as it had been developed). In 1961, the Act was renamed the *Community Planning Act* and revised in 1973. The 1966 comprehensive community plan for Saint John identified three zones for industrial activity: heavy industrial; light industrial; and restricted industrial. The current *Community Planning Act* [S.N.B. 2017, c. 19] was assented on 5 May 2017. Saint John's current Zoning By-Law designates industrial zones as either: heavy industrial; medium industrial; light industrial; pit and quarry; transportation; utility service; and utility service landfill.

COMMENTER G

Although the exact dates are not known when the lands along Milford Road were zoned Heavy Industrial or when the narrow strip along Milford Road was zoned two-unit residential, they have been that way since at least 1996 (*i.e.*, the earliest available survey available showing the zoning designations) and most likely since IPP had the survey done on 30 July 1951 around the time when land use was being preserved as the *status quo* under *The New Brunswick Town Planning Act*.

The Project Team is not aware of any rezoning that has occurred for the properties that now comprise the Mill site. Representatives with the City of Saint John's Community Planning Department are members of the Environmental Impact Assessment Technical Review Committee. If there are any issues with the current zoning, the City's representatives will identify them during their review.

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IPP is committed to working within the existing guidelines for maintaining pipeline integrity.

Thanks,

Matt Alexander

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G
COMMENTER

FUNDY Engineering

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Environmental Sciences Manager

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--
[Redacted]

COMMENTER G

Matthew Alexander

From: [REDACTED]
Sent: April 18, 2022 1:02 PM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL)
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Dr Alexander,

Thank you again for your response. I did read what you replied earlier, but in your reply it is also obvious that there is only an assumption that the properties fall under the appropriate zoning of the Heavy Industrial you show in your report. Your replies also mention how the properties were amalgamated but no reference or research results, with dates, of when the zonings were actually changed. It is my understanding that this information is potentially stored in the provincial archives.

I do hope that you understand that this project will have a huge negative impact on many people. The economic loss of property value along with the social and personal effects on many by this project when complete.. I do not think it is too much to ask to have the proponent provide the proof of the rezonings. Please see below the information provided to me by Crystale Harty

"Zoning, dates of rezoning and conditions attached to the properties that now make up the property are in question, these are not technical questions, who is responsible to provide these answers?"

Zoning related questions should be directed to the proponent and they will respond."

The answers provided to date have not provided adequate response to the questions directed to the proponent.

[REDACTED]
On Mon, Apr 18, 2022 at 11:15 AM Matthew Alexander <matt.alexander@fundyeng.com> wrote:

Mr. [REDACTED]:

As noted in the previous response, representatives with the City of Saint John's Community Planning Department are members of the Environmental Impact Assessment (EIA) Technical Review Committee. If there are any issues with the current zoning, the City's representatives will identify them during their review of the EIA document.

Thanks,

Matt Alexander

COMMENTER G

Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

FUNDY Engineering

Bio-Resources | Building Systems | Environmental | Geotechnical & Surveying | Project Management

COMMENTER G

From: [REDACTED]
Sent: April 18, 2022 8:09 AM
To: Matthew Alexander <matt.alexander@fundyeng.com>
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

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Thus, portions of the lands may in fact not be properly zoned. Who brings this to the attention of the city's representatives, please?

Thank you

[REDACTED]

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COMMENTER G

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Thanks,

Matt Alexander

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COMMENTER G



Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

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COMMENTER G

Matthew Alexander

From: [REDACTED]
Sent: April 22, 2022 3:10 PM
To: Mbaya, Patrick (ELG/EGL); Harty, Crystale (ELG/EGL)
Cc: Matthew Alexander
Subject: IPP EIA - 4561-3-1578

Patrick & Crystale,

Understanding that the 30 days for questions to the proponent on IPP EIA - 4561-3-1578 has passed, what is the process now to get the requested information. There are some serious technical questions that were posed and reports requested that were not provided.

This may seem tedious and picky to some but there will be a huge impact on the residents of our area by this project. Requests were made in regard to sound level reports, light, zoning, etc, not to mention a realistic economic impact assessment addressing the loss of neighbouring property values.

Where do we as residents go from here?

Thank you

--
[REDACTED]

COMMENTER G

Matthew Alexander

From: [REDACTED]
Sent: April 28, 2022 7:12 AM
To: Mbaya, Patrick (ELG/EGL)
Cc: Harty, Crystale (ELG/EGL); Matthew Alexander
Subject: Re: IPP EIA - 4561-3-1578

Patrick,

Thank you for the reply. The information I understand that has been requested and not provided (assumptions have been stated, but no evidential information) is listed below.

I also ask that you please provide a copy of the information forwarded to the Technical Review Committee and the names of those who will comprise the Technical Review Committee.

Information needed,

The full economic impact evaluation including the value loss of neighbouring properties and the loss of future tax revenue to the City of Saint John.

The evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional noise?

What are the current levels of noise at the various receptors (residences, businesses *etc.*) in very close proximity and within 2 kilometres at different times of day throughout the year? What are ambient noise levels from these sources? What are the levels at nearby receptors? What time of day are these levels measured? What will the noise levels be at the residence receptors in close proximity when all of the new equipment is included in the analysis? What will the noise levels be once the new facility and associated equipment is operational?

The evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour? What are the current odours at nearby receptors (residences, businesses, churches, day care *etc.*) and not just at the monitoring station? What level are the odours going to be limited to? the technical engineered analysis and modelling determining odour levels at nearby receptors (residential, business, churches, day care, recreational municipal sports facilities *etc.*). Clean effluent and very little odour are subjective terms. What engineered data supports this?

There is no data or engineered analysis to quantify emissions to nearby receptors in the EIA. There is no modelling or dispersion information to indicate what the emissions (type and level) will be at nearby receptors and in the general area. Where is the information to quantify actual emissions? Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour? Due to the sensitive adjacent receptors in very close proximity to the proposed facility, it is imperative that the requirement of the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants to provide an odour impact analysis within 500 m be met. This is not included in the EIA. Where is this information? How will an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property be provided as required (certified and stamped by a Professional Engineer or Scientist)?

COMMENTER G

Thank you

On Mon, Apr 25, 2022 at 3:49 PM Mbaya, Patrick (ELG/EGL) <Patrick.Mbaya@gnb.ca> wrote:

Dear Mr. [REDACTED],

Thank you for your email.

The proponent is expected to submit a public consultation report to DELG which will be reviewed by the Technical review Committee (TRC).

The public consultation report should include comments or responses provided by the proponent to all of the public questions/comments raised during the Public consultation review period. The EIA process is proponent driven therefore, they can take the time they need to provide DELG the information. No decision will be made until the EIA review is completed and all relevant issues have been addressed to the TRC's satisfaction.

The proponent has been advised to address any new relevant questions that are raised beyond the allotted public comments period.

With regards to your question: "what is the process to get the requested information". In order to assist you, could you please provide further detail regarding what information you have requested of the proponent?

Regards

Patrick Mbaya

Environmental Impact Assessment Specialist/ Spécialiste des études d'impact sur l'environnement

Environmental Assessment Branch/Direction etude d'impact sur l'environnemental
NB - DELG/MELG

COMMENTER G

P.O.Box 6000, Fredericton, NB, E3B 5H1
Marysville Place, 20 McGloin Street, Fredericton, NB
Email/[courriel:Patrick.Mbaya@gnb.ca](mailto:Patrick.Mbaya@gnb.ca)

Mobile/cell: +1-506-429-6170

Landline/fixe: +15064443820



From: [REDACTED]
Sent: Friday, April 22, 2022 3:10 PM
To: Mbaya, Patrick (ELG/EGL) <Patrick.Mbaya@gnb.ca>; Harty, Crystale (ELG/EGL) <Crystale.Harty@gnb.ca>
Cc: Matthew Alexander <matt.alexander@fundyeng.com>
Subject: IPP EIA - 4561-3-1578

ATTENTION! External email / courriel externe.

Patrick & Crystale,

Understanding that the 30 days for questions to the proponent on IPP EIA - 4561-3-1578 has passed, what is the process now to get the requested information. There are some serious technical questions that were posed and reports requested that were not provided.

This may seem tedious and picky to some but there will be a huge impact on the residents of our area by this project. Requests were made in regard to sound level reports, light, zoning, etc, not to mention a realistic economic impact assessment addressing the loss of neighbouring property values.

Where do we as residents go from here?

Thank you

COMMENTER G

--
[REDACTED]

--
[REDACTED]

COMMENTER G

WANT MORE INFO?

Fill out the below. leave it with us and we will be in touch!

NAME: [REDACTED]

NUMBER: [REDACTED]

QUESTION/COMMENT:
*Wonderful work being done
to improve data usage and protect
the environment*

COMMENTER H

Matthew Alexander

From: Matthew Alexander
Sent: March 28, 2022 1:56 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on 23 March 2022 regarding the proposed Project and thank you for submitting the following comments below.

Wonderful work being done to improve water usage and protect the environment.

Thank you for your comment. IPP's Project team has spent considerable time and effort developing a Project that will yield substantial benefits and protect the environment.

Thanks,

Matt Alexander

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FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER H

WANT MORE INFO?

Fill out the below, leave it with us and we will be in touch!

NAME: _____

NUMBER: _____

QUESTION/COMMENT:

*Are you aware
of mitigation steps to cope
with impact of climate change
(extreme rain events etc in
Australia) will be sufficient
to protect your infrastructure?*

COMMENTER 1

Matthew Alexander

From: Matthew Alexander
Sent: March 28, 2022 1:58 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for attending Irving Pulp & Paper, Limited's (IPP) Open House on 23 March 2022 regarding the proposed Project and thank you for submitting the following comments below.

Are you sure your mitigation steps to deal with impact of climate change intense rain events like in Australia, BC will be sufficient to protect your infrastructure?

For potential extreme precipitation impacts on the Project, Irving Pulp & Paper, Limited's Project team has considered the largest possible storm event (*i.e.*, a 1 in 100 year 24 hour event) as per existing design standards. Atmospheric Rivers, such as those that were recently experienced in the Fraser River Basin during November 2021 and in eastern Australia also during 2021, are bands of water in the atmosphere several thousand kilometers long and only a few hundred meters wide. According to researchers, these are rare atmospheric events that appear to have decreased slightly over the past century in both number and intensity. Typically, atmospheric rivers originate over tropical oceans and produce intense rainfall and subsequent flooding. They are most prominent along the west coasts of North America and northern Europe. Although these events have occurred in Atlantic Canada, atmospheric rivers here tend to be short in duration and tend to sweep across the coast quickly since the warm, moist waterbodies where they form are located south of the land mass. At this time, it is believed that designing to a 1 in 100 year 24 hour event, which is the current design standard, is sufficient for this Project.

Thanks,

Matt Alexander

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Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

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COMMENTER 1

Overall statement on the IPP Project

To. Dr. Matthew Alexander

For the record I want to acknowledge that this Environmental Treatment Facility and Water Use Reduction is a good overall Project that will enhance and improve water treatment capacity especially for the future new regulatory rules and standards. Using a lot less water from Spruce Lake is very positive as well. The EIA document is impressive and excellent. The questions often center on whether mitigation efforts will be sufficient to reduce the environmental impacts which this EIA identifies as well. Please be advised I consent to my name being included in your response documents for the Summary of Public Involvement.

██████████

COMMENTER 1

21 April 2022

To. Dr. Matthew Alexander, Fundy Engineering

RE: Comments on the Environmental Treatment Facility and Water Use Reduction Project

Please find enclosed my comments, issues of concern, and questions on the EIA Project document (File A). Thank you for making the EIA Registration document available at the time of registration. It was most helpful. Please note my commentary is in File A. Now I have enclosed File B that includes my earlier comments on the public review process for the renewal of IPP's Air Quality Approval. There is no need to respond to my submission on that Air Quality Approval. The Department of Environment did respond to my commentary and question in the public document interim report on issues and response that is also enclosed in File B.

This information captures my issues related to IPP's Air Quality Approval under the Clean Air Act. I wanted to make it available to provide you with issues related to their air emission releases as well as other related issues associated with this large industrial source and complex. I would only ask for you to (1) read all the information in my File B (2) identify any information that you think may need clarification or consideration in the EIA based on the Minister's response in the Interim Summary of Issues and Response. It's the issue on Schedule B list of 35 VOCs that is a concern. Question is if you agree with the Minister's answer to my request of concern that Schedule B should be referenced in the Air Quality Section of this EIA. The EIA refers to the general description under VOCs, but fails to identify any of them on their standards or lack thereof.

File A is my main EIA Process submission. Thank you for reviewing and providing response in the Public Engagement Document part of this EIA public consultation process. Sorry to have submitted in hand writing format. If you decide you need to have it typed, I would be available to correct or clarify any words not clear. From my end typing is unnecessary but you may want to have it typed to make it easier to work with.

Now I would like to kindly request a copy of all my submitted material in my File A and B. These are my copies of this material. Finally, thank you for accepting my submission one day late from the April 20 cut off. I hope my comments and your responses to them will be included in the Public Involvement Summary submitted to the Province. Please advise.

For reference the March 22, 2002 Public Notice on page B3 did not include time line 30 day end period. Also the four page "Project Overview" also did not mention the 30 day end date deadline only says want your feedback. The small card available at Open House did not identify deadline date of April 20th in order to be included in the Public Involvement Summary. Finally, I was one date late as I was involved in Holy Week religious events that delayed me from completing my submission.

I am enclosing pubic notices and associated info from Open House to illustrate my point on the deadline date April 20th.

Looking forward to reviewing the responses to my submission along with the other public comments.

COMMENTER 1

April 20, 2022

Comments on the Irving Pulp and Paper Environmental Treatment Facility and Water Reduction Project

From [REDACTED], Saint John, NB, E2J 3J1

Notwithstanding that this Project's objective is to result in a cleaner water leaving the Mill and a reduction in water consumption by up to 50%; this does mean that this Project will not result in actual environmental impacts some of which from the public perspective will be problematic. Section 4.3 titled "Overview of Valued Environmental Component Analysis" is an excellent description and analysis of what is valued. One part missing from the context of this analysis is an analysis of the current impact of what is the overall impact on the current massive industrial complex on this stie. This complex has had and will continue to have an even more intrusive industrialized presence right in the middle of the City of Saint John. Yes, over the years improvements have been made with more to come, but the fact of the matter is, this industry has had a degrading presence to the natural environment with unwelcomed impacts on the residents, especially in the West Side. Air pollution impacts such as odour, the Schedule B list of 37 air toxins (see Air Quality Approval), particulate matter, criteria air contaminants over the years have contributed to the overall degradation of the air quality along with many other industrialized sources.

The last several air quality approvals have seen positive improvements in the emission control technologies both on the air and water aspect of this massive pulp and paper mill. See appendix document from this commenter in relation to the current public review of the current public review of their air quality approval (File B). Please review my submission and the Department of Environment's responses to it in their document title Interim Summary of Issues and Responses. The Final Summar of Issues and Responses will be soon posted under this public review process. The purpose of this request is to provide the applicant with a fuller appreciation of the impact on air quality in respect to the emissions contribution. I draw your attention to my strong concern over the Schedule B Emissions listed (all 37) attached to the current Air Quality Approval but not the new draft. Those VOC's (air toxins) are of grave concern. The DELG/Minister fails to regulate them or demand the approval holder to eliminate or greatly reduce these dangerous (some cancer causing) emissions. I would request the applicant to review the Minister's responses to my issues of concern to determine whether you have covered these on page 165 in your list of potential impacts associated with air quality. Yes, there is the list under VOCs not broken down. Please list all the VOCs. It is the same as Schedule B in the current Air Quality Approval? If so, please describe what emission controls will deal with these. You list PM with no breakdown as to PM10 or PM2.5 (microns per cubic meter).

Even though this Project is not expected to be a major air polluter not like the main operation the emissions and potential impacts have to be understood and studied within the entire operational "source" Both together. Why wasn't that done? This EIA on air quality has to be understood in the full context of this large industrial source.

One of my significant concerns of this proposed project is identified on Page 166 and Table 49. There is as noted in the last paragraph of Page 166 "the probability that the Project will disperse bacteria into the airshed when exhausting air through the indirect air coolers". This EIA assessment document concludes this is "negligible".

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The public is aware of problems in Moncton with and linking of airborne bacteria diseases outbreak to industrial direct cooling towers. As the EIA document states in Table 49 Page 189. Direct cooling towers can release aerosolized water to the atmosphere and if bacteria are present, the aerosolized water can spread the bacteria over several kilometers. This type of adverse potential impact is a concern despite the mitigation efforts by the applicant. I understand the kind of technology being used for this Project is different from the kind of equipment used in those Moncton cooling towers. Please explain the difference and why your design is superior to the traditional cooling tower technology.

The Province of New Brunswick has first issued steps to develop or has developed new standards for these cooling standards. See recent media/print story in Telegraph Journal just prior to Easter. Will these cooling towers meet these new standards as they were not announced prior to this EIA being written and registered? Will your Project exceed these new or proposed standards?

Page 167 top three paragraphs: The applicant identifies the potential impacts identified for air quality related to “a mishap, error, and or unforeseen event” there is a potential that impacts could be realized to air quality. Same for water quality impacts. When you examine past significant impacts from these large industrial complexes like this one, many such events/impacts are the result of human error, upset conditions, mishaps. This is why I noted a key mitigation step on Page 168 on the list of Proposed Mitigation 4.4.2.1.3. This writer was pleased to see the following mitigation step included: “Emergency response and contingency plans should be designed to prevent any major and/or sustained environmental damage during any errors, mishaps, and/or unforeseen events. Good to see this included. Does sustained mean permanent or long lasting? Please explain what you mean by “sustained”. What about other environmental damage shot or moderate term periods? Will the emergency responses and contingency plans apply?

Further comments on Section 4.4.2.1.3. Reference to a Project specific environmental protection plan will be developed. This EIA does not provide what is the plan for the public to review. Why isn't it or at least terms of reference on a plant outline provided? I recommend at least an outline. Please provide at least a plant outline/parameters of the plan.

I agree with anti-idling policy as well as ultra low sulphur diesel, using clean fuels not “where available and practical”. This should be removed in any regulated approvals considering the proponents family relatives own the largest petroleum refinery in Canada that produces such fuels.

This EIA fails to recognize or acknowledge Canada's new Clean Fuels Act. This new Federal legislation will have important implications for large industrial/energy generation users. Why wasn't it in the EIA? If it was included please correct this writer's comment. Reference to “recovered fibers and or dewatered should be incinerated in the onsite power boiler to generate electricity and offset that required for purchases from NB Power.” Please see my commentary on IPP's Public Review of its Air Quality approval on reference to particulate emissions – PM2.5. I object to this proposed mitigation cited above. NB Power electricity is clean either from Pt. Lepreau, hydroelectric from Quebec Hydro. The mitigation proposed is inconsistent with the applicant's goals to minimize environmental impact on the air side. As well as on the water side of their new Project. This mitigation step needs to be reworked. When there is a cleaner way to generate electricity to power onsite boilers to generate electricity, it needs to be

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used in this case, its clean power from NB Power sources as noted above. Economic reasons and not the ones to predominate an important environmental consideration. Recommend words “as a last resort” or “under exceptional conditions” will recovered fibre or dewatered solids be allowed to be incinerated. Please review my submission on Air Quality Approval in File B in a separate file part of this commentary.

Additional Comments/Issues of Concern

Over the years this writer has picked up comments in the community that the rock base on which this complex sits could be compromised or undermined from natural and manmade factors to these natural ancient rock bases. Those are (1) over hundreds of years the high flow of water against these natural rock base sides adjacent to the ST. John River and Bay of Fundy high tides etc. may have caused crevices fissures and even under water tunnels where water has found its way into this rock base potentially causing the foundations of the structures being weakened over time.

Years ago a community member told me a story of a diver discovered small caves, tunnels, opening on the rock bases where this mill was constructed. Apparently years ago old junk cars would be dumped into this area. This is why a diver had been sent into this area to assess this problem to take steps to remove them. This is when the diver discovered these fractures, small caves, tunnels, crevices in the rock side adjacent to the rushing water. This may be total “malarky” to use ancient description or a “wives tale” or just complete nonsense; however, force of high volume of water hitting against the natural rock could potentially create fissures, brokendown that could bigger over the centuries. Water can seep through and undermine the integrity of the rock base? If that were the case, then that base could weekend and eventually cause the base to partially fail with impact on the structures above it. Such an upset condition could potentially impact this Project.

Another dimension to this is the fact that a lot of pile driving has occurred along the water edge of this complex over the years. To what extent has driving these steel posts into the rock base created cracks, fissures where water could penetrate the rock base where main structures sit? This one may be more plausible. Therefore, I would recommend the following: (1) a geological subject matter review and the rock impact of water pressure flow hitting up against it for thousands of years; (2) geological testing to determine if water is seeping into the rock base below the IPP facility; (3) send dive team or underwater submarines into the area to see if there are any of these tunnels, cave, opening, large crevices evident; (4) consult history experts such as David Goss or Harold Wright to see if any of these possible far fetches stories have any merit. They could add local historical and anecdotal information. There may be no merit to these assumptions, stories but better for an assessment to be made before more pile driving and construction takes place. Won't hurt to commence some kind of review on this topic.

Comment on Section 4.4.2.1 Air Quality Page 163, 164. Refers to global efforts (emissions of greenhouse gases). Now this EIA cites outdated international agreements, conventions, and protocols. One outdated one is Paris agreement of the United Nations Framework Convention on Climate Change. This EIA should have included more recent ones such as last years COPP 21 Agreement which exceeds the targets set out in the Paris Agreement. The Paris Agreement did not go far enough compared to (a) COPP21 as well as the most recent and alarming IPCC Report which is even more alarming with even more aggressive GHG emission reduction targets. None of these more current protocols, etc. were identified. Why not? When was this

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EIA written? Yest it was registered in March 2022 but it should have been updated and refreshed on this critically important area. Please provide updated analysis.

Just recently the government of Canada passed new climate change greenhouse gas reduction plan legislation up to 2030 targets. How will this Project be impacted by such new current legislation, protocols, agreements? Also, Province of New Brunswick is completing its own Climate Change Plan soon to be released after extensive legislature hearings, etc. Await this plans release and then assess how this Project will be impacted.

The cited NB Climate Change Action Plan (PNB 2016) is outdated. This particular Climate Change Action Plan PN/B cited that states “all projects constructed in New Brunswick must adhere to the Province’s air emissions guidelines and climate change action plan”. The new CC Action Plan for NB and Federal legislation need to be applied to this Project in regards to emission reduction not old outdated regulatory objectives, guidelines.

The days of guidelines, voluntary actions are over, its hardball time now with Federal legislation driving the GHG emission reductions. Please explain how this Project plan to comply with them. Please start by listing them all and provide an explanation on how they impact this Project. Same for NB Water Strategy Actions and or other Federal DFO legislation coming along. I assume of course this Project is most consistent with NB Water Strategy approved about five years ago. No doubt exceeds any standards in it?

Page 170 RE: pneumatic rock breaking structures and pile driving. See my comments above for this issues of concern. How many piles to be drilled? Limitations needed re how current allowable too long. Notice to residents need to be given. Mail box delivery. AM too early same for 7PM, not Saturday. Shrouds should be used at all times not just “where possible”.

Table 19 Emissions Data circa 2019 (page 78). How will this Project impact IPP’s reduction or increase in air emissions? Will there be an overall total decrease? Slight or moderate increases? Please provide a projection.

Page 78, last paragraph. This EIA again uses outdated information. GHGRP in March 2004 that’s a 17 year old reference. Now into a reporting requirement where all facilities that emit the equivalent of 50, 000 tonnes or more of GHGs are required to report. Hs this reporting threshold of 50,000 tonnes changed or about to change? Any new reporting requirements expected?

What about all that white vapour observed from this site especially in the cooler periods with the water treatment open roof tanks will there be an increase in current vapour emissions? Are there GHGs that is the water vapour? Please breakdown what is in all this water vapour. List all contaminants in this water vapour.

I am concerned about Schedule B list of contaminants attached to the current air quality approval. More of such water vapour drifting off this site is not acceptable (see my File B).

What ever happened to that heat/steam capture Project to provide nearby industries with heat such as Moosehead Brewery? This could be done. Please comment on why not a possibility as was proposed about 15 years ago. I would recommend such a Project be reinstated.

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P. 11 Project Benefits. I did notice the indirect air coolers will also be equipped with a plume abatement system minimizing the visible water vapour plumes from being produced. This is positive.

Fish impingement and entrainment will be nearly eliminated. This is most positive. Will a Fish Authorization Permit be still required? If so, will an application to DFO be needed to commence prior to this Project starting including construction stages?

Section 4.4.2.1 Air Quality Additional Comment Pages 163 -179. In reviewing this section this writer did not see any references to the current Public Review process document including the current Air Quality Approval, Facility Profile, Interim Summary of Issues and Responses, Draft Approval. Please find attached these documents in addition to the writer's own submission (File B). The Interim Summary of Issues and Responses Document responded to public comments submitted. The issues of concern and questions in that interim were from this writer. Since submissions are not identified the issues are identified as those from the community and public comments and this section I did not see any references on how air emissions levels will be integrated into the new approval which is still under public review. Why is that? For example, Schedule B list of 36 air toxins is part of the current approval but will be deleted from the new Draft/Final Approval which I strongly objected to in my submission to the Minister. I am requesting that this EIA applicant carefully review these documents especially the Interim Summary of Issues and Responses with a view to determine whether any of the information in Section 4.4.2.1 needs revision of information or recommendations in your EIA document.

EIA refers to VOCs but fails to break them down such as what is provided in the current approval in Schedule B of that current approval. This section under VOCs failed to include this important information of public interest. In your response to this EIA, I would specifically ask you to review the Interim Summary of Issues and Responses to determine if you agree with the Department of Environment's responses to the public issues raised in this part of the current public review. The EIA should have made some reference to this current public review process. Why was such a public review left out?

There is no need to respond to my comments on the current approval Just the Department's responses will suffice.

In order for the EIA applicant to more fully appreciate community concerns and issues of concern, this writer has enclosed all the public review documents in this important public participation (regulated) for this IPP a "source" under the NB Clean Air Act. I do request however that my written submission in File A be responded to as part of this 30 day public review process. Thank you.

3.1.6 Geology. Additional comment to my comments above. This section describes the surficial geology in the vicinity of the Reversing Falls Mill but fails to mention whether water permeability or seepage could penetrate into these various rock formations as stated above. At least such a statement such as "its absolutely impossible for water flowing by the mill could seep or leak into such solid rock formations or even with man made pile driving drilling now or in the past could such water enter into such rock formations". Some analysis, reassurance needed here.

See my File B Documentation attached. Section 6.2.5 Approval to Operate, 6.2.5.1 Water Quality. An important approval was left out, namely Air Quality Approval under Clean Air Act. This Project has a section on air quality/emissions from this Project apart from transportation

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related which are not subject to this Air Quality Approval. Only fixed industrial sources. This Project is a “source” under the current and new draft emissions described in this Project. Section 4.4.2.1 fall under definition “Mill Complex Emission Sources” and therefore should have been addressed in this EIA. Please respond to this point. Note in new Draft Schedule A Description and Location of Source (Page 1 of 16 of Draft). One area of Provincial regulatory concern is the fact that the timing of this EIA registration March 23, 2022 to commence the Public Review period process. Now is it a random decision to register this EIA at that time? The reason I ask is based on the timing of the public review of this industry’s Air Quality Approval January 10, 2022 ending April 1, 2022 just a few days before this EIA was registered.

There should have been more integration and information on air emission side included in both information documents. Question unless there any discussion with the DELG as to the timing of the EIA registration? Both processes (Air Quality Approval and EIA) should have integrated related air emission information provisions. Please explain why it did not occur. The DELG may also need to respond to this as part of this public engagement review process.

See Public Notice for Class I Air Quality Operating Approval issued under the Clean Air Act attached in my supplementary File B. There is not expectation for the EIA applicant to respond to my written submission under the Air Quality Approval Public Review. It is for informational purposes to assist the applicant in understanding the overall environmental impact both real and perceived from the general community perspective. I do request however, the EIA applicant (1) review the public document and (2) respond to the Interim and Final (soon to be released) Report Summary of Issues and Responses. Does the EIA agree with those Departmental responses? Is there any information in them including Facility Profile that needs clarification?

Table 4 Page 124. On reviewing the various including the three that ranked acceptable did you use upset conditions or unexpected technical events as one of the criteria before you made your final decision? Some technologies are more susceptible to upset events/technology breakdowns. How does the one you selected stack up against the other acceptable ones using this criteria? My concern is that despite being best under your criteria, its somewhat newer and it could be subject to glitches, system errors, mishaps, or mechanical malfunctions due to operator error. Is that possible? Is it a concern? Was the human or mechanical error analysis analyzed?

Section 4.4.4.4 Aesthetics. This is an important section from a public/resident impact perspective. The EIA states in this section ... it is necessary to ensure that industrial development is sited appropriately such that it does not negatively impact surrounding non industrial lands use.” This reviewer concludes that the current site/complex does in fact negatively impact surrounding non industrial land use. Your list is incomplete it should have included Douglas Avenue where there have been odour impacts to some parts of this long residential street. Please refer to the complaint record in the interim Summary of Issues and Responses under current Air Quality Approval. I have received complaints from folks on Douglas Avenue. Many other areas needed to be included businesses, residential flats on Main Street, Tim Hortons Restaurant near and across from the Mill Complex, again odours (Pulp/Paper/THC odours) all too frequent. I personally have experienced such odours. Past years have seen fires in sawdust piles along with dust blow ups. The EIA Table 60 identifies low light conditions and nighttime operations; unpleasant odours may waft into neighbourhood areas. I am concerned about the backup beepers on operations equipment as wells as additional lighting in addition to any additional water vapour. The Mill Complex including any

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new additions such as this treatment facility will continue to emit much vapour that blocks at times blue sky above the Mill thus diminishing resident's opportunity to enjoy a nice sunny blue sky day all to infrequent with natural and man made industrial flog from this pulp and paper mill.

Question. Will there be less vapour, same or reduced vapour coming off this facility? I assume this treatment plant is not at all like the ABS one near Irving Paper Mill, correct? I understand this water treatment system is far superior to the one used at Irving Paper?

Table 66 does a good job identifying assessment of potential impacts on aesthetics of this proposed project. My concern is as the EIA notes in Table 66 "depending on meteorological conditions, e.g., temperature, wind direction, speed, humidity (you forgot low cloud cover, inversion) water vapour plumes may be visible from the exhaust fans of the indirect air coolers and the exterior process tanks". I assume then more white vapour will be added to the current amount now observed? Please confirm.

RE Odour. It is reassuring to read "when the system is operating normally there should be little to no odour associated with the environmental treatment facility". Good

Pleased to read a several meter high and wide berm will be made to half mask the view of the infrastructure associated with the environmental treatment facility. I suspect new permanent Project lighting will create an even more adverse impact on those living nearby. All this current and new lighting has the potential to adversely impact sleep patterns of residents in Milford Road area along with the sound from these air exchangers. One can hear these at IOL for those walking along Grandview Avenue.

Under Mitigation Table 66 its unacceptable to allow construction work during the evening, or worse overnight and or weekends. Such activity must be prohibited by Minister in Approval to Construct.

IPP protocols for handling air quality including odours is woefully inadequate (see my comments in my handwritten submission (File B) as part of Air Quality Approval Public Review). Please describe current public complaint procedure that needs a complete upgrade and enhancement. There is a definite need for a Community Liaison Committee made up with residents, businesses nearby, the Proponent, stakeholders including Departmental EIA/COA Officials (as a response person) similar to Coleson Cove, Saint John LNG, IOR Community Liaison Committees. These have been in place for years and have proven to be a very effective format for information exchanges and to deal with any community concerns that may arise. I would like to see this Proponent support such. If for some reason the Proponent does not agree then the Minister as a condition of this EIA approval include such in a condition. This was done for the former Canaport LNG Project. I really think the establishment of such a committee will serve the interests of both the Proponent as well as the localized community of interests. Another example is the American Iron Metal facility. Issues of community concern are no constructively dealt with within this structure.

I received an email March 18, 2022 advising that IPP is registering its EIA for this project. I was informed that a hard copy of the EIA document available at Fundy Engineering to pick up. That effort was appreciated.

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Document did not get posted on Departmental website on that date. Informed it would “take a few days to go up online due to the government doing their RTIPPA efforts”. This delay is confusing in terms of what is the start date for the 30 day public comment period.

March 22, 2022 TJ Notice Page B-3 Notice of Open House. No date when EIA registered nor any mention of the 30 day Comment Period as part of the regulatory approval process. This writer did call 1-800-518-7999, person advised she was not sure what time of event nor registration booking. Advised to call following day.

The Proponent should have been better prepared at point of phone contact to (1) bookings to attend Open House, (2) time of event. I called next day to book attendances. At first, advised 3-4 period booked. I asked if I could be accommodated for 3PM – confirmed. This is the first time I have ever heard of the public having to book a time to attend an Open House.

Restrictions and Mandates were lifted at this time. The Open House was informative. I had the opportunity to learn about the Project. There were some community members at the March 23rd Open House. How many attended this or any other Open Houses? How many “hits” on the ipppmodernization.com website?

I did make some constructive recommendations to enhance and broaden public engagement process. I suggested a virtual digital Zoom like public presentation session be organized during this 30 day public engagement process. It would be an Open House online with PowerPoint presentations question/answer using that format. I attended such an information session on SMRs where 346 people attended. An official from JDI (government relations) thought my suggestion had merit and value. Said he would take it under review. Did such a session occur? If not please provide an explanation as to why not. It was a good idea under pandemic conditions. May I suggest that such online Open House be added to the public consultation process? Perhaps the Department can recommend such for future EIA Open Houses in addition to the traditional onsite format that are potentially more COVID challenging. This Open House was helpful to those community members who were able to attend, however it was limiting and restrictive in that there was no presentation or opportunity for the public to ask questions where everyone hears the question and able to hear the answers from the Proponent. It would have been live streamed on the sited ipppmodernization.com website. Was this done? Why not?

Respectfully submitted

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Mr. [REDACTED]
 Saint John, New Brunswick
 E2J 3J1

Job File: 14972
 2 May 2022

Correspondence via email [REDACTED]

RE: Environmental Treatment Facility and Water Use Reduction Environmental Impact Assessment for the Reversing Falls Mill in Saint John, New Brunswick - Response to Public Comments

Dear Mr. [REDACTED]:

The Irving Pulp & Paper (IPP) Reversing Falls Mill (i.e., the Mill) near the mouth of the Saint John River is the anchor of the New Brunswick Forest Products Industry. The Mill has undergone numerous upgrades to become the world class pulp producing facility that it is today. With its modern, efficient, and sustainable environmental processes, the Mill currently produces a final process effluent that meets existing regulations.

As part of an on-going, long-term, multi-phase upgrade program to maintain the Mill's environmental sustainability and economic viability, IPP is proposing to install current best-available technology to build upon the existing pollution prevention strategy equipment at the Mill. The Environmental Impact Assessment (EIA) that was registered on 18 March 2022 details the *Environmental Treatment Facility and Water Use Reduction* project (i.e., the Project) planned for the Mill. The Project comprises installing and operating:

- an Environmental Treatment Facility (ETF): an onsite Moving Bed Biofilm Reactor (MBBR) to meet or exceed the existing Pulp and Paper Effluent Regulations (PPERs) [SOR / 92-269] under the *Fisheries Act* [R.S.C., 1985, c.F-14] and to accommodate any expected future changes to the PPERs; and
- a Water Use Reduction (WUR) system: a brackish water heat exchanger system that uses the cooling capacity of the Saint John River while coincidentally reducing the amount of freshwater drawn from the Spruce Lake Watershed by up to 50 %.

As part of the public consultation process, you submitted a letter on 21 April 2022. Below are the questions gleaned from the letter along with answers to those questions.

Questions and Answers

Q1. *For reference the March 22, 2002 Public Notice on page B3 did not include time line 30 day end period. Also the four page "Project Overview" also did not mention the 30 day end date deadline only says want your feedback. The small card available at Open House did not identify deadline date of April 20th in order to be included in the Public Involvement Summary. Finally, I was one date late as I was involved in Holy Week religious events that delayed me from completing my submission. I am enclosing public notices and associated info from Open House to illustrate my point on the deadline date April 20th.*

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A1. We apologize for this oversight. Two notices identical to that shown in Figure 110 of the Environmental Impact Assessment (EIA) document were published in the *Telegraph Journal*: Saturday 19 March 2022 (Page C3) and Saturday 9 April 2022 (Page C3). Those notices complied with the New Brunswick Department of Environment and Local Government's (NBDELG's) public notice announcements and indicated that receipt of comments was requested on or before 20 April 2022. The advertisement in the *Telegraph Journal* on Tuesday 22 March 2022 (Page B3) was done voluntarily to enhance announcements of the Open House. The four page "Project Overview" document and postcards handed out at the Open House were only designed to provide additional information on the Project. In hindsight, those materials could have included the request for public comments on or before 20 April 2022.

Q2. *Section 4.3 titled "Overview of Valued Environmental Component Analysis" is an excellent description and analysis of what is valued. One part missing from the context of this analysis is an analysis of the current impact of what is the overall impact on the current massive industrial complex on this site.*

A2. The purpose of this EIA is to assess the impact of the proposed Project, the environmental treatment facility and the water use reduction project, on the existing environment.

Q3. *I would request the applicant to review the Minister's responses to my issues of concern to determine whether you have covered these on page 165 in your list of potential impacts associated with air quality. Yes, there is the list under VOCs not broken down. Please list all the VOCs. It is the same as Schedule B in the current Air Quality Approval? If so, please describe what emission controls will deal with these. You list PM with no breakdown as to PM10 or PM2.5 (microns per cubic meter).*

A3. Please refer to response to Q3. For this proposed Project, Volatile Organic Compounds (VOCs) are related to diesel and gasoline within mobile equipment used for construction and operation (i.e., product deliveries and hauling away of recovered solids). With respect to Particulate Matter (PM) within the assessment, it is for both 2.5 microns and 10 microns (PM_{2.5} and PM₁₀).

Q4. *Even though this Project is not expected to be a major air polluter not like the main operation the emissions and potential impacts have to be understood and studied within the entire operational "source". Both together. Why wasn't that done? This EIA on air quality has to be understood in the full context of this large industrial source.*

A4. This was not done because there will be no cumulative impact as a result of the proposed Project. There are no regulated air emissions associated with the proposed Project.

Q5. *The public is aware of problems in Moncton with and linking of airborne bacteria diseases outbreak to industrial direct cooling towers. As the EIA document states in Table 49 Page 189. Direct cooling towers can release aerosolized water to the atmosphere and if bacteria are present, the aerosolized water can spread the bacteria over several kilometers. This type of adverse potential impact is a concern despite the mitigation efforts by the applicant. I understand the kind of technology being used for this Project is different from the kind of equipment used in those Moncton cooling towers. Please explain the difference and why your design is superior to the traditional cooling tower technology.*

A5. As noted, there was a bacterial outbreak in the Greater Moncton Region in 2019 followed by another outbreak in 2021. The 2019 Greater Moncton outbreak was determined to be the result of an improperly maintained cooling tower. The 2021 outbreak has been attributed to more than one cause and the sources were undetermined. The following are the most common factors leading to outbreaks, such as those that occurred in Moncton:

- lack of using biocide;
- improper use of biocide;
- infrequent testing for microbiological contamination;
- improper use or maintenance of drift eliminators (*i.e.*, preventing water droplets and mist from escaping the cooling tower); and
- lack of a total system cleaning for towers shutdown for an extended period of time.

Due to these outbreaks the Province is developing a registry for cooling towers in order to better manage those outbreaks.

The probability that the Project will disperse bacteria into the airshed when exhausting air through the indirect air coolers is negligible. That is because the spray water that will be in direct contact with the air circulated through the coolers will be clean water. Furthermore, the indirect air coolers proposed for this Project will have an oxidant injected into the clean spray water to inhibit bacterial growth. To ensure the coolers remain free of bacteria, regular monitoring will be undertaken. Contingency plans will be developed to monitor, control, and eliminate bacterial growth during operation of the Project. The indirect air coolers will also be included in the New Brunswick registry.

Q6. *The Province of New Brunswick has first issued steps to develop or has developed new standards for these cooling standards. See recent media/print story in Telegraph Journal just prior to Easter. Will these cooling towers meet these new standards as they were not announced prior to this EIA being written and registered? Will your Project exceed these new or proposed standards?*

A6. Yes, the indirect air coolers associated with this proposed Project will meet and exceed the standards for cooling technology the Province of New Brunswick recently announced, which involves the registration of these systems.

Q7. *This writer was pleased to see the following mitigation step included: “Emergency response and contingency plans should be designed to prevent any major and/or sustained environmental damage during any errors, mishaps, and/or unforeseen events. Good to see this included. Does sustained mean permanent or long lasting? Please explain what you mean by “sustained”. What about other environmental damage short or moderate term periods? Will the emergency responses and contingency plans apply?*

A7. In this instance, sustained refers to medium-term, definitely not permanent. Anything longer than that would not be considered an error, mishap, or unforeseen event. The emergency response and contingency plans will also apply to short and moderate periods.

Q8. *Further comments on Section 4.4.2.1.3. Reference to a Project specific environmental protection plan will be developed. This EIA does not provide what is the*

plan for the public to review. Why isn't it or at least terms of reference on a plant outline provided? I recommend at least an outline. Please provide at least a plant outline/parameters of the plan.

A8. It is expected that development of a Project-specific Environmental Protection Plan (EPP) will be a condition of EIA approval. That EPP will be created by the Proponent and then subsequently reviewed and approved by the NBDELG before construction begins. Section 6.2.2 of the EIA document provides details on the EPP. The most important component within the EPP will be datasheets for describing best management practices. As noted in Section 6.2.2 of the EIA document, those datasheets will include: aquatic flora and fauna protection; archaeological discovery; concrete wash water management; environmental incidents reporting guidelines; hazardous materials management; pile driving sound emissions; rock check dams; sanitary waste management; sediment filter bag; sediment traps; silt fences; solid waste management; spill prevention and control; spills or leaks emergency response procedures; stockpile management; storm drain inlet protection; straw bale barriers; terrestrial flora and fauna protection; vehicle and equipment cleaning; vehicle and equipment fueling; and vehicle and equipment maintenance.

Q9. *This EIA fails to recognize or acknowledge Canada's new Clean Fuels Act. This new Federal legislation will have important implications for large industrial/energy generation users. Why wasn't it in the EIA? If it was included please correct this writer's comment.*

A9. The Clean Fuel Standard is an important part of Canada's climate plan to reduce emissions, accelerate the use of clean technologies and fuel, and create jobs in a diversified economy. The Clean Fuel Standard, as it currently stands, is applicable to fuel producers who need to provide innovative solutions and new fuel options to consumers. It is not recognized how the standard is applicable to this Project other than the construction and maintenance equipment will have to use progressively cleaner fuels over time. The proposed regulations for the Clean Fuel Standard were published in the Canada Gazette on 18 December 2021. Final regulations are targeted for publication in spring 2022.

Q10. *Reference to "recovered fibers and or dewatered should be incinerated in the onsite power boiler to generate electricity and offset that required for purchases from NB Power." Please see my commentary on IPP's Public Review of its Air Quality approval on reference to particulate emissions – PM2.5. I object to this proposed mitigation cited above. NB Power electricity is clean either from Pt. Lepreau, hydroelectric from Quebec Hydro. The mitigation proposed is inconsistent with the applicant's goals to minimize environmental impact on the air side. As well as on the water side of their new Project. This mitigation step needs to be reworked. When there is a cleaner way to generate electricity to power onsite boilers to generate electricity, it needs to be used in this case, its clean power from NB Power sources as noted above. Economic reasons and not the ones to predominate an important environmental consideration. Recommend words "as a last resort" or "under exceptional conditions" will recovered fibre or dewatered solids be allowed to be incinerated.*

A10. IPP currently maximizes power generation capacity within its onsite generators, which allows the Mill to operate using over 99.9 % of renewable energy. Currently, there is no capacity to utilize any additional biomass within the onsite generators that is

produced from this Project. Instead, the recovered fibers and / or dewatered solids will be directed to an offsite compost facility.

As the Mill continues to develop, it is always looking to increase its capacity for renewable energy.

Q11. Years ago a community member told me a story of a diver discovered small caves, tunnels, opening on the rock bases where this mill was constructed. Apparently years ago old junk cars would be dumped into this area. This is why a diver had been sent into this area to assess this problem to take steps to remove them. This is when the diver discovered these fractures, small caves, tunnels, crevices in the rock side adjacent to the rushing water. This may be total “malarky” to use ancient description or a “wives’ tale” or just complete nonsense; however, force of high volume of water hitting against the natural rock could potentially create fissures, broken down that could bigger over the centuries. Water can seep through and undermine the integrity of the rock base?

A11. IPP is not aware of any underwater caves, caverns, or tunnels that have been created through the erosive powers of the Saint John River. The Project infrastructure will be constructed on solid ground. Additionally, all Project infrastructure is being founded on solid footings, some supported by steel piles that extend from the footings to competent bedrock. All of the foundation design is being completed by structural and geotechnical engineers with a competent understanding of the site geology and subsurface conditions. Detailed geotechnical inspections always occur prior to installing any new infrastructure.

Q12. *Another dimension to this is the fact that a lot of pile driving has occurred along the water edge of this complex over the years. To what extent has driving these steel posts into the rock base created cracks, fissures where water could penetrate the rock base where main structures sit? This one may be more plausible. Therefore, I would recommend the following: (1) a geological subject matter review and the rock impact of water pressure flow hitting up against it for thousands of years; (2) geological testing to determine if water is seeping into the rock base below the IPP facility; (3) send dive team or underwater submarines into the area to see if there are any of these tunnels, cave, opening, large crevices evident; (4) consult history experts such as David Goss or Harold Wright to see if any of these possible far fetches stories have any merit. They could add local historical and anecdotal information. There may be no merit to these assumptions, stories but better for an assessment to be made before more pile driving and construction takes place. Won't hurt to commence some kind of review on this topic.*

A12. Please refer to the response to Q11.

Q13. *Comment on Section 4.4.2.1 Air Quality Page 163, 164. Refers to global efforts (emissions of greenhouse gases). Now this EIA cites outdated international agreements, conventions, and protocols. One outdated one is Paris agreement of the United Nations Framework Convention on Climate Change. This EIA should have included more recent ones such as last years’ COP21 Agreement which exceeds the targets set out in the Paris Agreement. The Paris Agreement did not go far enough compared to (a) COP21 as well as the most recent and alarming IPCC Report which is even more alarming with even more aggressive GHG emission reduction targets. None of these more current protocols, etc. were identified. Why not? When was this EIA written? Yes it was registered in March 2022 but it should have been updated and refreshed on this critically important area. Please provide updated analysis.*

A13. These comments are noted. The EIA document was prepared between June 2021 and March 2022. The *Glasgow Climate Pact* from the Conference of the Parties (COP) 26 aims to turn the 2020s into a decade on climate action and support. Part of the package of decisions from COP26 is a rulebook for the *Paris Agreement* as it relates to market mechanisms and non-market approaches and the transparent reporting of climate actions and support provided or received, including for loss and damage. Section 4.5 of the EIA document provides additional information on climate change and potential impacts and mitigation. That section includes current information, such as that from the Intergovernmental Panel on Climate Change Working Group's assessments from 2021. The *Paris Agreement* is still valid as it strengthens the global response to climate change and reaffirms the goal of limiting global temperature increase to well below 2 °C above pre-industrial levels, while pursuing efforts to limit that increase to 1.5 °C. More recent agreements, etc. build upon the *Paris Agreement*.

Q14. *Just recently the government of Canada passed new climate change greenhouse gas reduction plan legislation up to 2030 targets. How will this Project be impacted by such new current legislation, protocols, agreements? Also, Province of New Brunswick is completing its own Climate Change Plan soon to be released after extensive legislature hearings, etc. Await this plans release and then assess how this Project will be impacted.*

A14. On 22 March 2022, after the EIA was registered, the Prime Minister announced the release of the 2030 Emissions Reduction Plan: Canada's Next Steps for Clean Air and a Strong Economy. The 2030 Emissions Reduction Plan is an ambitious and achievable sector-by-sector approach for Canada to reach its new climate target of cutting emissions by 40 % below 2005 levels by 2030 to put Canada on track toward its goal of achieving net-zero emissions by 2050. Key components of the plan include: making it easier for Canadians to switch to electric vehicles; greening Canada's homes and buildings; helping industries to adopt to clean technology and transition to net-zero emissions; making Canada's grid even cleaner; reducing oil and gas emissions; supporting farmers in building a clean, prosperous future; empowering communities to take climate action; and embracing the power of nature to fight climate change. New Brunswick's Climate Change Action Plan *Transitioning to a Low-Carbon Economy* that was launched in December 2016 is still in place. The New Brunswick *Climate Change Act [S.N.B. 2018, c.11]* requires that the Province's Action Plan be renewed ever five years. Public comments on the plan were accepted up until 24 February 2022.

As a point of reference, IPP is very proud of its initiatives to reduce GHG emissions. Between 2005 and 2021, our pulp and paper mills have reduced GHG emissions on a gross output basis by 53 % and by 51 % on an intensity basis, far surpassing the reductions discussed above.

Q15. *The cited NB Climate Change Action Plan (PNB 2016) is outdated. This particular Climate Change Action Plan PNB cited that states "all projects constructed in New Brunswick must adhere to the Province's air emissions guidelines and climate change action plan". The new CC Action Plan for NB and Federal legislation need to be applied to this Project in regards to emission reduction not old outdated regulatory objectives, guidelines.*

A15. Please refer to the response to Q14.

Q16. *The days of guidelines, voluntary actions are over, its hardball time now with Federal legislation driving the GHG emission reductions. Please explain how this Project plan to comply with them. Please start by listing them all and provide an explanation on how they impact this Project. Same for NB Water Strategy Actions and or other Federal DFO legislation coming along. I assume of course this Project is most consistent with NB Water Strategy approved about five years ago. No doubt exceeds any standards in it?*

A16. The applicable legislation, municipal, provincial, and federal are described and discussed throughout the EIA document.

In December 2017, the Province of New Brunswick released the document *A Water Strategy for New Brunswick 2018-2028*. The strategy was prepared in recognition that water is a precious resource and in order for New Brunswick's existing surface water and groundwater resources to provide New Brunswickers with abundant clean water now and into the future, they need to be protected and managed responsibly to ensure their long-term sustainability. This Project aligns with that strategy.

Q17. *Page 170 RE: pneumatic rock breaking structures and pile driving. See my comments above for this issues of concern. How many piles to be drilled? Limitations needed re how current allowable too long. Notice to residents need to be given. Mail box delivery. 7AM too early same for 7PM, not Saturday. Shrouds should be used at all times not just "where possible".*

A17. As noted in Section 2.8.2.3 of the EIA document, it is estimated that 210 piles will be required for the Project and that those piles would be driven over a one month period and suitable notification will be provided to neighbours in advance of the work (i.e., one week advance notice as noted in Section 4.4.2.2.3). It is expected that notification will be done through the mail system as was done for notice of the EIA public house. As noted in Section 2.8.2.4, loud work, such as pile driving, will be done between the regular work hours of 7AM to 7PM Monday through Friday.

Q18. *Table 19 Emissions Data circa 2019 (page 78). How will this Project impact IPP's reduction or increase in air emissions? Will there be an overall total decrease? Slight or moderate increases? Please provide a projection.*

A18. Emissions related to effluent treatment in 2018, 2019, and 2020 were, respectively, 4 438 tonnes CO_{2eq}, 4 338 tonnes CO_{2eq}, and 3 362 tonnes CO_{2eq}. It is estimated that once this Project is operation, the emissions related to effluent treatment will be 2 937 tonnes CO_{2eq}, which is about a 13 % decrease from 2020 emissions.

Q19. *Page 78, last paragraph. This EIA again uses outdated information. GHGRP in March 2004 that's a 17 year old reference. Now into a reporting requirement where all facilities that emit the equivalent of 50,000 tonnes or more of GHGs are required to report. Has this reporting threshold of 50,000 tonnes changed or about to change? Any new reporting requirements expected?*

A19. We thank the commenter for their level of review. The 17 year old reference was strictly to note that Canada's Greenhouse Gas Reporting program was introduced in March 2004. The reporting threshold for facilities has now decreased from 50 000 tonnes of CO_{2eq} to 10 000 tonnes of CO_{2eq}. Reporting requirements change from time to time as do the prescribed methodologies for calculating emissions.

Q20. *What about all that white vapour observed from this site especially in the cooler periods with the water treatment open roof tanks will there be an increase in current vapour emissions? Are there GHGs that is the water vapour? Please breakdown what is in all this water vapour. List all contaminants in this water vapour.*

A20. As discussed in Section 4.4.4.4.2 of the EIA document, some visible water vapour plumes may be created as a result of evaporation at the surface of the tanks particularly during low temperature or high humidity periods. The indirect air coolers will be equipped with a plume abatement system to minimize visible water vapour plumes from being produced. The Mill's existing operations are not within scope of this EIA, which is constrained to the environmental treatment facility and water use reduction project.

Q21. *What ever happened to that heat/steam capture Project to provide nearby industries with heat such as Moosehead Brewery? This could be done. Please comment on why not a possibility as was proposed about 15 years ago. I would recommend such a Project be reinstated.*

A21. That Project was an initiative of the City of Saint John, not the Proponent, and was put on hold in 2011 due to the City's financial constraints. In October 2021, Saint John Common Council approved an application for submission to Natural Resources Canada to fund a feasibility study for exploring how waste energy from some industries could be used to heat buildings in the uptown core.

Q22. *P. 11 Project Benefits. I did notice the indirect air coolers will also be equipped with a plume abatement system minimizing the visible water vapour plumes from being produced. This is positive.*

A22. Thank you. Yes, several best-in-class technologies were included in the overall Project design to yield additional environmental benefits and to ensure IPP continues to be socially responsible and a good neighbour.

Q23. *Fish impingement and entrainment will be nearly eliminated. This is most positive. Will a Fish Authorization Permit be still required? If so, will an application to DFO be needed to commence prior to this Project starting including construction stages?*

A23. As noted in Section 6.1.1 of the EIA document, it is believed that a *Fisheries Act* Authorization will be required to construct and operate the intake structure for the water use reduction component of the Project. Representatives from the Department of Fisheries and Oceans are members of the Technical Review Committee and they will confirm if this is a requirement. An application for the Authorization would be made prior to constructing that component of the Project.

Q24. *3.1.6 Geology. Additional comment to my comments above. This section describes the surficial geology in the vicinity of the Reversing Falls Mill but fails to mention whether water permeability or seepage could penetrate into these various rock formations as stated above. At least such a statement such as "it's absolutely impossible for water flowing by the mill could seep or leak into such solid rock formations or even with manmade pile driving drilling now or in the past could such water enter into such rock formations". Some analysis, reassurance needed here.*

A24. The bedrock that the Mill sits atop is metamorphic and igneous. Those rock types would have extremely low primary porosity / permeability. Detailed geotechnical inspections always occur prior to installing any new infrastructure.

Q25. *See my File B Documentation attached. Section 6.2.5 Approval to Operate, 6.2.5.1 Water Quality. An important approval was left out, namely Air Quality Approval under Clean Air Act. This Project has a section on air quality/emissions from this Project apart from transportation related which are not subject to this Air Quality Approval. Only fixed industrial sources. This Project is a "source" under the current and new draft emissions described in this Project. Section 4.4.2.1 fall under definition "Mill Complex Emission Sources" and therefore should have been addressed in this EIA. Please respond to this point.*

A25. There are no new point source emissions related to this Project. An Approval To Operate under the Air Quality Regulation [97-133] of the New Brunswick Clean Air Act [S.N.B. 1997, c. C-5.2] is not required. The Mill's existing Approval To Operate under the Water Quality Regulation [82-126] of the New Brunswick Clean Environment Act [R.S.N.B. 1973, c. c-6] will require amendment.

Q26. *Note in new Draft Schedule A Description and Location of Source (Page 1 of 16 of Draft). One area of Provincial regulatory concern is the fact that the timing of this EIA registration March 23, 2022 to commence the Public Review period process. Now is it a random decision to register this EIA at that time? The reason I ask is based on the timing of the public review of this industry's Air Quality Approval January 10, 2022 ending April 1, 2022 just a few days before this EIA was registered.*

A26. There is no connection between the registration of the EIA document and the public review of the Mill's Air Quality Approval to Operate. The EIA was registered when it was completed.

Q27. *There should have been more integration and information on air emission side included in both information documents. Question unless there any discussion with the DELG as to the timing of the EIA registration? Both processes (Air Quality Approval and EIA) should have integrated related air emission information provisions. Please explain why it did not occur. The DELG may also need to respond to this as part of this public engagement review process.*

A27. Please refer to the response to Q25.

Q28. *Table 4 Page 124. On reviewing the various including the three that ranked acceptable did you use upset conditions or unexpected technical events as one of the criteria before you made your final decision? Some technologies are more susceptible to upset events/technology breakdowns. How does the one you selected stack up against the other acceptable ones using this criteria? My concern is that despite being best under your criteria, its somewhat newer and it could be subject to glitches, system errors, mishaps, or mechanical malfunctions due to operator error. Is that possible? Is it a concern? Was the human or mechanical error analysis analyzed?*

A28. As noted in Section 2.6.3.7.5 of the EIA document, the technology selected, Moving Bed Biofilm Reactor (MBBR), has the ability to respond faster from upset events. Overall, it was the best technology available for the Project. Yes, human and mechanical

errors were analyzed as part of the assessment summarized in Table 5 of the EIA document. IPP understands the technology well as a small MBBR has been operated as a component of the pollution prevention strategy at the Mill since 1999.

Q29. Will there be less vapour, same or reduced vapour coming off this facility? I assume this treatment plant is not at all like the ABS one near Irving Paper Mill, correct? I understand this water treatment system is far superior to the one used at Irving Paper?

A29. Please refer to the response to Q20. This treatment plant is not like the treatment lagoon at Irving Paper. The treatment technology selected was determined to be the clear leader of the six technologies reviewed. The footprint of this Project is considerably smaller than the Irving Paper treatment lagoon, which is one of the benefits of this technology.

Q30. Table 66 does a good job identifying assessment of potential impacts on aesthetics of this proposed project. My concern is as the EIA notes in Table 66 “depending on meteorological conditions, e.g., temperature, wind direction, speed, humidity (you forgot low cloud cover, inversion) water vapour plumes may be visible from the exhaust fans of the indirect air coolers and the exterior process tanks”. I assume then more white vapour will be added to the current amount now observed? Please confirm.

A30. The reviewer is correct, low cloud cover and inversions could have been included in Table 66 as meteorological conditions that could affect visibility of water vapour in the air. With the mitigation measures proposed, such as the plume abatement system on the exhaust fans of the indirect air coolers, there should be minimal additional visible water vapour plumes being produced.

Q31. It is reassuring to read “when the system is operating normally there should be little to no odour associated with the environmental treatment facility”. Good

A31. Best-in-class technologies have been included within the environmental treatment facility design to yield additional environmental benefits and to ensure IPP continues to be socially responsible and a good neighbour.

Q32. Pleased to read a several meter high and wide berm will be made to half mask the view of the infrastructure associated with the environmental treatment facility. I suspect new permanent Project lighting will create an even more adverse impact on those living nearby. All this current and new lighting has the potential to adversely impact sleep patterns of residents in Milford Road area along with the sound from these air exchangers. One can hear these at IOL for those walking along Grandview Avenue.

A32. The landscaped berm will mask the view of infrastructure and help mitigate sound emissions.

As described in Section 2.7.1.8.1.8 of the EIA document, artificial lighting will be limited to that necessary for employee safety and for process and security monitoring. The design and selection of exterior lighting balances employee safety criteria with requirements to minimize the effects on the environment and neighbours. The lighting will be designed to only light the area that needs it, be no brighter than necessary, minimize blue light emissions, and be full shielded. These features are not only important for mitigating impacts to residential neighbours, but protecting against attracting birds to avoid collisions.

There are street lights on every second powerline pole along Milford Road and additional street lights at intersections, such as Violet Street and Williams Street. Those street lights, which are either sat-m or sat-s Satellite™ series luminaries, are placed for pedestrian and vehicle safety. Similar to the lights proposed for this Project, those street lights are modern and minimize sky glow, spill light, and glare.

There is minimal mechanical equipment associated with this proposed Project. None of the equipment that will emit sound, such as blowers, pumps, and fans, will be exposed. The Project Team is specifying low sound emission equipment (*i.e.*, < 80 dBA at 1 m). Additionally, loud equipment, as noted within the EIA document, will either be located within insulated wall rooms of buildings, or have shrouds attached to them for mitigating sound emissions.

Q33. *Under Mitigation Table 66 its unacceptable to allow construction work during the evening, or worse overnight and or weekends. Such activity must be prohibited by Minister in Approval to Construct.*

A33. As noted in Section 2.8.2.4 of the EIA document, loud work that has the potential to disturb neighbours (*e.g.*, pile driving, *etc.*), will normally be done between the regular work hours of 7 AM to 7 PM Monday through Friday. Crews working outside of those regular work hours will be sensitive to neighbours and will, whenever practical, confine loud work to regular work hours.

A reduced construction crew may be used when working on Saturdays, Sundays, and evenings. Tie-in work (*i.e.*, connecting the new units to the Mill), which requires Mill shutdowns, will be completed 24 hours · day⁻¹, seven days a week in order to limit shutdown duration.

Q34. *Please describe current public complaint procedure that needs a complete upgrade and enhancement.*

A34. Complaints received are recorded on an incident complaint form. As per the Approvals to Operate, complaints from the public regarding unfavourable environmental impacts require reporting to the NBDELG with details including date, time, nature of the complaint, and action taken to verify the complaint and mitigate any impacts. IPP complies with the Regulators' complaints process. Complaints that are deemed to not be associated with the Mill are turned back over to the Regulator to handle.

Q35. *This is the first time I have ever heard of the public having to book a time to attend an Open House. Restrictions and Mandates were lifted at this time. The Open House was informative. I had the opportunity to learn about the Project. There were some community members at the March 23rd Open House. How many attended this or any other Open Houses? How many "hits" on the ippmodernization.com website?*

A35. Registration was done for the Open House in order to limit the number of attendees during each hour of the event for social distancing reasons (*i.e.*, COVID-19). A total of 48 people attended the Open House. The website has received ~ 1 300 engagements as of 26 April 2022.

Q36. *I did make some constructive recommendations to enhance and broaden public engagement process. I suggested a virtual digital Zoom like public presentation session*

be organized during this 30 day public engagement process. It would be an Open House online with PowerPoint presentations question/answer using that format. I attended such an information session on SMRs where 346 people attended. An official from JDI (government relations) thought my suggestion had merit and value. Said he would take it under review. Did such a session occur? If not please provide an explanation as to why not. It was a good idea under pandemic conditions. May I suggest that such online Open House be added to the public consultation process?

A36. A hybrid Open House format was not completed for this Project, but could be considered for future projects. The voluntary Open House was structured such that physical distancing was maintained so that members of the public could attend safely. KN95 masks were made available as was hand sanitizer. Information packages about the Project were delivered to all homes in the Milford and Randolph area. The Project Team believes the Open House was a success with a good turnout. The website was also useful in disseminating information.

Q37. *Perhaps the Department can recommend such for future EIA Open Houses in addition to the traditional onsite format that are potentially more COVID challenging. This Open House was helpful to those community members who were able to attend, however it was limiting and restrictive in that there was no presentation or opportunity for the public to ask questions where everyone hears the question and able to hear the answers from the Proponent. It would have been live streamed on the sited ippmodernization.com website. Was this done? Why not?*

A37. IPP has conducted many open houses for a variety of projects in communities that they have operations. It is their experience that the type of open house format used for this Project is the most beneficial because attendees are able to have one-on-one interactions with the Project Team. There were many great conversations that lasted a long time during the Open House, which would not have occurred in a presentation-type format open house.

Closing

A copy of your questions and the responses provided herein have been included in the public consultation report forwarded to the NBDELG for their records and consideration during their regulatory review process. IPP thanks you for your comments.

I trust this information is satisfactory for your present needs. Please feel free to contact me via telephone at 506.674.9422 or by email at matt.alexander@fundyeng.com if further clarification or explanation is required.

Respectfully Submitted,

FUNDY ENGINEERING & CONSULTING LTD.



Dr. Matthew D. Alexander, P.Geo., FGC, EP

Encl.: [REDACTED] Letter

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 28, 2022 4:21 PM
To: Matthew Alexander
Subject: FW: Questions from participants

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Friday, March 25, 2022 6:46 PM
To: Info <info2@jdirving.com>
Subject: Questions from participants

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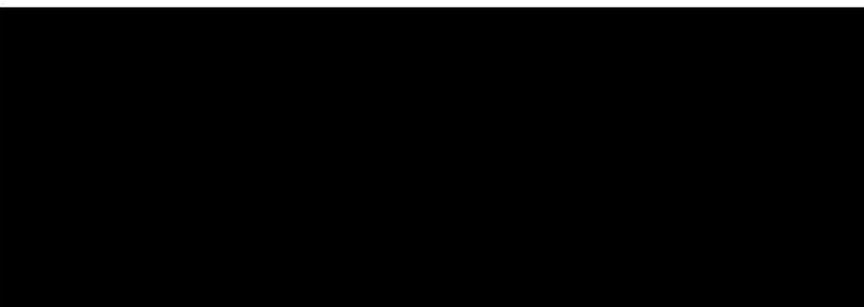
Hi!

I was told that questions and answers that were made will be made public. Where do I find that information?

I can't find a link on the website.

Thanks

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COMMENTER J

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COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 28, 2022 4:22 PM
To: Matthew Alexander
Subject: FW: Project Manager from Department of the Environment

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Saturday, March 26, 2022 2:00 PM
To: Info <info2@jdirving.com>
Subject: Project Manager from Department of the Environment

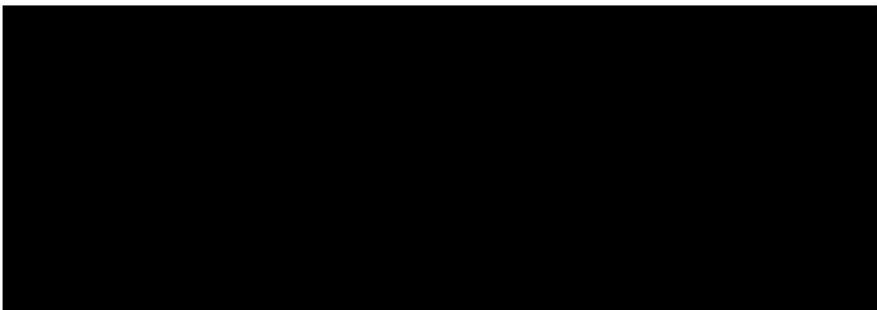
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Thanks

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COMMENTER J

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COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 28, 2022 4:22 PM
To: Matthew Alexander
Subject: FW: Social and Economic Study for Project

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Saturday, March 26, 2022 1:58 PM
To: Info <info2@jdirving.com>
Subject: Social and Economic Study for Project

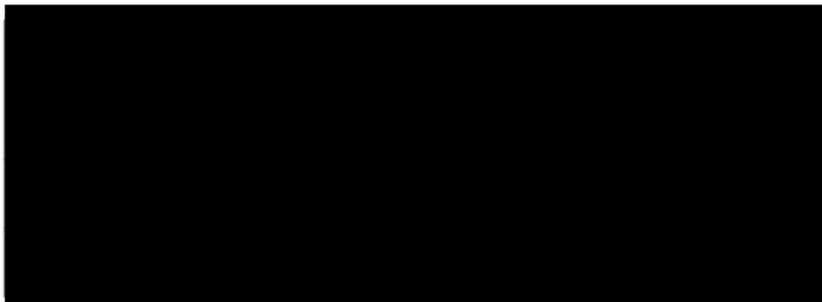
External Email Alert

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Will you please provide me with the Social and Economic Study for this project?

Thanks

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COMMENTER J

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COMMENTER J

Matthew Alexander

From: Matthew Alexander
Sent: March 28, 2022 5:15 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Ms. [REDACTED]:

Thank you for your emails regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

The Project website (www.ippmodernization.ca) contains a clickable FAQ link near the bottom. Here is the direct link to the most recent version of the Frequently Asked Questions: <https://www.ippmodernization.ca/wp-content/uploads/2022/03/PPD-EIA-QA-8.5x11-V3.pdf>

The representative with the New Brunswick Department of Environment and Local Government that has been assigned as Project Manager to this Project is Patrick Mbaya. His contact information is as follows: Phone: (506) 444-5382; Email: patrick.mbaya@gnb.ca

The Socio-Economic baseline assessment is provided in Section 3.3 of the Environmental Impact Assessment (EIA) document. The Potential Project Impacts and Proposed Mitigation are provided in Section 4.4.4 of the EIA document. The EIA document can be downloaded from the Province's EIA website at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 29, 2022 10:06 AM
To: Matthew Alexander
Subject: FW: Sector Specific Guidelines regulations 87-83

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

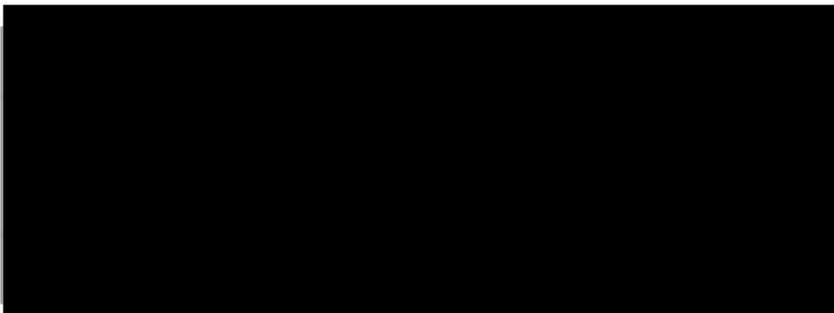
From: [REDACTED]
Sent: Tuesday, March 29, 2022 9:06 AM
To: Info <info2@jdirving.com>
Cc: [REDACTED]
Subject: Sector Specific Guidelines regulations 87-83

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What sector specific guidelines were used for the EIA?

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COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 29, 2022 10:07 AM
To: Matthew Alexander
Subject: FW: request for sector specific guidelines

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Tuesday, March 29, 2022 9:07 AM
To: Info <info2@jdirving.com>
Cc: [REDACTED]
Subject: request for sector specific guidelines

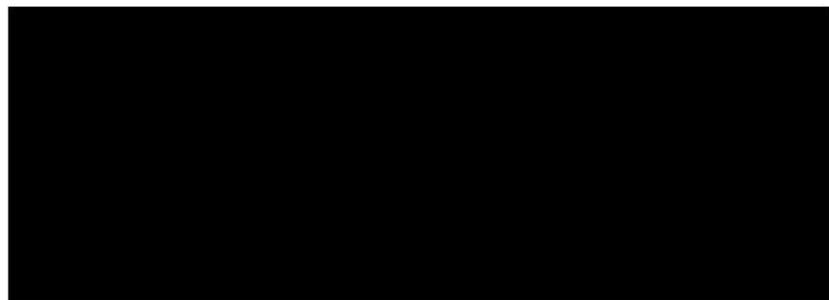
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Will you please send me the sector specific guidelines used when the EIA was submitted?

Thanks

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures



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COMMENTER J

Matthew Alexander

From: Matthew Alexander
Sent: March 29, 2022 4:29 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: WastewaterTreatment.pdf

Hi Ms. [REDACTED]:

Thank you for your emails regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

As noted in Section 2.3 of the Environmental Impact Assessment (EIA) document, the “EIA meets the requirements of the NBDELG [2018] guide to EIAs and the NBDELG [2004] Sector Guidelines for Wastewater Treatment Projects.”

The NBDELG’s EIA information and guidelines can be found at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment.html The Sector Guidelines for Wastewater Treatment Projects can be found under the *Sector Guidelines* tab (they have also been attached to this email for your reference). Please note that these are guidelines and are meant to help the proponent prepare the EIA document for review. Also, please note that this proposed Project is with respect to an industrial treatment system, not a municipal system and there can be considerable differences between those two types of projects and effluents. Much of the aforementioned guideline is not applicable to this project because it is strictly for treating industrial effluent.

The assessment of potential environmental impacts for all EIAs is based on the scope and complexity of the proposed Project. The scope and complexity of this proposed Project are described within Section 2 of the EIA document. The potential environmental impacts and definition of Valued Environmental Components were determined by overlaying the Project on top of the baseline environment.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER

Additional Information Requirements for Wastewater Treatment Projects

Pursuant to Section 5(2) of the *Environmental Impact Assessment Regulation* of the Clean Environment Act, this document is intended to assist proponents in preparing a registration submission for projects involving the above-mentioned sector. It should be read in conjunction with the General Information Requirements as outlined in the latest version of the Registration Guide. Note that the following items are requirements **in addition to** those outlined in the Registration Guide. The information requested in the Registration Guide must also be provided. For further assistance, please contact the Project Assessment and Approvals Branch, Department of Environment at (506)-444-5382.

After reviewing a registration submission, the Technical Review Committee may require other information beyond the items listed below and in the Registration Guide.

Definition

This guideline is applicable to all municipal and industrial wastewater disposal or treatment facilities, other than domestic, on-site sewage disposal systems.

A complete list of potential triggers for project registration is provided in Schedule "A" of the Regulation. To determine if registration is required for a specific project, please contact the Project Assessment and Approvals Branch at the number listed above.

1.0 THE PROPONENT

See Registration Guide

2.0 THE UNDERTAKING

(iii) Purpose/Rationale/Need for the Undertaking:

- How are the current wastewater treatment demands being met?

(v) Siting Considerations:

- Discuss the location with respect to existing sensitive land uses (e.g. residential properties, schools, recreational facilities, tourist areas, etc.)
- If the facility is intended for municipal use, does the community have communal potable water supply and where is it compared to the proposed waste water treatment plant (WWTP) location?

COMMENTER J

- Have the locations of existing or proposed *Wellfield Protected Areas* and *Watershed Protected Areas* been taken into consideration in the siting of the facility?
- Note that the proponents of new wastewater treatment facilities for municipal use should examine and fully exhaust potential locations within the municipal boundaries prior to looking outside the municipal limits.
- The current New Brunswick siting standards for wastewater treatment facilities state that these facilities cannot be located within a 1:20 year floodplain. If applicable, delineate the floodplain on the proposed site. Should a floodplain exist, its extent must be determined and clearly delineated using mapping using a scale of 1:10,000. Should floodplains exist within the proposed facility footprint or on the property of the proposed facility, the proponent is required to provide rationale for the facility location and to describe what mitigation the proponent is intending to implement. Specific attention in the registration document must be given to the location and design of the facility with respect to known flood levels, ice movement, freshet discharges and hydraulic upheavals.

(vi) Physical Components and Dimensions of the Project:

Provide a detailed description of the proposed project, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- The proponent is required to identify in general terms all infrastructures related to the collection and release of wastewater. Detailed engineering drawings are not required however the proponent should identify the following information on an appropriate scale map: location of all collection piping; number and location of all lift stations; location of outfall piping; proposed lagoon design features if applicable (type of liner, size, retention time, etc.).
- A design brief should be provided for the proposed facility, describing the type of treatment system that is planned (facultative lagoon, surface aeration lagoon, subsurface aeration lagoon, constructed wetland, rotating biological contactor, other mechanical system, etc.) and describing various design features (size, design capacity, detention time, effluent treatment criteria, etc.).
- If subsurface disposal of waste water is being proposed, please provide: a) a survey plan of the property to identify exact lot dimensions for an on-site waste disposal assessment, b) a contour plan should also be submitted if slopes on the lot are greater than 5%, and c) a description of the permeability (hydraulic conductivity) of the disposal area. (For soils with low permeability, indicate the source and estimated volume of imported material that will be required.)

(vii) Construction Details:

COMMENTER J

Provide a detailed description of the proposed construction activities and methods, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- If a subsurface wastewater disposal system is proposed, confirm that the area for the disposal field will be marked off or flagged off to prevent soil compaction by heavy equipment.

(viii) Operation and Maintenance Details:

Provide a detailed description of the proposed project's operation and maintenance characteristics, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- Describe the point of discharge into the receiving environment. This description should also identify the diffusion/dispersion method for the discharge.
- For river or marine discharge locations, provide information regarding the flow volume and an anticipated dilution factor to be achieved from the facility. Include a description of the mixing zone. Will the receiving stream always have at least eight times more volume of water than effluent?
- Will disinfection be used prior to effluent discharge? If so, please identify the technology and operating procedures. The proponent should note that if chlorination of the treated effluent is the preferred option, it must be accompanied with a de-chlorination process.
- To what level of its nominal capacity will the facility be functioning at the beginning of its operation?
- For municipal systems provide a prediction of probable loading growth and future extension of municipal services. How many years of additional capacity does the design provide? The submission must also include a detailed listing of the number of residential, institutional, commercial and industrial users to be serviced with the system.
- If the system is an expansion of an existing municipal wastewater treatment lagoon with a combined (storm and sanitary) sewer system, how does the system operate during storm events? Please note that NBDELG does not approve any new combined sewer systems.
- Will the system discharge to the receiving environment be batch or continuous? If the discharge will be on a batch basis, when or how often are discharges likely to occur?
- For municipal systems, will any special industries or significant users be using the treatment facilities? Assess the possibility of either hazardous chemicals in the system or significant changes in the system loading as a result of such users.

- Will the facility be designed to allow it to receive hauled septage from septic service companies or other industrial facilities?
- Are pump or lift stations required? If so, please locate them on a map. Will they have emergency power? If the pumping station does not have back-up power, what mitigation measures are proposed to minimize environmental impacts from by-pass events?
- Describe the projected characteristics of the treated effluent (e.g., BOD, TSS, TKN, TP, etc.) and provide information on projected effluent flow volumes.
- Please note that NBDELG's effluent quality objectives for municipal wastewater systems are 20 mg/l for BOD and 20 mg/l for TSS. If the proposed municipal project does not meet these objectives, a thorough justification must be provided.
- Characteristics of the raw influent wastewater loadings to the wastewater treatment facility (chemical and physical) should be provided so that the adequacy of the design can be verified by reviewers.
- Operation and Maintenance (O&M) targets or criteria should be established for the proposed facility. This information is usually known relatively early in the planning process as the facility owner may have physical or budgetary considerations which limit options for long term O&M. This information can be used in the EIA registration document, in conjunction with other material, to inform TRC members of the rationale used by the proponent for decision-making.
- Will there be disposal of sludge in the future? How much will be produced and how and where will it be treated or disposed of?
- Who will be responsible for the maintenance of the system? Note that for residential subdivisions with communal water and wastewater systems outside incorporated areas, the department will require that a public entity (municipality, commission) own and maintain the infrastructure associated with the development.

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

Include all relevant environmental features as noted in the Registration Guide. Examples of issues that may be of particular relevance to this class of project include but are not limited to the following:

- Current uses of the receiving stream downstream of the outfall; (e. g. swimming, drinking water, shellfish harvesting)
- The presence of other effluent discharges upstream or downstream of the proposed discharge location.

COMMENTER J

- For systems discharging to surface water, the fish habitat in the zone of influence of the proposed discharge.
- If subsurface disposal of waste water is being proposed, the distances to wells and septic fields on neighbouring properties.

4.0 SUMMARY OF ENVIRONMENTAL IMPACTS

All anticipated impacts should be described and discussed. These will depend on the scope and complexity of the project as well as the project location. See the Registration Guide for further information. Examples of impacts resulting from this class of project may include but are not limited to the following:

- Odour impact - Provide an odour impact analysis for any existing sensitive land uses within 500m of the boundary of the subject property.

5.0 SUMMARY OF PROPOSED MITIGATION

Describe all mitigative measures that will be employed to minimize the potential environmental impacts identified above. These may include but are not limited to the following:

- Describe any proposed pollution control equipment and discharge monitoring programs.
- What contingency plans are in place for power failures and other malfunctions?
- What monitoring of nearby wells, receiving stream and/or of effluent is proposed?
- If surface aeration is the preferred option, how will potential concerns about aerosols impacting health of neighbours be addressed?
- In the case of municipal systems, will the consulting engineer be providing the municipality with sample bylaws concerning wastewater collection, such as allowable volumes or contaminants by users into the collection system?

Other mitigative measures will vary depending on the size, scope and complexity of the project and depending on its location with respect to environmental features. See the Registration Guide for additional guidance.

6.0 PUBLIC INVOLVMENT

See Registration Guide.

7.0 APPROVAL OF THE UNDERTAKING

COMMENTER J

See Registration Guide.

8.0 FUNDING

See Registration Guide.

9.0 SIGNATURE

See Registration Guide.

10.0 SUBMISSION INSTRUCTIONS

See Registration Guide.

COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 30, 2022 8:58 AM
To: Matthew Alexander
Subject: FW: request for Social and Economic Study - Website request

You may have responded to this since the message below was sent (last evening)? Let's confirm

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

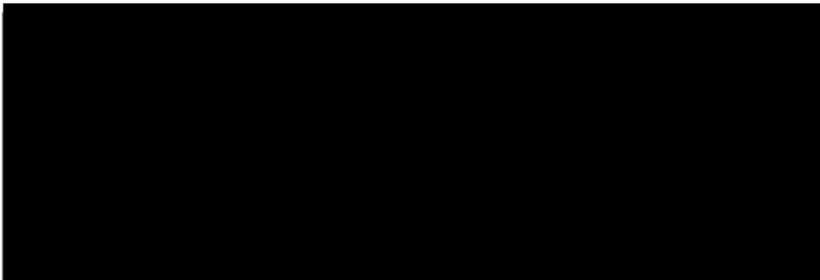
From: [REDACTED]
Sent: Tuesday, March 29, 2022 5:36 PM
To: Info <info2@jdirving.com>
Cc: [REDACTED]
Subject: request for Social and Economic Study - Website request

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Will you please provide me with the Social and Economic Study for this project?

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COMMENTER J

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COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 30, 2022 8:58 AM
To: Matthew Alexander
Cc: Mosher, Mark; Clark, Chris
Subject: FW: Funding availability for opponents - JDI

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Tuesday, March 29, 2022 5:38 PM
To: Info <info2@jdirving.com>
Cc: [REDACTED]
Subject: Funding availability for opponents - JDI

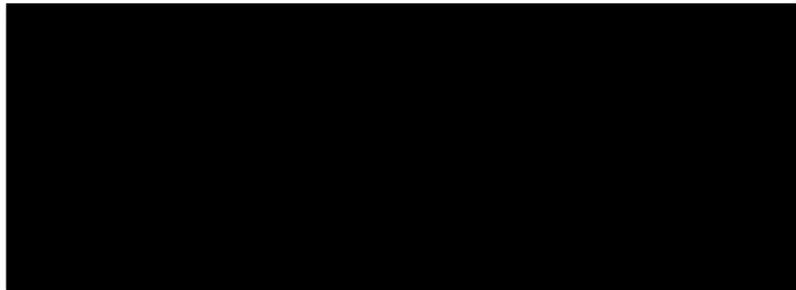
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I understand that the federal government provides funding for Indigenous communities, individuals, and organizations to take part in the federal EIA process.

Does the Provincial Government have funding for the provincial EIA process for individuals, organizations or Indigenous communities?

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COMMENTER J

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COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 30, 2022 9:00 AM
To: Matthew Alexander
Cc: Mosher, Mark; Clark, Chris
Subject: FW: IH Zoning

Last one from last evening:

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Tuesday, March 29, 2022 6:18 PM
To: Info <info2@jdirving.com>
Cc: [REDACTED]
Subject: IH Zoning

External Email Alert

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Of the 5 PIN noted on the EIA, which PIN's are volatile heavy and which ones are offensive heavy?

Will you please describe what the difference is?

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COMMENTER J

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COMMENTER J

Matthew Alexander

From: Matthew Alexander
Sent: March 31, 2022 2:06 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

As noted in the previous email, the Socio-Economic baseline assessment is provided in Section 3.3 of the Environmental Impact Assessment (EIA) document. The Potential Project Impacts and Proposed Mitigation are provided in Section 4.4.4 of the EIA document. The EIA document can be downloaded from the Province's EIA website at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

In some instances, the Impact Agency of Canada does provide funding to support various groups, including members of the public, scientists, and Indigenous peoples to play a more active role in assessments and policy development of the Impact Assessment process under the federal *Impact Assessment Act* [SC 2019, c. 28, s. 1]. There are no known funding processes to support the provincial environmental impact assessment process for individuals, organizations, or Indigenous communities.

There are five Property Identification (PID) numbers that make up the Reversing Falls Mill site: 55162416; 55223739; 55232649; 55232656; and 55233001. All of those properties are zoned for heavy industrial use. Definitions for a volatile industrial use and an offensive industrial use from the City of Saint John's Zoning By-Law are provided below.

A volatile industrial use is where the type of material used, produced, or stored and or the type of manufacturing process involved may be harmful or detrimental to a person's health and or property due to the potential of fire, explosion, or the accidental release of toxic gases, fumes, or otherwise, and without limiting the generality of the foregoing, shall include, but not be limited to, a chemical plant, crude import and or export terminal, fertilizer manufacture and storage, liquefied natural gas terminal, petro-chemical plant, or petroleum refinery, but not a nuclear power plant, nuclear storage facility, or a nuclear enrichment plant.

An offensive industrial use is where the type of manufacturing process involved or the type of material used, produced or stored may cause a dangerous gas or fume, dust, objectionable odour, noise or vibration, or the unsightly storage of goods, wares, merchandise, salvage, junk, waste, or other material to a condition that could be hazardous or injurious as regards to a person's health or safety, or which prejudices the character of the surrounding neighbourhood, or could interfere with the normal enjoyment of any land, building, or structure, and shall include, but not be limited to, a brewery, pulp and paper mill or a scrap or salvage yard.

Based on the definitions above, all five of the properties zoned for heavy industrial owned by Irving Pulp & Paper, Limited are for an offensive industrial use, which is appropriate for siting the proposed Project.

Thanks,

Matt Alexander

COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: March 31, 2022 5:05 PM
To: Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL)
Subject: Economic Benefit

Hi Mr. Alexander,

A Guide to Environmental impact assessment in New Brunswick 2(c) “describe the market potential, benefit to society, economic benefits, job creation benefit, consumer and/or industrial demand, and other relevant issues that make the proposal viable and desirable for the local and/or New Brunswick economy”. I understand that the IPP mill has considerable benefits, and that treating the industrial waste water has benefits.

My concern is the location. What I don't see in the report are the benefits of this location to the residents. What are the benefits to the residents that reside within a 2km radius?

My questions are:

- How many residential properties are within a 2km radius of the proposed site?
- What is the forecasted impact to property values within a 2 km radius over the life of the project?
 - Reference material please for calculation
- What is the 30 to 50 year forecasted decrease in property tax revenue to the City of Saint John?
 - Reference material please for calculation
- What is the benefit for the residents that reside within 2 km of the proposed site?
 - Reference material please for calculation
- What do the residents of Saint John benefit from this site location?
 - Calculation please

I could not locate this in any of the material provided.

Thanks

[REDACTED]

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[REDACTED]

From: Matthew Alexander <matt.alexander@fundyeng.com>
Sent: March 31, 2022 2:06 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

COMMENTER J

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

As noted in the previous email, the Socio-Economic baseline assessment is provided in Section 3.3 of the Environmental Impact Assessment (EIA) document. The Potential Project Impacts and Proposed Mitigation are provided in Section 4.4.4 of the EIA document. The EIA document can be downloaded from the Province's EIA website at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

In some instances, the Impact Agency of Canada does provide funding to support various groups, including members of the public, scientists, and Indigenous peoples to play a more active role in assessments and policy development of the Impact Assessment process under the federal *Impact Assessment Act* [SC 2019, c. 28, s. 1]. There are no known funding processes to support the provincial environmental impact assessment process for individuals, organizations, or Indigenous communities.

There are five Property Identification (PID) numbers that make up the Reversing Falls Mill site: 55162416; 55223739; 55232649; 55232656; and 55233001. All of those properties are zoned for heavy industrial use. Definitions for a volatile industrial use and an offensive industrial use from the City of Saint John's Zoning By-Law are provided below.

A volatile industrial use is where the type of material used, produced, or stored and or the type of manufacturing process involved may be harmful or detrimental to a person's health and or property due to the potential of fire, explosion, or the accidental release of toxic gases, fumes, or otherwise, and without limiting the generality of the foregoing, shall include, but not be limited to, a chemical plant, crude import and or export terminal, fertilizer manufacture and storage, liquefied natural gas terminal, petro-chemical plant, or petroleum refinery, but not a nuclear power plant, nuclear storage facility, or a nuclear enrichment plant.

An offensive industrial use is where the type of manufacturing process involved or the type of material used, produced or stored may cause a dangerous gas or fume, dust, objectionable odour, noise or vibration, or the unsightly storage of goods, wares, merchandise, salvage, junk, waste, or other material to a condition that could be hazardous or injurious as regards to a person's health or safety, or which prejudices the character of the surrounding neighbourhood, or could interfere with the normal enjoyment of any land, building, or structure, and shall include, but not be limited to, a brewery, pulp and paper mill or a scrap or salvage yard.

Based on the definitions above, all five of the properties zoned for heavy industrial owned by Irving Pulp & Paper, Limited are for an offensive industrial use, which is appropriate for siting the proposed Project.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

COMMENTER J

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COMMENTER J

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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: March 31, 2022 9:45 PM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL)
Cc: [REDACTED]
Subject: Court Order

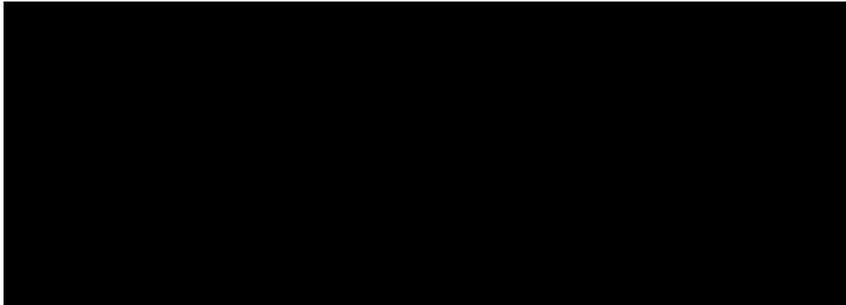
Gentlemen,

Will you please confirm the following:

- Does IPP meets the current PPER requirements?
- There was a court ordered mandate?
 - Under what regulations were the court orders completed?
 - Copies of the court documents and mandates please

Thank you,

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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: March 31, 2022 10:39 PM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL)
Subject: property on Milford Rd

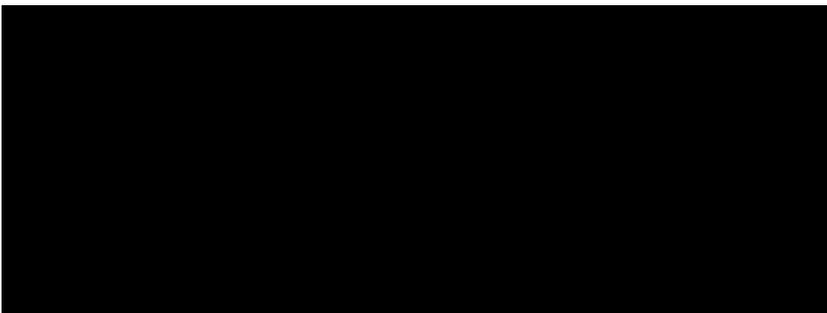
Gentlemen,

The property on Milford Road was rezoned in the early 2000's for the LNG pipeline. Special restrictions were put on that parcel of land at that time that restricted further development.

When were those restrictions lifted? I'd like to have minutes to the zoning meetings please?

Thanks

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COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: April 1, 2022 10:12 AM
To: Matthew Alexander
Subject: FW: DFO funding

FYI

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Thursday, March 31, 2022 10:07 PM
To: Info <info2@jdirving.com>
Cc: [REDACTED]
Subject: DFO funding

External Email Alert

Caution: This email originated from outside the organization. If you suspect this email is suspicious, please forward the email to 'phishing@jdirving.com' to notify JDI Security

I believe that the court order were a result of DFO charges. If so, does the EIA have a federal component since DFO is involved?

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[REDACTED]

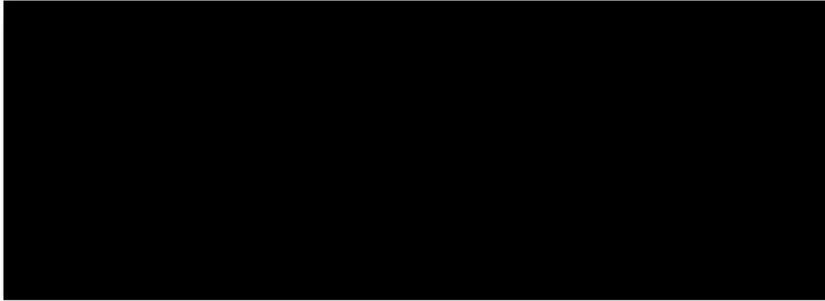
From: [REDACTED]
Sent: March 29, 2022 5:38 PM
To: info@jdirving.com
Cc: [REDACTED]
Subject: Funding availability for opponents - JDI

I understand that the federal government provides funding for Indigenous communities, individuals, and organizations to take part in the federal EIA process.

Does the Provincial Government have funding for the provincial EIA process for individuals, organizations or Indigenous communities?

COMMENTER J

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COMMENTER J

Matthew Alexander

From: Matthew Alexander
Sent: April 7, 2022 11:26 AM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: 14972 Property Assess.pdf; 14972 M&R Properties.pdf

Hi Ms. [REDACTED]:

Thank you for your emails regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. A Guide to Environmental impact assessment in New Brunswick 2(c) “describe the market potential, benefit to society, economic benefits, job creation benefit, consumer and/or industrial demand, and other relevant issues that make the proposal viable and desirable for the local and/or New Brunswick economy”. I understand that the IPP mill has considerable benefits, and that treating the industrial waste water has benefits. My concern is the location. What I don’t see in the report are the benefits of this location to the residents. What are the benefits to the residents that reside within a 2km radius?

This Project is of Provincial importance. As noted in Section 2.2 the Environmental Impact Assessment (EIA) document Irving Pulp & Paper, Limited’s Reversing Falls Mill is the anchor of New Brunswick’s forest products industry. In 2022, J.D. Irving, Limited (JDI), Irving Pulp & Paper, Limited’s (IPP) parent company, had 4 925 full-time employees working within their forest products industry. Those jobs are linked to the IPP’s Reversing Falls Mill. That same year, JDI spent \$1.63 billion on local suppliers. The Mill complex in Saint John directly employs 480, many of whom reside in the Greater Saint John area and some who reside in the Milford and Randolph area of West Saint John. IPP is mandated to install an Environmental Treatment Facility (ETF) at the Reversing Falls Mill. If the ETF is not built and operated, it would cause the Mill to be shutdown and affect the livelihood of thousands of New Brunswickers and hundreds of Saint Johners.

Section 2.4 of the EIA document provides additional information on how New Brunswick’s Forest Products Industry is an integral component of the Province’s natural resource-based industry and how Saint John is the industry’s hub. As the EIA document notes, the proposed Project represents \$150 million in capital expenditure that is 100 % funded by JDI. Approximately 120 person years of construction employment will be generated and it is expected that many of the contractors working on the Project will be from Greater Saint John.

In conjunction with this Project, there is an opportunity to build a landscaped berm along Milford Road, which the Project team believes will improve the aesthetics of the street landscape for local residents.

2. How many residential properties are within a 2km radius of the proposed site?

It is understood that Gardner Pinfold Consultants Inc. prepared a report in 2020 for the Greater Saint John Regional Task Force Analysis. It is also understood that a comparison was drawn between Fredericton, Moncton, and Saint John, three New Brunswick cities, which have vastly different socioeconomic characteristics. The report suggested that the value of residential properties within 2 km of industrial properties is negatively impacted by comparing Saint John that has industry within the core to Moncton and Fredericton that have industry at their outskirts. The relevance of the report is not recognized for this Project. The Mill, in various forms, has existed since 1836. Residential development has continued to grow and in some instances densify around the Mill site since that time.

COMMENTER

It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000.

3. What is the forecasted impact to property values within a 2 km radius over the life of the project? Reference material please for calculation

During preparation of the Environmental Impact Assessment (EIA) document, the Project team reviewed the property assessments and sales records for 519 single-family residential properties within the Milford and Randolph Area. The attached Google Earth image shows the single-family residential properties that were reviewed (*i.e.*, red polygon) and a 2 km radius (*i.e.*, red circle) around the Project site (*i.e.*, yellow pushpin). Overall, no negative impacts to property values were identified, which is the reason why it was not included in the EIA document.

It is not believed that this Project will negatively affect property assessment values in the area. This is based on our detailed review of the local property assessment values presented below. The majority of these homes have existed adjacent to the Mill site since 1951 and their values have continued to increase. The Project team also believes that the beautification work along Milford Road will improve aesthetics of the area.

NB Property Assessment determines an assessed value for each real property in New Brunswick on an annual basis. A property's assessment reflects the property's market value. Market value is the price the property would likely sell for on the open real estate market on January 1 of each assessment year for which the assessment was made. The Province's assessment process is the most common method of property assessment used in North America. It is based on market value because it is transparent, easy to understand, and a fair and realistic measure of a property's value. The Province's assessors look at a variety of factors when assessing the value of a property including lot size, sale prices of homes and properties in the area, property condition, age of buildings, and any recent renovations and/or improvements made to the property. More information on how a property is assessed can be found on the Province's website at: <https://www2.snb.ca/content/snb/en/sites/property-assessment/understanding/valued.html>

The 2022 assessed values of New Brunswick properties reflect a strong real estate market provincewide. While 28 % of properties showed no change in assessed value when compared to 2021, 28 % of properties increased by up to 5 %, and 23 % increased ranging from 5 % to 10 %. While 19 % increased by greater than 10 %, 77 % of those are protected by the Province's Spike Protection Mechanism whereby the increase is phased in over time to make assessment growth much more stable and predictable.

Within the Milford and Randolph areas of west Saint John, there are approximately 659 properties (*i.e.*, vacant land, residential, institutional, commercial, and industrial) within the Service New Brunswick database. Of those, 85 % (*i.e.*, 562) saw a property assessment increase between 2021 and 2022, 1 % (*i.e.*, 6) experienced a decrease, and 14 % (*i.e.*, 91) showed no change. These data suggest that property values in the Milford and Randolph areas grew more, on average, than New Brunswick as a whole.

Because property assessments were frozen across the Province between 2020 and 2021, assessment changes over the past five years were also reviewed. Those data show that 82 % (*i.e.*, 542) of those same properties showed an assessment increase, 5 % (*i.e.*, 34) experienced a decrease, and 13 % (*i.e.*, 83) saw no change. On average, assessments increased by 19 % over those five years (*i.e.*, 2018 to 2022).

The Saint John Real Estate Board reported on 13 January 2022 that Saint John 2021 MLS® home sales smashed the record set in 2020. During 2021, 3 142 residential units were sold. Sales were up in 2021 by 21 % over the 2020 annual sales setting record. Buyers are fiercely competing over a low inventory, which is driving price growth; the composite benchmark price extended the streak of double-digit year-over year percentage gains to 15 months in December 2021. The average price of homes sold in December 2021 was \$249 527, up 31 % from December 2020.

Looking specifically at single-family residential, there are 519 properties in the Milford and Randolph area. Within the past five years (*i.e.*, 2018 to 2022), the average assessment for those properties increased by almost 13 %. The average

value of a single-family residential property increased from about \$151 850 in 2018 to \$\$167 160 in 2022. The Saint John Real Estate Board expects record sales prices to continue in the foreseeable future.

Attached are the records that were used to calculate the above information.

4. What is the 30 to 50 year forecasted decrease in property tax revenue to the City of Saint John? Reference material please for calculation

This question would best be directed to New Brunswick’s property assessors. The Project team does not anticipate a decrease in property tax revenue to the City of Saint John as a result of this proposed Project. Property taxes on the Mill property will increase as a result of the proposed Project, which will generate more property tax revenue for the City of Saint John.

5. What is the benefit for the residents that reside within 2 km of the proposed site? Reference material please for calculation

Please refer to the response to question 3.

6. What do the residents of Saint John benefit from this site location? Calculation please

Please refer to the response to question 3.

7. Does IPP meets the current PPER requirements?

Absolutely IPP meets the 1992 Pulp and Paper Effluent Regulations (PPERs). This is demonstrated in the data included within Table 8 of the EIA document. If the Mill was not meeting the 1992 PPERs, it would not be permitted to operate.

8. There was a court ordered mandate? Under what regulations were the court orders completed? Copies of the court documents and mandates please

IPP is committed to the long-term environmental sustainability and economic viability of the Mill. This proposed Project will prepare the Mill for expected future changes to environmental regulations and that is beneficial for the community, the environment, and the Mill.

IPP was fined under the federal *Fisheries Act* related to self-reported environmental incidents. None of those self-reported incidents resulted in observed environmental harm or damage to the Sant John River watershed, nor were there any observed or reported fish deaths. Although part of the court agreement, as reported in the media, is to build a new ETF, IPP has been considering building a facility since 1992. This ETF design and technology goes above and beyond that necessary within the court agreement. The detailed court agreement is not a public document.

9. The property on Milford Road was rezoned in the early 2000’s for the LNG pipeline. Special restrictions were put on that parcel of land at that time that restricted further development. When were those restrictions lifted? I’d like to have minutes to the zoning meetings please?

There was no rezoning on IPP’s property for the LNG pipeline built in the early 2000’s; however, in July 2003, Maritimes & Northeast Pipeline Limited Partnership (M&NPP) registered a 30 m wide easement / right-of-way on the Mill property. The Mill property where the pipeline easement was placed was already zoned heavy industrial, which was appropriate zoning for installing the pipeline.

Property re-zoning is all done within the public realm and in Saint John comprises public meetings with the Planning Approval Committee and Common Council. No rezoning was required so there are no rezoning meeting minutes available.

COMMENTER J

With respect to M&NPP's 30 m pipeline right-of-way, there are restrictions as to what activities can occur. Permanent structures are prohibited because the ability to access and maintain the pipeline must not be impaired. Permanent structures include, but are not limited to, houses, trailers, mobile homes, poles, decks, tool sheds, garages, swimming pools, leaching fields, and septic tanks. Although fences may be placed on the right-of-way, fence posts must be located a minimum of 1.5 m from the pipeline. Driveways, road, and parking lots are generally permitted if they are built to M&NPP's standards. The National Energy Board of Canadian Standards Association regulations require that M&NPP maintain a safe amount of cover over the pipeline. Accordingly, the grade over the pipeline cannot be reduced or increased without permission from M&NPP. Shrubs and bushes may be planted on the right-of-way provided they are less than 1.2 m in height at maturity and are not within 3 m of the pipeline. Plants and trees that grow taller than 1.2 m are not permitted because they inhibit access and hinder aerial surveillance of the right-of-way.

IPP is committed to working within the existing guidelines for maintaining pipeline integrity.

10. I believe that the court order were a result of DFO charges. If so, does the EIA have a federal component since DFO is involved?

EIA approval is the first step in the environmental permitting process. As described in Section 6 of the EIA document, there are several federal, provincial, and municipal permits, authorizations, or approvals that may be required for various components of the proposed Project. Federal Regulators, such as the Department of Fisheries and Oceans and Environment and Climate Change Canada, are included as members of the EIA Technical Review Committee.

No federal approvals are required for building and operating the ETF component of the Project. Federal permit, authorizations, or approvals are only required for the water use reduction component of the Project.

Thanks,

Matt Alexander

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FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER J

ALL PROPERTY ASSESSMENTS WITHIN THE MILFORD AND RANDOLPH AREA OF WEST SAINT JOHN

Address	PID	PAN	Assessments	% Change	UP	DWN	NC	Sales	Description	5 YR Assess	%Chg	UP	DWN	NC
541 Milford Road	405407	1713795	2022 \$757,300 N/A 2021 - \$715,700 - \$0.00 2020 - \$711,300 - \$0.00 2019 - \$701,200 - \$0.00 2018 - \$688,400 - \$0.00	5.81%	1				ST ROSES S CHURCH & RECT	757300 688400	10.00871586	1		
130 Milford Road	55123673	6538019	2022 \$415,600 N/A 2021 - \$346,300 - \$6,248.64 2020 - \$346,300 - \$6,248.64 2019 - \$346,300 - \$6,248.64 2018 - \$346,300 - \$6,248.64	20.01%	1			2011-02-24 - \$1	5 Unit Apt - Subsidized	415600 346300	20.01155068	1		
82 Milford Road	403915	5945700	2022 \$311,700 N/A 2021 - \$282,200 - \$5,134.63 2020 - \$282,200 - \$5,134.63 2019 - \$280,600 - \$5,105.76 2018 - \$274,300 - \$4,901.86	10.45%	1			2013-08-30 - \$245,000 2009-10-19 - \$265,000	HOUSE, GARAGE & LOT	311700 274300	13.63470653	1		
248 Milford Road	55049647	4815350	2022 \$308,100 N/A 2021 - \$299,800 - \$906.51 2020 - \$299,800 - \$906.51 2019 - \$295,700 - \$894.42 2018 - \$291,600 - \$882.33	2.77%	1				COMMUNITY CENTRE	308100 291600	5.658436214	1		
550 Milford Road	405399	3650870	2022 \$300,900 N/A 2021 - \$292,900 - \$14,302.01 2020 - \$292,900 - \$14,302.01 2019 - \$288,800 - \$14,101.82 2018 - \$284,800 - \$13,906.50	2.73%	1			2021-10-15 - \$277,000	CONVENIENCE STORE & LOT	300900 284800	5.653089888	1		
88 Milford Road	55195804	5945996	2022 \$259,300 N/A 2021 - \$208,500 - \$4,494.62 2020 - \$260,700 - \$5,319.17 2019 - \$258,000 - \$5,261.07 2018 - \$253,200 - \$5,158.05	24.36%	1				HOUSE, GARAGE & LOT	259300 253200	2.409162717	1		
340 Milford Road	55161301	1712448	2022 \$243,800 N/A 2021 - \$226,200 - \$4,081.55 2020 - \$226,200 - \$4,081.55 2019 - \$224,200 - \$4,045.46 2018 - \$220,500 - \$3,978.71	7.78%	1			2011-08-17 - \$225,000	RESIDENCE & LOT	243800 220500	10.56689342	1		
400 Milford Road	404665	1713054	2022 \$240,100 N/A 2021 - \$227,300 - \$8,728.93 2020 - \$227,300 - \$8,728.93 2019 - \$227,400 - \$6,768.11 2018 - \$226,500 - \$6,741.32	5.63%	1			2018-09-04 - \$280,000 2014-10-29 - \$1	2 STY,5 UNIT APART & W/H	240100 226500	6.004415011	1		
Milford Road	55023303	1712634	2022 \$221,500 N/A 2021 - \$221,500 - \$0.00 2020 - \$86,100 - \$0.00 2019 - \$82,100 - \$0.00 2018 - \$78,600 - \$0.00	0.00%			1		CHURCH PARKING LOT	221500 78600	181.8066158	1		
519 Milford Road	403964	1712317	2022 \$212,000 N/A 2021 - \$194,800 - \$3,514.97 2020 - \$194,800 - \$3,514.97 2019 - \$192,000 - \$3,464.45 2018 - \$188,700 - \$3,172.14	8.83%	1			2018-09-28 - \$1	HOUSE, GARAGE & LOT	212000 188700	12.34764176	1		
579 Milford Road	34215	1701780	2022 \$207,800 N/A 2021 - \$192,800 - \$3,478.88 2020 - \$192,800 - \$3,181.16 2019 - \$189,000 - \$3,112.60 2018 - \$185,800 - \$3,054.85	7.78%	1				RESIDENCE & LOT	207800 185800	11.84068891	1		
100 Milford Road	55158117	5945742	2022 \$204,000 N/A 2021 - \$185,100 - \$3,400.82 2020 - \$185,100 - \$3,110.31 2019 - \$183,900 - \$2,841.46 2018 - \$170,200 - \$3,345.58	10.21%	1				RESIDENCE & LOT	204400 170200	20.09400705	1		
412 Milford Road	404616	1713004	2022 \$200,700 N/A 2021 - \$186,200 - \$4,232.85 2020 - \$186,200 - \$4,191.37 2019 - \$185,700 - \$4,179.99 2018 - \$182,600 - \$3,253.34	7.79%	1			2013-01-18 - \$1 2010-02-26 - \$147,500	RESIDENCE & LOT	200700 182600	9.91237678	1		
494 Milford Road	404202	1712587	2022 \$198,400 N/A 2021 - \$185,200 - \$3,524.35 2020 - \$185,200 - \$3,340.30 2019 - \$183,800 - \$3,315.04 2018 - \$180,900 - \$3,262.72	7.13%	1				HOUSE, GARAGE & LOT	198400 180900	9.673852957	1		
40 Milford Road	404806	1713185	2022 \$196,400 N/A 2021 - \$180,500 - \$3,256.95 2020 - \$180,500 - \$3,006.13 2019 - \$179,800 - \$2,993.50 2018 - \$176,400 - \$2,932.16	8.81%	1			2011-05-18 - \$30,000	TWO STY,TWO FAM RES &LOT	196400 176400	11.33786848	1		
315 Milford Road	404343	1712715	2022 \$194,400 N/A 2021 - \$179,300 - \$4,352.47 2020 - \$179,300 - \$5,336.51 2019 - \$177,200 - \$3,856.86 2018 - \$173,900 - \$3,782.08	8.42%	1			2021-05-07 - \$180,000 2009-01-28 - \$150,000	HOUSE, GARAGE & LOT	194400 173900	11.78838413	1		
346 Milford Road	404160	1712545	2022 \$190,500 N/A 2021 - \$176,700 - \$4,327.47 2020 - \$176,700 - \$4,249.88 2019 - \$174,000 - \$4,183.58 2018 - \$171,100 - \$4,112.49	7.81%	1				RESIDENCE, GARAGE & LOT	190500 171000	11.40350877	1		
5 Milford Road	55189435	5876804	2022 \$189,900 N/A 2021 - \$191,900 - \$4,137.66 2020 - \$191,900 - \$4,137.66 2019 - \$190,000 - \$4,096.34 2018 - \$186,300 - \$4,016.70	1.04%			1	2021-05-13 - \$180,000	HOUSE,GARAGE & LOT 07-03	189900 186300	1.93236715	1		
135 Milford Road	405449	1713826	2022 \$189,000 N/A 2021 - \$175,400 - \$3,164.92 2020 - \$175,400 - \$2,885.24 2019 - \$173,400 - \$2,849.15 2018 - \$170,400 - \$2,795.02	7.75%	1				RESIDENCE, GARAGE & LOT	189000 170400	10.91549296	1		
267 Milford Road	404137	1712503	2022 \$188,400 N/A 2021 - \$174,800 - \$3,154.09 2020 - \$174,800 - \$2,921.33 2019 - \$173,500 - \$2,897.87 2018 - \$170,500 - \$2,831.11	7.78%	1				HOUSE, GARAGE & LOT	188400 170500	10.49853372	1		
247 Milford Road	403808	1712155	2022 \$187,700 N/A 2021 - \$174,200 - \$5,184.71	7.75%	1				RESIDENCE & LOT	187700 169300	10.86828116	1		

COMMENTER J

138 Milford Road	404855	1713258	2022 \$161,800 N/A 2021 - \$150,100 - \$2,708.41 2020 - \$150,100 - \$2,481.08 2019 - \$147,900 - \$2,441.36 2018 - \$145,400 - \$2,396.24	7.79%	1		2020-07-23 - \$172,000	HOUSE & LOT
470 Milford Road	403857	1712202	2022 \$160,900 N/A 2021 - \$149,300 - \$2,693.97 2020 - \$149,300 - \$2,488.27 2019 - \$148,600 - \$2,475.64 2018 - \$146,100 - \$2,430.53	7.77%	1			HOUSE, GARAGE & LOT
170 Milford Road	403980	1712341	2022 \$160,100 N/A 2021 - \$146,800 - \$3,164.49 2020 - \$146,800 - \$3,049.01 2019 - \$146,000 - \$2,518.94 2018 - \$143,100 - \$2,466.62	9.06%	1			HOUSE, GARAGE & LOT
211 Milford Road	405167	1713559	2022 \$160,000 N/A 2021 - \$148,400 - \$4,416.83 2020 - \$148,400 - \$4,416.83 2019 - \$147,000 - \$3,169.27 2018 - \$144,500 - \$3,114.79	7.82%	1		2021-03-12 - \$180,000 2016-03-16 - \$140,000 2011-12-20 - \$145,000	HOUSE & LOT
580 Milford Road	34918	1699705	2022 \$159,900 N/A 2021 - \$148,400 - \$4,416.83 2020 - \$148,400 - \$4,416.83 2019 - \$146,300 - \$4,354.33 2018 - \$143,800 - \$2,452.18	7.75%	1			RESIDENCE, GARAGE & LOT
173 Milford Road	404749	1713127	2022 \$159,400 N/A 2021 - \$147,900 - \$2,668.71 2020 - \$147,900 - \$2,549.62 2019 - \$145,900 - \$2,513.53 2018 - \$143,500 - \$2,470.23	7.78%	1			HOUSE & LOT
513 Milford Road	55003909	1713981	2022 \$157,400 N/A 2021 - \$146,100 - \$2,800.23 2020 - \$146,100 - \$2,607.16 2019 - \$145,000 - \$2,586.19 2018 - \$142,500 - \$2,537.71	7.73%	1			HOUSE & LOT
328 Milford Road	404095	1712464	2022 \$156,200 N/A 2021 - \$145,000 - \$2,616.38 2020 - \$145,000 - \$2,432.33 2019 - \$144,400 - \$2,408.88 2018 - \$142,000 - \$2,190.54	7.72%	1			HOUSE & LOT
394 Milford Road	405514	1713931	2022 \$156,200 N/A 2021 - \$142,400 - \$4,238.26 2020 - \$142,400 - \$4,238.26 2019 - \$138,100 - \$4,110.28 2018 - \$137,800 - \$4,101.34	9.69%	1			RESIDENCE GARAGE & LOT
573 Milford Road	34223	1699056	2022 \$155,800 N/A 2021 - \$144,600 - \$2,609.16 2020 - \$144,600 - \$2,376.40 2019 - \$144,000 - \$2,365.57 2018 - \$141,600 - \$2,322.27	7.75%	1		2009-06-11 - \$145,000	RESIDENCE & LOT
151 Milford Road	404178	1712553	2022 \$155,700 N/A 2021 - \$141,800 - \$4,220.39 2020 - \$141,800 - \$4,220.39 2019 - \$139,700 - \$4,157.89 2018 - \$136,700 - \$4,068.61	9.80%	1		2015-11-20 - \$51,000 2014-03-18 - \$1 2013-10-10 - \$1 2010-11-03 - \$150,000 2010-10-08 - \$1	RESIDENCE & LOT
225 Milford Road	404525	1712896	2022 \$154,100 N/A 2021 - \$143,000 - \$2,580.29 2020 - \$143,000 - \$2,389.03 2019 - \$142,800 - \$2,385.42 2018 - \$140,400 - \$2,289.79	7.76%	1			HOUSE & LOT
453 Milford Road	405241	1713630	2022 \$152,400 N/A 2021 - \$141,400 - \$2,551.42 2020 - \$141,400 - \$2,551.42 2019 - \$140,000 - \$3,137.96 2018 - \$137,600 - \$4,095.38	7.78%	1		2019-05-23 - \$135,000 2016-07-04 - \$24,500	Residence & Lot
55 Milford Road	405068	1713850	2022 \$152,100 N/A 2021 - \$152,200 - \$2,746.30 2020 - \$152,200 - \$2,619.99 2019 - \$150,700 - \$2,592.93 2018 - \$147,700 - \$2,538.80	0.07%	1			HOUSE, GARAGE & LOT
523 Milford Road	404442	1712838	2022 \$152,000 N/A 2021 - \$141,100 - \$2,546.01 2020 - \$141,100 - \$2,336.70 2019 - \$139,100 - \$2,300.62 2018 - \$136,800 - \$2,259.11	7.73%	1			HOUSE, GARAGE & LOT
524 Milford Road	405134	1713525	2022 \$152,000 N/A 2021 - \$141,000 - \$2,544.20 2020 - \$141,000 - \$2,544.20 2019 - \$140,600 - \$2,536.99 2018 - \$138,200 - \$2,493.68	7.80%	1		2015-03-27 - \$139,000	HOUSE, GARAGE & LOT
210 Milford Road	404236	1712618	2022 \$151,900 N/A 2021 - \$151,000 - \$3,255.51 2020 - \$151,000 - \$3,156.28 2019 - \$149,500 - \$3,123.35 2018 - \$146,600 - \$3,061.65	0.60%	1			HOUSE, GARAGE & LOT
472 Milford Road	404285	1712668	2022 \$151,500 N/A 2021 - \$140,600 - \$2,536.99 2020 - \$140,600 - \$2,399.85 2019 - \$139,900 - \$2,387.23 2018 - \$137,500 - \$2,343.92	7.75%	1		2021-12-15 - \$129,000	HOUSE & LOT
518 Milford Road	404897	3785510	2022 \$150,600 N/A 2021 - \$139,700 - \$2,520.75 2020 - \$139,700 - \$2,914.33 2019 - \$138,500 - \$2,888.00 2018 - \$136,200 - \$2,839.47	7.80%	1			RESIDENCE & LOT
241 Milford Road	404921	1713321	2022 \$149,700 N/A 2021 - \$138,900 - \$2,506.32 2020 - \$138,900 - \$2,506.32 2019 - \$137,800 - \$2,486.46 2018 - \$135,500 - \$2,444.97	7.78%	1		2011-10-03 - \$119,900	HOUSE, GARAGE & LOT
221 Milford Road	405225	1713614	2022 \$147,500 N/A 2021 - \$136,800 - \$2,468.42 2020 - \$136,800 - \$2,468.42 2019 - \$136,600 - \$2,464.81 2018 - \$134,300 - \$2,423.31	7.82%	1		2017-04-11 - \$1	HOUSE & LOT

161800
145400 11.27922971 1

160900
146100 10.13004791 1

160100
143100 11.87980433 1

160000
144500 10.7266436 1

159900
143800 11.1961057 1

159400
145300 9.704060564 1

157400
142500 10.45614035 1

156200
142000 10 1

156200
137800 13.35268505 1

155800
141600 10.02824859 1

155700
136700 13.89904901 1

154100
140400 9.757834758 1

152400
137600 10.75581395 1

152100
147700 2.97901151 1

152000
136800 11.11111111 1

152000
138200 9.98552822 1

151900
146600 3.615279673 1

151500
137500 10.18181818 1

150600
136200 10.57268722 1

149700
135500 10.4797048 1

147500
134300 9.828741623 1

COMMENTER J

350 Milford Road	404103	1712472	2022 \$146,800 N/A 2021 - \$156,600 - \$2,825.69 2020 - \$156,600 - \$2,825.69 2019 - \$155,000 - \$2,796.82 2018 - \$152,000 - \$2,742.69	6.26%		1	2015-06-23 - \$159,000 2014-06-09 - \$39,900 2014-04-22 - \$1 2014-03-12 - \$20,000	HOUSE & LOT
226 Milford Road	403923	1712278	2022 \$145,000 N/A 2021 - \$134,500 - \$2,426.92 2020 - \$134,500 - \$2,309.63 2019 - \$133,800 - \$2,297.01 2018 - \$131,600 - \$2,257.31	7.81%		1		HOUSE, GARAGE & LOT
330 Milford Road	404087	1712456	2022 \$144,200 N/A 2021 - \$133,800 - \$2,414.29 2020 - \$133,800 - \$2,242.87 2019 - \$132,500 - \$2,219.41 2018 - \$130,300 - \$2,179.72	7.77%		1		HOUSE & LOT
51 Milford Road	404988	1713389	2022 \$143,700 N/A 2021 - \$133,300 - \$2,405.27 2020 - \$133,300 - \$2,300.62 2019 - \$132,100 - \$2,278.96 2018 - \$129,800 - \$2,203.18	7.80%		1		HOUSE, GARAGE & LOT
35 Milford Road	405498	4312027	2022 \$143,000 N/A 2021 - \$131,900 - \$3,925.74 2020 - \$131,900 - \$3,925.74 2019 - \$130,900 - \$3,895.98 2018 - \$136,700 - \$2,268.14	8.42%		1	2018-10-29 - \$80,000 2018-04-03 - \$80,000	HOUSE, GARAGE & LOT
534 Milford Road	405001	1713402	2022 \$141,800 N/A 2021 - \$131,600 - \$2,374.59 2020 - \$131,600 - \$2,251.89 2019 - \$130,500 - \$2,232.05 2018 - \$128,300 - \$2,192.35	7.75%		1		HOUSE & LOT
290 Milford Road	404954	1713355	2022 \$140,900 N/A 2021 - \$130,700 - \$2,358.36 2020 - \$140,400 - \$2,421.50 2019 - \$139,400 - \$2,403.46 2018 - \$137,100 - \$2,289.79	7.80%		1		HOUSE & LOT
250 Milford Road	404210	1712995	2022 \$140,700 N/A 2021 - \$130,500 - \$2,354.75 2020 - \$130,500 - \$2,354.75 2019 - \$129,600 - \$2,338.50 2018 - \$127,400 - \$2,298.81	7.82%		1	2018-07-19 - \$1 2015-05-28 - \$1 2014-05-23 - \$32,500 2013-10-28 - \$1 2013-10-28 - \$1 2013-10-28 - \$1	RESIDENCE & LOT
471 Milford Road	55186167	1712684	2022 \$140,100 N/A 2021 - \$127,500 - \$2,300.62 2020 - \$127,500 - \$2,199.57 2019 - \$126,600 - \$2,183.32 2018 - \$124,400 - \$2,143.63	9.88%		1		RESIDENCE, GARAGE & LOT
294 Milford Road	404962	1713363	2022 \$139,400 N/A 2021 - \$129,300 - \$2,333.09 2020 - \$129,300 - \$2,333.09 2019 - \$128,200 - \$2,313.24 2018 - \$126,100 - \$2,275.35	7.81%		1	2016-05-13 - \$29,000 2015-05-22 - \$45,000 2013-12-03 - \$136,000 2013-05-23 - \$1	HOUSE & LOT
258 Milford Road	404939	1713339	2022 \$139,300 N/A 2021 - \$129,200 - \$2,331.28 2020 - \$129,200 - \$2,138.22 2019 - \$128,400 - \$2,123.78 2018 - \$126,200 - \$2,084.09	7.82%		1		HOUSE, GARAGE & LOT
38 Milford Road	55233944	6584052	2022 \$138,100 N/A 2021 - \$126,700 - \$2,286.18 2020 - \$126,700 - \$2,286.18 2019 - \$124,700 - \$2,250.09 2018 - \$118,000 - \$2,241.76	9.00%		1	2018-01-08 - \$124,500 2011-02-21 - \$1	Residence & Lot
372 Milford Road	404913	1713313	2022 \$137,500 N/A 2021 - \$127,600 - \$2,302.41 2020 - \$127,600 - \$2,123.78 2019 - \$127,000 - \$2,112.96 2018 - \$124,800 - \$2,073.26	7.76%		1		HOUSE & LOT
283 Milford Road	404582	1712969	2022 \$137,400 N/A 2021 - \$127,500 - \$2,300.62 2020 - \$127,500 - \$2,300.62 2019 - \$126,500 - \$2,282.57 2018 - \$124,400 - \$2,244.67	7.76%		1	2016-09-01 - \$79,900	RESIDENCE & LOT
217 Milford Road	404459	1712846	2022 \$137,200 N/A 2021 - \$106,300 - \$1,918.08 2020 - \$106,300 - \$1,809.82 2019 - \$105,200 - \$1,789.96 2018 - \$103,100 - \$1,752.08	29.07%		1		HOUSE, GARAGE & LOT
93 Milford Road	405522	1713973	2022 \$137,100 N/A 2021 - \$127,200 - \$2,295.20 2020 - \$127,200 - \$2,109.35 2019 - \$126,500 - \$2,096.71 2018 - \$124,400 - \$2,058.83	7.78%		1		HOUSE & LOT
298 Milford Road	404970	1713371	2022 \$136,400 N/A 2021 - \$126,500 - \$2,282.57 2020 - \$126,500 - \$2,105.74 2019 - \$125,300 - \$2,084.09 2018 - \$123,200 - \$2,046.19	7.83%		1		HOUSE & LOT
287 Milford Road	404780	1713169	2022 \$136,100 N/A 2021 - \$126,300 - \$2,278.96 2020 - \$126,300 - \$2,278.96 2019 - \$125,200 - \$2,259.11 2018 - \$123,100 - \$2,221.22	7.76%		1	2017-08-30 - \$118,000	HOUSE & LOT
397 Milford Road	404350	1712731	2022 \$135,900 N/A 2021 - \$137,700 - \$2,484.66 2020 - \$137,700 - \$2,365.57 2019 - \$136,300 - \$2,340.31 2018 - \$133,600 - \$2,291.59	1.31%		1		RESIDENCE & LEASED LOT
457 Milford Road	404186	1712561	2022 \$135,300 N/A 2021 - \$125,500 - \$2,264.53 2020 - \$125,500 - \$2,089.50 2019 - \$124,900 - \$2,078.67 2018 - \$122,800 - \$2,040.78	7.81%		1		RESIDENCE & LOT
254 Milford Road	403816	1712163	2022 \$134,900 N/A 2021 - \$128,300 - \$2,315.05 2020 - \$128,300 - \$2,315.05 2019 - \$127,600 - \$2,302.41 2018 - \$127,600 - \$2,302.41	5.14%		1	2010-03-01 - \$76,900	HOUSE, GARAGE & LOT
306 Milford Road	404335	1712707	2022 \$134,500 N/A	9.82%		1	2017-03-31 - \$128,000	HOUSE, GARAGE & LOT

146800	152000	-3.421052632	1
145000	131600	10.18237082	1
144200	130300	10.66768995	1
143700	129800	10.70878274	1
143000	136700	4.608632041	1
141800	128300	10.52221356	1
140900	137100	2.771699489	1
140700	127400	10.43956044	1
140100	124400	12.62057878	1
139400	126100	10.54718477	1
139300	126200	10.38034865	1
138100	118000	17.03389831	1
137500	124800	10.17628205	1
137400	124400	10.45016077	1
137200	103100	33.07468477	1
137100	124000	10.56451613	1
136400	123200	10.71428571	1
136100	123100	10.5605199	1
135900	133600	1.721556886	1
135300	122800	10.17915309	1
134900	127600	5.721003135	1
134500			

COMMENTER J

			2021 - \$122,700 - \$2,645.26 2020 - \$122,700 - \$2,645.26 2019 - \$119,700 - \$2,580.58 2018 - \$117,200 - \$2,527.27			2017-02-21 - \$22,188		117200	14.76109215	1
Milford Road	55233043	1713096	2022 \$134,200 N/A 2021 - \$124,500 - \$2,975.40 2020 - \$124,500 - \$2,975.40 2019 - \$121,600 - \$2,906.66 2018 - \$119,600 - \$2,741.57	7.79%	1	2018-03-08 - \$17,500 2017-06-13 - \$1	RESIDENCE & LOT	134200 119600	12.20735786	1
208 Milford Road	405035	1713436	2022 \$133,400 N/A 2021 - \$123,800 - \$2,233.85 2020 - \$123,800 - \$2,233.85 2019 - \$123,200 - \$2,223.02 2018 - \$121,100 - \$2,185.13	7.75%	1	2011-10-25 - \$125,000	HOUSE & LOT	133400 121000	10.24793388	1
358 Milford Road	404111	1712480	2022 \$132,000 N/A 2021 - \$114,800 - \$3,416.79 2020 - \$114,800 - \$3,416.79 2019 - \$112,500 - \$3,348.35 2018 - \$112,500 - \$3,348.35	14.98%	1	2021-05-03 - \$307,000	2 STY,4 UNIT APART BLDG	132000 112500	17.33333333	1
233 Milford Road	404558	1712935	2022 \$131,600 N/A 2021 - \$122,100 - \$2,203.18 2020 - \$122,100 - \$2,165.28 2019 - \$121,400 - \$2,152.65 2018 - \$109,200 - \$1,932.52	7.78%	1		RESIDENCE & LOT	131600 109200	20.51282051	1
418 Milford Road	404723	1713101	2022 \$130,700 N/A 2021 - \$118,400 - \$2,552.43 2020 - \$118,400 - \$2,552.43 2019 - \$116,500 - \$2,511.12 2018 - \$113,900 - \$2,391.05	10.39%	1		HOUSE & LOT	130700 113900	14.74978051	1
507 Milford Road	404400	1712781	2022 \$129,100 N/A 2021 - \$119,800 - \$3,565.60 2020 - \$119,800 - \$3,565.60 2019 - \$119,300 - \$3,550.73 2018 - \$117,300 - \$3,491.21	7.76%	1		RESIDENCE & LOT	129100 117300	10.05967604	1
114 Milford Road	404541	1712919	2022 \$128,600 N/A 2021 - \$119,300 - \$2,560.18 2020 - \$119,300 - \$3,550.73 2019 - \$118,300 - \$3,520.96 2018 - \$40,500 - \$1,205.41	7.80%	1	2021-04-22 - \$145,000 2017-01-27 - \$30,000 2014-10-02 - \$17,113 2013-07-16 - \$1 2012-12-18 - \$1 2012-09-26 - \$1	Residence & Lot	128600 40500	217.5308642	1
41 Milford Road	405233	1713622	2022 \$128,100 N/A 2021 - \$118,800 - \$2,143.63 2020 - \$115,700 - \$2,091.17 2019 - \$107,100 - \$1,932.52 2018 - \$105,300 - \$1,900.04	7.83%	1	2020-01-02 - \$129,000 2018-12-21 - \$25,000 2015-03-20 - \$1 2012-12-07 - \$1	Residence & Lot	128100 105300	21.65242165	1
73 Milford Road	55151427	5231185	2022 \$128,100 N/A 2021 - \$118,900 - \$2,145.44 2020 - \$118,900 - \$2,038.97 2019 - \$118,300 - \$2,028.15 2018 - \$116,300 - \$1,992.06	7.74%	1		HOUSE, GARAGE & LOT	128100 116300	10.14617369	1
310 Milford Road	405274	1713664	2022 \$128,100 N/A 2021 - \$127,300 - \$2,297.01 2020 - \$127,300 - \$2,203.18 2019 - \$126,000 - \$2,179.72 2018 - \$123,500 - \$2,134.61	0.63%	1		RESIDENCE, GARAGE & LOT	128100 123500	3.724696356	1
497 Milford Road	404848	1713232	2022 \$127,900 N/A 2021 - \$118,700 - \$2,141.83 2020 - \$118,700 - \$2,028.15 2019 - \$117,600 - \$2,008.30 2018 - \$115,600 - \$1,972.21	7.75%	1		HOUSE, GARAGE & LOT	127900 115600	10.64013841	1
27 Milford Road	404756	1713135	2022 \$127,400 N/A 2021 - \$118,000 - \$2,129.19 2020 - \$118,000 - \$2,022.74 2019 - \$117,600 - \$2,015.52 2018 - \$115,700 - \$1,981.23	7.71%	1		HOUSE, GARAGE & LOT	127100 115700	9.85306828	1
281 Milford Road	403873	1712228	2022 \$125,200 N/A 2021 - \$116,200 - \$2,096.71 2020 - \$116,200 - \$2,096.71 2019 - \$115,700 - \$2,087.70 2018 - \$113,700 - \$2,051.61	7.75%	1	2013-04-15 - \$55,000 2012-02-09 - \$1	HOUSE & LOT	125200 113700	10.11433597	1
272 Milford Road	405027	1713428	2022 \$125,000 N/A 2021 - \$115,000 - \$2,075.06 2020 - \$125,400 - \$2,262.72 2019 - \$124,100 - \$2,239.27 2018 - \$121,800 - \$2,197.76	8.70%	1	2010-05-31 - \$103,000	HOUSE, CARPORT & LOT	125000 121800	2.6272578	1
162 Milford Road	403840	1712197	2022 \$124,700 N/A 2021 - \$115,700 - \$2,087.70 2020 - \$115,700 - \$2,087.70 2019 - \$114,900 - \$2,073.26 2018 - \$113,000 - \$2,038.97	7.78%	1	2020-03-04 - \$112,000 2016-06-07 - \$77,000 2016-01-20 - \$1 2015-11-12 - \$1	HOUSE, GARAGE & LOT	124700 113000	10.3539823	1
406 Milford Road	404145	1712529	2022 \$124,000 N/A 2021 - \$115,000 - \$2,075.06 2020 - \$115,000 - \$1,972.21 2019 - \$114,400 - \$1,961.39 2018 - \$112,500 - \$1,927.10	7.83%	1		HOUSE, GARAGE & LOT	124000 112500	10.22222222	1
Milford Road	55098404	1713698	2022 \$123,600 N/A 2021 - \$114,700 - \$2,069.65 2020 - \$114,700 - \$1,910.86 2019 - \$114,200 - \$1,901.84 2018 - \$112,300 - \$1,867.56	7.76%	1		RESIDENCE, GARAGE & LOT	123600 112300	10.06233304	1
17 Milford Road	405175	1713567	2022 \$121,500 N/A 2021 - \$112,800 - \$2,035.36 2020 - \$112,800 - \$2,035.36 2019 - \$111,600 - \$2,013.71 2018 - \$109,800 - \$1,981.23	7.71%	1	2017-10-12 - \$1 2015-02-12 - \$45,000	HOUSE, GARAGE & LOT	121500 109800	10.6557377	1
224 Milford Road	404947	1713347	2022 \$119,100 N/A 2021 - \$107,600 - \$1,941.53 2020 - \$107,600 - \$1,941.53 2019 - \$107,000 - \$1,930.71 2018 - \$105,200 - \$1,880.18	10.69%	1	2021-11-05 - \$135,500 2018-08-17 - \$117,000 2010-09-27 - \$82,000	RESIDENCE & LOT	119100 105200	13.21292776	1
24 Milford Road	55097398	4563000	2022 \$118,800 N/A 2021 - \$103,500 - \$2,171.09 2020 - \$103,500 - \$2,171.09 2019 - \$101,800 - \$2,134.54 2018 - \$98,500 - \$2,065.63	14.78%	1	2016-08-09 - \$73,000 2016-04-14 - \$55,000	Residence & Lot	118800 98500	20.60913706	1
262 Milford Road	405084	1713478	2022 \$118,000 N/A 2021 - \$109,000 - \$1,966.80	8.26%	1	2020-06-22 - \$109,000	HOUSE, GARAGE & LOT	118000 114900	2.697998259	1

COMMENTER J

			2018 - \$71,000 - \$2,113.17										
130 Milford Road	55123673	6538043	2022 \$83,200 N/A 2021 - \$69,300 - \$2,028.90 2020 - \$69,300 - \$2,028.90 2019 - \$69,300 - \$2,028.90 2018 - \$69,300 - \$2,028.90	20.06%	1			2011-02-24 - \$1	1 Apt - Not subsidized	83200 69300	20.05772006	1	
Milford Road	405431	1713818	2022 \$69,800 N/A 2021 - \$69,800 - \$863.22 2020 - \$69,800 - \$863.22 2019 - \$69,800 - \$863.22 2018 - \$69,800 - \$863.22	0.00%				2011-08-04 - \$1	VACANT LAND	69800 69800	0		1
158 Milford Road	403931	1712286	2022 \$67,400 N/A 2021 - \$60,800 - \$1,809.60 2020 - \$60,800 - \$1,809.60 2019 - \$60,000 - \$1,785.78 2018 - \$58,600 - \$1,744.11	10.86%	1				HOUSE, GARAGE & LOT	67400 58600	15.01706485	1	
370 Milford Road	403881	1712236	2022 \$63,600 N/A 2021 - \$59,000 - \$1,064.60 2020 - \$118,600 - \$2,140.02 2019 - \$117,500 - \$2,120.18 2018 - \$115,500 - \$2,084.09	7.80%	1			2020-12-02 - \$59,000 2020-09-25 - \$67,000 2015-12-09 - \$1 2014-02-17 - \$20,000 2013-08-12 - \$1	Residence & Lot	63600 115500	-44.93506494		1
Milford Road	55124028	1713119	2022 \$35,000 N/A 2021 - \$35,000 - \$1,057.60 2020 - \$35,000 - \$1,057.60 2019 - \$35,000 - \$1,057.60 2018 - \$35,000 - \$1,057.60	0.00%					VACANT LAND	35000 35000	0		1
Milford Road	405381	1713779	2022 \$35,000 N/A 2021 - \$35,000 - \$1,057.60 2020 - \$35,000 - \$1,057.60 2019 - \$35,000 - \$1,057.60 2018 - \$35,000 - \$1,057.60	0.00%					VACANT LAND	35000 35000	0		1
Milford Road	405423	1713800	2022 \$33,800 N/A 2021 - \$33,800 - \$418.01 2020 - \$33,800 - \$418.01 2019 - \$33,800 - \$418.01 2018 - \$33,800 - \$418.01	0.00%					Park and Land	33800 33800	0		1
253 Milford Road	404467	1712854	2022 \$25,000 N/A 2021 - \$25,000 - \$755.43 2020 - \$25,000 - \$755.43 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	0.00%					VACANT LAND	25000 25000	0		1
Milford Road	55212872	6157392	2022 \$16,200 N/A 2021 - \$15,100 - \$333.02 2020 - \$15,000 - \$330.81 2019 - \$14,800 - \$326.40 2018 - \$14,400 - \$317.57	7.28%	1			2011-06-06 - \$1	SEWAGE LIFT STATION	16200 14400	12.5	1	
Milford Road	55123681	5020631	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%				2013-07-11 - \$8,500	VACANT LAND	15000 15000	0		1
Milford Road	403949	1712294	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%					VACANT LOT	15000 15000	0		1
Milford Road	403956	1712309	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%					VACANT LAND	15000 15000	0		1
Milford Road	404038	1712406	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%				2021-05-13 - \$180,000	VACANT LAND	15000 15000	0		1
Milford Road	404129	4206789	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%					VACANT LOT	15000 15000	0		1
Milford Road	404491	1712862	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%					VACANT LOT	15000 15000	0		1
Milford Road	404509	1712870	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%					VACANT LAND	15000 15000	0		1
Milford Road	55049639	3977222	2022 \$15,000 N/A 2021 - \$15,000 - \$45.33 2020 - \$15,000 - \$45.33 2019 - \$15,000 - \$45.33 2018 - \$15,000 - \$45.33	0.00%					PARKING (LOT 88-1)	15000 15000	0		1
246 Milford Road	405456	4815368	2022 \$15,000 N/A 2021 - \$15,000 - \$45.33 2020 - \$15,000 - \$45.33 2019 - \$15,000 - \$45.33 2018 - \$15,000 - \$45.33	0.00%					PARKING LOT	15000 15000	0		1
244 Milford Road	55220024	6291251	2022 \$13,700 N/A 2021 - \$12,600 - \$615.25 2020 - \$12,400 - \$605.48 2019 - \$12,100 - \$590.84 2018 - \$11,700 - \$571.30	8.73%	1			2012-10-01 - \$1	UTILITY BLDG/tower & LOT	13700 11700	17.09401709	1	
Milford Road	55239969	6584078	2022 \$10,500 N/A 2021 - \$10,500 - \$317.29 2020 - \$10,500 - \$317.29 2019 - \$10,500 - \$317.29 2018 - \$10,500 - \$317.29	0.00%				2021-03-12 - \$75,000	Vacant Lot 17-03	10500 10500	0		1
Milford Road	431445	1714432	2022 \$7,500 N/A 2021 - \$7,500 - \$226.64 2020 - \$7,500 - \$226.64 2019 - \$7,500 - \$226.64 2018 - \$7,500 - \$226.64	0.00%				2021-11-12 - \$210,000	VACANT LOT	7500 7500	0		1
Milford Road	55233951	6584094	2022 \$6,500 N/A	0.00%				2021-03-12 - \$75,000	Vacant Lot 17-02	6500			

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			2021 - \$6,500 - \$196.41 2020 - \$6,500 - \$196.41 2019 - \$6,500 - \$196.41 2018 - \$6,500 - \$196.41			2019-02-19 - \$1		6500	0	1
Milford Road	55160402	5421081	2022 \$1,000 N/A 2021 - \$1,000 - \$30.21 2020 - \$1,000 - \$30.21 2019 - \$1,000 - \$17.85 2018 - \$1,000 - \$17.85	0.00%		1 2019-07-23 - \$1,000 2018-12-14 - \$1 2018-01-22 - \$2,604 2017-07-18 - \$2,604	REMNANT LOT	1000 1000	0	1
Milford Road	414391	6291243	2022 \$800 N/A 2021 - \$800 - \$24.18 2020 - \$800 - \$24.18 2019 - \$800 - \$24.18 2018 - \$800 - \$24.18	0.00%		1	VACANT LAND	800 800	0	1
Milford Road	55022123	6041826	2022 \$100 N/A 2021 - \$100 - \$1.24 2020 - \$100 - \$1.24 2019 - \$100 - \$1.24 2018 - \$100 - \$1.24	0.00%		1	VACANT LAND	100 100	0	1
540 McKiel Street	33829	1698709	2022 \$253,900 N/A 2021 - \$239,300 - \$7,122.29 2020 - \$160,100 - \$4,765.06 2019 - \$155,900 - \$4,640.05 2018 - \$152,600 - \$4,541.83	6.10%	1	2020-10-16 - \$290,000	RESIDENCE & LOT	253900 152600	66.38269987	1
McKiel Street	55023352	1699933	2022 \$219,000 N/A 2021 - \$190,400 - \$5,666.87 2020 - \$190,400 - \$5,666.87 2019 - \$186,700 - \$5,556.76 2018 - \$186,700 - \$5,556.76	15.02%	1	2010-05-18 - \$290,000 2009-10-15 - \$1	5 UNIT & LOT	219000 186700	17.30048206	1
McKiel Street	55038442	1701859	2022 \$176,700 N/A 2021 - \$166,500 - \$3,000.72 2020 - \$166,500 - \$2,728.25 2019 - \$165,500 - \$2,710.21 2018 - \$162,700 - \$2,659.69	6.13%	1		RESIDENCE & LOT	176700 162700	8.6047941	1
544 McKiel Street	34447	1699276	2022 \$170,000 N/A 2021 - \$160,200 - \$3,960.47 2020 - \$160,200 - \$4,768.04 2019 - \$158,600 - \$4,720.41 2018 - \$155,900 - \$4,640.05	6.12%	1	2021-08-06 - \$180,000 2009-09-04 - \$113,000 2009-03-26 - \$1,000	RESIDENCE & LOT	170000 155900	9.04425914	1
535 McKiel Street	55003842	1701706	2022 \$146,500 N/A 2021 - \$138,000 - \$2,477.45 2020 - \$138,000 - \$2,253.70 2019 - \$136,000 - \$2,217.61 2018 - \$133,700 - \$2,176.11	6.16%	1		RESIDENCE & LOT	146500 133700	9.573672401	1
526 McKiel Street	33407	1698286	2022 \$144,100 N/A 2021 - \$135,800 - \$4,041.82 2020 - \$135,800 - \$4,041.82 2019 - \$133,200 - \$3,964.44 2018 - \$130,100 - \$3,872.17	6.11%	1	2022-01-13 - \$113,500	Residence & Lot	144100 130100	10.76095311	1
552 McKiel Street	34439	1699268	2022 \$142,000 N/A 2021 - \$133,800 - \$2,282.57 2020 - \$133,800 - \$2,075.06 2019 - \$132,000 - \$2,042.58 2018 - \$129,800 - \$2,002.88	6.13%	1	2021-08-04 - \$225,000 2018-10-25 - \$1	RESIDENCE & LOT	142000 129800	9.399075501	1
522 McKiel Street	34652	1699454	2022 \$140,900 N/A 2021 - \$130,100 - \$2,880.74 2020 - \$130,100 - \$2,792.32 2019 - \$126,800 - \$2,719.89 2018 - \$123,900 - \$2,655.85	8.30%	1		RESIDENCE & LOT	140900 123900	13.72074253	1
576 McKiel Street	33682	1698555	2022 \$138,400 N/A 2021 - \$130,500 - \$2,354.75 2020 - \$130,500 - \$2,354.75 2019 - \$130,400 - \$2,352.94 2018 - \$129,300 - \$2,333.09	6.05%	1	2016-06-30 - \$69,700	RESIDENCE & LOT	138400 129300	7.037896365	1
532 McKiel Street	33811	1698694	2022 \$137,300 N/A 2021 - \$129,400 - \$3,156.88 2020 - \$129,400 - \$3,851.33 2019 - \$127,700 - \$3,800.73 2018 - \$124,600 - \$3,708.47	6.11%	1	2020-12-17 - \$146,000	RESIDENCE & LOT	137300 124600	10.19261637	1
548 McKiel Street	34603	1699404	2022 \$127,400 N/A 2021 - \$117,900 - \$2,680.53 2020 - \$117,900 - \$2,610.16 2019 - \$114,900 - \$2,541.95 2018 - \$112,300 - \$2,482.15	8.06%	1		RESIDENCE & LOT	127400 112300	13.44612645	1
556 McKiel Street	32326	1697258	2022 \$126,000 N/A 2021 - \$118,700 - \$2,698.49 2020 - \$118,700 - \$2,631.72 2019 - \$117,500 - \$2,604.21 2018 - \$115,200 - \$2,552.15	6.15%	1		RESIDENCE & LOT	126000 115200	9.375	1
510 McKiel Street	55012751	1697981	2022 \$121,700 N/A 2021 - \$114,700 - \$3,413.82 2020 - \$114,700 - \$3,413.82 2019 - \$113,600 - \$3,381.08 2018 - \$111,400 - \$3,315.60	6.10%	1	2019-10-18 - \$36,250	3 UNIT DWELLING & LOT	121700 111400	9.245960503	1
514 McKiel Street	34595	1699399	2022 \$107,300 N/A 2021 - \$101,100 - \$3,009.04 2020 - \$101,100 - \$3,009.04 2019 - \$99,700 - \$2,967.37 2018 - \$116,500 - \$3,467.39	6.13%	1	2019-04-01 - \$139,900 2017-01-10 - \$29,000 2016-04-20 - \$1 2013-08-12 - \$108,500	Residences & Lot	107300 116500	-7.896995708	1
518 McKiel Street	34769	1699569	2022 \$62,600 N/A 2021 - \$59,000 - \$1,756.02 2020 - \$99,000 - \$2,946.54 2019 - \$98,000 - \$2,916.77 2018 - \$96,100 - \$2,860.22	6.10%	1	2020-11-16 - \$59,000 2019-10-18 - \$31,250	2 UNIT DWELLING & LOT	62600 96100	-34.85952133	1
146 Busby Street	55149397	1700051	2022 \$180,700 N/A 2021 - \$170,300 - \$3,047.64 2020 - \$170,300 - \$2,771.56 2019 - \$168,600 - \$2,740.89 2018 - \$165,800 - \$2,690.37	6.11%	1		BUNGALOW & LOT	180700 165800	8.986731001	1
148 Busby Street	55158000	1700069	2022 \$161,100 N/A 2021 - \$151,800 - \$2,706.60 2020 - \$151,800 - \$2,461.20 2019 - \$150,400 - \$2,435.94 2018 - \$147,900 - \$2,390.84	6.13%	1		2 FAMILY RESIDENCE	161100 147900	8.92494929	1
Busby Street	55158018	3630430	2022 \$77,200 N/A 2021 - \$77,200 - \$1,702.57 2020 - \$77,200 - \$1,702.57	0.00%		1	SEWAGE PUMPING STA & LOT	77200 70300	9.815078236	1

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Collins Street	55167340	1697737	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%	1		VACANT LOT	15000 15000	0	1
Collins Street	34488	1699315	2022 \$10,000 N/A 2021 - \$10,000 - \$302.17 2020 - \$10,000 - \$302.17 2019 - \$10,000 - \$302.17 2018 - \$10,000 - \$302.17	0.00%	1		VACANT LOT	10000 10000	0	1
Prospect Street West	33597	6449341	2022 \$12,229,700 N/A 2021 - \$12,075,900 - \$589,654.11 2020 - \$12,029,100 - \$587,368.93 2019 - \$12,029,100 - \$587,368.93 2018 - \$11,949,700 - \$583,491.90	1.27%	1		Brewery Complex & Land	12229700 11949700	2.343155058	1
507 Prospect Street West	35006	1699797	2022 \$136,700 N/A 2021 - \$128,800 - \$3,833.48 2020 - \$128,800 - \$3,833.48 2019 - \$127,500 - \$3,794.80 2018 - \$125,000 - \$3,720.38	6.13%	1		RESIDENCES & LOT	136700 125000	9.36	1
538 Prospect Street West	35444	1700166	2022 \$115,000 N/A 2021 - \$100,000 - \$2,976.30 2020 - \$100,000 - \$2,976.30 2019 - \$99,900 - \$2,295.66 2018 - \$97,200 - \$2,231.72	15.00%	1	2021-12-01 - \$650,000	Residence & Lot (4 Unit)	115000 97200	18.3127572	1
483 Prospect Street West	32805	1697703	2022 \$109,300 N/A 2021 - \$103,000 - \$2,341.35 2020 - \$103,000 - \$2,292.64 2019 - \$102,100 - \$2,271.71 2018 - \$99,200 - \$2,206.49	6.12%	1	2010-09-24 - \$93,000 2010-09-07 - \$1	RESIDENCES & LOT	109300 99200	10.18145161	1
496 Prospect Street West	32391	1697321	2022 \$30,000 N/A 2021 - \$30,000 - \$906.51 2020 - \$30,000 - \$906.51 2019 - \$30,000 - \$906.51 2018 - \$102,300 - \$3,044.77	0.00%	1		vacant LOT	30000 102300	-70.6744868	1
Prospect Street West	34181	1699014	2022 \$20,000 N/A 2021 - \$20,000 - \$604.34 2020 - \$20,000 - \$604.34 2019 - \$20,000 - \$604.34 2018 - \$20,000 - \$604.34	0.00%	1		VACANT LOT	20000 20000	0	1
Prospect Street West	32706	1697606	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%	1		VACANT LOT	15000 15000	0	1
Prospect Street West	33050	1697949	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%	1		VACANT LOT	15000 15000	0	1
Prospect Street West	36178	1700857	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%	1		VACANT LOT	15000 15000	0	1
519 Prospect Street West	34553	1699357	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%	1		VACANT LOT	15000 15000	0	1
Prospect Street West	32870	1697779	2022 \$10,000 N/A 2021 - \$10,000 - \$302.17 2020 - \$10,000 - \$302.17 2019 - \$10,000 - \$302.17 2018 - \$10,000 - \$302.17	0.00%	1		VACANT LOT	10000 10000	0	1
487 Prospect Street West	33555	1698440	2022 \$10,000 N/A 2021 - \$10,000 - \$302.17 2020 - \$10,000 - \$302.17 2019 - \$10,000 - \$302.17 2018 - \$10,000 - \$302.17	0.00%	1		VACANT LOT	10000 10000	0	1
491 Prospect Street West	32409	1697339	2022 \$10,000 N/A 2021 - \$10,000 - \$302.17 2020 - \$10,000 - \$302.17 2019 - \$10,000 - \$302.17 2018 - \$10,000 - \$302.17	0.00%	1		VACANT LOT	10000 10000	0	1
497 Prospect Street West	35881	1700572	2022 \$10,000 N/A 2021 - \$10,000 - \$302.17 2020 - \$10,000 - \$302.17 2019 - \$10,000 - \$302.17 2018 - \$10,000 - \$302.17	0.00%	1		Vacant Lot	10000 10000	0	1
Prospect Street West	34256	1699080	2022 \$9,000 N/A 2021 - \$9,000 - \$271.96 2020 - \$9,000 - \$271.96 2019 - \$9,000 - \$271.96 2018 - \$9,000 - \$271.96	0.00%	1		VACANT LOT	9000 9000	0	1
Prospect Street West	32334	1697266	2022 \$5,400 N/A 2021 - \$5,400 - \$163.17 2020 - \$5,400 - \$163.17 2019 - \$5,400 - \$163.17 2018 - \$5,400 - \$163.17	0.00%	1		VACANT LOT	5400 5400	0	1
Gifford Road	55024368	1718907	2022 \$2,654,700 N/A 2021 - \$2,460,800 - \$120,158.41 2020 - \$2,438,400 - \$119,064.63 2019 - \$2,369,300 - \$115,690.55 2018 - \$2,306,500 - \$112,624.09	7.88%	1		CFM BUILDINGS	2654700 2306500	15.09646651	1
60 Gifford Road	55036990	3650888	2022 \$189,200 N/A 2021 - \$175,600 - \$3,168.53 2020 - \$175,600 - \$3,015.16 2019 - \$174,300 - \$2,991.70 2018 - \$171,400 - \$2,939.37	7.74%	1		RESIDENCE & LOT	189200 171400	10.38506418	1
20 Gifford Road	32288	1697193	2022 \$185,700 N/A 2021 - \$172,300 - \$5,128.18 2020 - \$172,300 - \$5,128.18 2019 - \$170,000 - \$5,059.71 2018 - \$167,100 - \$4,973.40	7.78%	1		RESIDENCE & LOT	185700 167100	11.13105925	1
66 Gifford Road	55037006	3650901	2022 \$183,200 N/A 2021 - \$170,000 - \$3,067.48	7.76%	1		RESIDENCE & LOT	183200 166000	10.36144578	1

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Gifford Road	55176788	5658549	2018 - \$15,000 - \$453.26 2022 \$7,000 N/A 2021 - \$7,000 - \$341.81 2020 - \$2,100 - \$102.55 2019 - \$2,000 - \$97.66 2018 - \$1,900 - \$92.77	0.00%	1	2017-01-13 - \$16,243	VACANT DISCONTINUED ST	7000 1900	268.4210526	1
24 Hernani Court	55043731	3769043	2022 \$253,000 N/A 2021 - \$234,800 - \$4,236.73 2020 - \$234,800 - \$4,018.40 2019 - \$232,600 - \$3,978.71 2018 - \$228,700 - \$3,908.33	7.75%	1		RESIDENCE,GARAGE & LOT	253000 228700	10.62527328	1
8 Hernani Court	55043798	3769006	2022 \$244,800 N/A 2021 - \$224,400 - \$4,049.07 2020 - \$224,400 - \$4,049.07 2019 - \$221,100 - \$3,989.53 2018 - \$216,800 - \$3,911.94	9.09%	1	2020-06-09 - \$235,000 2013-01-18 - \$226,250	HOUSE, GARAGE & LOT	244800 216800	12.91512915	1
3 Hernani Court	55043665	3769124	2022 \$235,100 N/A 2021 - \$218,100 - \$3,935.40 2020 - \$218,100 - \$3,935.40 2019 - \$216,200 - \$3,901.11 2018 - \$212,500 - \$3,834.36	7.79%	1		RESIDENCE & LOT	235100 212500	10.63529412	1
28 Hernani Court	55043723	37690051	2022 \$230,500 N/A 2021 - \$213,900 - \$3,859.62 2020 - \$213,900 - \$3,657.52 2019 - \$212,200 - \$3,626.84 2018 - \$208,700 - \$3,563.70	7.76%	1	2019-10-08 - \$220,000 2009-12-31 - \$1	RESIDENCE,GARAGE & LOT	230500 208700	10.44561572	1
23 Hernani Court	55043707	3769085	2022 \$223,300 N/A 2021 - \$207,200 - \$3,738.72 2020 - \$207,200 - \$3,738.72 2019 - \$205,200 - \$3,702.63 2018 - \$201,700 - \$3,639.48	7.77%	1		RESIDENCE,GARAGE & LOT	223300 201700	10.70897372	1
27 Hernani Court	55043715	3769077	2022 \$212,400 N/A 2021 - \$197,100 - \$3,556.48 2020 - \$197,100 - \$3,368.82 2019 - \$195,000 - \$3,330.92 2018 - \$191,700 - \$3,271.38	7.76%	1		HOUSE, GARAGE & LOT	212400 191700	10.79812207	1
16 Hernani Court	55043756	3769027	2022 \$209,200 N/A 2021 - \$194,100 - \$3,502.35 2020 - \$194,100 - \$3,502.35 2019 - \$192,100 - \$3,466.26 2018 - \$188,900 - \$3,408.52	7.78%	1	2017-03-24 - \$195,000	RESIDENCE & LOT	209200 188900	10.74642668	1
20 Hernani Court	55043749	3769035	2022 \$204,400 N/A 2021 - \$189,600 - \$3,421.14 2020 - \$189,600 - \$3,421.14 2019 - \$188,200 - \$3,395.88 2018 - \$185,100 - \$3,339.95	7.81%	1	2015-03-23 - \$1 2015-03-23 - \$180,000	HOUSE,GARAGE & LOT	204400 185100	10.42679633	1
14 Hernani Court	55043764	3769019	2022 \$203,000 N/A 2021 - \$188,300 - \$3,397.69 2020 - \$188,300 - \$3,397.69 2019 - \$185,900 - \$3,354.38 2018 - \$182,800 - \$3,298.44	7.81%	1		RESIDENCE, GARAGE & LOT	203000 182800	11.05032823	1
21 Hernani Court	55043699	3769093	2022 \$196,300 N/A 2021 - \$182,100 - \$3,285.82 2020 - \$182,100 - \$3,105.38 2019 - \$181,000 - \$3,085.52 2018 - \$177,900 - \$3,029.59	7.80%	1		RESIDENCE & LOT	196300 177900	10.34288926	1
15 Hernani Court	55043681	3769108	2022 \$192,000 N/A 2021 - \$178,100 - \$3,213.64 2020 - \$178,100 - \$3,033.20 2019 - \$176,100 - \$2,997.11 2018 - \$173,200 - \$2,944.78	7.80%	1		RESIDENCE & LOT	192000 173200	10.85450346	1
9 Hernani Court	55043673	3769116	2022 \$179,200 N/A 2021 - \$166,200 - \$2,998.91 2020 - \$166,200 - \$2,858.17 2019 - \$164,500 - \$2,827.50 2018 - \$161,800 - \$2,710.21	7.82%	1		RESIDENCE,GARAGE & LOT	179200 161800	10.75401731	1
26 Dalia Court	55044200	3772402	2022 \$213,400 N/A 2021 - \$198,000 - \$3,572.71 2020 - \$198,000 - \$3,383.26 2019 - \$196,500 - \$3,356.18 2018 - \$193,200 - \$3,296.64	7.78%	1		RESIDENCE,GARAGE & LOT	213400 193200	10.45548654	1
39 Dalia Court	55044150	3772444	2022 \$202,000 N/A 2021 - \$187,500 - \$3,383.26 2020 - \$187,500 - \$3,383.26 2019 - \$185,800 - \$3,352.58 2018 - \$182,700 - \$3,296.64	7.73%	1		2 FAMILY RES & LOT	202000 182700	10.56376574	1
7 Dalia Court	55043640	3768974	2022 \$200,700 N/A 2021 - \$186,300 - \$3,361.60 2020 - \$186,300 - \$3,179.35 2019 - \$184,600 - \$3,148.68 2018 - \$181,500 - \$3,092.74	7.73%	1	2014-12-16 - \$180,000	RESIDENCE & LOT	200700 181500	10.5785124	1
17 Dalia Court	407726	3772494	2022 \$191,100 N/A 2021 - \$176,300 - \$5,247.22 2020 - \$176,300 - \$5,247.22 2019 - \$190,200 - \$4,447.21 2018 - \$187,000 - \$4,370.72	8.39%	1	2020-12-04 - \$195,000 2019-02-01 - \$174,000	Residence & Lot (2 Unit)	191100 187000	2.192513369	1
34 Dalia Court	55044184	4013500	2022 \$180,900 N/A 2021 - \$173,100 - \$2,798.63 2020 - \$173,100 - \$2,544.20 2019 - \$170,900 - \$2,504.51 2018 - \$175,500 - \$2,587.51	4.51%	1		RES, GARAGE & LOT	180900 175500	3.076923077	1
32 Dalia Court	55059851	4013518	2022 \$180,200 N/A 2021 - \$172,500 - \$2,787.80 2020 - \$172,500 - \$2,535.19 2019 - \$170,300 - \$2,495.49 2018 - \$174,900 - \$2,578.49	4.46%	1		RESIDENCE & LOT	180200 174900	3.03030303	1
28 Dalia Court	55044192	4058110	2022 \$178,700 N/A 2021 - \$171,100 - \$2,775.17 2020 - \$171,100 - \$2,524.36 2019 - \$170,900 - \$2,520.75 2018 - \$175,500 - \$2,603.75	4.44%	1	2020-01-06 - \$1	RESIDENCE,GARAGE & LOT	178700 175500	1.823361823	1
30 Dalia Court	55060917	4058102	2022 \$178,700 N/A 2021 - \$171,100 - \$2,807.65 2020 - \$171,100 - \$2,553.23 2019 - \$170,900 - \$2,549.62 2018 - \$175,500 - \$2,632.62	4.44%	1		RESIDENCE,GARAGE & LOT	178700 175500	1.823361823	1
35 Dalia Court	55057988	3996705	2022 \$161,400 N/A	7.76%	1		RESIDENCE & LOT	151400		

COMMENTER J

			2021 - \$15,000 - \$267.75 2020 - \$15,000 - \$267.75 2019 - \$15,000 - \$267.75 2018 - \$15,000 - \$453.26				2019-11-04 - \$1 2019-01-30 - \$5,359 2018-07-24 - \$5,359		15000	0	1
2 Tullip Street	55172852	1712951	2022 \$1,920,700 N/A 2021 - \$1,749,400 - \$52,835.57 2020 - \$1,673,300 - \$50,536.07 2019 - \$1,569,500 - \$47,425.58 2018 - \$1,569,500 - \$47,425.58	9.79%	1		2013-11-29 - \$38,190,000 2011-12-22 - \$2,525,000	MOBILE HOME PARK	1920700 1569500	22.37655304	1
3 Austin Lane	403972	1712325	2022 \$97,100 N/A 2021 - \$89,500 - \$2,698.52 2020 - \$86,100 - \$2,443.44 2019 - \$83,000 - \$2,347.33 2018 - \$83,000 - \$2,347.33	8.49%	1			1 STY & LAND	97100 83000	16.98795181	1
397 Dwyer Road	55149421	1718347	2022 \$357,000 N/A 2021 - \$318,500 - \$5,747.02 2020 - \$318,500 - \$5,247.20 2019 - \$312,700 - \$5,142.54 2018 - \$320,700 - \$5,286.89	12.09%	1			RESIDENCE, POOL & LOT	357000 320700	11.31898971	1
349 Dwyer Road	55112981	4734716	2022 \$337,200 N/A 2021 - \$311,400 - \$5,618.90 2020 - \$311,400 - \$5,355.46 2019 - \$305,600 - \$5,250.80 2018 - \$300,100 - \$5,151.57	8.29%	1			HOUSE, GARAGE & LOT	337200 300100	12.36254582	1
353 Dwyer Road	55113575	4721496	2022 \$315,000 N/A 2021 - \$294,500 - \$5,313.96 2020 - \$294,500 - \$5,313.96 2019 - \$291,600 - \$5,261.63 2018 - \$285,900 - \$5,158.78	6.96%	1		2015-03-27 - \$280,000 2015-03-25 - \$1	HOUSE, GARAGE & LOT	315000 285900	10.17838405	1
365 Dwyer Road	55098891	4571728	2022 \$303,600 N/A 2021 - \$282,300 - \$5,093.83 2020 - \$282,300 - \$5,093.83 2019 - \$278,600 - \$5,027.06 2018 - \$274,000 - \$4,944.06	7.55%	1		2015-08-14 - \$275,000	HOUSE, GARAGE & LOT	303600 274000	10.80291971	1
361 Dwyer Road	55098909	4571736	2022 \$268,500 N/A 2021 - \$247,000 - \$4,456.87 2020 - \$247,000 - \$4,242.15 2019 - \$244,000 - \$4,188.02 2018 - \$239,400 - \$4,105.02	8.70%	1			HOUSE & LOT	268500 239400	12.15538847	1
459 Dwyer Road	406884	1717155	2022 \$245,300 N/A 2021 - \$224,700 - \$4,054.49 2020 - \$224,700 - \$3,711.66 2019 - \$222,500 - \$3,671.96 2018 - \$218,100 - \$3,592.57	9.17%	1			HOUSE & LOT	245300 218100	12.47134342	1
429 Dwyer Road	406611	1716882	2022 \$239,000 N/A 2021 - \$219,800 - \$3,966.07 2020 - \$219,800 - \$3,635.87 2019 - \$216,700 - \$3,579.93 2018 - \$212,600 - \$3,505.95	8.74%	1			HOUSE & LOT	239000 212600	12.41768579	1
435 Dwyer Road	407841	1718088	2022 \$237,000 N/A 2021 - \$219,900 - \$3,967.88 2020 - \$219,900 - \$3,619.63 2019 - \$216,400 - \$3,556.48 2018 - \$212,700 - \$3,489.71	7.78%	1			HOUSE & LOT	237000 212700	11.42454161	1
426 Dwyer Road	55096242	4567965	2022 \$236,200 N/A 2021 - \$219,100 - \$3,953.45 2020 - \$219,100 - \$3,751.35 2019 - \$217,700 - \$3,726.09 2018 - \$214,100 - \$3,661.13	7.80%	1		2015-01-30 - \$1	HOUSE, GARAGE & LOT	236200 214100	10.32227931	1
389 Dwyer Road	55149439	1718339	2022 \$235,400 N/A 2021 - \$217,400 - \$3,922.77 2020 - \$217,400 - \$3,592.57 2019 - \$214,900 - \$3,547.45 2018 - \$211,100 - \$3,478.88	8.28%	1		2012-05-31 - \$210,000 2012-05-31 - \$1	HOUSE, GARAGE & LOT	235400 211100	11.51113216	1
412 Dwyer Road	406710	1716989	2022 \$228,500 N/A 2021 - \$212,000 - \$3,825.33 2020 - \$212,000 - \$3,480.69 2019 - \$209,400 - \$3,433.78 2018 - \$205,800 - \$3,368.82	7.78%	1			HOUSE, GARAGE & LOT	228500 205800	11.03012634	1
Dwyer Road	415059	1718915	2022 \$227,900 N/A 2021 - \$229,500 - \$4,141.10 2020 - \$229,500 - \$3,754.96 2019 - \$227,200 - \$3,713.46 2018 - \$222,700 - \$3,632.26	-0.70%	1		2020-10-20 - \$205,000 2020-10-15 - \$1	HOUSE, GARAGE & LOT	227900 222700	2.334979793	1
463 Dwyer Road	55031520	3570630	2022 \$215,500 N/A 2021 - \$200,000 - \$3,608.80 2020 - \$216,000 - \$3,552.87 2019 - \$213,900 - \$3,514.97 2018 - \$210,300 - \$3,450.01	7.75%	1			HOUSE, GARAGE & LOT	215500 210300	2.472658107	1
413 Dwyer Road	406637	1716905	2022 \$215,400 N/A 2021 - \$199,800 - \$3,605.19 2020 - \$199,800 - \$3,605.19 2019 - \$197,900 - \$3,570.91 2018 - \$203,600 - \$4,607.27	7.81%	1		2018-05-30 - \$182,000 2013-06-20 - \$1	Residence & Lot	215400 203600	5.7956778	1
405 Dwyer Road	406629	1716890	2022 \$214,400 N/A 2021 - \$199,000 - \$3,590.76 2020 - \$199,000 - \$3,298.44 2019 - \$197,200 - \$3,265.96 2018 - \$193,900 - \$3,206.42	7.74%	1			HOUSE & LOT	214400 193900	10.57246003	1
447 Dwyer Road	380469	1718779	2022 \$213,100 N/A 2021 - \$195,600 - \$3,529.41 2020 - \$195,600 - \$3,215.44 2019 - \$194,300 - \$3,191.99 2018 - \$190,500 - \$3,123.42	8.95%	1			HOUSE, GARAGE & LOT	213100 190500	11.86351706	1
400 Dwyer Road	406850	1717121	2022 \$207,300 N/A 2021 - \$192,300 - \$3,469.87 2020 - \$192,300 - \$3,155.90 2019 - \$190,300 - \$3,119.81 2018 - \$187,100 - \$3,062.07	7.80%	1			HOUSE, GARAGE & LOT	207300 187100	10.79636558	1
446 Dwyer Road	429639	1718355	2022 \$204,300 N/A 2021 - \$189,500 - \$3,404.91 2020 - \$189,500 - \$3,096.35 2019 - \$186,500 - \$3,042.22 2018 - \$183,300 - \$2,984.48	7.81%	1			HOUSE, GARAGE & LOT	204300 183300	11.45662848	1
469 Dwyer Road	407023	1717286	2022 \$204,100 N/A 2021 - \$189,400 - \$3,417.53 2020 - \$189,400 - \$3,417.53	7.76%	1		2019-06-21 - \$182,500 2019-06-20 - \$1	HOUSE & LOT	204100 185500	10.02695418	1

COMMENTER J

285 River H II Drive	406488	1716751	2022 \$183,300 N/A 2021 - \$170,100 - \$3,069.29 2020 - \$170,100 - \$2,823.89 2019 - \$167,200 - \$2,771.56 2018 - \$164,400 - \$2,721.04	7.76%	1			HOUSE & LOT
River Hill Drive	55021216	1716727	2022 \$183,200 N/A 2021 - \$170,000 - \$3,067.48 2020 - \$170,000 - \$3,067.48 2019 - \$169,000 - \$3,049.44 2018 - \$166,100 - \$2,997.11	7.76%	1			HOUSE, GARAGE & LOT
358 River H II Drive	406355	1716620	2022 \$182,800 N/A 2021 - \$169,600 - \$3,060.26 2020 - \$161,800 - \$2,663.29 2019 - \$161,200 - \$2,652.47 2018 - \$158,500 - \$2,603.75	7.78%	1	2020-09-01 - \$212,000		HOUSE, GARAGE & LOT
253 River H II Drive	406439	1716701	2022 \$181,200 N/A 2021 - \$168,100 - \$3,033.20 2020 - \$168,100 - \$2,767.95 2019 - \$166,900 - \$2,746.30 2018 - \$164,000 - \$2,693.97	7.79%	1			HOUSE, GARAGE & LOT
270 River H II Drive	406504	1716777	2022 \$181,100 N/A 2021 - \$168,000 - \$3,031.39 2020 - \$168,000 - \$3,031.39 2019 - \$165,900 - \$2,993.50 2018 - \$163,100 - \$2,942.98	7.80%	1	2016-11-01 - \$150,000		HOUSE, GARAGE & LOT
213 River H II Drive	407924	1718151	2022 \$180,200 N/A 2021 - \$167,300 - \$3,018.77 2020 - \$167,300 - \$3,018.77 2019 - \$168,300 - \$3,036.81 2018 - \$165,500 - \$2,986.29	7.71%	1	2017-12-22 - \$165,000		Residence & Lot
278 River H II Drive	406736	1717008	2022 \$180,200 N/A 2021 - \$167,200 - \$3,016.96 2020 - \$167,200 - \$2,742.69 2019 - \$164,700 - \$2,697.58 2018 - \$161,900 - \$2,647.06	7.78%	1			HOUSE, GARAGE & LOT
214 River H II Drive	407940	1718169	2022 \$178,800 N/A 2021 - \$165,900 - \$2,993.50 2020 - \$165,900 - \$2,722.84 2019 - \$163,500 - \$2,679.54 2018 - \$160,800 - \$2,630.82	7.78%	1			RESIDENCE,GARAGE & LOT
River Hill Drive	55019533	1716696	2022 \$175,800 N/A 2021 - \$163,100 - \$2,942.98 2020 - \$163,100 - \$2,677.73 2019 - \$161,100 - \$2,641.64 2018 - \$158,400 - \$2,592.93	7.79%	1			HOUSE, GARAGE & LOT
310 River H II Drive	406546	1716816	2022 \$175,700 N/A 2021 - \$163,000 - \$2,941.17 2020 - \$163,000 - \$2,693.97 2019 - \$161,500 - \$2,666.90 2018 - \$158,800 - \$2,618.19	7.79%	1			RESIDENCE & LOT
262 River H II Drive	406496	1716769	2022 \$175,600 N/A 2021 - \$162,900 - \$2,939.37 2020 - \$162,900 - \$2,721.04 2019 - \$162,000 - \$2,704.80 2018 - \$159,300 - \$2,656.08	7.80%	1			HOUSE & LOT
243 River H II Drive	407403	1717668	2022 \$174,300 N/A 2021 - \$161,800 - \$2,919.52 2020 - \$161,800 - \$2,919.52 2019 - \$159,900 - \$2,885.24 2018 - \$157,200 - \$2,836.52	7.73%	1	2019-04-16 - \$160,000		HOUSE,GARAGE & LOT
302 River H II Drive	406538	1716808	2022 \$170,600 N/A 2021 - \$158,300 - \$2,856.37 2020 - \$158,300 - \$2,648.86 2019 - \$157,200 - \$2,629.02 2018 - \$154,500 - \$2,580.29	7.77%	1			HOUSE & LOT
286 River H II Drive	406512	1716785	2022 \$169,000 N/A 2021 - \$156,700 - \$2,827.50 2020 - \$156,700 - \$2,827.50 2019 - \$155,000 - \$2,486.46 2018 - \$184,500 - \$3,018.77	7.85%	1	2019-08-16 - \$150,000		Residence & Lot
334 River H II Drive	406371	1716646	2022 \$168,100 N/A 2021 - \$156,000 - \$2,814.86 2020 - \$156,000 - \$2,574.88 2019 - \$154,400 - \$2,546.01 2018 - \$151,800 - \$2,499.10	7.76%	1			HOUSE & LOT
252 River H II Drive	406470	1716743	2022 \$161,100 N/A 2021 - \$149,500 - \$2,591.12 2020 - \$149,500 - \$2,356.55 2019 - \$147,400 - \$2,318.66 2018 - \$144,900 - \$2,273.54	7.76%	1			HOUSE & LOT
362 River H II Drive	406579	1716840	2022 \$159,800 N/A 2021 - \$148,200 - \$4,410.88 2020 - \$148,200 - \$4,410.88 2019 - \$147,200 - \$4,381.12 2018 - \$144,700 - \$4,306.71	7.83%	1			House & Lot
221 River H II Drive	406231	1716507	2022 \$158,600 N/A 2021 - \$150,800 - \$2,721.04 2020 - \$150,800 - \$2,721.04 2019 - \$149,800 - \$2,702.99 2018 - \$149,800 - \$2,702.99	5.17%	1	2011-10-20 - \$110,000 2011-04-13 - \$1		HOUSE & LOT
206 River H II Drive	407932	1718177	2022 \$154,800 N/A 2021 - \$143,600 - \$2,591.12 2020 - \$143,600 - \$2,363.76 2019 - \$142,800 - \$2,349.33 2018 - \$140,400 - \$2,306.02	7.80%	1			RESIDENCE & LOT
346 River H II Drive	406363	1716638	2022 \$148,700 N/A 2021 - \$138,000 - \$2,490.07 2020 - \$138,000 - \$2,490.07 2019 - \$147,300 - \$2,417.90 2018 - \$144,800 - \$2,372.79	7.75%	1	2019-07-15 - \$138,000		HOUSE & LOT
318 River H II Drive	406405	1716870	2022 \$146,400 N/A 2021 - \$135,900 - \$2,452.18 2020 - \$135,900 - \$2,452.18 2019 - \$135,100 - \$2,437.75 2018 - \$132,800 - \$2,396.24	7.73%	1	2012-01-04 - \$119,900 2012-01-04 - \$1		HOUSE & LOT
182 River H II Drive	370148	4330512	2022 \$134,700 N/A 2021 - \$128,900 - \$2,325.88	4.50%	1	2013-10-16 - \$145,900		RESIDENCE,GARAGE & LOT

183300	164400	11.49635036	1
183200	166100	10.29500301	1
182800	158500	15.33123028	1
181200	164000	10.48780488	1
181100	163100	11.03617413	1
180200	165500	8.882175227	1
180200	161900	11.30327363	1
178800	160800	11.19402985	1
175800	158400	10.98484848	1
175700	158800	10.64231738	1
175600	159300	10.23226616	1
174300	157200	10.8778626	1
170600	154500	10.42071197	1
169000	184500	-8.401084011	1
168100	151800	10.73781291	1
161100	144900	11.18012422	1
159800	144700	10.43538355	1
158600	149800	5.874499332	1
154800	140400	10.25641026	1
148700	144800	2.69370166	1
146400	132800	10.24096386	1
134700	133800	0.67264574	1

COMMENTER J

River Hill Drive	418483	3955937	2018 - \$25,000 - \$755.43 2022 \$5,000 N/A 2021 - \$5,000 - \$61.84 2020 - \$5,000 - \$61.84 2019 - \$5,000 - \$61.84 2018 - \$5,000 - \$61.84	0.00%		1	LOT "Y", F40, # 87	5000 5000	0	1	
River Hill Drive	414979	3955911	2022 \$5,000 N/A 2021 - \$5,000 - \$61.84 2020 - \$5,000 - \$61.84 2019 - \$5,000 - \$61.84 2018 - \$5,000 - \$61.84	0.00%		1	VACANT LAND	5000 5000	0	1	
353 Silvermount Crescent	406256	1716523	2022 \$205,700 N/A 2021 - \$191,500 - \$3,455.43 2020 - \$191,500 - \$3,455.43 2019 - \$189,100 - \$3,412.13 2018 - \$178,700 - \$3,224.47	7.42%		1	2020-09-11 - \$210,000 2018-08-29 - \$195,000 2011-04-29 - \$187,000	HOUSE & LOT	205700 178700	15.10912143	1
Silvermount Crescent	415018	4333099	2022 \$198,900 N/A 2021 - \$184,600 - \$3,330.92 2020 - \$184,600 - \$3,045.83 2019 - \$183,700 - \$3,029.59 2018 - \$180,600 - \$2,973.65	7.75%		1	2014-06-10 - \$1	HOUSE & LOTS	198900 180600	10.13289037	1
303 Silvermount Crescent	406330	1716604	2022 \$196,400 N/A 2021 - \$183,300 - \$3,307.47 2020 - \$183,300 - \$3,307.47 2019 - \$181,200 - \$3,269.57 2018 - \$178,400 - \$3,219.05	7.15%		1	2020-12-10 - \$205,000 2011-05-02 - \$185,000 2010-06-24 - \$175,000	HOUSE & LOT	196400 178400	10.0896861	1
297 Silvermount Crescent	406348	1716612	2022 \$169,700 N/A 2021 - \$166,600 - \$3,006.13 2020 - \$166,600 - \$2,746.30 2019 - \$165,400 - \$2,724.64 2018 - \$162,700 - \$2,675.93	13.87%		1	2021-09-24 - \$215,000 2019-09-26 - \$1	HOUSE, GARAGE & LOT	189700 162700	16.59496005	1
347 Silvermount Crescent	406553	1716824	2022 \$176,600 N/A 2021 - \$163,800 - \$2,955.61 2020 - \$163,800 - \$2,955.61 2019 - \$162,600 - \$2,933.95 2018 - \$159,900 - \$2,885.24	7.75%		1	2017-01-30 - \$166,500 2012-10-03 - \$165,000	HOUSE, GARAGE & LOT	176500 159900	10.38148843	1
305 Silvermount Crescent	406322	1716599	2022 \$175,800 N/A 2021 - \$163,100 - \$4,854.35 2020 - \$163,100 - \$4,854.35 2019 - \$160,200 - \$2,890.65 2018 - \$157,500 - \$3,704.73	7.79%		1	2019-03-05 - \$1 2018-06-28 - \$1 2014-01-13 - \$160,000 2011-10-19 - \$1 2011-05-06 - \$175,000	HOUSE, GARAGE & LOT	175800 157500	11.61904762	1
339 Silvermount Crescent	406264	1716531	2022 \$169,300 N/A 2021 - \$157,100 - \$2,834.72 2020 - \$157,100 - \$2,603.75 2019 - \$156,400 - \$2,591.12 2018 - \$153,700 - \$2,542.40	7.77%		1		HOUSE & LOT	169300 153700	10.14964216	1
333 Silvermount Crescent	406272	1716549	2022 \$169,000 N/A 2021 - \$156,800 - \$2,829.30 2020 - \$156,800 - \$2,600.15 2019 - \$156,400 - \$2,592.93 2018 - \$153,800 - \$2,546.01	7.78%		1		HOUSE & LOT	169000 153800	9.882964889	1
311 Silvermount Crescent	406314	1716581	2022 \$161,000 N/A 2021 - \$149,400 - \$2,695.77 2020 - \$149,400 - \$2,695.77 2019 - \$148,400 - \$2,677.73 2018 - \$145,900 - \$2,610.97	7.76%		1		HOUSE, GARAGE & LOT	161000 145900	10.34955449	1
319 Silvermount Crescent	406306	1716573	2022 \$160,200 N/A 2021 - \$148,700 - \$2,683.15 2020 - \$148,700 - \$2,614.58 2019 - \$147,600 - \$2,594.73 2018 - \$145,100 - \$2,547.81	7.73%		1	2020-09-15 - \$124,000 2020-09-11 - \$1	HOUSE, GARAGE & LOT	160200 145100	10.40661613	1
327 Silvermount Crescent	406280	1716557	2022 \$147,400 N/A 2021 - \$136,800 - \$2,468.42 2020 - \$136,800 - \$2,257.31 2019 - \$136,200 - \$2,246.48 2018 - \$133,900 - \$2,204.98	7.75%		1	2015-04-27 - \$1	HOUSE & LOT	147400 133900	10.08215086	1
Silvermount Crescent	414987	3771969	2022 \$8,800 N/A 2021 - \$8,800 - \$108.83 2020 - \$8,800 - \$108.83 2019 - \$8,800 - \$108.83 2018 - \$8,800 - \$108.83	0.00%		1		Vacant Greenspace	8800 8800	0	1
265 Glenburn Terrace	405795	1716060	2022 \$204,000 N/A 2021 - \$186,400 - \$3,363.40 2020 - \$186,400 - \$3,206.42 2019 - \$184,600 - \$3,173.94 2018 - \$180,800 - \$3,105.38	9.44%		1		RESIDENCE AND LOT	204000 180800	12.83185841	1
271 Glenburn Terrace	407163	1717422	2022 \$178,900 N/A 2021 - \$166,000 - \$2,995.30 2020 - \$166,000 - \$2,731.86 2019 - \$163,500 - \$2,686.76 2018 - \$160,800 - \$2,638.03	7.77%		1		HOUSE, GARAGE & LOT	178900 160800	11.25621891	1
269 Glenburn Terrace	405605	1715878	2022 \$175,500 N/A 2021 - \$162,900 - \$2,939.37 2020 - \$162,900 - \$2,939.37 2019 - \$161,400 - \$2,912.30 2018 - \$158,700 - \$2,863.59	7.73%		1	2020-04-01 - \$1 2015-07-27 - \$157,000 2012-06-29 - \$1 2012-06-28 - \$1	HOUSE, GARAGE & LOT	175500 158700	10.58601134	1
273 Glenburn Terrace	407064	1717325	2022 \$160,200 N/A 2021 - \$148,700 - \$2,683.15 2020 - \$148,700 - \$2,441.36 2019 - \$147,600 - \$2,421.50 2018 - \$145,100 - \$2,376.40	7.73%		1		HOUSE, GARAGE & LOT	160200 145100	10.40661613	1
275 Glenburn Terrace	406462	1716735	2022 \$155,700 N/A 2021 - \$144,500 - \$2,607.36 2020 - \$144,500 - \$2,607.36 2019 - \$143,500 - \$2,589.32 2018 - \$141,100 - \$2,546.01	7.75%		1		HOUSE, GARAGE & LOT	155700 141100	10.34727144	1
267 Glenburn Terrace	407577	1717820	2022 \$127,600 N/A 2021 - \$126,000 - \$2,273.54 2020 - \$126,000 - \$2,273.54 2019 - \$124,800 - \$2,251.89 2018 - \$122,400 - \$2,208.59	1.27%		1	2015-08-17 - \$105,500 2015-08-14 - \$1	HOUSE, GARAGE & LOT	127600 122400	4.248366013	1
173 Starburst Lane	408005	1718232	2022 \$214,800 N/A 2021 - \$200,700 - \$3,621.44 2020 - \$200,700 - \$3,621.44 2019 - \$198,200 - \$3,576.32 2018 - \$195,200 - \$3,522.19	7.03%		1	2016-09-16 - \$199,900	RESIDENCE & LOT	214800 195200	10.04098361	1
156 Starburst Lane	414441	1718397	2022 \$200,100 N/A	7.81%		1	2009-10-23 - \$172,500	RESIDENCE & LOT	200100		

COMMENTER J

Balmoral Crescent	55117022	4848646	2022 \$50,000 N/A 2021 - \$50,000 - \$1,510.85 2020 - \$50,000 - \$1,510.85 2019 - \$50,000 - \$1,510.85 2018 - \$50,000 - \$1,510.85	0.00%		1		VACANT LAND	50000 50000	0	1
Balmoral Crescent	414656	4091299	2022 \$35,000 N/A 2021 - \$35,000 - \$1,057.60 2020 - \$35,000 - \$1,057.60 2019 - \$35,000 - \$1,057.60 2018 - \$35,000 - \$1,057.60	0.00%		1		VACANT LOT 14 BK 1	35000 35000	0	1
Balmoral Crescent	414490	4091249	2022 \$25,000 N/A 2021 - \$25,000 - \$755.43 2020 - \$25,000 - \$755.43 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	0.00%		1		VACANT LOT	25000 25000	0	1
Balmoral Crescent	414755	4091265	2022 \$25,000 N/A 2021 - \$25,000 - \$755.43 2020 - \$25,000 - \$755.43 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	0.00%		1		VACANT LOT	25000 25000	0	1
Balmoral Crescent	414904	4091150	2022 \$25,000 N/A 2021 - \$25,000 - \$755.43 2020 - \$25,000 - \$755.43 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	0.00%		1		VACANT LOT 4 BK 4	25000 25000	0	1
Balmoral Crescent	414912	4091142	2022 \$25,000 N/A 2021 - \$25,000 - \$755.43 2020 - \$25,000 - \$755.43 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	0.00%		1		VACANT LOT 3 BK 4	25000 25000	0	1
Balmoral Crescent	414920	4091134	2022 \$25,000 N/A 2021 - \$25,000 - \$755.43 2020 - \$25,000 - \$755.43 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	0.00%		1		VACANT LOT 2 BK 4	25000 25000	0	1
Balmoral Crescent	414938	4091126	2022 \$25,000 N/A 2021 - \$25,000 - \$755.43 2020 - \$25,000 - \$755.43 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	0.00%		1		VACANT LOT 2A BK 4	25000 25000	0	1
Balmoral Crescent	414946	4091118	2022 \$25,000 N/A 2021 - \$25,000 - \$755.43 2020 - \$25,000 - \$755.43 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	0.00%		1		VACANT LOT 1 BK 4	25000 25000	0	1
Balmoral Crescent	414953	4091100	2022 \$25,000 N/A 2021 - \$25,000 - \$755.43 2020 - \$25,000 - \$755.43 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	0.00%		1		VACANT LOT 1A BK 4	25000 25000	0	1
Balmoral Crescent	414748	4091257	2022 \$15,000 N/A 2021 - \$15,000 - \$453.26 2020 - \$15,000 - \$453.26 2019 - \$15,000 - \$453.26 2018 - \$15,000 - \$453.26	0.00%		1	2016-09-16 - \$199,900	VACANT LOT	15000 15000	0	1
Saint Claire Avenue	55212013	1717723	2022 \$161,700 N/A 2021 - \$150,000 - \$2,706.60 2020 - \$176,600 - \$3,029.59 2019 - \$173,400 - \$2,971.85 2018 - \$170,400 - \$2,917.72	7.80%	1			HOUSE & LOT	161700 170400	-5.105633803	1
51 Francis Street	405050	1713452	2022 \$250,900 N/A 2021 - \$202,900 - \$3,661.13 2020 - \$202,900 - \$3,491.52 2019 - \$201,100 - \$3,459.04 2018 - \$197,500 - \$3,386.86	23.66%	1		2021-05-26 - \$245,000 2012-01-06 - \$1	HOUSE & LOT	250900 197500	27.03797468	1
66 Francis Street	55147573	5147019	2022 \$201,200 N/A 2021 - \$186,700 - \$3,368.82 2020 - \$186,700 - \$3,217.25 2019 - \$183,200 - \$3,154.09 2018 - \$180,100 - \$3,098.16	7.77%	1			HOUSE & LOT	201200 180100	11.71571349	1
56 Francis Street	403865	1712210	2022 \$177,200 N/A 2021 - \$163,600 - \$2,952.00 2020 - \$163,600 - \$2,827.50 2019 - \$162,100 - \$2,800.43 2018 - \$159,200 - \$2,690.37	8.31%	1			RESIDENCE & LOT	177200 159200	11.30653266	1
5 Francis Street	405191	1713583	2022 \$168,900 N/A 2021 - \$154,500 - \$2,787.80 2020 - \$154,500 - \$2,787.80 2019 - \$154,300 - \$2,629.02 2018 - \$151,200 - \$2,573.07	9.32%	1		2019-07-12 - \$155,000	HOUSE, GARAGE & LOT	168900 151200	11.70634921	1
70 Francis Street	333468	1714686	2022 \$162,200 N/A 2021 - \$150,500 - \$2,715.63 2020 - \$150,500 - \$2,533.38 2019 - \$147,900 - \$2,486.46 2018 - \$145,400 - \$2,441.36	7.77%	1			HOUSE & LOT	162200 145400	11.55433287	1
Francis Street	405183	6403418	2022 \$152,400 N/A 2021 - \$145,000 - \$2,616.38 2020 - \$145,000 - \$2,616.38 2019 - \$141,800 - \$2,558.64 2018 - \$141,800 - \$2,558.64	5.10%	1			House & Lot	152400 141800	7.475317348	1
55 Francis Street	405472	1714652	2022 \$146,300 N/A 2021 - \$135,400 - \$2,443.16 2020 - \$135,700 - \$2,338.50 2019 - \$134,400 - \$2,315.05 2018 - \$132,000 - \$2,223.02	8.05%	1		2020-02-24 - \$113,000	HOUSE & LOT	146300 132000	10.83333333	1
20 Francis Street	55181325	5781740	2022 \$145,600 N/A 2021 - \$138,500 - \$2,499.10 2020 - \$138,500 - \$2,385.42 2019 - \$137,600 - \$2,369.18 2018 - \$144,800 - \$2,499.10	5.13%	1		2016-08-12 - \$1 2010-01-22 - \$154,000	RESIDENCE & LOT	145600 144800	0.552486188	1
22 Francis Street	55181317	5781732	2022 \$145,300 N/A 2021 - \$138,100 - \$2,491.88 2020 - \$138,100 - \$2,394.44 2019 - \$137,200 - \$2,378.20 2018 - \$144,400 - \$2,508.12	5.21%	1		2010-03-18 - \$143,000	RESIDENCE & LOT	145300 144400	0.623268698	1
58 Francis Street	55147581	5147001	2022 \$134,700 N/A 2021 - \$125,000 - \$2,255.50	7.76%	1			RESIDENCE & LOT	134700 148800	-9.475806452	1

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31 Green Head Road	55021380	1699048	2018 - \$1,928,800 - \$94,181.38 2022 \$346,900 N/A 2021 - \$337,600 - \$16,484.67 2020 - \$337,600 - \$16,484.67 2019 - \$332,900 - \$16,255.17 2018 - \$328,200 - \$16,025.68	2.75%	1		2019-01-14 - \$1	SPORTS EXCELLENCE STORE	346900 328200	5.697745277	1
498 Green Head Road	406827	1717090	2022 \$276,600 N/A 2021 - \$253,900 - \$4,744.26 2020 - \$94,600 - \$2,769.60 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	8.94%	1		2017-10-23 - \$17,250 2016-04-20 - \$1 2015-12-17 - \$39,693 2015-08-21 - \$39,693	HOUSE, GARAGE & LOT	276600 25000	1006.4	1
661 Green Head Road	55227110	6456843	2022 \$257,000 N/A 2021 - \$244,500 - \$4,411.76 2020 - \$244,500 - \$4,411.76 2019 - \$242,000 - \$4,366.65 2018 - \$242,000 - \$4,366.65	5.11%	1		2015-10-22 - \$1	Residence & Lot	257000 242000	6.198347107	1
Green Head Road	55037949	1718020	2022 \$243,700 N/A 2021 - \$240,000 - \$725.21 2020 - \$240,000 - \$725.21 2019 - \$240,000 - \$725.21 2018 - \$238,100 - \$719.17	1.54%	1			COMMUNITY CENTRE & LAND	243700 238100	2.351952961	1
489 Green Head Road	406918	1717189	2022 \$234,200 N/A 2021 - \$217,300 - \$3,920.97 2020 - \$217,300 - \$3,735.11 2019 - \$214,800 - \$3,690.00 2018 - \$211,200 - \$3,625.04	7.78%	1		2021-03-25 - \$1	HOUSE, GARAGE & LOT	234200 211200	10.89015152	1
687 Green Head Road	55146674	1718436	2022 \$233,500 N/A 2021 - \$216,600 - \$3,908.33 2020 - \$216,600 - \$3,578.13 2019 - \$215,000 - \$3,549.26 2018 - \$211,400 - \$3,484.30	7.80%	1			RESIDENCE & LOT	233500 211400	10.45411542	1
558 Green Head Road	406652	1716921	2022 \$233,400 N/A 2021 - \$216,500 - \$4,571.49 2020 - \$216,500 - \$4,279.18 2019 - \$213,500 - \$4,215.80 2018 - \$209,900 - \$4,141.61	7.81%	1			RESIDENCE,GARAGE & LOT	233400 209900	11.19580753	1
571 Green Head Road	407718	1717969	2022 \$229,600 N/A 2021 - \$213,000 - \$3,843.37 2020 - \$213,000 - \$3,635.87 2019 - \$211,000 - \$3,599.78 2018 - \$207,500 - \$3,536.62	7.79%	1			RESIDENCE,GARAGE & LOT	229600 207500	10.65060241	1
559 Green Head Road	405936	1716206	2022 \$226,200 N/A 2021 - \$207,700 - \$4,477.83 2020 - \$207,700 - \$4,337.10 2019 - \$202,400 - \$4,222.70 2018 - \$198,500 - \$4,138.28	8.91%	1			HOUSE, GARAGE & LOT	226200 198500	13.95465995	1
671 Green Head Road	470922	1718795	2022 \$217,900 N/A 2021 - \$202,200 - \$4,359.84 2020 - \$202,200 - \$5,762.53 2019 - \$200,500 - \$5,967.49 2018 - \$197,100 - \$5,866.29	7.76%	1		2020-11-19 - \$1	RESIDENCE,GARAGE & LOT	217900 197100	10.55301877	1
329 Green Head Road	406991	1717252	2022 \$217,400 N/A 2021 - \$201,700 - \$4,230.12 2020 - \$201,700 - \$3,991.93 2019 - \$200,600 - \$3,968.57 2018 - \$197,300 - \$3,899.66	7.78%	1			RESIDENCE, GARAGE & LOT	217400 197300	10.18753168	1
Green Head Road	55031280	1716426	2022 \$210,800 N/A 2021 - \$195,600 - \$3,529.41 2020 - \$195,600 - \$3,529.41 2019 - \$193,300 - \$3,487.91 2018 - \$190,000 - \$3,428.36	7.77%	1		2010-11-01 - \$1	RESIDENCE & LOT	210800 190000	10.94736842	1
467 Green Head Road	406215	1716484	2022 \$209,900 N/A 2021 - \$194,700 - \$3,513.17 2020 - \$194,700 - \$3,329.12 2019 - \$192,900 - \$3,296.64 2018 - \$189,600 - \$3,237.09	7.81%	1			HOUSE & LOT	209900 189600	10.70675105	1
564 Green Head Road	469734	1718787	2022 \$205,800 N/A 2021 - \$190,900 - \$3,444.60 2020 - \$190,900 - \$3,395.88 2019 - \$188,000 - \$3,343.56 2018 - \$184,800 - \$3,285.82	7.81%	1			HOUSE & LOT	205800 184800	11.36363636	1
378 Green Head Road	405977	1716248	2022 \$200,300 N/A 2021 - \$190,500 - \$3,437.39 2020 - \$190,500 - \$3,437.39 2019 - \$188,600 - \$3,403.10 2018 - \$188,400 - \$3,579.93	5.14%	1		2021-12-29 - \$1 2016-12-01 - \$1 2012-07-24 - \$50,000	RESIDENCE & LOT	200300 198400	0.95766129	1
675 Green Head Road	407957	1718185	2022 \$199,800 N/A 2021 - \$185,400 - \$3,345.36 2020 - \$185,400 - \$3,060.26 2019 - \$183,300 - \$3,022.38 2018 - \$180,200 - \$2,966.43	7.77%	1			RESIDENCE,GARAGE & LOT	199800 180200	10.87680355	1
Green Head Road	55087464	5269675	2022 \$198,400 N/A 2021 - \$184,100 - \$3,321.91 2020 - \$184,100 - \$3,321.91 2019 - \$181,500 - \$3,274.99 2018 - \$178,400 - \$3,042.22	7.77%	1		2018-07-26 - \$1	HOUSE, GARAGE & LOT	198400 178400	11.21076233	1
446 Green Head Road	55151732	5230511	2022 \$195,900 N/A 2021 - \$181,800 - \$3,280.40 2020 - \$181,800 - \$2,989.90 2019 - \$178,600 - \$2,932.16 2018 - \$175,600 - \$2,878.02	7.76%	1			HOUSE, GARAGE & LOT	195900 175600	11.56036446	1
699 Green Head Road	448142	1718486	2022 \$189,100 N/A 2021 - \$175,400 - \$3,185.14 2020 - \$175,400 - \$2,927.11 2019 - \$174,100 - \$2,902.52 2018 - \$171,200 - \$2,850.21	7.81%	1			RESIDENCE & LOT	189100 171200	10.45560748	1
362 Green Head Road	407361	5041344	2022 \$185,900 N/A 2021 - \$172,500 - \$3,112.60 2020 - \$172,500 - \$3,112.60 2019 - \$170,500 - \$3,548.80 2018 - \$50,000 - \$1,488.15	7.77%	1		2019-03-18 - \$172,500 2018-03-01 - \$60,000 2017-12-13 - \$1 2010-05-03 - \$1	RESIDENCE & LOT	185900 50000	271.8	1
584 Green Head Road	55209886	1717139	2022 \$185,900 N/A 2021 - \$172,500 - \$5,134.13 2020 - \$172,500 - \$5,134.13 2019 - \$170,400 - \$5,071.61 2018 - \$167,500 - \$4,985.32	7.77%	1			HOUSE, GARAGE & LOT	185900 167500	10.98507463	1
493 Green Head Road	406926	1717197	2022 \$184,100 N/A	7.79%	1		2020-10-30 - \$187,500	RESIDENCE, GARAGE & LOT	184100		

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			2021 - \$170,800 - \$3,081.92 2020 - \$170,800 - \$3,081.92 2019 - \$169,400 - \$3,056.65 2018 - \$166,500 - \$3,004.33				2015-07-13 - \$1 2010-12-03 - \$127,500		166500	10.57057057	1
485 Green Head Road	406843	1717113	2022 \$181,300 N/A 2021 - \$168,300 - \$3,036.81 2020 - \$168,300 - \$2,879.82 2019 - \$167,000 - \$2,856.37 2018 - \$164,200 - \$2,805.85	7.72%	1		2017-10-03 - \$1 2012-04-25 - \$1	HOUSE & LOT	181300 164200	10.41412911	1
472 Green Head Road	407650	1717901	2022 \$180,200 N/A 2021 - \$167,200 - \$3,016.96 2020 - \$167,200 - \$2,854.56 2019 - \$165,700 - \$2,827.50 2018 - \$162,900 - \$2,776.98	7.78%	1			2 FMLY HOUSE & LOT	180200 162900	10.62001228	1
649 Green Head Road	407007	1717260	2022 \$179,400 N/A 2021 - \$166,500 - \$3,004.33 2020 - \$166,500 - \$2,850.95 2019 - \$165,300 - \$2,829.30 2018 - \$162,500 - \$2,778.78	7.75%	1			RESIDENCE & LOT	179400 162500	10.4	1
501 Green Head Road	405720	1715991	2022 \$179,200 N/A 2021 - \$166,300 - \$3,000.72 2020 - \$166,300 - \$2,771.56 2019 - \$166,000 - \$2,766.15 2018 - \$163,200 - \$2,715.63	7.76%	1			HOUSE & LOT	179200 163200	9.803921569	1
455 Green Head Road	407338	1717595	2022 \$178,700 N/A 2021 - \$165,800 - \$2,991.70 2020 - \$165,800 - \$2,811.26 2019 - \$165,800 - \$2,811.26 2018 - \$163,000 - \$2,760.73	7.78%	1			HOUSE & LOT	178700 163000	9.63190184	1
395 Green Head Road	407114	1717375	2022 \$177,400 N/A 2021 - \$164,600 - \$2,970.04 2020 - \$164,600 - \$2,970.04 2019 - \$162,800 - \$2,937.56 2018 - \$160,100 - \$2,888.85	7.78%	1		2012-07-27 - \$1 2012-07-27 - \$165,000	RESIDENCE, GARAGE & LOT	177400 160100	10.80574641	1
400 Green Head Road	55231641	6482446	2022 \$177,100 N/A 2021 - \$168,500 - \$3,040.42 2020 - \$168,500 - \$3,040.42 2019 - \$167,300 - \$3,018.77 2018 - \$167,300 - \$3,018.77	5.10%	1			Residence & lot	177100 167300	5.857740586	1
461 Green Head Road	406173	1716442	2022 \$176,300 N/A 2021 - \$163,600 - \$2,952.00 2020 - \$163,600 - \$2,952.00 2019 - \$162,600 - \$2,933.95 2018 - \$159,900 - \$2,885.24	7.76%	1		2016-12-23 - \$165,000 2016-12-23 - \$1 2016-03-18 - \$1 2012-11-30 - \$163,000	HOUSE, GARAGE & LOT	176300 159900	10.25641026	1
473 Green Head Road	407486	1717731	2022 \$173,700 N/A 2021 - \$161,100 - \$2,906.89 2020 - \$161,100 - \$2,762.54 2019 - \$159,200 - \$2,728.25 2018 - \$156,500 - \$2,679.54	7.82%	1		2010-05-18 - \$1	RESIDENCE & LOT	173700 156500	10.99041534	1
443 Green Head Road	405886	1716159	2022 \$172,200 N/A 2021 - \$158,100 - \$2,852.76 2020 - \$158,100 - \$2,852.76 2019 - \$156,300 - \$2,820.28 2018 - \$153,300 - \$2,766.15	8.92%	1		2017-09-29 - \$1 2017-09-29 - \$125,000	Residence & Lot	172200 153300	12.32876712	1
314 Green Head Road	407965	1718193	2022 \$171,700 N/A 2021 - \$163,300 - \$2,946.59 2020 - \$163,300 - \$2,946.59 2019 - \$143,400 - \$2,450.38 2018 - \$143,400 - \$2,450.38	5.14%	1		2019-08-15 - \$140,000	RESIDENCE & LOT	171700 143400	19.73500697	1
369 Green Head Road	405894	1716167	2022 \$170,600 N/A 2021 - \$158,300 - \$2,856.37 2020 - \$158,300 - \$2,856.37 2019 - \$155,900 - \$2,813.06 2018 - \$153,300 - \$2,766.15	7.77%	1		2014-03-31 - \$160,000	RESIDENCE, GARAGE & LOT	170600 153300	11.28506197	1
394 Green Head Road	406041	6482420	2022 \$169,300 N/A 2021 - \$161,000 - \$2,905.08 2020 - \$161,000 - \$2,905.08 2019 - \$161,200 - \$2,908.69 2018 - \$161,200 - \$2,908.69	5.16%	1		2012-07-11 - \$1	Residence & lot	169300 161200	5.024813896	1
325 Green Head Road	406900	1717171	2022 \$168,900 N/A 2021 - \$156,700 - \$2,827.50 2020 - \$156,700 - \$2,677.73 2019 - \$155,700 - \$2,659.69 2018 - \$153,100 - \$2,612.77	7.79%	1			RESIDENCE, GARAGE & LOT	168900 153100	10.32005225	1
635 Green Head Road	467738	1718460	2022 \$168,000 N/A 2021 - \$155,800 - \$2,811.26 2020 - \$155,800 - \$3,391.60 2019 - \$154,600 - \$3,364.07 2018 - \$152,000 - \$3,305.44	7.83%	1		2021-08-25 - \$230,000	HOUSE & LOT	168000 152000	10.52631579	1
601 Green Head Road	407684	1717935	2022 \$167,900 N/A 2021 - \$155,800 - \$2,811.26 2020 - \$155,800 - \$2,811.26 2019 - \$154,300 - \$2,784.19 2018 - \$151,700 - \$2,737.28	7.77%	1		2015-04-28 - \$80,000 2011-02-23 - \$1	RESIDENCE & LOT	167900 151700	10.67897165	1
406 Green Head Road	406975	1717244	2022 \$167,400 N/A 2021 - \$155,400 - \$2,804.04 2020 - \$155,400 - \$2,804.04 2019 - \$153,800 - \$2,775.17 2018 - \$151,200 - \$2,728.25	7.72%	1		2011-07-04 - \$155,000	RESIDENCE & LOT	167400 151200	10.71428571	1
315 Green Head Road	407304	1717561	2022 \$166,800 N/A 2021 - \$155,400 - \$2,804.04 2020 - \$155,400 - \$2,804.04 2019 - \$154,200 - \$2,782.38 2018 - \$151,800 - \$2,739.08	7.34%	1		2015-06-30 - \$153,000	RESIDENCE, GARAGE & LOT	166800 151800	9.881422925	1
405 Green Head Road	406959	1717228	2022 \$166,100 N/A 2021 - \$154,100 - \$2,780.59 2020 - \$154,100 - \$2,625.41 2019 - \$152,500 - \$2,596.54 2018 - \$149,900 - \$2,549.62	7.79%	1		2010-11-15 - \$1	RESIDENCE & LOT	166100 149900	10.8072048	1
537 Green Head Road	405928	1716191	2022 \$166,100 N/A 2021 - \$152,000 - \$2,811.22 2020 - \$152,000 - \$2,811.22 2019 - \$151,400 - \$2,800.39 2018 - \$148,400 - \$2,744.01	9.28%	1		2010-09-30 - \$129,000	HOUSE & LOT	166100 148400	11.92722372	1
308 Green Head Road	407973	3769491	2022 \$165,200 N/A 2021 - \$153,300 - \$2,766.15 2020 - \$153,300 - \$2,766.15	7.76%	1		2021-01-08 - \$180,000	HOUSE, GARAGE & LOT	165200 147900	11.69709263	1

COMMENTER J

476 Green Head Road	405563	1715836	2022 \$135,700 N/A 2021 - \$125,900 - \$2,271.74 2020 - \$125,900 - \$2,082.28 2019 - \$124,800 - \$2,062.43 2018 - \$122,700 - \$2,024.54	7.78%	1	2017-01-19 - \$1	HOUSE & LOT	135700 122700	10.59494703	1
731 Green Head Road	55194724	1718965	2022 \$135,600 N/A 2021 - \$125,800 - \$2,269.94 2020 - \$125,800 - \$2,269.94 2019 - \$124,300 - \$2,242.87 2018 - \$122,200 - \$2,204.98	7.79%	1	2014-08-14 - \$79,800	RESIDENCE & LOT	135600 122200	10.96563011	1
449 Green Head Road	407270	1717537	2022 \$134,900 N/A 2021 - \$125,100 - \$2,257.31 2020 - \$125,100 - \$2,140.02 2019 - \$124,100 - \$2,121.97 2018 - \$122,000 - \$2,084.09	7.83%	1		HOUSE & LOT	134900 122000	10.57377049	1
389 Green Head Road	405860	1716133	2022 \$134,300 N/A 2021 - \$124,600 - \$2,248.28 2020 - \$124,600 - \$2,248.28 2019 - \$123,500 - \$2,228.44 2018 - \$121,400 - \$2,067.84	7.78%	1	2018-07-30 - \$122,500	RESIDENCE, GARAGE & LOT	134300 121400	10.62602965	1
745 Green Head Road	55194740	1718591	2022 \$132,600 N/A 2021 - \$119,200 - \$2,849.29 2020 - \$119,200 - \$2,849.29 2019 - \$117,900 - \$2,817.64 2018 - \$115,000 - \$2,748.91	11.16%	1	2017-05-23 - \$115,000	2 FAMILY RES & LOT 08-12	132500 115000	15.2173913	1
431 Green Head Road	407460	1717715	2022 \$130,300 N/A 2021 - \$120,900 - \$2,181.52 2020 - \$120,900 - \$2,060.62 2019 - \$119,700 - \$2,038.97 2018 - \$117,700 - \$2,002.88	7.78%	1		Residence & Lot	130300 117700	10.70518267	1
437 Green Head Road	406124	1716395	2022 \$130,100 N/A 2021 - \$120,700 - \$2,177.92 2020 - \$120,700 - \$2,049.80 2019 - \$120,000 - \$2,037.17 2018 - \$118,000 - \$2,001.08	7.79%	1		HOUSE & LOT	130100 118000	10.25423729	1
Green Head Road	408070	1719026	2022 \$129,500 N/A 2021 - \$129,500 - \$3,913.10 2020 - \$129,500 - \$3,913.10 2019 - \$129,500 - \$3,913.10 2018 - \$129,500 - \$3,913.10	0.00%	1		VACANT LAND	129500 129500	0	1
425 Green Head Road	405712	1715983	2022 \$129,400 N/A 2021 - \$120,000 - \$2,165.28 2020 - \$120,000 - \$2,165.28 2019 - \$119,300 - \$2,152.65 2018 - \$117,300 - \$2,116.57	7.83%	1	2012-05-25 - \$120,000 2010-04-14 - \$1	RESIDENCE & LOT	129400 117300	10.31543052	1
494 Green Head Road	405571	1715844	2022 \$127,500 N/A 2021 - \$118,300 - \$2,134.61 2020 - \$118,300 - \$2,134.61 2019 - \$117,200 - \$2,114.76 2018 - \$115,200 - \$2,078.67	7.78%	1	2011-10-19 - \$1	HOUSE & LOT	127500 115200	10.67708333	1
739 Green Head Road	55194732	1718973	2022 \$116,300 N/A 2021 - \$87,900 - \$1,586.07 2020 - \$87,900 - \$1,586.07 2019 - \$87,000 - \$1,569.83 2018 - \$116,900 - \$3,203.07	32.31%	1	2018-11-01 - \$50,000	RESIDENCE & LOT	116300 116900	-0.513259196	1
480 Green Head Road	406801	1717074	2022 \$116,200 N/A 2021 - \$109,800 - \$1,981.23 2020 - \$109,800 - \$1,981.23 2019 - \$109,000 - \$1,966.80 2018 - \$109,000 - \$1,966.80	5.83%	1	2015-08-21 - \$89,000	RESIDENCE & LOT	116200 109000	6.605504587	1
356 Green Head Road	405985	1716256	2022 \$112,400 N/A 2021 - \$104,400 - \$1,883.79 2020 - \$104,400 - \$1,883.79 2019 - \$103,000 - \$1,858.53 2018 - \$119,200 - \$2,196.84	7.66%	1	2018-03-22 - \$103,000 2018-03-22 - \$63,200	RESIDENCE & LOT	112400 119200	-5.704697987	1
589 Green Head Road	406751	1717024	2022 \$100,400 N/A 2021 - \$100,400 - \$1,811.62 2020 - \$100,400 - \$1,656.44 2019 - \$99,400 - \$1,638.40 2018 - \$97,500 - \$1,604.12	0.00%	1	2021-11-23 - \$100,000 2021-09-07 - \$1	HOUSE & LOT	100400 97500	2.974358974	1
596 Green Head Road	407072	1717333	2022 \$98,800 N/A 2021 - \$90,300 - \$1,629.38 2020 - \$79,900 - \$1,333.46 2019 - \$78,500 - \$1,308.20 2018 - \$76,900 - \$1,279.32	9.41%	1		HOUSE & LOT	98800 76900	28.47854356	1
479 Green Head Road	405837	1716109	2022 \$97,000 N/A 2021 - \$90,000 - \$2,678.67 2020 - \$90,000 - \$2,678.67 2019 - \$140,800 - \$4,190.64 2018 - \$138,500 - \$2,499.10	7.78%	1	2021-12-03 - \$110,000 2018-10-10 - \$1	HOUSE & LOT	97000 138500	-29.96389892	1
581 Green Head Road	407825	1718062	2022 \$96,400 N/A 2021 - \$88,300 - \$1,593.29 2020 - \$88,300 - \$1,476.00 2019 - \$88,000 - \$1,470.59 2018 - \$86,300 - \$1,439.91	9.17%	1		Residence & Lot	96400 86300	11.70336037	1
468 Green Head Road	407437	1717684	2022 \$86,400 N/A 2021 - \$80,000 - \$1,443.52 2020 - \$80,000 - \$1,344.28 2019 - \$97,200 - \$1,654.64 2018 - \$114,100 - \$1,959.58	8.00%	1		Residence & Lot	86400 114100	-24.27695004	1
707 Green Head Road	55194690	1718931	2022 \$84,500 N/A 2021 - \$76,600 - \$1,382.17 2020 - \$76,600 - \$1,382.17 2019 - \$76,200 - \$1,374.95 2018 - \$74,500 - \$1,344.28	10.31%	1	2014-09-02 - \$75,000	RESIDENCE & LOT	84500 74500	13.42281879	1
715 Green Head Road	55194708	1718949	2022 \$83,300 N/A 2021 - \$76,900 - \$1,380.37 2020 - \$76,900 - \$1,255.86 2019 - \$75,900 - \$1,237.82 2018 - \$74,500 - \$1,212.56	8.32%	1	2009-09-29 - \$84,500	RESIDENCE & LOT	83300 74500	11.81208054	1
Green Head Road	408112	1719042	2022 \$75,700 N/A 2021 - \$75,700 - \$936.19 2020 - \$75,700 - \$936.19 2019 - \$75,700 - \$936.19 2018 - \$75,700 - \$936.19	0.00%	1		VACANT LAND	75700 75700	0	1
470 Green Head Road	407643	1717896	2022 \$75,400 N/A 2021 - \$70,000 - \$1,263.08	7.71%	1	2020-01-17 - \$70,000	HOUSE, GARAGE & LOT	75400 131100	-42.48665141	1

COMMENTER J

ALL SINGLE-FAMILY PROPERTY ASSESSMENTS WITHIN THE MILFORD AND RANDOLPH AREA OF WEST SAINT JOHN

Address	PID	PAN	PAN Assessments		% Change	UP	DWN	NC	UP	DWN	NC	2018 Assess	2022 Assess
			2022	2021									
82 Milford Road	403815	5945700	2022-\$311,700 -N/A	2021-\$282,200 -\$5,134.63	10.45%	1			1			311700	311700
			2020-\$282,200 -\$5,134.63	2019-\$280,600 -\$5,105.76					1			274300	274300
			2018-\$274,300 -\$4,901.86										
88 Milford Road	55195804	5945996	2022-\$259,300 -N/A	2021-\$208,500 -\$4,494.62	24.38%	1			1			259300	259300
			2020-\$260,700 -\$5,319.17	2019-\$258,000 -\$5,251.07								253200	253200
			2018-\$253,200 -\$5,158.05										
340 Milford Road	55161301	1712448	2022-\$243,800 -N/A	2021-\$226,200 -\$4,081.55	7.78%	1			1			243800	243800
			2020-\$226,200 -\$4,081.55	2019-\$224,200 -\$4,045.46								220500	220500
			2018-\$220,500 -\$3,978.71										
519 Milford Road	403864	1712317	2022-\$212,000 -N/A	2021-\$194,800 -\$3,514.97	8.83%	1			1			212000	212000
			2020-\$194,800 -\$3,514.97	2019-\$192,000 -\$3,484.45								188700	188700
			2018-\$186,700 -\$3,172.14										
579 Milford Road	34215	1701780	2022-\$207,800 -N/A	2021-\$192,800 -\$3,478.88	7.78%	1			1			207800	207800
			2020-\$192,800 -\$3,181.16	2019-\$189,000 -\$3,112.60								185800	185800
			2018-\$185,800 -\$3,054.85										
100 Milford Road	5515617	5945742	2022-\$204,000 -N/A	2021-\$185,100 -\$3,400.82	10.21%	1			1			204400	204400
			2020-\$185,100 -\$3,110.31	2019-\$183,900 -\$2,841.46								170200	170200
			2018-\$170,200 -\$3,345.58										
412 Milford Road	404616	1713004	2022-\$200,700 -N/A	2021-\$186,200 -\$4,232.85	7.79%	1			1			200700	200700
			2020-\$186,200 -\$4,191.37	2019-\$185,700 -\$4,179.99								182600	182600
			2018-\$182,600 -\$3,253.34										
494 Milford Road	404202	1712587	2022-\$198,400 -N/A	2021-\$185,200 -\$3,524.35	7.13%	1			1			198400	198400
			2020-\$185,200 -\$3,340.30	2019-\$183,800 -\$3,315.04								180900	180900
			2018-\$180,900 -\$3,262.72										
315 Milford Road	404343	1712715	2022-\$194,400 -N/A	2021-\$179,300 -\$4,352.47	8.42%	1			1			194400	194400
			2020-\$179,300 -\$5,336.51	2019-\$177,200 -\$3,856.86								173900	173900
			2018-\$173,900 -\$3,782.08										
346 Milford Road	404160	1712545	2022-\$190,500 -N/A	2021-\$176,700 -\$4,327.47	7.81%	1			1			190500	190500
			2020-\$176,700 -\$4,249.88	2019-\$174,000 -\$4,183.58								171000	171000
			2018-\$171,000 -\$4,112.49										
5 Milford Road	55189435	5876804	2022-\$189,900 -N/A	2021-\$191,900 -\$4,137.66	-1.04%	1			1			189900	189900
			2020-\$189,900 -\$4,137.66									186300	186300

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135 Milford Road	40549	1713826	2020-\$191,900-\$4,137.66 2019-\$190,000-\$4,096.34 2018-\$186,300-\$4,016.70	7.75%	1														189000 170400	10.91549	1	170400	189000
			2022-\$189,000 -N/A 2021-\$175,400-\$3,164.92 2020-\$175,400-\$2,885.24 2019-\$173,400-\$2,849.15 2018-\$170,400-\$2,795.02																188400 170500	10.49853	1	170500	188400
267 Milford Road	404137	1712503	2022-\$188,400 -N/A 2021-\$174,800-\$3,154.09 2020-\$174,800-\$2,921.33 2019-\$173,500-\$2,887.87 2018-\$170,500-\$2,831.11	7.78%	1														187700 169300	10.86828	1	169300	187700
			2022-\$187,700 -N/A 2021-\$174,200-\$5,184.71 2020-\$174,200-\$5,184.71 2019-\$172,200-\$5,125.19 2018-\$169,300-\$5,038.88																187400 170300	10.0411	1	170300	187400
506 Milford Road	404590	1712977	2022-\$187,400 -N/A 2021-\$173,900-\$5,175.80 2020-\$173,900-\$5,175.80 2019-\$173,200-\$5,154.96 2018-\$170,300-\$5,088.65	7.76%	1														186200 161200	15.50868	1	161200	186200
			2022-\$186,200 -N/A 2021-\$167,300-\$3,018.77 2020-\$167,300-\$2,887.04 2019-\$165,300-\$2,850.95 2018-\$161,200-\$2,776.98	11.30%	1														183000 165600	10.50725	1	165600	183000
46 Milford Road	404426	1712812	2022-\$183,000 -N/A 2021-\$169,200-\$3,545.53 2020-\$169,200-\$3,361.48 2019-\$168,500-\$3,345.32 2018-\$165,600-\$3,283.62	8.16%	1					2014-06-05-\$1									182800 167200	9.330144	1	167200	182800
			2022-\$182,800 -N/A 2021-\$169,600-\$3,060.26 2020-\$169,600-\$2,962.82 2019-\$170,000-\$2,791.41 2018-\$167,200-\$2,538.80	7.78%	1														182400 165500	10.21148	1	165500	182400
261 Milford Road	471094	1714694	2022-\$182,400 -N/A 2021-\$169,300-\$3,054.85 2020-\$169,300-\$2,805.85 2019-\$168,300-\$2,787.80 2018-\$165,500-\$2,737.28	7.74%	1					2020-06-19-\$171,000	1								180900 160200	12.92135	1	160200	180900
			2022-\$180,900 -N/A 2021-\$164,600-\$2,970.04 2020-\$164,600-\$2,887.20 2019-\$163,700-\$2,850.95 2018-\$160,200-\$2,787.80	9.90%	1					2021-03-30-\$1 2009-03-18-\$1									180200 161600	11.5099	1	161600	180200
436 Milford Road	404624	1713012	2022-\$180,200 -N/A 2021-\$167,200-\$3,016.96 2020-\$167,200-\$3,016.96 2019-\$164,400-\$2,986.43 2018-\$161,600-\$2,915.91	7.78%	1					2016-04-28-\$1									177300				177300
			2022-\$177,300 -N/A	7.78%	1																		
528 Milford Road	403790	1712147																					

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120 Milford Road	405806	1719223	2022 - \$162,200 - N/A	9.30%	1	2014-06-30 - \$122,000	1	HOUSE, GARAGE & LOT	162200	13.58543	1	142800	162200
			2021 - \$148,400 - \$2,677.73										
			2020 - \$148,400 - \$2,677.73										
			2019 - \$145,800 - \$2,630.82										
			2018 - \$142,800 - \$2,576.68										
138 Milford Road	404855	1719258	2022 - \$161,800 - N/A	7.79%	1	2020-07-23 - \$172,000	1	HOUSE & LOT	161800	11.27923	1	145400	161800
			2021 - \$150,100 - \$2,708.41										
			2020 - \$150,100 - \$2,481.06										
			2019 - \$147,900 - \$2,441.36										
			2018 - \$145,400 - \$2,386.24										
470 Milford Road	403857	1712202	2022 - \$160,900 - N/A	7.77%	1			HOUSE, GARAGE & LOT	160900	10.13005	1	146100	160900
			2021 - \$149,300 - \$2,683.97										
			2020 - \$149,300 - \$2,488.27										
			2019 - \$148,600 - \$2,475.64										
			2018 - \$146,100 - \$2,430.53										
170 Milford Road	403880	1712341	2022 - \$160,100 - N/A	9.06%	1			HOUSE, GARAGE & LOT	160100	11.8798	1	143100	160100
			2021 - \$146,800 - \$3,164.49										
			2020 - \$146,800 - \$3,049.01										
			2019 - \$146,000 - \$2,518.94										
			2018 - \$143,100 - \$2,466.62										
211 Milford Road	405167	1719559	2022 - \$160,000 - N/A	7.82%	1	2021-03-12 - \$180,000	1	HOUSE & LOT	160000	10.72664	1	144500	160000
			2021 - \$148,400 - \$4,416.83			2016-03-16 - \$140,000							
			2020 - \$148,400 - \$4,416.83			2011-12-20 - \$145,000							
			2019 - \$147,000 - \$3,189.27										
			2018 - \$144,500 - \$3,114.79										
580 Milford Road	34918	1699705	2022 - \$159,900 - N/A	7.75%	1			RESIDENCE, GARAGE & LOT	159900	11.19611	1	143800	159900
			2021 - \$148,400 - \$4,416.83										
			2020 - \$148,400 - \$4,416.83										
			2019 - \$146,300 - \$4,354.33										
			2018 - \$143,800 - \$2,462.18										
173 Milford Road	404749	1713127	2022 - \$159,400 - N/A	7.78%	1			HOUSE & LOT	159400	9.704061	1	145300	159400
			2021 - \$147,900 - \$2,688.71										
			2020 - \$147,900 - \$2,549.62										
			2019 - \$145,900 - \$2,513.53										
			2018 - \$143,500 - \$2,470.23										
513 Milford Road	55003809	1719381	2022 - \$157,400 - N/A	7.73%	1			HOUSE & LOT	157400	10.45614	1	142500	157400
			2021 - \$146,100 - \$2,800.23										
			2020 - \$146,100 - \$2,607.16										
			2019 - \$145,000 - \$2,586.19										
			2018 - \$142,500 - \$2,537.71										
328 Milford Road	404855	1712464	2022 - \$156,200 - N/A	7.72%	1			HOUSE & LOT	156200	10	1	142000	156200
			2021 - \$145,000 - \$2,616.38										
			2020 - \$145,000 - \$2,423.33										
			2019 - \$144,400 - \$2,408.88										
			2018 - \$142,000 - \$2,180.54										
394 Milford Road	405514	1713931	2022 - \$156,200 - N/A	9.69%	1			RESIDENCE GARAGE & LOT	156200	13.35269	1	137800	156200
			2021 - \$142,400 - \$4,238.26										
			2020 - \$142,400 - \$4,238.26										
			2019 - \$138,100 - \$4,110.28										
			2018 - \$137,800 - \$4,101.34										
573 Milford Road	34223	1699056	2022 - \$155,800 - N/A	7.75%	1	2009-06-11 - \$145,000	1	RESIDENCE & LOT	155800	10.02825	1	141600	155800
			2021 - \$144,600 - \$2,689.16										
			2020 - \$144,600 - \$2,376.40										
			2019 - \$144,000 - \$2,376.40										
			2018 - \$144,000 - \$2,385.57										

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151 Milford Road	40478	171253	2018-\$141,600-\$2,322.27 2022-\$165,700-N/A 2021-\$141,800-\$4,220.39 2020-\$141,800-\$4,220.39 2019-\$138,700-\$4,157.89 2018-\$136,700-\$4,088.61	9.80%	1				2015-11-20-\$51,000 2014-03-18-\$1 2013-10-10-\$1 2010-11-03-\$150,000 2010-10-08-\$1				RESIDENCE & LOT	155700 136700	13.89905	1	136700	155700
225 Milford Road	40425	1712896	2022-\$154,100-N/A 2021-\$143,000-\$2,580.29 2020-\$143,000-\$2,389.03 2019-\$142,800-\$2,385.42 2018-\$140,400-\$2,289.79	7.76%	1								HOUSE & LOT	154100 140400	9.757835	1	140400	154100
453 Milford Road	40541	1713630	2022-\$162,400-N/A 2021-\$141,400-\$2,551.42 2020-\$141,400-\$2,551.42 2019-\$140,000-\$3,137.96 2018-\$137,600-\$4,095.38	7.78%	1				2019-05-23-\$135,000 2016-07-04-\$24,500				Residence & Lot	152400 137600	10.75581	1	137600	152400
55 Milford Road	40568	1713850	2022-\$162,100-N/A 2021-\$152,200-\$2,746.30 2020-\$152,200-\$2,619.99 2019-\$150,700-\$2,582.93 2018-\$147,700-\$2,538.80	-0.07%	1								HOUSE,GARAGE & LOT	152100 147700	2.979012	1	147700	152100
523 Milford Road	40442	1712838	2022-\$162,000-N/A 2021-\$141,100-\$2,546.01 2020-\$141,100-\$2,336.70 2019-\$138,100-\$2,300.62 2018-\$136,800-\$2,259.11	7.73%	1								HOUSE, GARAGE & LOT	152000 136800	11.11111	1	136800	152000
524 Milford Road	40534	1713825	2022-\$162,000-N/A 2021-\$141,000-\$2,544.20 2020-\$141,000-\$2,544.20 2019-\$140,600-\$2,536.99 2018-\$138,200-\$2,493.68	7.80%	1				2015-03-27-\$138,000				HOUSE, GARAGE & LOT	152000 138200	9.985528	1	138200	152000
210 Milford Road	40426	1712618	2022-\$161,900-N/A 2021-\$151,000-\$3,255.51 2020-\$151,000-\$3,156.28 2019-\$149,500-\$3,123.35 2018-\$146,600-\$3,081.65	0.80%	1								HOUSE, GARAGE & LOT	151900 146600	3.61528	1	146600	151900
472 Milford Road	40485	1712668	2022-\$161,500-N/A 2021-\$140,600-\$2,536.99 2020-\$140,600-\$2,389.85 2019-\$138,900-\$2,387.23 2018-\$137,500-\$2,343.92	7.75%	1				2021-12-15-\$128,000	129000			HOUSE & LOT	151500 137500	10.18182	1	137500	151500
518 Milford Road	40487	3785510	2022-\$160,600-N/A 2021-\$138,700-\$2,520.75 2020-\$138,700-\$2,914.33 2019-\$136,500-\$2,888.00 2018-\$136,200-\$2,839.47	7.80%	1								RESIDENCE & LOT	150600 136200	10.57269	1	136200	150600
241 Milford Road	40421	1713321	2022-\$148,700-N/A 2021-\$138,900-\$2,506.32 2020-\$138,900-\$2,506.32 2019-\$137,800-\$2,486.46 2018-\$135,500-\$2,444.97	7.78%	1				2011-10-03-\$119,900				HOUSE,GARAGE & LOT	149700 135500	10.4797	1	135500	149700
221 Milford Road	40525	1713614	2022-\$147,500-N/A 2021-\$136,800-\$2,488.42 2020-\$136,800-\$2,488.42 2019-\$136,600-\$2,464.81	7.82%	1				2017-04-11-\$1				HOUSE & LOT	147500 134300	9.828742	1	134300	147500

COMMENTER J

350 Milford Road	404103	1712472	2018-\$134,300-\$2,423.31 2022-\$146,800-N/A 2021-\$156,600-\$2,825.69 2020-\$156,600-\$2,825.69 2019-\$155,000-\$2,796.82 2018-\$162,000-\$2,742.69	-6.26%	1	2015-06-23-\$159,000 2014-06-09-\$39,900 2014-04-22-\$1 2014-03-12-\$20,000	HOUSE & LOT	146800 152000	1	152000	146800
226 Milford Road	403823	1712278	2022-\$145,000-N/A 2021-\$134,500-\$2,426.92 2020-\$134,500-\$2,309.63 2019-\$133,800-\$2,297.01 2018-\$131,600-\$2,257.31	7.81%	1		HOUSE, GARAGE & LOT	145000 131600	1	131600	145000
330 Milford Road	404087	1712456	2022-\$144,200-N/A 2021-\$133,800-\$2,414.29 2020-\$133,800-\$2,242.87 2019-\$132,500-\$2,219.41 2018-\$130,300-\$2,179.72	7.77%	1		HOUSE & LOT	144200 130300	1	130300	144200
51 Milford Road	404988	1713389	2022-\$143,700-N/A 2021-\$133,300-\$2,405.27 2020-\$133,300-\$2,300.62 2019-\$132,100-\$2,278.96 2018-\$129,800-\$2,203.18	7.80%	1		HOUSE, GARAGE & LOT	143700 129800	1	129800	143700
35 Milford Road	405488	4312027	2022-\$143,000-N/A 2021-\$131,900-\$3,925.74 2020-\$131,900-\$3,925.74 2019-\$130,900-\$3,895.98 2018-\$136,700-\$2,288.14	8.42%	1	2018-10-29-\$80,000 2018-04-03-\$80,000	HOUSE, GARAGE & LOT	143000 136700	1	136700	143000
534 Milford Road	405001	1713402	2022-\$141,800-N/A 2021-\$131,600-\$2,374.59 2020-\$131,600-\$2,251.89 2019-\$130,500-\$2,232.05 2018-\$128,300-\$2,192.35	7.75%	1		HOUSE & LOT	141800 128300	1	128300	141800
290 Milford Road	404854	1713355	2022-\$140,900-N/A 2021-\$130,700-\$2,368.36 2020-\$140,400-\$2,421.50 2019-\$139,400-\$2,403.46 2018-\$137,100-\$2,289.79	7.80%	1		HOUSE & LOT	140900 137100	1	137100	140900
250 Milford Road	404210	1712595	2022-\$140,700-N/A 2021-\$130,500-\$2,354.75 2020-\$130,500-\$2,354.75 2019-\$129,600-\$2,338.50 2018-\$127,400-\$2,298.81	7.82%	1	2018-07-19-\$1 2015-05-28-\$1 2014-05-23-\$32,500 2013-10-28-\$1 2013-10-28-\$1 2013-10-28-\$1	RESIDENCE & LOT	140700 127400	1	127400	140700
471 Milford Road	55186167	1712684	2022-\$140,100-N/A 2021-\$127,500-\$2,300.62 2020-\$127,500-\$2,199.57 2019-\$126,600-\$2,183.32 2018-\$124,400-\$2,143.63	9.88%	1		RESIDENCE, GARAGE & LOT	140100 124400	1	124400	140100
284 Milford Road	404862	1713363	2022-\$139,400-N/A 2021-\$129,300-\$2,333.09 2020-\$129,300-\$2,333.09 2019-\$128,200-\$2,313.24 2018-\$126,100-\$2,275.35	7.81%	1	2016-05-13-\$29,000 2015-05-22-\$45,000 2013-12-03-\$136,000 2013-05-23-\$1	HOUSE & LOT	139400 126100	1	126100	139400
288 Milford Road	404639	1713339	2022-\$138,300-N/A 2021-\$129,200-\$2,331.28 2020-\$129,200-\$2,138.22 2019-\$128,400-\$2,123.78	7.82%	1		HOUSE, GARAGE & LOT	139300 126200	1	126200	139300

COMMENTER J

38 Milford Road	5523344	6584052	2018-\$126,200-\$2,084.09	9.00%	1	2018-01-08-\$124,500 2011-02-21-\$1				Residence & Lot	138100 118000	17.0939	1	118000	138100
			2022-\$136,100-N/A 2021-\$126,700-\$2,286.18 2020-\$126,700-\$2,286.18 2019-\$124,700-\$2,250.09 2018-\$118,000-\$2,241.76												
372 Milford Road	404813	1713313	2022-\$137,500-N/A 2021-\$127,600-\$2,302.41 2020-\$127,600-\$2,123.78 2019-\$127,000-\$2,112.96 2018-\$124,800-\$2,073.26	7.76%	1					HOUSE & LOT	137500 124800	10.17628	1	124800	137500
283 Milford Road	404882	1712969	2022-\$137,400-N/A 2021-\$127,500-\$2,300.62 2020-\$127,500-\$2,300.62 2019-\$126,500-\$2,292.57 2018-\$124,400-\$2,244.67	7.76%	1	2018-09-01-\$79,900				RESIDENCE & LOT	137400 124400	10.45016	1	124400	137400
217 Milford Road	404659	1712846	2022-\$137,200-N/A 2021-\$106,300-\$1,918.08 2020-\$106,300-\$1,899.82 2019-\$105,200-\$1,789.96 2018-\$103,100-\$1,752.08	29.07%	1					HOUSE, GARAGE & LOT	137200 103100	33.07468	1	103100	137200
93 Milford Road	405522	1713973	2022-\$137,100-N/A 2021-\$127,200-\$2,295.20 2020-\$127,200-\$2,109.35 2019-\$126,500-\$2,096.71 2018-\$124,400-\$2,068.83	7.78%	1					HOUSE & LOT	137100 124000	10.56452	1	124000	137100
288 Milford Road	404970	1713371	2022-\$136,400-N/A 2021-\$126,500-\$2,282.57 2020-\$126,500-\$2,105.74 2019-\$125,300-\$2,084.09 2018-\$123,200-\$2,046.19	7.83%	1					HOUSE & LOT	136400 123200	10.71429	1	123200	136400
287 Milford Road	404780	1713169	2022-\$136,100-N/A 2021-\$126,300-\$2,278.96 2020-\$126,300-\$2,278.96 2019-\$125,200-\$2,259.11 2018-\$123,100-\$2,221.22	7.76%	1	2017-08-30-\$118,000				HOUSE & LOT	136100 123100	10.56052	1	123100	136100
397 Milford Road	404350	1712731	2022-\$135,900-N/A 2021-\$137,700-\$2,484.66 2020-\$137,700-\$2,365.57 2019-\$136,300-\$2,340.31 2018-\$133,600-\$2,291.59	-1.31%	1					RESIDENCE & LEASED LOT	135900 133600	1.721557	1	133600	135900
457 Milford Road	404186	1712561	2022-\$135,300-N/A 2021-\$125,500-\$2,284.53 2020-\$125,500-\$2,089.50 2019-\$124,900-\$2,078.67 2018-\$122,800-\$2,040.78	7.81%	1					RESIDENCE & LOT	135300 122800	10.17915	1	122800	135300
254 Milford Road	403816	1712163	2022-\$134,900-N/A 2021-\$128,300-\$2,315.05 2020-\$128,300-\$2,315.05 2019-\$127,600-\$2,302.41 2018-\$127,600-\$2,302.41	5.14%	1	2010-03-01-\$76,900				HOUSE, GARAGE & LOT	134900 127600	5.721003	1	127600	134900
306 Milford Road	404335	1712707	2022-\$134,500-N/A 2021-\$122,700-\$2,645.26 2020-\$122,700-\$2,645.26 2019-\$119,700-\$2,580.56 2018-\$117,200-\$2,527.27	9.62%	1	2017-03-31-\$128,000 2017-02-21-\$22,188				HOUSE, GARAGE & LOT	134500 117200	14.76109	1	117200	134500

COMMENTER J

55233043	1715096	2022 - \$134,200 - N/A 2021 - \$124,500 - \$2,975.40 2020 - \$124,500 - \$2,975.40 2019 - \$121,600 - \$2,906.86 2018 - \$119,600 - \$2,741.57	7.79%	1	2018-03-08 - \$17,500 2017-06-13 - \$1				RESIDENCE & LOT	134200 119600	12.20736	1	119600	134200
405035	1715436	2022 - \$133,400 - N/A 2021 - \$123,800 - \$2,233.85 2020 - \$123,800 - \$2,233.85 2019 - \$123,200 - \$2,223.02 2018 - \$121,100 - \$2,185.13	7.75%	1	2011-10-25 - \$125,000				HOUSE & LOT	133400 121000	10.24793	1	121000	133400
404568	1712935	2022 - \$131,600 - N/A 2021 - \$122,100 - \$2,203.18 2020 - \$122,100 - \$2,165.28 2019 - \$121,400 - \$2,152.65 2018 - \$108,200 - \$1,932.52	7.78%	1					RESIDENCE & LOT	131600 109200	20.51282	1	109200	131600
404723	1715101	2022 - \$130,700 - N/A 2021 - \$118,400 - \$2,552.43 2020 - \$118,400 - \$2,552.43 2019 - \$116,500 - \$2,511.12 2018 - \$113,900 - \$2,391.05	10.39%	1					HOUSE & LOT	130700 113900	14.74978	1	113900	130700
404400	1712781	2022 - \$128,100 - N/A 2021 - \$119,800 - \$3,565.60 2020 - \$119,800 - \$3,565.60 2019 - \$119,300 - \$3,550.73 2018 - \$117,300 - \$3,491.21	7.76%	1					RESIDENCE & LOT	129100 117300	10.05968	1	117300	129100
404541	1712919	2022 - \$128,600 - N/A 2021 - \$119,300 - \$2,590.18 2020 - \$119,300 - \$3,550.73 2019 - \$118,300 - \$3,520.96 2018 - \$40,500 - \$1,205.41	7.80%	1	2021-04-22 - \$145,000 2017-01-27 - \$30,000 2014-10-02 - \$17,113 2013-07-16 - \$1 2012-12-18 - \$1 2012-09-26 - \$1	1	145000	Residence & Lot	128600 40500	217.5309	1	40500	128600	
405233	1718622	2022 - \$128,100 - N/A 2021 - \$118,800 - \$2,143.63 2020 - \$115,700 - \$2,091.17 2019 - \$107,100 - \$1,932.52 2018 - \$105,300 - \$1,900.04	7.83%	1	2020-01-02 - \$125,000 2018-12-21 - \$25,000 2015-03-20 - \$1 2012-12-07 - \$1	1	129000	Residence & Lot	128100 105300	21.65242	1	105300	128100	
55151427	5231185	2022 - \$128,100 - N/A 2021 - \$118,900 - \$2,145.44 2020 - \$118,900 - \$2,088.97 2019 - \$118,300 - \$2,028.15 2018 - \$116,300 - \$1,982.06	7.74%	1					HOUSE, GARAGE & LOT	128100 116300	10.14617	1	116300	128100
405274	1718664	2022 - \$128,100 - N/A 2021 - \$127,300 - \$2,287.01 2020 - \$127,300 - \$2,203.18 2019 - \$126,000 - \$2,179.72 2018 - \$123,500 - \$2,134.61	0.63%	1					RESIDENCE, GARAGE & LOT	128100 123500	3.724696	1	123500	128100
404848	1718332	2022 - \$127,900 - N/A 2021 - \$118,700 - \$2,141.83 2020 - \$118,700 - \$2,028.15 2019 - \$117,600 - \$2,008.30 2018 - \$115,600 - \$1,972.21	7.75%	1					HOUSE, GARAGE & LOT	127900 115600	10.64014	1	115600	127900
404756	1718135	2022 - \$127,100 - N/A 2021 - \$118,000 - \$2,129.19 2020 - \$118,000 - \$2,022.74 2019 - \$117,600 - \$2,015.52 2018 - \$115,700 - \$1,981.23	7.71%	1					HOUSE, GARAGE & LOT	127100 115700	9.853068	1	115700	127100

COMMENTER J

281 Milford Road	403873	1712228	2022-\$125,200 -N/A	7.75%	1	2013-04-15-\$55,000 2012-02-09-\$1			HOUSE & LOT	125200 113700	10.11434	1	113700	125200
			2021-\$116,200-\$2,086.71 2020-\$116,200-\$2,086.71 2019-\$115,700-\$2,087.70 2018-\$113,700-\$2,051.81											
272 Milford Road	405027	1713428	2022-\$125,000 -N/A	8.70%	1	2010-05-31-\$103,000			HOUSE,CARPORT & LOT	125000 121800	2.627258	1	121800	125000
			2021-\$115,000-\$2,075.06 2020-\$125,400-\$2,262.72 2019-\$124,100-\$2,239.27 2018-\$121,800-\$2,197.76											
162 Milford Road	403840	1712197	2022-\$124,700 -N/A	7.78%	1	2020-03-04-\$112,000 2016-06-07-\$77,000 2016-01-20-\$1 2015-11-12-\$1	112000		HOUSE, GARAGE & LOT	124700 113000	10.355398	1	113000	124700
			2021-\$115,700-\$2,087.70 2020-\$115,700-\$2,087.70 2019-\$114,900-\$2,073.26 2018-\$113,000-\$2,038.97											
406 Milford Road	404145	1712529	2022-\$124,000 -N/A	7.83%	1				HOUSE,GARAGE & LOT	124000 112500	10.22222	1	112500	124000
			2021-\$115,000-\$2,075.06 2020-\$115,000-\$1,972.21 2019-\$114,400-\$1,961.39 2018-\$112,500-\$1,927.10											
Milford Road	55096404	1715698	2022-\$123,600 -N/A	7.76%	1				RESIDENCE, GARAGE & LOT	123600 112300	10.06233	1	112300	123600
			2021-\$114,700-\$2,069.65 2020-\$114,700-\$1,910.86 2019-\$114,200-\$1,901.84 2018-\$112,300-\$1,867.56											
17 Milford Road	405175	1715657	2022-\$121,500 -N/A	7.71%	1	2017-10-12-\$1 2015-02-12-\$45,000			HOUSE, GARAGE & LOT	121500 109800	10.65574	1	109800	121500
			2021-\$112,800-\$2,035.36 2020-\$112,800-\$2,035.36 2019-\$111,600-\$2,013.71 2018-\$109,800-\$1,981.23											
224 Milford Road	404947	1713347	2022-\$119,100 -N/A	10.69%	1	2021-11-05-\$135,500 2018-08-17-\$117,000 2010-09-27-\$82,000	135500	1	RESIDENCE & LOT	119100 105200	13.21293	1	105200	119100
			2021-\$107,600-\$1,941.53 2020-\$107,600-\$1,941.53 2019-\$107,000-\$1,930.71 2018-\$105,200-\$1,880.18											
24 Milford Road	55097398	4563000	2022-\$118,800 -N/A	14.78%	1	2016-08-09-\$73,000 2016-04-14-\$55,000			Residence & Lot	118800 98500	20.60914	1	98500	118800
			2021-\$103,500-\$2,171.09 2020-\$103,500-\$2,171.09 2019-\$101,800-\$2,134.54 2018-\$98,500-\$2,065.63											
262 Milford Road	405084	1713478	2022-\$118,000 -N/A	8.26%	1	2020-06-22-\$105,000	109000	1	HOUSE, GARAGE & LOT	118000 114900	2.697998	1	114900	118000
			2021-\$109,000-\$1,966.80 2020-\$117,500-\$2,033.56 2019-\$117,000-\$2,024.54 2018-\$114,900-\$1,986.65											
286 Milford Road	404814	1713193	2022-\$116,500 -N/A	10.11%	1	2015-08-04-\$20,000			HOUSE & LOT	116500 102400	13.76953	1	102400	116500
			2021-\$105,800-\$3,148.93 2020-\$105,800-\$3,148.93 2019-\$104,700-\$3,116.19 2018-\$102,400-\$3,047.74											
295 Milford Road	404871	1713274	2022-\$110,400 -N/A	8.55%	1				HOUSE & LOT	110400 99400	11.0664	1	99400	110400
			2021-\$101,700-\$1,835.08 2020-\$101,700-\$1,701.55 2019-\$101,300-\$1,660.05 2018-\$99,400-\$1,510.29											
291 Milford Road	404866	1712943	2022-\$108,300 -N/A	5.97%	1	2020-07-06-\$104,900	104900	1	HOUSE & LOT	108300				108300

COMMENTER J

16 Hemani Court	55043756	3769027	2020-\$197,100-\$3,368.82 2019-\$195,000-\$3,330.92 2018-\$191,700-\$3,271.38	7.78%	1	2017-03-24-\$195,000	RESIDENCE & LOT	209200 188900	10.74643	1	188900	209200
20 Hemani Court	55043749	3769035	2022-\$204,400-N/A 2021-\$194,100-\$3,502.35 2020-\$194,100-\$3,502.35 2019-\$192,100-\$3,466.26 2018-\$188,900-\$3,408.52	7.81%	1	2015-03-23-\$1 2015-03-23-\$180,000	HOUSE,GARAGE & LOT	204400 185100	10.4268	1	185100	204400
14 Hemani Court	55043764	3769019	2022-\$203,000-N/A 2021-\$188,300-\$3,397.69 2020-\$188,300-\$3,397.69 2019-\$185,900-\$3,354.38 2018-\$182,800-\$3,298.44	7.81%	1		RESIDENCE, GARAGE & LOT	203000 182800	11.05033	1	182800	203000
21 Hemani Court	55043699	3769093	2022-\$196,300-N/A 2021-\$182,100-\$3,295.82 2020-\$182,100-\$3,105.38 2019-\$181,000-\$3,085.52 2018-\$177,900-\$3,029.59	7.80%	1		RESIDENCE & LOT	196300 177900	10.34289	1	177900	196300
15 Hemani Court	55043881	3769108	2022-\$192,000-N/A 2021-\$178,100-\$3,213.64 2020-\$178,100-\$3,033.20 2019-\$176,100-\$2,997.11 2018-\$173,200-\$2,944.78	7.80%	1		RESIDENCE & LOT	192000 173200	10.8545	1	173200	192000
9 Hemani Court	55043873	3769116	2022-\$179,200-N/A 2021-\$166,200-\$2,998.91 2020-\$166,200-\$2,868.17 2019-\$164,500-\$2,827.50 2018-\$161,800-\$2,710.21	7.82%	1		RESIDENCE,GARAGE & LOT	179200 161800	10.75402	1	161800	179200
26 Dallia Court	55044200	3772402	2022-\$213,400-N/A 2021-\$198,000-\$3,572.71 2020-\$198,000-\$3,383.26 2019-\$196,500-\$3,356.18 2018-\$193,200-\$3,286.64	7.78%	1		RESIDENCE,GARAGE & LOT	213400 193200	10.45549	1	193200	213400
7 Dallia Court	55043840	3768974	2022-\$200,700-N/A 2021-\$186,300-\$3,361.60 2020-\$186,300-\$3,179.35 2019-\$184,600-\$3,148.68 2018-\$181,500-\$3,092.74	7.73%	1	2014-12-16-\$180,000	RESIDENCE & LOT	200700 181500	10.57851	1	181500	200700
34 Dallia Court	55044184	4018500	2022-\$180,900-N/A 2021-\$173,100-\$2,798.63 2020-\$173,100-\$2,544.20 2019-\$170,900-\$2,504.51 2018-\$175,500-\$2,587.51	4.51%	1		RES,GARAGE & LOT	180900 175500	3.076923	1	175500	180900
32 Dallia Court	55059851	4018518	2022-\$180,200-N/A 2021-\$172,500-\$2,787.80 2020-\$172,500-\$2,535.19 2019-\$170,300-\$2,495.49 2018-\$174,900-\$2,578.49	4.46%	1		RESIDENCE & LOT	180200 174900	3.030303	1	174900	180200
28 Dallia Court	55044192	4058110	2022-\$178,700-N/A 2021-\$171,100-\$2,775.17 2020-\$171,100-\$2,524.36	4.44%	1	2020-01-06-\$1	RESIDENCE,GARAGE & LOT	178700 175500	1.823362	1	175500	178700

COMMENTER J

400 Kingsville Road	405076	1715460	2022 - \$206,000 - N/A	7.80%	1	2011-05-26 - \$85,000				HOUSE & LOT	206000	185500	11.05121	1	206000	185500	206000
			2021 - \$191,100 - \$3,448.21														
			2020 - \$191,100 - \$3,448.21														
			2019 - \$186,700 - \$3,404.91														
			2018 - \$185,500 - \$3,347.17														
376 Kingsville Road	405340	4262612	2022 - \$191,100 - N/A	7.78%	1	2021-12-16 - \$205,000			1	206000 RESIDENCE & LOT	191100	173600	10.08065	1	191100	173600	191100
			2021 - \$177,300 - \$3,199.21														
			2020 - \$177,300 - \$2,939.37														
			2019 - \$176,500 - \$2,994.94														
			2018 - \$173,600 - \$2,872.60														
288 Kingsville Road	404889	1716292	2022 - \$165,300 - N/A	7.47%	1	2019-07-25 - \$135,000				Residence & Lot	155300	135000	15.03704	1	155300	135000	155300
			2021 - \$144,500 - \$2,607.36			2018-07-19 - \$25,000											
			2020 - \$144,500 - \$2,607.36			2017-08-11 - \$1											
			2019 - \$141,900 - \$3,455.55			2011-08-17 - \$140,000											
			2018 - \$135,000 - \$4,018.01														
390 Kingsville Road	55008668	1714042	2022 - \$146,800 - N/A	8.18%	1					RESIDENCE & LOT	146800	132000	11.21212	1	146800	132000	146800
			2021 - \$135,700 - \$2,448.58														
			2020 - \$135,700 - \$2,246.48														
			2019 - \$134,400 - \$2,223.02														
			2018 - \$132,000 - \$2,179.72														
241 Kingsville Road	404376	1712785	2022 - \$144,400 - N/A	7.76%	1					HOUSE & LOT	144400	130900	10.31322	1	144400	130900	144400
			2021 - \$134,000 - \$2,417.80														
			2020 - \$134,000 - \$2,360.16														
			2019 - \$133,100 - \$2,343.92														
			2018 - \$130,900 - \$2,304.22														
316 Kingsville Road	404053	1712422	2022 - \$143,400 - N/A	7.82%	1					HOUSE & LOT	143400	129800	10.47766	1	143400	129800	143400
			2021 - \$133,000 - \$2,399.85														
			2020 - \$133,000 - \$2,186.93														
			2019 - \$132,100 - \$2,170.70														
			2018 - \$129,800 - \$2,129.19														
367 Kingsville Road	404004	1712375	2022 - \$130,100 - N/A	7.61%	1	2021-10-22 - \$200,000			1	200000 RESIDENCE & LOT	130100	118700	9.604044	1	130100	118700	130100
			2021 - \$120,900 - \$3,275.42			2021-05-07 - \$80,000				80000							
			2020 - \$120,900 - \$3,598.35														
			2019 - \$120,700 - \$3,592.40														
			2018 - \$118,700 - \$3,532.88														
342 Kingsville Road	405516	1713703	2022 - \$119,500 - N/A	9.23%	1					HOUSE, GARAGE & LOT	119500	106800	11.89139	1	119500	106800	119500
			2021 - \$109,400 - \$1,974.01														
			2020 - \$109,400 - \$1,829.66														
			2019 - \$109,000 - \$1,822.44														
			2018 - \$106,800 - \$1,717.79														
249 Kingsville Road	55150699	1713070	2022 - \$107,700 - N/A	7.81%	1	2021-06-22 - \$162,900			1	152900 RESIDENCE & LOT	107700	98000	9.897959	1	107700	98000	107700
			2021 - \$99,900 - \$2,331.37														
			2020 - \$99,900 - \$2,975.33														
			2019 - \$99,700 - \$2,867.37														
			2018 - \$98,000 - \$2,916.77														
276 Kingsville Road	404046	1712414	2022 - \$105,600 - N/A	7.76%	1	2010-10-15 - \$1				HOUSE & LOT	105600	95400	10.69182	1	105600	95400	105600
			2021 - \$98,000 - \$1,768.31														
			2020 - \$98,000 - \$1,680.73														
			2019 - \$97,000 - \$1,672.68														
			2018 - \$95,400 - \$1,643.81														
384 Kingsville Road	404228	4262599	2022 - \$104,400 - N/A	5.14%	1	2017-06-01 - \$110,000				RESIDENCE & LOT	104400	99300	5.135952	1	104400	99300	104400
			2021 - \$99,300 - \$1,791.77														
			2020 - \$99,300 - \$1,791.77														
			2019 - \$99,300 - \$1,791.77														
			2018 - \$99,300 - \$1,791.77														
322 Kingsville Road	404517	1712888	2022 - \$97,300 - N/A	12.62%	1					HOUSE, GARAGE & LOT	97300				97300		97300

COMMENTER J

266 Kingsville Road	404244	1712626	2021-\$86,400-\$1,537.35 2020-\$86,400-\$1,398.42 2019-\$83,500-\$1,346.08 2018-\$104,800-\$1,730.42	9.48%	1	2018-04-19-\$23,000 2017-07-14-\$1 2017-04-03-\$88,000 2015-11-30-\$109,000 2015-04-17-\$21,500 2015-01-05-\$1 2014-01-28-\$1 2010-08-13-\$128,000 2010-04-14-\$28,000	RESIDENCE & LOT	86600 76200	13.64829	1	104800	86600 76200
268 Kingsville Road	404640	1713038	2022-\$85,400 - N/A 2021-\$76,800-\$1,385.78 2020-\$76,800-\$1,295.56 2019-\$74,800-\$1,259.47 2018-\$72,900-\$1,225.19	11.20%	1		RESIDENCE & LOT	85400 72900	17.14678	1	72900	85400 72900
300 Kingsville Road	403782	1712139	2022-\$83,200 - N/A 2021-\$74,000-\$1,335.26 2020-\$74,000-\$1,292.25 2019-\$73,500-\$1,243.24 2018-\$71,500-\$1,207.15	12.43%	1		HOUSE & LOT	83200 71500	16.36364	1	71500	83200 71500
258 Kingsville Road	405043	1713444	2022-\$57,800 - N/A 2021-\$127,000-\$2,291.59 2020-\$127,000-\$2,291.59 2019-\$126,400-\$2,280.76 2018-\$124,200-\$2,241.06	54.49%	1	2017-04-03-\$1 2014-04-10-\$1 2009-09-15-\$1	HOUSE, GARAGE & LOT	57800 124200	53.4622	1	124200	57800 124200
347 Kingsville Road	404896	1713387	2022-\$48,300 - N/A 2021-\$41,600-\$750.63 2020-\$41,600-\$682.89 2019-\$40,700-\$676.66 2018-\$41,900-\$698.31	16.11%	1	2016-03-09-\$1 2010-05-14-\$1	House on Leased Lot	48300 41900	15.27446	1	41900	48300 41900
362 Kingsville Road	403832	1712189	2022-\$46,800 - N/A 2021-\$44,400-\$801.15 2020-\$44,400-\$801.15 2019-\$44,100-\$795.75 2018-\$44,100-\$795.75	5.41%	1	2013-07-02-\$56,000 2010-10-05-\$1	MOBILE HOME & LOT	46800 44100	6.122449	1	44100	46800 44100
397 Dwyer Road	55149421	1718347	2022-\$357,000 - N/A 2021-\$318,500-\$5,747.02 2020-\$318,500-\$5,247.20 2019-\$312,700-\$5,142.54 2018-\$320,700-\$5,286.89	12.09%	1		RESIDENCE POOL & LOT	357000 320700	11.31899	1	320700	357000 320700
349 Dwyer Road	55112881	4734716	2022-\$337,200 - N/A 2021-\$311,400-\$5,618.90 2020-\$311,400-\$5,355.46 2019-\$305,600-\$5,250.80 2018-\$300,100-\$5,151.57	8.29%	1		HOUSE, GARAGE & LOT	337200 300100	12.36255	1	300100	337200 300100
353 Dwyer Road	55113575	4721496	2022-\$315,000 - N/A 2021-\$294,500-\$5,313.96 2020-\$294,500-\$5,313.96 2019-\$291,600-\$5,251.63 2018-\$285,900-\$5,158.78	6.96%	1	2015-03-27-\$280,000 2015-03-25-\$1	HOUSE, GARAGE & LOT	315000 285900	10.17838	1	285900	315000 285900
365 Dwyer Road	55098891	4571728	2022-\$303,600 - N/A 2021-\$282,300-\$5,093.83 2020-\$282,300-\$5,093.83	7.55%	1	2015-08-14-\$275,000	HOUSE, GARAGE & LOT	303600 274000	10.80292	1	274000	303600 274000

COMMENTER J

361 Dwyer Road	55098809	4571736	2019 - \$276,600 - \$5,027.06 2018 - \$274,000 - \$4,944.06	8.70%	1														HOUSE & LOT	268500 239400	12.15539	1	239400	268500
459 Dwyer Road	406884	1717155	2022 - \$268,500 - N/A 2021 - \$247,000 - \$4,466.87 2020 - \$247,000 - \$4,242.15 2019 - \$244,000 - \$4,188.02 2018 - \$238,400 - \$4,105.02	9.17%	1														HOUSE & LOT	245300 218100	12.47134	1	218100	245300
429 Dwyer Road	406811	1716882	2022 - \$239,000 - N/A 2021 - \$224,700 - \$4,054.49 2020 - \$224,700 - \$3,711.66 2019 - \$222,500 - \$3,671.96 2018 - \$216,100 - \$3,592.57	8.74%	1														HOUSE & LOT	239000 212600	12.41769	1	212600	239000
435 Dwyer Road	407841	1716088	2022 - \$237,000 - N/A 2021 - \$219,900 - \$3,967.88 2020 - \$219,900 - \$3,619.63 2019 - \$216,400 - \$3,566.48 2018 - \$212,700 - \$3,489.71	7.78%	1														HOUSE & LOT	237000 212700	11.42454	1	212700	237000
426 Dwyer Road	55096242	4567965	2022 - \$236,200 - N/A 2021 - \$219,100 - \$3,953.45 2020 - \$219,100 - \$3,751.35 2019 - \$217,700 - \$3,726.09 2018 - \$214,100 - \$3,661.13	7.80%	1					2015-01-30 - \$1									HOUSE, GARAGE & LOT	236200 214100	10.32228	1	214100	236200
389 Dwyer Road	55149439	1716339	2022 - \$235,400 - N/A 2021 - \$217,400 - \$3,922.77 2020 - \$217,400 - \$3,592.57 2019 - \$214,900 - \$3,547.45 2018 - \$211,100 - \$3,478.88	8.28%	1					2012-05-31 - \$210,000 2012-05-31 - \$1									HOUSE, GARAGE & LOT	235400 211100	11.51113	1	211100	235400
412 Dwyer Road	406710	1716989	2022 - \$226,500 - N/A 2021 - \$212,000 - \$3,825.33 2020 - \$212,000 - \$3,480.69 2019 - \$208,400 - \$3,433.78 2018 - \$205,800 - \$3,368.82	7.78%	1														HOUSE, GARAGE & LOT	228500 205800	11.03013	1	205800	228500
Dwyer Road	415659	1716915	2022 - \$227,900 - N/A 2021 - \$228,500 - \$4,141.10 2020 - \$229,500 - \$3,754.96 2019 - \$227,200 - \$3,713.46 2018 - \$222,700 - \$3,632.26	-0.70%	1					2020-10-20 - \$205,000 2020-10-15 - \$1									HOUSE, GARAGE & LOT	227900 222700	2.33498	1	222700	227900
463 Dwyer Road	55031520	3570630	2022 - \$215,500 - N/A 2021 - \$200,000 - \$3,608.80 2020 - \$216,000 - \$3,552.87 2019 - \$213,900 - \$3,514.97 2018 - \$210,300 - \$3,450.01	7.75%	1														HOUSE, GARAGE & LOT	215500 210300	2.472658	1	210300	215500
413 Dwyer Road	406637	1716905	2022 - \$215,400 - N/A 2021 - \$198,800 - \$3,605.19 2020 - \$198,800 - \$3,605.19 2019 - \$197,900 - \$3,570.91 2018 - \$203,600 - \$4,607.27	7.61%	1					2018-05-30 - \$162,000 2013-06-20 - \$1									Residence & Lot	215400 203600	5.795678	1	203600	215400
405 Dwyer Road	406629	1716890	2022 - \$214,400 - N/A 2021 - \$199,000 - \$3,590.76 2020 - \$199,000 - \$3,288.44 2019 - \$197,200 - \$3,265.96	7.74%	1														HOUSE & LOT	214400 193900	10.57246	1	193900	214400

COMMENTER J

447 Dwyer Road	380469	1718779	2018-\$193,900-\$3,206.42 2022-\$213,100-N/A 2021-\$195,600-\$3,529.41 2020-\$195,600-\$3,215.44 2019-\$194,300-\$3,191.99 2018-\$190,500-\$3,123.42	8.95%	1													HOUSE, GARAGE & LOT	213100 190500	11.86352	1	190500	213100
400 Dwyer Road	406850	1717121	2022-\$207,300-N/A 2021-\$192,300-\$3,469.87 2020-\$192,300-\$3,155.90 2019-\$190,300-\$3,119.81 2018-\$187,100-\$3,082.07	7.80%	1													HOUSE, GARAGE & LOT	207300 187100	10.79637	1	187100	207300
446 Dwyer Road	429639	1718355	2022-\$204,300-N/A 2021-\$189,500-\$3,404.91 2020-\$189,500-\$3,096.35 2019-\$186,500-\$3,042.22 2018-\$183,300-\$2,984.48	7.81%	1													HOUSE, GARAGE & LOT	204300 183300	11.45663	1	183300	204300
469 Dwyer Road	407023	1717286	2022-\$204,100-N/A 2021-\$189,400-\$3,417.53 2020-\$189,400-\$3,417.53 2019-\$188,700-\$3,096.35 2018-\$185,500-\$3,038.61	7.76%	1				2019-06-21-\$182,500 2019-06-20-\$1									HOUSE & LOT	204100 185500	10.02695	1	185500	204100
480 Dwyer Road	405704	1716975	2022-\$203,700-N/A 2021-\$189,000-\$3,410.32 2020-\$189,000-\$3,410.32 2019-\$189,800-\$3,063.87 2018-\$186,900-\$3,011.55	7.78%	1				2019-06-27-\$220,000 2010-11-10-\$148,000									RESIDENCE, GARAGE & LOT	203700 166900	22.04913	1	166900	203700
421 Dwyer Road	406645	1716913	2022-\$198,300-N/A 2021-\$184,000-\$3,320.10 2020-\$184,000-\$3,035.00 2019-\$180,600-\$2,973.65 2018-\$177,600-\$2,919.52	7.77%	1				2009-01-09-\$1									HOUSE & LOT	198300 177600	11.65541	1	177600	198300
386 Dwyer Road	406116	1716387	2022-\$192,200-N/A 2021-\$178,400-\$3,219.05 2020-\$178,400-\$2,930.35 2019-\$176,300-\$2,882.46 2018-\$173,300-\$2,838.33	7.74%	1				2012-05-02-\$1									HOUSE, GARAGE & LOT	192200 173300	10.90594	1	173300	192200
352 Dwyer Road	415026	4333227	2022-\$189,300-N/A 2021-\$175,700-\$3,170.34 2020-\$175,700-\$3,007.94 2019-\$174,000-\$2,977.26 2018-\$171,100-\$2,924.94	7.74%	1													HOUSE, GARAGE & LOT	189300 171100	10.63705	1	171100	189300
466 Dwyer Road	405803	3882647	2022-\$186,800-N/A 2021-\$173,300-\$3,127.03 2020-\$173,300-\$2,843.73 2019-\$171,500-\$2,811.26 2018-\$168,600-\$2,758.93	7.79%	1													HOUSE, GARAGE & LOT	186800 168600	10.79478	1	168600	186800
443 Dwyer Road	407882	1718127	2022-\$182,200-N/A 2021-\$165,800-\$2,979.07 2020-\$165,800-\$2,708.41 2019-\$163,500-\$2,686.90 2018-\$165,200-\$2,697.58	9.89%	1													HOUSE & LOT	182200 165200	10.29056	1	165200	182200
362 Dwyer Road	415034	1718753	2022-\$181,800-N/A 2021-\$166,600-\$3,042.22 2020-\$166,600-\$2,789.76 2019-\$167,300-\$2,746.30 2018-\$164,500-\$2,695.77	7.83%	1													HOUSE, GARAGE & LOT	181800 164500	10.51672	1	164500	181800

COMMENTER J

450 Dwyer Road	407015	1717278	2022-\$171,000 -N/A	7.82%	1	2015-07-17-\$1				HOUSE & LOT	171000	155300	10.10947	1	155300	171000
			2021-\$156,600-\$2,861.78													
			2020-\$158,600-\$2,861.78													
			2019-\$156,000-\$2,850.95													
			2018-\$155,300-\$2,802.24													
483 Dwyer Road	407589	1716224	2022-\$161,900 -N/A	7.79%	1	2021-06-07-\$168,000	1	186000		HOUSE & LOT	161900	147200	9.986413	1	147200	161900
			2021-\$150,200-\$2,710.21													
			2020-\$150,200-\$2,477.45													
			2019-\$149,700-\$2,468.42													
			2018-\$147,200-\$2,423.31													
481 Dwyer Road	407581	1716216	2022-\$151,000 -N/A	5.15%	1	2019-11-28-\$1				HOUSE, GARAGE & LOT	151000	160400	-5.86035	1	160400	151000
			2021-\$143,600-\$2,556.84													
			2020-\$143,600-\$2,325.88													
			2019-\$144,000-\$2,333.09													
			2018-\$160,400-\$2,629.02													
130 River Hill Drive	405689	1716230	2022-\$240,400 -N/A	7.23%	1	2016-06-13-\$219,000				HOUSE, GARAGE & LOT	24400	217200	-88.7661	1	217200	24400
			2021-\$224,200-\$4,045.46													
			2020-\$224,200-\$4,045.46			2011-09-02-\$165,000										
			2019-\$220,700-\$3,962.32			2010-10-22-\$1										
			2018-\$217,200-\$3,919.16			2010-03-31-\$120,000										
						2009-03-30-\$1										
366 River Hill Drive	414895	1716452	2022-\$214,600 -N/A	4.88%	1					HOUSE & LOT	214800	193500	11.00775	1	193500	214800
			2021-\$204,800-\$3,695.41													
			2020-\$204,800-\$3,682.79													
			2019-\$203,500-\$3,659.32													
			2018-\$193,500-\$3,478.88													
155 River Hill Drive	5506909	4182707	2022-\$208,900 -N/A	8.58%	1					RESIDENCE,GARAGE & LOT	208900	185500	12.61456	1	185500	208900
			2021-\$192,400-\$3,471.67													
			2020-\$192,400-\$3,471.67													
			2019-\$189,000-\$3,410.32													
			2018-\$185,500-\$3,347.17													
River Hill Drive	5502108	1716719	2022-\$207,900 -N/A	25.02%	1	2021-12-20-\$251,000	1	251000		RESIDENCE,GARAGE & LOT	207900	162000	28.33333	1	162000	207900
			2021-\$166,300-\$3,000.72			2021-12-15-\$1										
			2020-\$166,300-\$2,728.25			2021-12-14-\$1										
			2019-\$164,800-\$2,701.19													
			2018-\$162,000-\$2,650.67													
129 River Hill Drive	55122634	4967864	2022-\$205,000 -N/A	7.78%	1					HOUSE & LOT	205500	185100	11.02107	1	185100	205500
			2021-\$190,200-\$3,431.97													
			2020-\$190,200-\$3,253.34													
			2019-\$186,300-\$3,219.05													
			2018-\$185,100-\$3,161.31													
284 River Hill Drive	406520	1716793	2022-\$197,500 -N/A	7.45%	1	2013-11-18-\$187,000				HOUSE & LOT	197500	179400	10.08919	1	179400	197500
			2021-\$183,800-\$3,316.49			2013-09-24-\$99,000										
			2020-\$183,800-\$3,316.49													
			2019-\$182,400-\$3,291.23													
			2018-\$179,400-\$3,237.09													
229 River Hill Drive	406249	1716515	2022-\$193,900 -N/A	7.78%	1	2019-06-14-\$182,500				Residence & Lot	193900	157900	22.79924	1	157900	193900
			2021-\$179,900-\$3,246.12													
			2020-\$179,900-\$3,246.12													
			2019-\$160,600-\$2,656.08													
			2018-\$157,900-\$2,607.36													
332 River Hill Drive	406389	1716654	2022-\$185,500 -N/A	18.30%	1	2009-01-27-\$1				HOUSE & LOT	185500	132300	40.21164	1	132300	185500
			2021-\$156,800-\$2,829.30													
			2020-\$135,600-\$2,446.77													
			2019-\$134,600-\$2,428.72													
			2018-\$132,300-\$2,387.23													
285 River Hill Drive	406488	1716751	2022-\$183,300 -N/A	7.76%	1					HOUSE & LOT	183300					183300

COMMENTER J

302 River Hill Drive	406538	1716608	2020-\$161,800-\$2,919.52 2019-\$159,900-\$2,885.24 2018-\$157,200-\$2,836.52	7.77%	1														HOUSE & LOT	170600 154500	10.42071	1	154500	170600
			2022-\$170,600-N/A 2021-\$158,300-\$2,856.37 2020-\$158,300-\$2,648.86 2019-\$157,200-\$2,629.02 2018-\$154,500-\$2,590.29																		1			
286 River Hill Drive	406512	1716785	2020-\$165,000-\$2,827.50 2019-\$156,700-\$2,827.50 2020-\$156,700-\$2,827.50 2019-\$155,000-\$2,486.46 2018-\$184,500-\$3,018.77	7.85%	1					2019-08-16-\$150,000									Residence & Lot	169000 184500	-8.40108	1	184500	169000
			2022-\$169,000-N/A 2021-\$156,000-\$2,814.86 2020-\$156,000-\$2,574.88 2019-\$154,400-\$2,546.01 2018-\$151,800-\$2,489.10																					
334 River Hill Drive	406371	1716646	2020-\$166,000-\$2,814.86 2019-\$156,000-\$2,574.88 2020-\$156,000-\$2,574.88 2019-\$154,400-\$2,546.01 2018-\$151,800-\$2,489.10	7.76%	1														HOUSE & LOT	168100 151800	10.73781	1	151800	168100
			2022-\$165,100-N/A 2021-\$149,500-\$2,591.12 2020-\$149,500-\$2,356.55 2019-\$147,400-\$2,318.66 2018-\$144,900-\$2,273.54																					
252 River Hill Drive	406470	1716743	2020-\$149,500-\$2,591.12 2019-\$149,500-\$2,356.55 2020-\$149,500-\$2,356.55 2019-\$147,400-\$2,318.66 2018-\$144,900-\$2,273.54	7.76%	1														HOUSE & LOT	161100 144900	11.18012	1	144900	161100
			2022-\$165,800-N/A 2021-\$148,200-\$4,410.88 2020-\$148,200-\$4,410.88 2019-\$147,200-\$4,381.12 2018-\$144,700-\$4,306.71																					
362 River Hill Drive	406579	1716840	2020-\$148,200-\$4,410.88 2019-\$148,200-\$4,410.88 2020-\$148,200-\$4,410.88 2019-\$147,200-\$4,381.12 2018-\$144,700-\$4,306.71	7.83%	1														House & Lot	159800 144700	10.43538	1	144700	159800
			2022-\$166,600-N/A 2021-\$150,800-\$2,721.04 2020-\$150,800-\$2,721.04 2019-\$149,800-\$2,702.99 2018-\$149,800-\$2,702.99																					
221 River Hill Drive	406231	1716507	2020-\$150,800-\$2,721.04 2019-\$150,800-\$2,721.04 2020-\$150,800-\$2,721.04 2019-\$149,800-\$2,702.99 2018-\$149,800-\$2,702.99	5.17%	1					2011-10-20-\$110,000 2011-04-13-\$1									HOUSE & LOT	158600 149800	5.87499	1	149800	158600
			2022-\$154,800-N/A 2021-\$143,600-\$2,591.12 2020-\$143,600-\$2,363.76 2019-\$142,800-\$2,349.33 2018-\$140,400-\$2,306.02																					
206 River Hill Drive	407932	1718177	2020-\$143,600-\$2,591.12 2019-\$143,600-\$2,363.76 2020-\$143,600-\$2,363.76 2019-\$142,800-\$2,349.33 2018-\$140,400-\$2,306.02	7.80%	1														RESIDENCE & LOT	154800 140400	10.25641	1	140400	154800
			2022-\$148,700-N/A 2021-\$138,000-\$2,480.07 2020-\$138,000-\$2,480.07 2019-\$147,300-\$2,417.90 2018-\$144,800-\$2,372.79																					
346 River Hill Drive	406383	1716638	2020-\$138,000-\$2,480.07 2019-\$138,000-\$2,480.07 2020-\$138,000-\$2,480.07 2019-\$147,300-\$2,417.90 2018-\$144,800-\$2,372.79	7.75%	1					2019-07-15-\$138,000									HOUSE & LOT	148700 144800	2.69337	1	144800	148700
			2022-\$146,400-N/A 2021-\$135,900-\$2,452.18 2020-\$135,900-\$2,452.18 2019-\$135,100-\$2,437.75 2018-\$132,800-\$2,386.24																					
318 River Hill Drive	406405	1716670	2020-\$135,900-\$2,452.18 2019-\$135,900-\$2,452.18 2020-\$135,900-\$2,452.18 2019-\$135,100-\$2,437.75 2018-\$132,800-\$2,386.24	7.73%	1					2012-01-04-\$118,900 2012-01-04-\$1									HOUSE & LOT	146400 132800	10.24096	1	132800	146400
			2022-\$134,700-N/A 2021-\$128,900-\$2,325.88 2020-\$128,900-\$2,325.88 2019-\$130,200-\$2,349.33 2018-\$133,800-\$2,414.29																					
182 River Hill Drive	37048	4330512	2020-\$128,900-\$2,325.88 2019-\$128,900-\$2,325.88 2020-\$128,900-\$2,325.88 2019-\$130,200-\$2,349.33 2018-\$133,800-\$2,414.29	4.50%	1					2013-10-16-\$145,900									RESIDENCE,GARAGE & LOT	134700 133800	0.672646	1	133800	134700
			2022-\$131,300-N/A 2021-\$121,900-\$2,199.57 2020-\$121,900-\$2,199.57																					
324 River Hill Drive	406397	1716662	2020-\$121,900-\$2,199.57 2019-\$121,900-\$2,199.57	7.71%	1					2018-03-28-\$1 2018-03-28-\$90,000									RESIDENCE & LOT	131300 130200	0.844854	1	130200	131300

COMMENTER J

160 River Hill Drive	55083430	4327218	2019-\$121,100-\$2,185.13 2018-\$130,200-\$2,140.02 2022-\$131,200 - N/A 2021-\$120,800-\$3,595.38 2020-\$120,800-\$3,595.38 2019-\$120,000-\$3,571.56 2018-\$145,800-\$4,339.45	8.61%	1	2021-11-16-\$165,000	1	165000	Townhouse & Lot	131200 145800	-10.0137	1	145800	131200
173 River Hill Drive	414763	4328060	2022-\$130,400 - N/A 2021-\$124,800-\$2,006.49 2020-\$124,800-\$1,824.25 2019-\$126,000-\$1,845.91 2018-\$128,500-\$1,909.06	4.49%	1				HOUSE, GARAGE & LOT	130400 129500	0.694981	1	129500	130400
162 River Hill Drive	370163	4327226	2022-\$129,400 - N/A 2021-\$120,000-\$3,571.56 2020-\$120,000-\$3,571.56 2019-\$130,700-\$3,890.03 2018-\$128,500-\$3,824.55	7.83%	1	2021-12-01-\$155,000	1	155000	Townhouse & Lot	129400 128400	0.778816	1	128400	129400
190 River Hill Drive	55083398	4330766	2022-\$125,700 - N/A 2021-\$120,400-\$1,980.71 2020-\$120,400-\$1,755.69 2019-\$119,600-\$1,741.25 2018-\$122,800-\$1,798.89	4.40%	1				RESIDENCE & LOT	125700 122800	2.361564	1	122800	125700
192 River Hill Drive	370190	4330768	2022-\$125,700 - N/A 2021-\$120,300-\$1,927.10 2020-\$120,300-\$1,752.08 2019-\$119,600-\$1,739.44 2018-\$122,800-\$1,797.18	4.49%	1				RESIDENCE & LOT	125700 122800	2.361564	1	122800	125700
202 River Hill Drive	370122	4330839	2022-\$125,400 - N/A 2021-\$120,000-\$2,165.28 2020-\$120,000-\$2,165.28 2019-\$126,000-\$2,273.54 2018-\$128,400-\$2,334.89	4.50%	1	2017-08-01-\$120,000 2013-05-15-\$1			RESIDENCE & LOT	125400 129400	-3.09119	1	129400	125400
150 River Hill Drive	55082937	4567981	2022-\$125,200 - N/A 2021-\$119,800-\$2,161.67 2020-\$119,800-\$2,161.67 2019-\$119,000-\$2,147.24 2018-\$122,200-\$2,204.98	4.51%	1	2014-12-02-\$122,500			RESIDENCE & LOT	125200 122200	2.454992	1	122200	125200
152 River Hill Drive	370171	4327072	2022-\$125,200 - N/A 2021-\$119,800-\$1,932.52 2020-\$119,800-\$1,757.49 2019-\$119,000-\$1,743.05 2018-\$122,200-\$1,800.79	4.51%	1				RESIDENCE & LOT	125200 122200	2.454992	1	122200	125200
175 River Hill Drive	55083463	4328078	2022-\$125,200 - N/A 2021-\$119,800-\$1,916.27 2020-\$119,800-\$1,743.05 2019-\$119,400-\$1,735.83 2018-\$122,600-\$1,793.57	4.51%	1	2021-05-03-\$141,000 2009-11-02-\$135,000	1	141000	RESIDENCE & LOT	125200 122600	2.120718	1	122600	125200
180 River Hill Drive	55083406	4330504	2022-\$125,100 - N/A 2021-\$119,800-\$1,919.88 2020-\$119,800-\$1,746.66 2019-\$119,000-\$1,732.22 2018-\$122,200-\$1,789.96	4.42%	1	2021-01-07-\$116,000	1	116000	RESIDENCE & LOT	125100 122200	2.373159	1	122200	125100
181 River Hill Drive	55083455	4330601	2022-\$125,000 - N/A 2021-\$119,700-\$1,941.53 2020-\$119,700-\$1,766.51 2019-\$119,000-\$1,753.88	4.43%	1				RESIDENCE & LOT	125000 122200	2.291326	1	122200	125000

COMMENTER J

183 River Hill Drive	406238	4330627	2018-\$122,200-\$1,811.62 2022-\$125,000-N/A 2021-\$119,700-\$1,939.74 2020-\$119,700-\$1,764.70 2019-\$118,800-\$1,748.47 2018-\$122,000-\$1,806.21	4.43%	1															RESIDENCE & LOT	125000 122000	2.459016	1	122000	125000
200 River Hill Drive	55063380	4330847	2022-\$124,900-N/A 2021-\$119,500-\$1,919.88 2020-\$119,500-\$1,746.66 2019-\$118,500-\$1,728.62 2018-\$121,700-\$1,786.36	4.52%	1															RESIDENCE & LOT	124900 121700	2.629417	1	121700	124900
140 River Hill Drive	55063328	4569640	2022-\$124,700-N/A 2021-\$119,400-\$2,154.45 2020-\$119,400-\$2,154.45 2019-\$119,300-\$2,152.65 2018-\$122,500-\$1,800.79	4.44%	1					2018-06-27-\$122,500										Townhouse & Lot	124700 122500	1.795918	1	122500	124700
163 River Hill Drive	414886	4328141	2022-\$124,700-N/A 2021-\$119,400-\$1,948.75 2020-\$119,400-\$1,771.92 2019-\$118,500-\$1,755.69 2018-\$121,700-\$1,813.43	4.44%	1															HOUSE & LOT	124700 121700	2.465078	1	121700	124700
161 River Hill Drive	55063471	4328133	2022-\$123,700-N/A 2021-\$118,400-\$1,845.91 2020-\$118,400-\$1,678.09 2019-\$118,800-\$1,685.31 2018-\$122,000-\$1,743.05	4.48%	1															HOUSE & LOT	123700 122000	1.393443	1	122000	123700
170 River Hill Drive	55063422	4328010	2022-\$122,800-N/A 2021-\$117,600-\$1,892.82 2020-\$117,600-\$1,721.40 2019-\$118,500-\$1,737.64 2018-\$121,700-\$1,795.38	4.42%	1															RESIDENCE & LOT	122800 121700	0.903862	1	121700	122800
172 River Hill Drive	370655	4328002	2022-\$122,800-N/A 2021-\$117,600-\$1,898.23 2020-\$117,600-\$1,726.82 2019-\$118,500-\$1,743.05 2018-\$121,700-\$1,800.79	4.42%	1															RESIDENCE & LOT	122800 121700	0.903862	1	121700	122800
142 River Hill Drive	406223	4141905	2022-\$118,500-N/A 2021-\$113,500-\$2,048.00 2020-\$113,500-\$2,048.00 2019-\$113,800-\$2,053.41 2018-\$116,900-\$2,109.35	4.41%	1					2012-10-26-\$120,000										HOUSE & LOT	118500 116900	1.368691	1	116900	118500
353 Silvermount Crescent	406256	1716523	2022-\$205,700-N/A 2021-\$191,500-\$3,455.43 2020-\$191,500-\$3,455.43 2019-\$189,100-\$3,412.13 2018-\$178,700-\$3,224.47	7.42%	1					2020-09-11-\$2710,000 2018-08-29-\$195,000 2011-04-29-\$187,000										HOUSE & LOT	205700 178700	15.10912	1	178700	205700
Silvermount Crescent	415018	4333099	2022-\$198,900-N/A 2021-\$184,600-\$3,330.92 2020-\$184,600-\$3,045.83 2019-\$183,700-\$3,029.59 2018-\$180,600-\$2,973.65	7.75%	1					2014-06-10-\$1										HOUSE & LOTS	198900 180600	10.13289	1	180600	198900
303 Silvermount Crescent	406330	1716604	2022-\$196,400-N/A 2021-\$183,300-\$3,307.47 2020-\$183,300-\$3,307.47 2019-\$181,200-\$3,289.57 2018-\$178,400-\$3,219.05	7.15%	1					2020-12-10-\$205,000 2011-05-02-\$185,000 2010-06-24-\$175,000										HOUSE & LOT	196400 178400	10.08969	1	178400	196400

COMMENTER J

207 Silvermount Crescent	406348	1716612	2022 - \$189,700 - N/A	13.87%	1	2021-09-24 - \$215,000 2019-09-26 - \$1	1	1	215000	HOUSE, GARAGE & LOT	189700	162700	16.59496	1	162700	189700
			2021 - \$166,600 - \$3,006.13 2020 - \$166,600 - \$2,746.30 2019 - \$165,400 - \$2,724.64 2018 - \$162,700 - \$2,675.83													
347 Silvermount Crescent	406563	1716824	2022 - \$176,500 - N/A	7.75%	1	2017-01-30 - \$166,500 2012-10-03 - \$165,000	1	1		HOUSE, GARAGE & LOT	176500	159900	10.38149	1	159900	176500
			2021 - \$163,800 - \$2,955.61 2020 - \$163,800 - \$2,955.61 2019 - \$162,600 - \$2,933.95 2018 - \$159,900 - \$2,885.24													
305 Silvermount Crescent	406522	1716599	2022 - \$175,800 - N/A	7.79%	1	2019-03-05 - \$1 2018-06-28 - \$1 2014-01-13 - \$160,000 2011-10-19 - \$1 2011-05-06 - \$175,000	1	1		HOUSE, GARAGE & LOT	175800	157500	11.61905	1	157500	175800
			2021 - \$163,100 - \$4,854.35 2020 - \$163,100 - \$4,854.35 2019 - \$160,200 - \$2,890.65 2018 - \$157,500 - \$3,704.73													
339 Silvermount Crescent	406584	1716531	2022 - \$169,300 - N/A	7.77%	1		1	1		HOUSE & LOT	169300	153700	10.14964	1	153700	169300
			2021 - \$157,100 - \$2,834.72 2020 - \$157,100 - \$2,803.75 2019 - \$156,400 - \$2,591.12 2018 - \$153,700 - \$2,542.40													
333 Silvermount Crescent	406272	1716549	2022 - \$169,000 - N/A	7.78%	1		1	1		HOUSE & LOT	169000	153800	9.882965	1	153800	169000
			2021 - \$156,800 - \$2,829.30 2020 - \$156,800 - \$2,800.15 2019 - \$156,400 - \$2,592.93 2018 - \$153,800 - \$2,546.01													
311 Silvermount Crescent	406314	1716581	2022 - \$161,000 - N/A	7.76%	1		1	1		HOUSE, GARAGE & LOT	161000	145900	10.34955	1	145900	161000
			2021 - \$149,400 - \$2,695.77 2020 - \$149,400 - \$2,695.77 2019 - \$148,400 - \$2,677.73 2018 - \$145,900 - \$2,610.97													
319 Silvermount Crescent	406306	1716573	2022 - \$160,200 - N/A	7.73%	1	2020-09-15 - \$124,000 2020-09-11 - \$1	1	1	124000	HOUSE, GARAGE & LOT	160200	145100	10.40662	1	145100	160200
			2021 - \$148,700 - \$2,683.15 2020 - \$148,700 - \$2,614.58 2019 - \$147,600 - \$2,594.73 2018 - \$145,100 - \$2,547.81													
327 Silvermount Crescent	406280	1716557	2022 - \$147,400 - N/A	7.75%	1	2015-04-27 - \$1	1	1		HOUSE & LOT	147400	133900	10.08215	1	133900	147400
			2021 - \$136,800 - \$2,488.42 2020 - \$136,800 - \$2,257.31 2019 - \$136,200 - \$2,246.48 2018 - \$133,900 - \$2,204.98													
265 Glenburn Terrace	405795	1716000	2022 - \$204,000 - N/A	9.44%	1		1	1		RESIDENCE AND LOT	204000	180800	12.83186	1	180800	204000
			2021 - \$186,400 - \$3,363.40 2020 - \$186,400 - \$3,206.42 2019 - \$184,600 - \$3,173.94 2018 - \$180,800 - \$3,105.38													
271 Glenburn Terrace	407163	1717422	2022 - \$178,900 - N/A	7.77%	1		1	1		HOUSE, GARAGE & LOT	178900	160800	11.25622	1	160800	178900
			2021 - \$166,000 - \$2,995.30 2020 - \$166,000 - \$2,731.86 2019 - \$163,500 - \$2,686.76 2018 - \$160,800 - \$2,638.03													
269 Glenburn Terrace	405805	1716878	2022 - \$175,500 - N/A	7.73%	1	2020-04-01 - \$1 2015-07-27 - \$157,000 2012-06-29 - \$1 2012-06-28 - \$1	1	1		HOUSE, GARAGE & LOT	175500	158700	10.58601	1	158700	175500
			2021 - \$162,900 - \$2,939.37 2020 - \$162,900 - \$2,939.37 2019 - \$161,400 - \$2,912.30 2018 - \$158,700 - \$2,863.59													
273 Glenburn Terrace	407064	1717325	2022 - \$160,200 - N/A	7.73%	1		1	1		HOUSE, GARAGE & LOT	160200	145100	10.40662	1	145100	160200
			2021 - \$148,700 - \$2,683.15 2020 - \$148,700 - \$2,614.58 2019 - \$147,600 - \$2,594.73 2018 - \$145,100 - \$2,547.81													

COMMENTER J

133 Starburst Lane	408654	1716282	2020-\$166,700-\$3,044.03 2019-\$167,200-\$3,016.96 2018-\$164,400-\$2,966.43	7.77%	1														RESIDENCE, GARAGE & LOT	179000 162300	10.28959	1	162300	179000
141 Starburst Lane	408647	1716274	2021-\$166,100-\$2,997.11 2020-\$166,100-\$2,758.93 2019-\$165,100-\$2,740.89 2018-\$162,300-\$2,690.37	7.81%	1														HOUSE, GARAGE & LOT	178000 161200	10.42184	1	161200	178000
165 Starburst Lane	408613	1716240	2022-\$177,000 -N/A 2021-\$165,100-\$2,966.43 2020-\$165,100-\$2,697.58 2019-\$164,000-\$2,677.73 2018-\$161,200-\$2,627.21	7.80%	1														HOUSE & LOT	177000 160500	10.28037	1	160500	177000
132 Starburst Lane	407916	1718143	2022-\$164,800 -N/A 2021-\$150,500-\$2,715.63 2020-\$150,500-\$2,488.27 2019-\$149,500-\$2,470.23 2018-\$147,000-\$2,425.11	9.50%	1														HOUSE & LOT	164800 147000	12.10884	1	147000	164800
144 Starburst Lane	414425	1718410	2022-\$162,900 -N/A 2021-\$151,100-\$2,726.45 2020-\$151,100-\$2,587.51 2019-\$150,500-\$2,576.68 2018-\$148,000-\$2,531.58	7.81%	1														HOUSE & LOT	162900 148000	10.06757	1	148000	162900
254 Balmoral Court	407775	1718012	2022-\$354,100 -N/A 2021-\$328,500-\$5,927.46 2020-\$328,500-\$5,620.71 2019-\$324,300-\$5,544.93 2018-\$318,800-\$5,445.68	7.79%	1														HOUSE, GARAGE & LOT	354100 318800	11.07277	1	318800	354100
243 Balmoral Court	405621	1716894	2022-\$315,100 -N/A 2021-\$292,300-\$5,274.27 2020-\$292,300-\$5,274.27 2019-\$290,700-\$5,245.40 2018-\$285,800-\$5,156.98	7.80%	1					2016-01-21 - \$228,000									HOUSE, GARAGE & LOT	315100 285800	10.25192	1	285800	315100
265 Balmoral Court	414730	3888936	2022-\$266,700 -N/A 2021-\$247,400-\$4,484.09 2020-\$247,400-\$4,231.32 2019-\$244,200-\$4,173.58 2018-\$240,100-\$4,089.60	7.80%	1						2009-04-30 - \$263,500								HOUSE, GARAGE & LOT	266700 240100	11.07872	1	240100	266700
244 Balmoral Court	406702	1716971	2022-\$243,500 -N/A 2021-\$225,900-\$4,076.14 2020-\$225,900-\$3,866.83 2019-\$223,100-\$3,816.31 2018-\$219,300-\$3,747.74	7.79%	1														HOUSE & LOT	243500 219300	11.03511	1	219300	243500
265 Balmoral Court	407635	1717888	2022-\$209,300 -N/A 2021-\$194,200-\$3,466.26 2020-\$194,200-\$3,152.29 2019-\$190,900-\$3,092.74 2018-\$187,700-\$3,035.00	7.78%	1														HOUSE, GARAGE & LOT	209300 187700	11.50773	1	187700	209300
274 Balmoral Court	406676	1717147	2022-\$207,700 -N/A 2021-\$205,900-\$3,715.26 2020-\$205,900-\$3,381.45	0.87%	1														HOUSE, GARAGE & LOT	207700 199900	3.901951	1	199900	207700

COMMENTER J

264 Balmoral Court	406882	1717163	2019-\$203,900-\$3,345.36 2018-\$198,900-\$3,273.18	8.69%	1													197700 175000	12.97143	1	175000	197700	
264 Balmoral Court			2022-\$197,700 - N/A 2021-\$181,900-\$3,282.21 2020-\$181,900-\$3,282.21 2019-\$178,400-\$3,219.05																				
280 Balmoral Crescent	55096269	4667973	2022-\$344,100 - N/A 2021-\$314,300-\$5,671.23 2020-\$314,300-\$5,671.23 2019-\$308,300-\$5,582.97 2018-\$301,900-\$5,447.49	9.48%	1																		
284 Balmoral Crescent	407628	1717773	2022-\$336,000 - N/A 2021-\$311,800-\$5,666.12 2020-\$311,800-\$5,666.12 2019-\$233,900-\$5,084.29 2018-\$236,400-\$3,885.02	7.76%	1			2020-07-24-\$300,000 2018-11-08-\$136,000	1														
315 Balmoral Crescent	55117030	4859524	2022-\$311,100 - N/A 2021-\$288,600-\$5,207.50 2020-\$288,600-\$5,207.50 2019-\$283,800-\$5,120.89 2018-\$279,000-\$5,094.28	7.80%	1																		
336 Balmoral Crescent	426148	4091281	2022-\$283,100 - N/A 2021-\$262,600-\$4,738.35 2020-\$262,600-\$4,738.35 2019-\$258,900-\$4,488.82 2018-\$254,500-\$4,359.43	7.81%	1																		
310 Balmoral Crescent	407264	1717511	2022-\$265,200 - N/A 2021-\$246,000-\$4,438.82 2020-\$246,000-\$4,077.94 2019-\$243,200-\$4,027.42 2018-\$238,100-\$3,963.45	7.80%	1																		
346 Balmoral Crescent	405893	1716284	2022-\$259,600 - N/A 2021-\$240,900-\$4,346.80 2020-\$240,900-\$3,971.49 2019-\$236,600-\$3,883.90 2018-\$232,600-\$3,821.72	7.76%	1																		
365 Balmoral Crescent	55086181	4398940	2022-\$237,600 - N/A 2021-\$220,400-\$3,976.90 2020-\$220,400-\$3,976.90 2019-\$217,100-\$3,917.36 2018-\$213,400-\$3,850.59	7.80%	1			2017-05-29-\$286,000 2014-04-17-\$170,000															
378 Balmoral Crescent	414819	1716606	2022-\$236,500 - N/A 2021-\$219,500-\$3,960.66 2020-\$219,500-\$3,783.83 2019-\$216,200-\$3,724.28 2018-\$212,500-\$3,657.52	7.74%	1																		
368 Balmoral Crescent	407680	1717341	2022-\$234,000 - N/A 2021-\$217,100-\$3,917.36 2020-\$217,100-\$3,579.93 2019-\$214,100-\$3,525.80 2018-\$210,500-\$3,460.84	7.78%	11																		
368 Balmoral Crescent	407510	1717765	2022-\$232,000 - N/A 2021-\$215,200-\$3,883.07 2020-\$215,200-\$3,883.07 2019-\$209,600-\$3,782.02	7.81%	1			2018-03-02-\$153,500 2018-03-02-\$1															

COMMENTER J

414 Balmoral Crescent	407445	1717692	2022 - \$135,100 - N/A 2021 - \$128,700 - \$2,322.27 2020 - \$128,700 - \$2,322.27 2019 - \$128,200 - \$2,313.24 2018 - \$128,200 - \$2,313.24	4.97%	1	1	2020-08-20 - \$123,000 2016-11-09 - \$85,000 2016-07-13 - \$92,000 2010-12-01 - \$120,000	1	123000 HOUSE & LOT	135100 128200	5.382215	1	128200	135100
Saint Claire Avenue	55212013	1717723	2022 - \$161,700 - N/A 2021 - \$150,000 - \$2,706.60 2020 - \$176,600 - \$3,029.59 2019 - \$173,400 - \$2,971.85 2018 - \$170,400 - \$2,917.72	7.80%	1	1			HOUSE & LOT	161700 170400	-5.105563	1	170400	161700
51 Francis Street	405660	1715452	2022 - \$250,900 - N/A 2021 - \$202,900 - \$3,661.13 2020 - \$202,900 - \$3,491.52 2019 - \$201,100 - \$3,469.04 2018 - \$197,500 - \$3,386.86	23.66%	1	1	2021-05-26 - \$245,000 2012-01-06 - \$1	1	246000 HOUSE & LOT	250900 197500	27.03797	1	197500	250900
66 Francis Street	55147573	5147019	2022 - \$201,200 - N/A 2021 - \$186,700 - \$3,368.82 2020 - \$186,700 - \$3,217.25 2019 - \$185,200 - \$3,154.09 2018 - \$180,100 - \$3,098.16	7.77%	1	1			HOUSE & LOT	201200 180100	11.71571	1	180100	201200
56 Francis Street	403865	1772210	2022 - \$177,200 - N/A 2021 - \$163,600 - \$2,952.00 2020 - \$163,600 - \$2,827.50 2019 - \$162,100 - \$2,800.43 2018 - \$159,200 - \$2,690.37	8.31%	1	1			RESIDENCE & LOT	177200 159200	11.30653	1	159200	177200
5 Francis Street	405191	1715583	2022 - \$168,900 - N/A 2021 - \$154,500 - \$2,787.80 2020 - \$154,500 - \$2,787.80 2019 - \$154,300 - \$2,629.02 2018 - \$151,200 - \$2,573.07	9.32%	1	1	2019-07-12 - \$155,000		HOUSE, GARAGE & LOT	168900 151200	11.70635	1	151200	168900
70 Francis Street	333468	1714686	2022 - \$162,200 - N/A 2021 - \$150,500 - \$2,715.63 2020 - \$150,500 - \$2,533.38 2019 - \$147,900 - \$2,486.46 2018 - \$145,400 - \$2,441.38	7.77%	1	1			HOUSE & LOT	162200 145400	11.55433	1	145400	162200
Francis Street	405183	6403418	2022 - \$152,400 - N/A 2021 - \$145,000 - \$2,616.38 2020 - \$145,000 - \$2,616.38 2019 - \$141,800 - \$2,558.64 2018 - \$141,800 - \$2,558.64	5.10%	1	1			House & Lot	152400 141800	7.475317	1	141800	152400
55 Francis Street	405472	1714652	2022 - \$146,300 - N/A 2021 - \$135,400 - \$2,443.16 2020 - \$135,700 - \$2,388.50 2019 - \$134,400 - \$2,315.05 2018 - \$132,000 - \$2,223.02	8.05%	1	1	2020-02-24 - \$113,000	1	113000 HOUSE & LOT	146300 132000	10.83333	1	132000	146300
20 Francis Street	55181325	5781740	2022 - \$145,600 - N/A 2021 - \$138,500 - \$2,499.10 2020 - \$138,500 - \$2,385.42 2019 - \$137,600 - \$2,369.18 2018 - \$144,800 - \$2,489.10	5.13%	1	1	2016-08-12 - \$1 2010-01-22 - \$154,000		RESIDENCE & LOT	145600 144800	0.552486	1	144800	145600
22 Francis Street	55181317	5781732	2022 - \$145,300 - N/A 2021 - \$138,100 - \$2,491.88 2020 - \$138,100 - \$2,394.44 2019 - \$137,200 - \$2,378.20 2018 - \$144,400 - \$2,508.12	5.21%	1	1	2010-03-18 - \$143,000		RESIDENCE & LOT	145300 144400	0.623269	1	144400	145300
56 Francis Street	55147381	5147001	2022 - \$134,700 - N/A	7.76%	1	1			RESIDENCE & LOT	134700			134700	

COMMENTER J

61 Francis Street	404608	1712993	2021-\$125,000-\$2,255.50 2020-\$125,000-\$2,053.41 2019-\$151,400-\$2,506.32 2018-\$146,800-\$2,278.96 2022-\$96,900 - N/A 2021-\$55,000-\$1,636.97 2020-\$105,700-\$1,811.62 2019-\$107,800-\$1,777.34 2018-\$105,500-\$1,735.83	76.18%	1	1	2021-12-15-\$132,600 2020-07-16-\$55,000	1	1	132600 55000	HOUSE & LOT	148800	-9,47581	1	148800
10 Allison Street	55200644	6014984	2022-\$144,100 - N/A 2021-\$137,100-\$2,473.84 2020-\$137,100-\$2,473.84 2019-\$136,500-\$2,463.01 2018-\$143,600-\$2,591.12	5.11%	1	1	2011-11-28-\$145,000 2010-06-01-\$97,752	1	1	RESIDENCE & LOT	144100	0.348189	1	143600	
8 Allison Street	55200651	6014992	2022-\$139,200 - N/A 2021-\$132,400-\$2,389.03 2020-\$132,400-\$2,295.20 2019-\$131,900-\$2,286.18 2018-\$138,800-\$2,410.88	5.14%	1	1	2010-08-18-\$162,000	1	1	RESIDENCE & LOT	139200	0.288184	1	138800	
1 Allison Street	403907	1712252	2022-\$127,300 - N/A 2021-\$104,100-\$1,878.39 2020-\$104,100-\$1,878.39 2019-\$103,100-\$1,860.34 2018-\$101,100-\$1,824.25	22.29%	1	1	2016-09-23-\$75,000 2015-12-17-\$25,000 2015-08-21-\$25,000	1	1	RESIDENCE & LOT	127300	25.91494	1	101100	
2 Allison Street	55181309	5782186	2022-\$110,600 - N/A 2021-\$102,600-\$1,851.31 2020-\$102,600-\$1,766.51 2019-\$102,300-\$1,761.09 2018-\$100,600-\$1,730.42	7.80%	1	1	2012-03-02-\$1	1	1	RESIDENCE & LOT	110600	9.940558	1	100600	
102 Church Avenue	35949	1700629	2022-\$159,600 - N/A 2021-\$146,300-\$2,675.93 2020-\$148,300-\$2,585.71 2019-\$146,900-\$2,580.45 2018-\$143,800-\$2,504.51	7.62%	1	1				RESIDENCE & LOT	159600	10.98748	1	143800	
120 Church Avenue	33266	1698157	2022-\$127,100 - N/A 2021-\$117,800-\$2,116.57 2020-\$117,800-\$1,925.30 2019-\$117,200-\$1,914.47 2018-\$114,600-\$1,867.56	7.89%	1	1				RESIDENCE & LOT	127100	10.9075	1	114600	
119 Church Avenue	36103	1700784	2022-\$114,000 - N/A 2021-\$105,700-\$2,402.98 2020-\$105,700-\$2,354.25 2019-\$103,800-\$2,310.59 2018-\$102,000-\$2,289.91	7.85%	1	1				RESIDENCE & LOT	114000	11.76471	1	102000	
134 Church Avenue	34264	1698098	2022-\$109,200 - N/A 2021-\$102,900-\$1,817.04 2020-\$102,900-\$1,652.83 2019-\$101,900-\$1,634.79 2018-\$100,000-\$1,600.51	6.12%	1	1				RESIDENTIAL LOT	109200	9.2	1	100000	
92 Church Avenue	32888	1697787	2022-\$102,300 - N/A 2021-\$96,400-\$1,723.21 2020-\$96,400-\$1,568.03 2019-\$94,100-\$1,526.52 2018-\$92,000-\$1,486.64	6.12%	1	1	2016-02-08-\$1			RESIDENCE & LOT	102300	11.19565	1	92000	
114 Church Avenue	32367	1697290	2022-\$53,400 - N/A 2021-\$50,000-\$1,488.15	6.80%	1	1	2020-10-16-\$50,000			50000 RESIDENCE & LOT	54300	-26.0218	1	73400	

COMMENTER J

488 Green Head Road	406827	1777090	2020 - \$77,600 - \$2,309.60 2019 - \$75,700 - \$2,253.07 2018 - \$73,400 - \$2,184.60	8.94%	1	2017-10-23 - \$17,260 2016-04-20 - \$1 2015-12-17 - \$39,693 2015-08-21 - \$39,693	HOUSE, GARAGE & LOT	276600 25000	1006.4	1	25000	276600
661 Green Head Road	5527110	6458843	2022 - \$276,600 - N/A 2021 - \$253,900 - \$4,744.26 2020 - \$94,600 - \$2,769.60 2019 - \$25,000 - \$755.43 2018 - \$25,000 - \$755.43	5.11%	1	2015-10-22 - \$1	Residence & Lot	257000 242000	6.198347	1	242000	257000
489 Green Head Road	406818	1771789	2022 - \$257,000 - N/A 2021 - \$244,500 - \$4,411.76 2020 - \$244,500 - \$4,411.76 2019 - \$242,000 - \$4,366.65 2018 - \$242,000 - \$4,366.65	7.78%	1	2021-03-25 - \$1	HOUSE, GARAGE & LOT	234200 211200	10.89015	1	211200	234200
667 Green Head Road	55146874	1718436	2022 - \$234,200 - N/A 2021 - \$217,300 - \$3,920.97 2020 - \$217,300 - \$3,735.11 2019 - \$214,800 - \$3,690.00 2018 - \$211,200 - \$3,625.04	7.80%	1		RESIDENCE & LOT	233500 211400	10.45412	1	211400	233500
558 Green Head Road	406652	1716921	2022 - \$233,500 - N/A 2021 - \$216,600 - \$3,908.33 2020 - \$216,600 - \$3,578.13 2019 - \$215,000 - \$3,549.26 2018 - \$211,400 - \$3,484.30	7.81%	1		RESIDENCE GARAGE & LOT	233400 209900	11.19581	1	209900	233400
571 Green Head Road	407718	1717969	2022 - \$228,600 - N/A 2021 - \$216,500 - \$4,571.49 2020 - \$216,500 - \$4,279.18 2019 - \$213,500 - \$4,215.80 2018 - \$209,900 - \$4,141.61	7.79%	1		RESIDENCE GARAGE & LOT	229600 207500	10.6506	1	207500	229600
559 Green Head Road	405886	1716206	2022 - \$226,200 - N/A 2021 - \$207,700 - \$4,477.83 2020 - \$207,700 - \$4,337.10 2019 - \$202,400 - \$4,222.70 2018 - \$198,500 - \$4,138.28	8.91%	1		HOUSE, GARAGE & LOT	226200 198500	13.95466	1	198500	226200
671 Green Head Road	470622	1718795	2022 - \$217,900 - N/A 2021 - \$202,200 - \$4,359.84 2020 - \$202,200 - \$5,762.53 2019 - \$200,500 - \$5,967.49 2018 - \$197,100 - \$5,886.29	7.76%	1	2020-11-19 - \$1	RESIDENCE GARAGE & LOT	217900 197100	10.55502	1	197100	217900
329 Green Head Road	406891	1717252	2022 - \$217,400 - N/A 2021 - \$201,700 - \$4,230.12 2020 - \$201,700 - \$3,981.93 2019 - \$200,600 - \$3,968.57 2018 - \$197,300 - \$3,889.66	7.78%	1		RESIDENCE, GARAGE & LOT	217400 197300	10.18753	1	197300	217400
Green Head Road	55031280	1716426	2022 - \$210,800 - N/A 2021 - \$195,600 - \$3,529.41 2020 - \$195,600 - \$3,529.41 2019 - \$193,300 - \$3,487.91 2018 - \$190,000 - \$3,428.36	7.77%	1	2010-11-01 - \$1	RESIDENCE & LOT	210800 190000	10.94737	1	190000	210800
467 Green Head Road	406245	1716484	2022 - \$209,900 - N/A 2021 - \$194,700 - \$3,513.17 2020 - \$194,700 - \$3,329.12	7.81%	1		HOUSE & LOT	209900 189600	10.70675	1	189600	209900

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501 Green Head Road	405720	1716991	2018-\$162,500-\$2,778.78 2022-\$179,200-N/A 2021-\$166,300-\$3,000.72 2020-\$166,300-\$2,771.56 2019-\$166,000-\$2,786.15 2018-\$163,200-\$2,715.63	7.76%	1													HOUSE & LOT	179200 163200	9.803922	1	163200	179200
455 Green Head Road	407338	1717595	2022-\$178,700-N/A 2021-\$165,800-\$2,991.70 2020-\$165,800-\$2,811.26 2019-\$165,800-\$2,811.26 2018-\$163,000-\$2,760.73	7.78%	1													HOUSE & LOT	178700 163000	9.631902	1	163000	178700
395 Green Head Road	407114	1717375	2022-\$177,400-N/A 2021-\$164,600-\$2,970.04 2020-\$164,600-\$2,970.04 2019-\$162,800-\$2,937.56 2018-\$160,100-\$2,888.85	7.78%	1				2012-07-27-\$1 2012-07-27-\$165,000									RESIDENCE, GARAGE & LOT	177400 160100	10.80575	1	160100	177400
400 Green Head Road	55231641	6482446	2022-\$177,100-N/A 2021-\$166,500-\$3,040.42 2020-\$166,500-\$3,040.42 2019-\$167,300-\$3,018.77 2018-\$167,300-\$3,018.77	5.10%	1													Residence & lot	177100 167300	5.857741	1	167300	177100
461 Green Head Road	406773	1716442	2022-\$176,300-N/A 2021-\$163,600-\$2,952.00 2020-\$163,600-\$2,952.00 2019-\$162,600-\$2,933.95 2018-\$159,900-\$2,885.24	7.76%	1				2016-12-23-\$165,000 2016-12-23-\$1 2016-03-18-\$1 2012-11-30-\$163,000									HOUSE, GARAGE & LOT	176300 159900	10.25641	1	159900	176300
473 Green Head Road	407486	1717731	2022-\$173,700-N/A 2021-\$161,100-\$2,906.89 2020-\$161,100-\$2,762.54 2019-\$159,200-\$2,728.25 2018-\$156,500-\$2,679.54	7.82%	1				2010-05-18-\$1									RESIDENCE & LOT	173700 156500	10.99042	1	156500	173700
443 Green Head Road	405886	1716159	2022-\$172,200-N/A 2021-\$158,100-\$2,852.76 2020-\$158,100-\$2,852.76 2019-\$156,300-\$2,820.28 2018-\$153,300-\$2,766.15	8.92%	1				2017-09-29-\$1 2017-09-29-\$125,000									Residence & Lot	172200 153300	12.32877	1	153300	172200
314 Green Head Road	407665	1718193	2022-\$171,700-N/A 2021-\$163,300-\$2,946.59 2020-\$163,300-\$2,946.59 2019-\$143,400-\$2,450.38 2018-\$143,400-\$2,450.38	5.14%	1				2019-08-15-\$140,000									RESIDENCE & LOT	171700 143400	19.73501	1	143400	171700
369 Green Head Road	405884	1716167	2022-\$170,600-N/A 2021-\$156,300-\$2,866.37 2020-\$156,300-\$2,866.37 2019-\$155,900-\$2,813.06 2018-\$153,300-\$2,766.15	7.77%	1				2014-03-31-\$160,000									RESIDENCE, GARAGE & LOT	170600 153300	11.28506	1	153300	170600
394 Green Head Road	406041	6482420	2022-\$169,300-N/A 2021-\$161,000-\$2,905.08 2020-\$161,000-\$2,905.08 2019-\$161,200-\$2,908.69 2018-\$161,200-\$2,908.69	5.16%	1				2012-07-11-\$1									Residence & lot	169300 161200	5.024814	1	161200	169300
325 Green Head Road	406900	1717171	2022-\$168,900-N/A 2021-\$156,700-\$2,827.50 2020-\$156,700-\$2,677.73 2019-\$155,700-\$2,659.69 2018-\$153,100-\$2,612.77	7.79%	1													RESIDENCE, GARAGE & LOT	168900 153100	10.32005	1	153100	168900

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635 Green Head Road	487738	1716460	2022 - \$168,000 - N/A	7.83%	1	1	2021-08-25 - \$230,000	1	230000	HOUSE & LOT	168000	152000	168000
			2021 - \$155,800 - \$2,811.26								152000	10.52632	1
			2020 - \$155,800 - \$3,391.60								152000	10.52632	1
			2019 - \$154,600 - \$3,384.07								152000	10.52632	1
			2018 - \$152,000 - \$3,305.44								152000	10.52632	1
601 Green Head Road	407684	1717935	2022 - \$167,900 - N/A	7.77%	1	1	2015-04-28 - \$80,000			RESIDENCE & LOT	167900	151700	167900
			2021 - \$155,800 - \$2,811.26				2011-02-23 - \$1				151700	10.67897	1
			2020 - \$155,800 - \$2,811.26								151700	10.67897	1
			2019 - \$154,300 - \$2,784.19								151700	10.67897	1
			2018 - \$151,700 - \$2,737.28								151700	10.67897	1
406 Green Head Road	406675	1717244	2022 - \$167,400 - N/A	7.72%	1	1	2011-07-04 - \$155,000			RESIDENCE & LOT	167400	151200	167400
			2021 - \$155,400 - \$2,804.04								151200	10.71429	1
			2020 - \$155,400 - \$2,804.04								151200	10.71429	1
			2019 - \$153,800 - \$2,775.17								151200	10.71429	1
			2018 - \$151,200 - \$2,728.25								151200	10.71429	1
315 Green Head Road	407304	1717561	2022 - \$166,800 - N/A	7.34%	1	1	2015-06-30 - \$155,000			RESIDENCE,GARAGE & LOT	166800	151800	166800
			2021 - \$155,400 - \$2,804.04								151800	9.881423	1
			2020 - \$155,400 - \$2,804.04								151800	9.881423	1
			2019 - \$154,200 - \$2,782.38								151800	9.881423	1
			2018 - \$151,800 - \$2,739.08								151800	9.881423	1
405 Green Head Road	406659	1717228	2022 - \$165,100 - N/A	7.79%	1	1	2010-11-15 - \$1			RESIDENCE & LOT	166100	149900	166100
			2021 - \$154,100 - \$2,780.59								149900	10.8072	1
			2020 - \$154,100 - \$2,825.41								149900	10.8072	1
			2019 - \$152,500 - \$2,596.54								149900	10.8072	1
			2018 - \$149,900 - \$2,549.82								149900	10.8072	1
537 Green Head Road	405628	1716191	2022 - \$165,100 - N/A	9.28%	1	1	2010-09-30 - \$129,000			HOUSE & LOT	166100	148400	166100
			2021 - \$152,000 - \$2,811.22								148400	11.92722	1
			2020 - \$152,000 - \$2,811.22								148400	11.92722	1
			2019 - \$151,400 - \$2,800.39								148400	11.92722	1
			2018 - \$148,400 - \$2,744.01								148400	11.92722	1
308 Green Head Road	407973	3768491	2022 - \$165,200 - N/A	7.76%	1	1	2021-01-08 - \$180,000		180000	HOUSE,GARAGE & LOT	165200	147900	165200
			2021 - \$153,300 - \$2,786.15								147900	11.69709	1
			2020 - \$153,300 - \$2,786.15								147900	11.69709	1
			2019 - \$150,500 - \$2,715.63								147900	11.69709	1
			2018 - \$147,900 - \$2,668.71								147900	11.69709	1
416 Green Head Road	455535	1717757	2022 - \$164,900 - N/A	7.78%	1	1	2018-06-30 - \$155,000			RESIDENCE, GARAGE & LOT	164900	150300	164900
			2021 - \$153,000 - \$2,780.73								150300	9.713906	1
			2020 - \$153,000 - \$2,780.73								150300	9.713906	1
			2019 - \$152,900 - \$2,612.77								150300	9.713906	1
			2018 - \$150,300 - \$2,565.86								150300	9.713906	1
381 Green Head Road	406678	1716947	2022 - \$163,100 - N/A	7.80%	1	1	2021-06-21 - \$216,000			RESIDENCE, GARAGE & LOT	163100	148100	163100
			2021 - \$151,300 - \$2,730.06				2009-09-01 - \$160,000				148100	10.12829	1
			2020 - \$151,300 - \$2,580.29								148100	10.12829	1
			2019 - \$150,700 - \$2,569.47								148100	10.12829	1
			2018 - \$148,100 - \$2,522.55								148100	10.12829	1
383 Green Head Road	406108	1716379	2022 - \$162,000 - N/A	15.80%	1	1	2021-06-21 - \$216,000			RESIDENCE, GARAGE & LOT	162000	136500	162000
			2021 - \$139,900 - \$2,524.36								136500	18.68132	1
			2020 - \$139,900 - \$2,286.81								136500	18.68132	1
			2019 - \$138,800 - \$2,278.86								136500	18.68132	1
			2018 - \$136,500 - \$2,237.46								136500	18.68132	1
Green Head Road	55212005	1717723	2022 - \$161,700 - N/A	7.80%	1	1				HOUSE & LOT	161700	170400	161700
			2021 - \$150,000 - \$2,706.60								170400	-5.10563	1
			2020 - \$176,600 - \$3,029.59								170400	-5.10563	1
			2019 - \$173,400 - \$2,971.85								170400	-5.10563	1
			2018 - \$170,400 - \$2,917.72								170400	-5.10563	1
376 Green Head Road	406785	1717058	2022 - \$160,700 - N/A	7.78%	1	1				RESIDENCE & LOT	160700	160700	160700

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346 Green Head Road	407239	1717488	1716957	8.67%	1	2010-03-02 - \$94,900					RESIDENCE,GARAGE & LOT	141600 126800	11.67192	1	126800	141600
723 Green Head Road	55194716	1716957	1716957	7.80%	1						RESIDENCE & LOT	141000 126700	11.2865	1	126700	141000
Green Head Road	55097869	4398277	4398277	9.02%	1						RESIDENCE & LOT	140200 124000	13.06452	1	124000	140200
420 Green Head Road	405847	1716917	1716917	7.83%	1	2020-11-27 - \$124,500				124500	RESIDENCE, GARAGE & LOT	139100 126400	10.04747	1	126400	139100
466 Green Head Road	405802	1716175	1716175	7.75%	1						RESIDENCE & LOT	139000 154500	-10.0324	1	154500	139000
476 Green Head Road	405863	1716836	1716836	7.78%	1	2017-01-19 - \$1					HOUSE & LOT	135700 122700	10.59495	1	122700	135700
731 Green Head Road	55194724	1716965	1716965	7.79%	1	2014-08-14 - \$79,800					RESIDENCE & LOT	135600 122200	10.96563	1	122200	135600
449 Green Head Road	407270	1717537	1717537	7.83%	1						HOUSE & LOT	134900 122000	10.57377	1	122000	134900
389 Green Head Road	405860	1716133	1716133	7.78%	1	2018-07-30 - \$122,500					RESIDENCE, GARAGE & LOT	134300 121400	10.62603	1	121400	134300
431 Green Head Road	407460	1717715	1717715	7.78%	1						Residence & Lot	130300 117700	10.70518	1	117700	130300
437 Green Head Road	406124	1716395	1716395	7.79%	1						HOUSE & LOT	130100 118000	10.25424	1	118000	130100

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425 Green Head Road	405712	1716983	2019-\$120,000-\$2,037.17 2018-\$118,000-\$2,001.08 2022-\$129,400 - N/A 2021-\$120,000-\$2,185.28 2020-\$120,000-\$2,185.28 2019-\$119,300-\$2,152.85 2018-\$117,300-\$2,116.57	7.83%	1	2012-05-25-\$120,000 2010-04-14-\$1				RESIDENCE & LOT	129400 117300	10.31543	1	117500	129400
494 Green Head Road	405671	1716844	2022-\$127,500 - N/A 2021-\$118,300-\$2,134.61 2020-\$118,300-\$2,134.61 2019-\$117,200-\$2,114.76 2018-\$115,200-\$2,078.67	7.78%	1	2011-10-19-\$1				HOUSE & LOT	127500 115200	10.67708	1	115200	127500
739 Green Head Road	55194732	1716973	2022-\$116,300 - N/A 2021-\$87,900-\$1,596.07 2020-\$87,900-\$1,596.07 2019-\$87,000-\$1,569.83 2018-\$116,900-\$3,203.07	32.31%	1	2018-11-01-\$50,000				RESIDENCE & LOT	116300 116900	-0.51326	1	116900	116300
480 Green Head Road	406801	1717074	2022-\$116,200 - N/A 2021-\$109,800-\$1,981.23 2020-\$109,800-\$1,981.23 2019-\$109,000-\$1,966.80 2018-\$109,000-\$1,966.80	5.83%	1	2015-08-21-\$89,000				RESIDENCE & LOT	116200 109000	6.605505	1	109000	116200
356 Green Head Road	405985	1716256	2022-\$112,400 - N/A 2021-\$104,400-\$1,883.79 2020-\$104,400-\$1,883.79 2019-\$103,000-\$1,858.53 2018-\$119,200-\$2,196.84	7.66%	1	2018-03-22-\$103,000 2018-03-22-\$83,200				RESIDENCE & LOT	112400 119200	-5.7047	1	119200	112400
589 Green Head Road	406751	1717024	2022-\$100,400 - N/A 2021-\$100,400-\$1,811.62 2020-\$100,400-\$1,656.44 2019-\$99,400-\$1,638.40 2018-\$97,600-\$1,604.12	0.00%	1	2021-11-23-\$100,000 2021-09-07-\$1	100000			HOUSE & LOT	100400 97500	2.974359	1	97500	100400
596 Green Head Road	407072	1717333	2022-\$98,800 - N/A 2021-\$90,300-\$1,629.38 2020-\$79,900-\$1,333.46 2019-\$78,500-\$1,306.20 2018-\$76,800-\$1,279.32	9.41%	1					HOUSE & LOT	98800 76900	28.47854	1	76900	98800
479 Green Head Road	405637	1716109	2022-\$97,000 - N/A 2021-\$90,000-\$2,676.67 2020-\$90,000-\$2,676.67 2019-\$140,800-\$4,190.64 2018-\$138,500-\$2,499.10	7.78%	1	2021-12-03-\$110,000 2018-10-10-\$1	110000			HOUSE & LOT	97000 138500	-29.9639	1	138500	97000
581 Green Head Road	407525	1716082	2022-\$96,400 - N/A 2021-\$88,300-\$1,593.29 2020-\$88,300-\$1,476.00 2019-\$88,000-\$1,470.59 2018-\$86,300-\$1,439.91	9.17%	1					Residence & Lot	96400 86300	11.70336	1	86300	96400
468 Green Head Road	407437	1717684	2022-\$86,400 - N/A 2021-\$80,000-\$1,443.52 2020-\$80,000-\$1,344.28 2019-\$97,200-\$1,654.64 2018-\$114,100-\$1,959.58	8.00%	1					Residence & Lot	86400 114100	-24.277	1	114100	86400
707 Green Head Road	55194690	1716931	2022-\$84,500 - N/A 2021-\$76,600-\$1,382.17 2020-\$76,600-\$1,382.17 2019-\$76,200-\$1,374.95	10.31%	1	2014-09-02-\$75,000				RESIDENCE & LOT	84500 74500	13.42282	1	74500	84500

COMMENTER J

715 Green Head Road	55194708	1718949	2018-\$74,500-\$1,344.28 2022-\$83,300-N/A 2021-\$76,900-\$1,380.37 2020-\$76,900-\$1,255.86 2019-\$75,800-\$1,237.82 2018-\$74,500-\$1,212.56	8.32%	1	2009-09-29-\$84,500						83300	11.81208	1	74500	83300
470 Green Head Road	407643	1717896	2022-\$75,400-N/A 2021-\$70,000-\$1,263.08 2020-\$134,400-\$2,300.62 2019-\$133,400-\$2,282.57 2018-\$131,100-\$2,241.06	7.71%	1	2020-01-17-\$70,000	70000 HOUSE, GARAGE & LOT					75400	-42.4867	1	131100	75400
673 Green Head Road	55012397	5151076	2022-\$73,800-N/A 2021-\$71,800-\$3,505.93 2020-\$71,800-\$3,505.93 2019-\$70,800-\$3,457.10 2018-\$69,800-\$3,408.27	2.79%	1		GARAGE & LOT					73800	5.730659	1	69800	73800
Green Head Road	55070106	1717634	2022-\$52,900-N/A 2021-\$49,000-\$884.16 2020-\$49,000-\$884.16 2019-\$82,900-\$1,425.48 2018-\$81,400-\$1,398.42	7.96%	1	2019-12-18-\$49,000 2019-12-18-\$1	HOUSE & LOT					52900	-37.0987	1	84100	52900
Dominion Park Road	55006482	1716400	2022-\$286,600-N/A 2021-\$265,900-\$4,797.90 2020-\$265,900-\$4,395.52 2019-\$264,000-\$4,361.24 2018-\$258,500-\$4,280.04	7.78%	1		RESIDENCE & LOT					286600	10.44316	1	259500	286600
651 Dominion Park Road	407452	1717707	2022-\$190,800-N/A 2021-\$177,000-\$3,214.01 2020-\$177,000-\$2,985.00 2019-\$189,300-\$3,188.07 2018-\$186,100-\$2,987.78	7.80%	1		RESIDENCE,GARAGE & LOT					190800	2.525524	1	186100	190800
644 Dominion Park Road	405670	1715959	2022-\$187,800-N/A 2021-\$174,300-\$5,187.69 2020-\$174,300-\$5,187.69 2019-\$172,700-\$5,140.07 2018-\$169,800-\$5,053.75	7.75%	1		RESIDENCE & LOT					187800	10.60071	1	169800	187800
640 Dominion Park Road	447102	1718363	2022-\$184,700-N/A 2021-\$171,400-\$3,082.74 2020-\$171,400-\$2,869.00 2019-\$169,500-\$2,834.72 2018-\$166,700-\$2,784.19	7.76%	1	2010-10-04-\$145,000	RESIDENCE & LOT					184700	10.79784	1	166700	184700
712 Dominion Park Road	407122	1717383	2022-\$177,200-N/A 2021-\$164,400-\$2,986.43 2020-\$164,400-\$2,748.11 2019-\$161,300-\$2,692.16 2018-\$158,600-\$2,643.45	7.79%	1		HOUSE & LOT					177200	11.72762	1	158600	177200
663 Dominion Park Road	407171	1717430	2022-\$159,800-N/A 2021-\$159,800-\$2,893.43 2020-\$159,800-\$2,740.89 2019-\$159,200-\$2,712.02 2018-\$155,100-\$2,656.08	0.00%	1		RESIDENCE & LOT					159800	3.030903	1	155100	159800
650 Dominion Park Road	434365	1718428	2022-\$159,500-N/A 2021-\$157,700-\$3,189.43 2020-\$157,700-\$2,985.53 2019-\$156,100-\$2,953.14 2018-\$153,000-\$2,890.18	1.14%	1		RESIDENCE,GARAGE & LOT					159500	4.248366	1	153000	159500

COMMENTER J

671 Dominion Park Road	55147813	1718046	2022 - \$159,400 - N/A	9.55%	1	2014-08-18 - \$85,000 2014-08-11 - \$1				159400	121100	31.62675	1	121100	159400
631 Dominion Park Road	406207	1716476	2022 - \$144,300 - N/A	7.77%	1					144300	130300	10.74444	1	130300	144300
621 Dominion Park Road	407155	1717414	2022 - \$126,300 - N/A	7.76%	1	2019-06-28 - \$75,000				126300	127900	-1.25098	1	127900	126300
641 Dominion Park Road	406887	1717236	2022 - \$118,100 - N/A	9.25%	1	2018-10-15 - \$1				118100	125400	-5.82137	1	125400	118100
636 Leblanc Court	422826	1718313	2022 - \$194,800 - N/A	7.74%	1	2016-08-23 - \$1				194800	165700	17.56186	1	165700	194800
634 Leblanc Court	5509209	4479104	2022 - \$137,700 - N/A	83.60%	1	2019-11-01 - \$50,000				137700	118200	16.49746	1	118200	137700
622 Leblanc Court	407759	1717993	2022 - \$127,600 - N/A	5.19%	1	2021-08-09 - \$771,940 2021-08-06 - \$1	257313	1		127600	120000	6.333333	1	120000	127600
632 Leblanc Court	5509217	4479099	2022 - \$125,200 - N/A	4.51%	1					125200	121000	3.471074	1	121000	125200
35 Angus Court	470906	1718818	2022 - \$286,100 - N/A	6.08%	1	2016-09-02 - \$1				286100	246600	16.01784	1	246600	286100
3 Angus Court	55117600	4822771	2022 - \$882,800 - N/A	7.77%	1					282800	251200	12.57962	1	251200	282800
24 Angus Court	470872	1718842	2022 - \$882,100 - N/A	9.60%	1					282100	248300	13.61257	1	248300	282100
32 Angus Court	470898	1718800	2022 - \$277,100 - N/A	4.92%	1	2017-04-18 - \$265,000				277100					277100

COMMENTER J

719 Tippett Drive	55164560	1717545	1716586	2020 - \$285,300 - \$4,904.36 2019 - \$280,000 - \$4,808.73 2018 - \$273,700 - \$4,695.05	2022 - \$294,100 - N/A 2021 - \$270,400 - \$4,879.10 2020 - \$270,400 - \$4,640.92 2019 - \$265,900 - \$4,559.72 2018 - \$260,800 - \$4,467.69	8.76%	1												294100	12.7684	1	260800	294100	
708 Tippett Drive	405613	1716586	1717781	2022 - \$286,100 - N/A 2021 - \$272,100 - \$4,909.78 2020 - \$97,100 - \$2,842.80 2019 - \$96,100 - \$2,813.52 2018 - \$96,100 - \$2,813.52	2022 - \$286,100 - N/A 2021 - \$247,800 - \$5,097.48 2020 - \$247,800 - \$4,801.54 2019 - \$244,100 - \$4,724.24 2018 - \$240,000 - \$4,638.54	5.15%	1	2017-08-21 - \$132,500												286100	197.7107	1	96100	286100
Tippett Drive	5501811	1717781	1717846	2022 - \$267,100 - N/A 2021 - \$247,800 - \$5,097.48 2020 - \$247,800 - \$4,801.54 2019 - \$244,100 - \$4,724.24 2018 - \$240,000 - \$4,638.54	2022 - \$267,100 - N/A 2021 - \$220,900 - \$4,632.81 2020 - \$220,900 - \$4,477.65 2019 - \$216,600 - \$4,387.14 2018 - \$212,900 - \$4,309.84	7.79%	1													267100	11.29167	1	240000	267100
629 Tippett Drive	407893	1717846	1717846	2022 - \$238,000 - N/A 2021 - \$220,900 - \$4,632.81 2020 - \$220,900 - \$4,477.65 2019 - \$216,600 - \$4,387.14 2018 - \$212,900 - \$4,309.84	2022 - \$238,000 - N/A 2021 - \$218,600 - \$3,944.42 2020 - \$216,600 - \$3,736.92 2019 - \$216,300 - \$3,695.41 2018 - \$212,700 - \$3,630.45	7.74%	1													238000	11.78957	1	212500	238000
615 Tippett Drive	407874	1718119	1717600	2022 - \$235,600 - N/A 2021 - \$218,600 - \$3,944.42 2020 - \$216,600 - \$3,736.92 2019 - \$216,300 - \$3,695.41 2018 - \$212,700 - \$3,630.45	2022 - \$235,600 - N/A 2021 - \$215,400 - \$3,896.68 2020 - \$215,400 - \$3,578.13 2019 - \$212,200 - \$3,520.39 2018 - \$208,700 - \$3,457.23	7.78%	1													235600	10.76634	1	212700	235600
607 Tippett Drive	407946	1717600	1717600	2022 - \$232,100 - N/A 2021 - \$215,400 - \$3,896.68 2020 - \$215,400 - \$3,578.13 2019 - \$212,200 - \$3,520.39 2018 - \$208,700 - \$3,457.23	2022 - \$232,100 - N/A 2021 - \$210,900 - \$3,805.48 2020 - \$196,600 - \$3,601.58 2019 - \$196,300 - \$3,542.04 2018 - \$193,000 - \$3,482.49	7.75%	1													232100	11.21227	1	208700	232100
696 Tippett Drive	55189606	557575	1718509	2022 - \$227,300 - N/A 2021 - \$210,900 - \$3,805.48 2020 - \$196,600 - \$3,601.58 2019 - \$196,300 - \$3,542.04 2018 - \$193,000 - \$3,482.49	2022 - \$227,300 - N/A 2021 - \$210,900 - \$3,805.48 2020 - \$196,600 - \$3,601.58 2019 - \$196,300 - \$3,542.04 2018 - \$193,000 - \$3,482.49	7.78%	1	2010-07-15 - \$194,000												227300	17.77202	1	193000	227300
Tippett Drive	406834	1717202	1718509	2022 - \$216,200 - N/A 2021 - \$205,700 - \$3,953.07 2020 - \$205,700 - \$3,675.19 2019 - \$203,900 - \$3,640.36 2018 - \$203,900 - \$3,640.36	2022 - \$216,200 - N/A 2021 - \$195,900 - \$3,534.82 2020 - \$195,900 - \$3,534.82 2019 - \$194,600 - \$3,329.12 2018 - \$191,300 - \$3,289.57	5.10%	1													216200	13.0162	1	191300	216200
549 Tippett Drive	278693	1718509	1718509	2022 - \$195,900 - \$3,534.82 2021 - \$195,900 - \$3,534.82 2020 - \$195,900 - \$3,534.82 2019 - \$194,600 - \$3,329.12 2018 - \$191,300 - \$3,289.57	2022 - \$195,900 - \$3,534.82 2021 - \$195,900 - \$3,534.82 2020 - \$195,900 - \$3,534.82 2019 - \$194,600 - \$3,329.12 2018 - \$191,300 - \$3,289.57	7.76%	1	2019-06-07 - \$1 2014-10-21 - \$1												211100	10.35024	1	191300	211100
661 Tippett Drive	55049415	4516299	1718509	2022 - \$183,300 - \$4,166.47 2020 - \$183,300 - \$4,005.87 2019 - \$180,800 - \$3,949.05 2018 - \$177,800 - \$3,880.85	2022 - \$183,300 - \$4,166.47 2020 - \$183,300 - \$4,005.87 2019 - \$180,800 - \$3,949.05 2018 - \$177,800 - \$3,880.85	7.80%	1													197600	11.13611	1	177800	197600
704 Tippett Drive	405787	1716052	1716052	2022 - \$182,900 - \$5,443.66 2021 - \$182,900 - \$5,443.66 2020 - \$182,900 - \$5,443.66	2022 - \$182,900 - \$5,443.66 2021 - \$182,900 - \$5,443.66 2020 - \$182,900 - \$5,443.66	7.82%	1													197200	10.29083	1	178800	197200

COMMENTER J

663 Tippet Drive	5501845	3470571	2019-\$181,900-\$5,413.89 2018-\$178,800-\$5,321.63	7.73%	1	2021-05-07-\$185,000	1	185000	HOUSE & LOT	192300 174000	10.51724	1	174000	192300
672 Tippet Drive	407544	1717799	2022-\$192,300-N/A 2021-\$178,500-\$3,913.08 2020-\$178,500-\$2,935.76 2019-\$177,000-\$2,908.69 2018-\$174,000-\$2,854.56	7.79%	1				HOUSE & LOT	184100 166500	10.57057	1	166500	184100
Tippet Drive	405738	1716002	2022-\$184,100-N/A 2021-\$170,800-\$3,081.92 2020-\$170,800-\$3,081.92 2019-\$169,400-\$3,056.65 2018-\$166,500-\$3,004.33	7.75%	1	2017-07-26-\$169,000 2013-04-02-\$173,000			RESIDENCE, GARAGE & LOT	179300 161300	11.15933	1	161300	179300
613 Tippet Drive	422818	1716086	2022-\$179,300-N/A 2021-\$166,400-\$3,002.52 2020-\$166,400-\$3,002.52 2019-\$164,100-\$2,981.03 2018-\$161,300-\$2,910.50	7.76%	1	2020-10-21-\$200,000	1	200000	RESIDENCE, GARAGE & LOT	169400 152400	11.15486	1	152400	169400
702 Tippet Drive	406660	1716939	2022-\$164,800-N/A 2021-\$157,200-\$2,836.52 2020-\$157,200-\$2,607.36 2019-\$155,000-\$2,567.67 2018-\$152,400-\$2,520.75	7.78%	1	2010-12-03-\$80,000			RESIDENCE & LOT	164800 148800	10.75269	1	148800	164800
700 Tippet Drive	406140	1716418	2022-\$161,600-N/A 2021-\$149,900-\$2,704.80 2020-\$149,900-\$2,596.54 2019-\$146,100-\$2,564.06 2018-\$145,600-\$2,518.84	7.81%	1				RESIDENCE & LOT	161600 145600	10.98901	1	145600	161600
555 Tippet Drive	277970	1716494	2022-\$161,500-N/A 2021-\$149,800-\$2,702.89 2020-\$149,800-\$2,477.45 2019-\$149,100-\$2,464.81 2018-\$146,600-\$2,419.71	7.81%	1				RESIDENCE & LOT	161500 146600	10.16371	1	146600	161500
621 Tippet Drive	405844	1716214	2022-\$157,600-N/A 2021-\$144,900-\$2,614.58 2020-\$144,900-\$2,614.58 2019-\$142,700-\$2,574.88 2018-\$140,000-\$2,526.16	8.76%	1	2015-06-26-\$193,700			RESIDENCE & LOT	157600 140000	12.57143	1	140000	157600
667 Tippet Drive	5501837	3470597	2022-\$156,700-N/A 2021-\$145,400-\$2,583.90 2020-\$145,400-\$2,349.33 2019-\$166,300-\$2,762.54 2018-\$165,500-\$2,712.02	7.77%	1				RESIDENCE, GARAGE & LOT	156700 165500	-5.31722	1	165500	156700
Tippet Drive	55045751	1716997	2022-\$144,800-N/A 2021-\$134,300-\$2,423.31 2020-\$134,300-\$2,423.31 2019-\$133,700-\$2,412.49 2018-\$131,500-\$2,291.89	7.82%	1	2018-01-26-\$1			RESIDENCE & LOT	144800 131500	10.11407	1	131500	144800
665 Tippet Drive	405746	1716010	2022-\$22,500-N/A 2021-\$15,700-\$467.29 2020-\$15,700-\$467.29 2019-\$15,100-\$449.43	43.31%	1	2016-10-04-\$30,000			RESIDENCE & LOT	22500 13700	64.23358	1	13700	22500

COMMENTER J

15 Mackie Lane	406842	1717210	2018 - \$13,700 - \$407.76 2022 - \$241,100 - N/A 2021 - \$222,300 - \$4,011.19 2020 - \$222,300 - \$3,688.35 2019 - \$218,700 - \$3,603.39 2018 - \$214,700 - \$3,531.22	8.46%	1	2010-11-24 - \$1				HOUSE & LOT	169400 152400	11.15486	1	152400	169400
5 Mackie Lane	407213	1717472	2022 - \$29,900 - N/A 2021 - \$25,600 - \$517.86 2020 - \$25,600 - \$761.93 2019 - \$25,000 - \$744.08 2018 - \$78,100 - \$2,324.50	16.80%	1	2021-03-12 - \$1 2021-03-12 - \$1				HOUSE & LOT	29900 78100	-61.7157	1	78100	29900
10 Marys Place	5501385	3470555	2022 - \$235,300 - N/A 2021 - \$224,300 - \$4,047.27 2020 - \$224,300 - \$3,837.96 2019 - \$222,400 - \$3,803.68 2018 - \$222,400 - \$3,803.68	4.90%	1	2022-01-27 - \$1				RESIDENCE & LOT	235300 222400	5.80036	1	222400	235300
9 Marys Place	407049	4516304	2022 - \$195,000 - N/A 2021 - \$176,700 - \$3,188.38 2020 - \$176,700 - \$3,049.44 2019 - \$173,900 - \$2,998.91 2018 - \$170,000 - \$2,928.55	10.36%	1	2009-03-17 - \$64,250				HOUSE & LOT	195000 170000	14.70588	1	170000	195000
4 Cove Roadway	406199	1716468	2022 - \$165,100 - N/A 2021 - \$166,900 - \$2,831.11 2020 - \$166,900 - \$2,831.11 2019 - \$164,000 - \$2,778.78 2018 - \$151,400 - \$2,731.86	7.78%	1	2012-04-11 - \$1				HOUSE, GARAGE & LOT	169100 151400	11.69089	1	151400	169100
Cove Roadway	5505820	1717553	2022 - \$167,100 - N/A 2021 - \$165,000 - \$2,796.82 2020 - \$165,000 - \$2,796.82 2019 - \$152,400 - \$2,749.91 2018 - \$149,800 - \$2,702.99	7.81%	1	2011-07-15 - \$159,900				RESIDENCE, GARAGE & LOT	167100 149800	11.54873	1	149800	167100
11 Cove Roadway	5521966	1716434	2022 - \$81,900 - N/A 2021 - \$85,000 - \$1,057.60 2020 - \$85,000 - \$1,057.60 2019 - \$85,000 - \$1,057.60 2018 - \$85,000 - \$1,057.60	134.00%	1	2020-07-29 - \$85,000 2012-11-16 - \$1 2012-07-09 - \$100,000 2012-02-10 - \$1	1	85000		Residence & Lot	81900 35000	134	1	35000	81900

519

510

6

3

73

49

160384.95

Over 5 years: 12.75462

488

30

1

151850.8671

167158.5742

519

519

COMMENTER J



COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: April 1, 2022 5:15 PM
To: Matthew Alexander
Subject: FW: 1993 EIA Submission

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Friday, April 1, 2022 10:23 AM
To: Info <info2@jdirving.com>
Cc: Mbaya, Patrick (ELG/EGL) <patrick.mbaya@gnb.ca>
Subject: 1993 EIA Submission

External Email Alert

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Gentlemen,

On March 12, 1993, an EIA report was submitted for the original secondary treatment facility. At that time Sheldon's point was the preferred site, and Northwest of the mill site (Milford Rd) was rejected with one of the reasons being that the proposed site was within 100 M of residential homes.

Sheldon's point was not a considered location during this EIA. Why?

Your current report states that this proposed (northwest of the mill – Milford) site is still within 100M of residential homes. Please provide me with engineered specific analysis of the rationale for the change between 1993 and today?

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

COMMENTER J



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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 5, 2022 7:55 AM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL)
Subject: Question submission deadline.

Good Morning Gentlemen,

I'd like some clarification on question submission dates, turnaround time for answers, and hard deadlines.

I have posed questions and am waiting on answers.

My follow up questions depends on the answer I received. Will that time be available?

How much time is available before you (Mr. Mbaya) decide what goes to the TRC?

Is there any opportunity for consultation with you regarding incomplete or unanswered questions?

I look forward to your response,

[REDACTED]

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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 10, 2022 8:54 AM
To: Matthew Alexander; Matthew Alexander
Cc: [REDACTED]
Subject: FW: Questions from [REDACTED]
Attachments: Neighbourhood Input Proposed Irving Waste Water Facility.pdf

Gentlemen,

I forwarded these questions to you on March 31 and have not had a response.

Further questions will be submitted depending on your response. The public consultation is scheduled to end on April 20th.

My questions in addition to Mr. [REDACTED] are:

- How do we get an extension to properly review the response and follow up with further questions?

Thanks,

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

[REDACTED]

From: [REDACTED]
Sent: March 31, 2022 3:53 PM
To: Matthew Alexander <matt.alexander@fundyeng.com>; Mbaya, Patrick (ELG/EGL) <Patrick.Mbaya@gnb.ca>
Cc: [REDACTED]
Subject: Questions from [REDACTED]

Please see attached questions/concerns from Mr. [REDACTED].

Thanks,

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

COMMENTER J



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COMMENTER J

██████████
██████████
Saint John, NB E2M 5P9

March 31, 2022

New Brunswick Department of Environment and Local Government

To Whom It May Concern:

Re: Public Consultation : Response to Environmental Treatment Facility And Water Use Reduction Project at the Reversing Falls Mill,

EIA issued by Fundy Engineering/ Irving Pulp & Paper, March 17, 2022

We have become aware of the proposal to build a waste water treatment centre in our neighbourhood. The proposed Irving Pulp & Paper waste water facility borders a neighbourhood of homes, private businesses, churches, day care facilities, community centres, and municipal recreational sport facilities and fields. It is a neighbourhood where people for generations have lived, worked, played, and taken great pride in the community.

I am a retired Professional Engineer (P.Eng.– Retired, MBA) who until recently held licences in 6 provinces including New Brunswick. My engineering career includes many development and engineering projects across Canada including New Brunswick. I have reviewed the Environmental Impact Assessment, the Question and Answer Documents and Guidelines as referenced below.

Reference :

- a) Environmental Treatment Facility And Water Use Reduction Project at the Reversing Falls Mill, EIA issued by Fundy Engineering/ Irving Pulp & Paper, March 17, 2022 including the Questions and Answers document
- b) The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government , January 2018

I submit the following questions and comments to the New Brunswick Department of Environment and Local Government.

Section 1 : Noise

EIA Questions and Answers, Potential Impact Mitigation

1. WILL THERE BE NOISE OR ODOUR COMING FROM THE FACILITY
“This facility is not expected to generate additional noise or odour.”

EIA 4.4.2.2.4 , EIA Table 50 EIA

“During operation it is anticipated that there will be no change in sound emissions.”

“If there is a public concern regarding the possibility of additional sounds being emitted from the Project , additional vegetation could be planted within the landscaped berm.”

EIA 4.4.4.4.2 : Building will be 5.4 m above Milford Rd.

EIA Berm Figure 93, 94, 95 , 2.7.1.9

COMMENTER J

1. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional noise?
 - a. What are the current levels of noise at the various receptors (residences, businesses etc.) in very close proximity and within 2 kilometres at different times of day throughout the year? Ambient noise levels from existing sources vary during the day and night. What are ambient noise levels from these sources?
 - b. The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government, January 2018 section 3.0 requires that the existing ambient noise levels must be included in the EIA. The information provided in EIA 4.4.2.2 Sound Emissions is inadequate and does not meet proper engineering and planning practise. In the table in EIA 4.4.2.2, ambient noise is stated as typically 55 db at 15 m distance. There is no engineered data or analysis offered for this statement. Where are these levels measured? What are the levels at nearby receptors? What time of day are these levels measured?
 - c. A berm is proposed as a noise barrier with a few trees on top. The elevation of the top of the berm is not specified and may not be as high as the process building and its associated noise producing equipment. Process building will be 5.4 m above Milford Rd. as per EIA section 4.4.4.4.2. What is top of berm elevation? Is it higher than process building? Pictures provided imply it won't be as high.
 - d. In EIA, Figure 93, 94 and 95 the berm is shown as optional. Is the berm to be included or not?

The trees on the berm as presented are not an effective noise barrier and are unacceptable as they do not meet any engineered noise mitigation standard. There is no engineered data from an acoustic engineer supporting this design. In EIA, 4.4.2.2.4 *"If there is public concern regarding the possibility of additional sounds being emitted from the Project, additional vegetation could be planted within the landscaped berm"*. Adding more trees on the small berm will not provide any effective noise mitigation. In any case, adding mitigation effort after the facility is complete and operational is not guaranteed by IPP and is far too late in the process.

Typically, engineered acoustic walls are used as noise barriers. Examples can be seen on various highways, roads, commercial and industrial developments near residential communities across Canada. Wood fence noise barriers are often used in urban areas but they must meet engineered standards. Regardless of the type of noise barriers used it cannot be evaluated without a proper acoustic study.

- e. What will the noise levels be at the residence receptors in close proximity when all of the new equipment is included in the analysis?
- f. What will the noise levels be once the new facility and associated equipment is operational?

Residential receptors are extremely close to the proposed facility. There is no reference to a proper independent engineered noise acoustic study identifying noise receptors (residences, businesses, churches, day care, sports facilities etc.) that are closest and within a few kilometres and noise levels at various times of day and night due to the new facility. A noise study by an independent acoustic engineering firm with proper modelling can generate these results. At minimum, good development planning and engineering practise criteria requires this acoustic analysis and report. This needs to be done before any statement as per the EIA can be validated and the noise impact on residences in close proximity determined.

- g. Will an engineered acoustic report be issued to properly determine noise levels at nearby receptors?

Section 2: Light

EIA Questions and Answers, Potential Impact Mitigation

5. WILL THIS NEW FACILITY GENERATE A LOT OF LIGHT AND MAKE IT DIFFICULT FOR US TO SLEEP?

“There is a minimal lighting associated with this Project. For employee safety and for process and security monitoring, there will be some lighting. Those lights will be designed to downwards and limit the amount of light that can spill into adjacent areas.”

Reference : EIA 2.7.2.6.1, 2.7.1.8.1.8, 4.4.4.4.1

2. How will the light at night impact the neighbourhood?

Exterior lighting at any retail, commercial and industrial site is always designed to point downwards and not into adjoining properties as this is basic good engineering practise and required by most municipalities. This statement does not mean that lighting levels will not affect nearby residences. Existing lighting levels at Milford Road residences must not be increased by the new facility exterior lighting.

As per EIA, Exterior lighting will be installed at 4.6 m above grade every 9m to 12 m. Actual lights and fixture strength are not specified only that they are LED. Lighting will be on at all times during the night.

EIA states light interference will be minimized so minimal effect on residences. There is no supporting documentation to specify what this means and what actual lighting levels will be. There is no commitment to any light level adjacent to residences and along Milford Rd.

There is no photometric (lighting) study presented to determine the light levels along the Irving property line and Milford Road. Lighting levels are not specified. Photometric studies are standard requirements for development approvals in urban municipalities in Canada.

The effect of the new exterior lighting on nearby residences cannot be determined from the EIA.

Will an engineered photometric lighting study be completed and mitigation implemented to ensure actual minimal specified lighting levels on nearby residences?

Section 3 : Odours and Emissions

Questions and Answers, Potential Impact Mitigation

1. WILL THERE BE NOISE OR ODOUR COMING FROM THE FACILITY

“This facility is not expected to generate additional noise or odour.”

EIA 4.4.4.2 Potential Impacts

Between the late 1990s and early 2000s, the mill reduced TRS emissions by about 80% which is demonstrated in the ambient air quality monitoring data included in Section 3.1.2.2. This project will not result in any material changes to the current TRS emissions from the Mill and there should be no changes in the surrounding air shed.

3. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?
 - a. The Statement regarding TRS does not address the odours generated by operations at the waste water facility but rather odour from the further away mill facility. Will the new waste water facility produce odours that will affect nearby residences?
 - b. What are the current odours at nearby receptors (residences, businesses, churches, day care etc.) and not just at the monitoring station? The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government, January 2018 section 3.0 requires that the existing air quality levels must be included in the EIA.

EIA 4.4.4.3 Proposed Mitigation

“Odour abatement systems (i.e. air scrubbers in the process building), or systems that help mitigate the generation of odours (e.g., subsurface air blowers, solids removal systems, etc.) should be maintained on appropriate schedules to limit the amount of odours generated.”

“IPP’s protocol for handling odour complaints should be reviewed to ensure that measures exist for receiving, investigating, managing, and tracking odour complaints from the environmental treatment facility in a timely manner.”

4. These statements confirm the presence of odours produced by the waste water facility. What level are the odours going to be limited to? What liability does IPP have to ensure the nearby residences are not affected by odour?
 - a. The proposed waste water technology and open tanks will release odours. Where is the technical engineered analysis and modelling determining odour levels at nearby receptors (residential, business, churches, day care, recreational municipal sports facilities etc).
 - b. What assurances can be provided to ensure IPP is responsible and liable to ensure nearby residential zoned properties are not negatively affected by odour?

“Irving Pulp & Paper is a modern mill with a strong environmental culture, which is reflected in mill collection and reuse systems that ensure a clean effluent with very little odour. We do not anticipate odour from the tanks.”

5. Clean effluent and very little odour are subjective terms. What engineered data supports this? Can this be quantified?

- a. Open tanks of effluent and biological treatment have the potential to give off odour and emissions to nearby receptors including residences. This is precisely the reason that a protocol to handle odour complaints from residences is recommended by Fundy Engineering in the EIA.
- b. This statement is not supported by any evidence, data or engineered analysis.

*“This is a water treatment facility, which treats **water only**. Because the water is warm, there could, at times, be some light water vapour visible near the surface of the tanks.”*

“Ventilation from the process building will be tempered, to prevent any dust, odours, or particulate matter from the part of the treatment process from leaving the building.”

6. The area is zoned as heavy industrial not water treatment. Is rezoning required?
7. The first statement that the facility “treats water only” is misleading. The process treats effluent from the mill which contains water, other materials/substances and chemicals. If it was pure water it would not need treatment. What are the actual emissions?
8. There is no data or engineered analysis to quantify emissions to nearby receptors in the EIA . There is no modelling or dispersion information to indicate what the emissions (type and level) will be at nearby receptors and in the general area. Where is the information to quantify actual emissions?
9. What are the emissions? Monitoring data from East Saint John and uptown Saint John is irrelevant and not adequate as it does not quantify existing air quality in the affected area. The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government, January 2018 section 3.0 requires that the existing ambient air quality must be included in the EIA.
10. Will the air quality levels in the affected areas and within 2 km of the waste water facility for all emissions be established and presented?

Please provide a response to my questions and concerns. The EIA as presented is incomplete as information is missing. The proposed facility as presented will negatively affect the very close residential zoned properties.

Yours truly,

██████████

██████████

██████████

COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 10, 2022 9:07 AM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL)
Subject: RE: Court Order

Gentlemen,

I have not had a response to the email noted below.

I can request under access to information, but I believe this is part of the EIA requirements.

Thanks

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

[REDACTED]

From: [REDACTED]
Sent: March 31, 2022 9:45 PM
To: Matthew Alexander <matt.alexander@fundyeng.com>; Mbaya, Patrick (ELG/EGL) <Patrick.Mbaya@gnb.ca>
Cc: [REDACTED]
Subject: Court Order

Gentlemen,

Will you please confirm the following:

- Does IPP meets the current PPER requirements?
- There was a court ordered mandate?
 - Under what regulations were the court orders completed?
 - Copies of the court documents and mandates please

Thank you,

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COMMENTER J



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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 10, 2022 9:08 AM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL)
Subject: RE: property on Milford Rd

Gentlemen,

I have not had a response to the email noted below.

Will you please respond?

Thanks

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[REDACTED]

From: [REDACTED]
Sent: March 31, 2022 10:39 PM
To: Matthew Alexander <matt.alexander@fundyeng.com>; Mbaya, Patrick (ELG/EGL) <Patrick.Mbaya@gnb.ca>
Subject: property on Milford Rd

Gentlemen,

The property on Milford Road was rezoned in the early 2000's for the LNG pipeline. Special restrictions were put on that parcel of land at that time that restricted further development.

When were those restrictions lifted? I'd like to have minutes to the zoning meetings please?

Thanks

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

[REDACTED]

COMMENTER J

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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 10, 2022 9:13 AM
To: Matthew Alexander; Mbaya, Patrick (ELG/EGL)
Cc: [REDACTED]
Subject: FW: FW: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: April 1 Second Submission Neighbourhood Input Proposed Irving Waste Water Facility (1).pdf; WastewaterTreatment (3).pdf

Gentlemen,

Mr. [REDACTED] has provided his professional opinion to me regarding the original answer to my question "I reviewed the document you sent, he did not answer your question".

Mr. Alexander's respond was on March 29th, 12 days ago. Public consultation is schedule to end in 10 days.

Will you please answer my questions?

Thanks

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[REDACTED]

From: [REDACTED]
Sent: April 2, 2022 11:50 AM
To: Matthew Alexander <matt.alexander@fundyeng.com>
Cc: Mbaya, Patrick (ELG/EGL) <patrick.mbaya@gnb.ca>; [REDACTED]
Subject: FW: FW: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Gentlemen,

I look forward to your response.

[REDACTED]

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

[REDACTED]

COMMENTER J

From: [REDACTED]
Sent: April 1, 2022 5:35 PM
To: [REDACTED]
Subject: Re: FW: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

[REDACTED],

I reviewed the document you sent, he did not answer your question.

The document (I attached again) you sent is an additional guide that the EIA must follow and is referenced in the EIA. In a nutshell, it states requirements for both industrial and municipal wastewater that must be followed in an EIA.

Zoning is a municipal item as you know. I have not tried to go through Saint John zoning by-laws or those that apply to these properties,

What it did highlight is that they are not meeting these additional requirements. I should have reviewed it with the other two documents. My oversight.

They state they meet all requirements of this sector specific document for wastewater and the General Guidelines for an EIA. In my opinion the EIA document is incomplete.

Please see attached second input submission related to above. feel free to comment or submit to them.

If you have any questions I am here.

[REDACTED]

On Thu, Mar 31, 2022 at 9:01 PM [REDACTED] wrote:

[REDACTED],

Information I received. I don't understand any of it.

Help please 😊

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[REDACTED]

COMMENTER J

From: Matthew Alexander <matt.alexander@fundyeng.com>

Sent: March 29, 2022 4:29 PM

To: [REDACTED]

Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

Thank you for your emails regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

As noted in Section 2.3 of the Environmental Impact Assessment (EIA) document, the “EIA meets the requirements of the *NBDELG* [2018] guide to EIAs and the *NBDELG* [2004] Sector Guidelines for Wastewater Treatment Projects.”

The NBDELG’s EIA information and guidelines can be found

at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment.html The Sector Guidelines for Wastewater Treatment Projects can be found under the *Sector Guidelines* tab (they have also been attached to this email for your reference). Please note that these are guidelines and are meant to help the proponent prepare the EIA document for review. Also, please note that this proposed Project is with respect to an industrial treatment system, not a municipal system and there can be considerable differences between those two types of projects and effluents. Much of the aforementioned guideline is not applicable to this project because it is strictly for treating industrial effluent.

The assessment of potential environmental impacts for all EIAs is based on the scope and complexity of the proposed Project. The scope and complexity of this proposed Project are described within Section 2 of the EIA document. The potential environmental impacts and definition of Valued Environmental Components were determined by overlaying the Project on top of the baseline environment.

Thanks,

Matt Alexander

COMMENTER J

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER J

██████████
██████████
Saint John, NB E2M 5P9

April 1, 2022

New Brunswick Department of Environment and Local Government

To Whom It May Concern:

Re: Public Consultation : Response to Environmental Treatment Facility And Water Use Reduction Project at the Reversing Falls Mill, Second Input Submission.

EIA issued by Fundy Engineering/ Irving Pulp & Paper, March 17, 2022

On March 31, 2022, I submitted questions and comments regarding the proposal to build a wastewater treatment facility. This second submission is specific to the Wastewater Treatment sector requirements “Additional information Requirements for Wastewater Treatment Projects version 04-11-25” – issued by the Government of New Brunswick.

The proposed Irving Pulp & Paper wastewater facility borders a neighbourhood of homes, private businesses, churches, day care facilities, community centres, and municipal recreational sport facilities and fields. It is a neighbourhood where people for generations have lived, worked, played, and taken great pride in the community.

I am a retired Professional Engineer (P.Eng.– Retired, MBA) who until recently held licences in 6 provinces including New Brunswick. My engineering career includes many development and engineering projects across Canada including New Brunswick. The Environmental Impact Assessment, the Question and Answer Documents and Guidelines have been reviewed.

References :

- Additional Information Requirements for Wastewater Treatment Projects version 04-11-25

EIA Questions and Answers, Potential Impact Mitigation

1. WILL THERE BE NOISE OR ODOUR COMING FROM THE FACILITY

“This facility is not expected to generate additional noise or odour.”

Additional information Requirements for Wastewater Treatment Projects version 04-11-25 issued by the New Brunswick Government:

Definition

This guideline is applicable to all municipal and industrial waste water disposal or treatment facilities, other than domestic, onsite sewage disposal systems.

Section 2.0 Undertaking

v) Siting Considerations:

- *Discuss the location with respect to existing sensitive land issues (e.g. residential properties, schools, recreational, facilities, tourist areas, etc.)*

Section 4.0 Summary of Environmental impacts

All anticipated impacts should be described and discussed. These will depend on the scope and complexity of the project as well as the project location. See registration Guide for further information. Examples of impacts resulting from this class of project may include but are not limited to the following:

COMMENTER J

- *Odour Impact – Provide an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property*

Questions and Comments

1. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?

In EIA Section 2.3: ***“this EIA meets the requirements of the NBDELG (2018) Guide to EIAs and the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants”***

In EIA, ***Table 3 Summary of the potential environmental constraints for locations evaluated for siting the environmental treatment facility proposed for the Reversing Falls Mill in Saint John New Brunswick , Other Potential Constraints, Residential Receptors, Mill West, 100m to nearest residence on Milford Road.***

The proposed Irving Pulp & Paper wastewater facility borders a neighbourhood of homes, private businesses, churches, day care facilities, community centres, and municipal recreational sport facilities and fields. As per the EIA, the nearest residence on Milford Road is 100 m from the facility.

- a) What will the odour impact from the proposed waste water facility be on the neighbourhood? It must be determined that these sensitive areas will not be affected by odour. Will information be provided to confirm the odour impact on the adjacent neighbourhood?
- b) Due to the sensitive adjacent receptors in very close proximity to the proposed facility, it is imperative that the requirement of the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants to provide an odour impact analysis within 500 m be met. This is not included in the EIA. Where is this information?
- c) The statement that the EIA meets the requirements of NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants is not supported.
- d) How will an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property be provided as required (certified and stamped by a Professional Engineer or Scientist)?

The EIA as presented is incomplete.

Yours truly,

██████████

██████████

██████████

COMMENTER J

Additional Information Requirements for Wastewater Treatment Projects

Pursuant to Section 5(2) of the *Environmental Impact Assessment Regulation* of the Clean Environment Act, this document is intended to assist proponents in preparing a registration submission for projects involving the above-mentioned sector. It should be read in conjunction with the General Information Requirements as outlined in the latest version of the Registration Guide. Note that the following items are requirements **in addition to** those outlined in the Registration Guide. The information requested in the Registration Guide must also be provided. For further assistance, please contact the Project Assessment and Approvals Branch, Department of Environment at (506)-444-5382.

After reviewing a registration submission, the Technical Review Committee may require other information beyond the items listed below and in the Registration Guide.

Definition

This guideline is applicable to all municipal and industrial wastewater disposal or treatment facilities, other than domestic, on-site sewage disposal systems.

A complete list of potential triggers for project registration is provided in Schedule "A" of the Regulation. To determine if registration is required for a specific project, please contact the Project Assessment and Approvals Branch at the number listed above.

1.0 THE PROPONENT

See Registration Guide

2.0 THE UNDERTAKING

(iii) Purpose/Rationale/Need for the Undertaking:

- How are the current wastewater treatment demands being met?

(v) Siting Considerations:

- Discuss the location with respect to existing sensitive land uses (e.g. residential properties, schools, recreational facilities, tourist areas, etc.)
- If the facility is intended for municipal use, does the community have communal potable water supply and where is it compared to the proposed waste water treatment plant (WWTP) location?

COMMENTER J

- Have the locations of existing or proposed *Wellfield Protected Areas* and *Watershed Protected Areas* been taken into consideration in the siting of the facility?
- Note that the proponents of new wastewater treatment facilities for municipal use should examine and fully exhaust potential locations within the municipal boundaries prior to looking outside the municipal limits.
- The current New Brunswick siting standards for wastewater treatment facilities state that these facilities cannot be located within a 1:20 year floodplain. If applicable, delineate the floodplain on the proposed site. Should a floodplain exist, its extent must be determined and clearly delineated using mapping using a scale of 1:10,000. Should floodplains exist within the proposed facility footprint or on the property of the proposed facility, the proponent is required to provide rationale for the facility location and to describe what mitigation the proponent is intending to implement. Specific attention in the registration document must be given to the location and design of the facility with respect to known flood levels, ice movement, freshet discharges and hydraulic upheavals.

(vi) Physical Components and Dimensions of the Project:

Provide a detailed description of the proposed project, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- The proponent is required to identify in general terms all infrastructures related to the collection and release of wastewater. Detailed engineering drawings are not required however the proponent should identify the following information on an appropriate scale map: location of all collection piping; number and location of all lift stations; location of outfall piping; proposed lagoon design features if applicable (type of liner, size, retention time, etc.).
- A design brief should be provided for the proposed facility, describing the type of treatment system that is planned (facultative lagoon, surface aeration lagoon, subsurface aeration lagoon, constructed wetland, rotating biological contactor, other mechanical system, etc.) and describing various design features (size, design capacity, detention time, effluent treatment criteria, etc.).
- If subsurface disposal of waste water is being proposed, please provide: a) a survey plan of the property to identify exact lot dimensions for an on-site waste disposal assessment, b) a contour plan should also be submitted if slopes on the lot are greater than 5%, and c) a description of the permeability (hydraulic conductivity) of the disposal area. (For soils with low permeability, indicate the source and estimated volume of imported material that will be required.)

(vii) Construction Details:

COMMENTER J

Provide a detailed description of the proposed construction activities and methods, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- If a subsurface wastewater disposal system is proposed, confirm that the area for the disposal field will be marked off or flagged off to prevent soil compaction by heavy equipment.

(viii) Operation and Maintenance Details:

Provide a detailed description of the proposed project's operation and maintenance characteristics, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- Describe the point of discharge into the receiving environment. This description should also identify the diffusion/dispersion method for the discharge.
- For river or marine discharge locations, provide information regarding the flow volume and an anticipated dilution factor to be achieved from the facility. Include a description of the mixing zone. Will the receiving stream always have at least eight times more volume of water than effluent?
- Will disinfection be used prior to effluent discharge? If so, please identify the technology and operating procedures. The proponent should note that if chlorination of the treated effluent is the preferred option, it must be accompanied with a de-chlorination process.
- To what level of its nominal capacity will the facility be functioning at the beginning of its operation?
- For municipal systems provide a prediction of probable loading growth and future extension of municipal services. How many years of additional capacity does the design provide? The submission must also include a detailed listing of the number of residential, institutional, commercial and industrial users to be serviced with the system.
- If the system is an expansion of an existing municipal wastewater treatment lagoon with a combined (storm and sanitary) sewer system, how does the system operate during storm events? Please note that NBDELG does not approve any new combined sewer systems.
- Will the system discharge to the receiving environment be batch or continuous? If the discharge will be on a batch basis, when or how often are discharges likely to occur?
- For municipal systems, will any special industries or significant users be using the treatment facilities? Assess the possibility of either hazardous chemicals in the system or significant changes in the system loading as a result of such users.

- Will the facility be designed to allow it to receive hauled septage from septic service companies or other industrial facilities?
- Are pump or lift stations required? If so, please locate them on a map. Will they have emergency power? If the pumping station does not have back-up power, what mitigation measures are proposed to minimize environmental impacts from by-pass events?
- Describe the projected characteristics of the treated effluent (e.g., BOD, TSS, TKN, TP, etc.) and provide information on projected effluent flow volumes.
- Please note that NBDELG's effluent quality objectives for municipal wastewater systems are 20 mg/l for BOD and 20 mg/l for TSS. If the proposed municipal project does not meet these objectives, a thorough justification must be provided.
- Characteristics of the raw influent wastewater loadings to the wastewater treatment facility (chemical and physical) should be provided so that the adequacy of the design can be verified by reviewers.
- Operation and Maintenance (O&M) targets or criteria should be established for the proposed facility. This information is usually known relatively early in the planning process as the facility owner may have physical or budgetary considerations which limit options for long term O&M. This information can be used in the EIA registration document, in conjunction with other material, to inform TRC members of the rationale used by the proponent for decision-making.
- Will there be disposal of sludge in the future? How much will be produced and how and where will it be treated or disposed of?
- Who will be responsible for the maintenance of the system? Note that for residential subdivisions with communal water and wastewater systems outside incorporated areas, the department will require that a public entity (municipality, commission) own and maintain the infrastructure associated with the development.

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

Include all relevant environmental features as noted in the Registration Guide. Examples of issues that may be of particular relevance to this class of project include but are not limited to the following:

- Current uses of the receiving stream downstream of the outfall; (e. g. swimming, drinking water, shellfish harvesting)
- The presence of other effluent discharges upstream or downstream of the proposed discharge location.

- For systems discharging to surface water, the fish habitat in the zone of influence of the proposed discharge.
- If subsurface disposal of waste water is being proposed, the distances to wells and septic fields on neighbouring properties.

4.0 SUMMARY OF ENVIRONMENTAL IMPACTS

All anticipated impacts should be described and discussed. These will depend on the scope and complexity of the project as well as the project location. See the Registration Guide for further information. Examples of impacts resulting from this class of project may include but are not limited to the following:

- Odour impact - Provide an odour impact analysis for any existing sensitive land uses within 500m of the boundary of the subject property.

5.0 SUMMARY OF PROPOSED MITIGATION

Describe all mitigative measures that will be employed to minimize the potential environmental impacts identified above. These may include but are not limited to the following:

- Describe any proposed pollution control equipment and discharge monitoring programs.
- What contingency plans are in place for power failures and other malfunctions?
- What monitoring of nearby wells, receiving stream and/or of effluent is proposed?
- If surface aeration is the preferred option, how will potential concerns about aerosols impacting health of neighbours be addressed?
- In the case of municipal systems, will the consulting engineer be providing the municipality with sample bylaws concerning wastewater collection, such as allowable volumes or contaminants by users into the collection system?

Other mitigative measures will vary depending on the size, scope and complexity of the project and depending on its location with respect to environmental features. See the Registration Guide for additional guidance.

6.0 PUBLIC INVOLVMENT

See Registration Guide.

7.0 APPROVAL OF THE UNDERTAKING

COMMENTER J

See Registration Guide.

8.0 FUNDING

See Registration Guide.

9.0 SIGNATURE

See Registration Guide.

10.0 SUBMISSION INSTRUCTIONS

See Registration Guide.

COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 10, 2022 9:43 AM
To: Mbaya, Patrick (ELG/EGL); Matthew Alexander
Subject: RE: Question submission deadline.

Gentlemen:

I have resent several emails to both of you regarding questions I have not had answered or that the initial response from Dr. Alexander did not answer my question.

Public consultation ends in 10 days.

I want to ensure, Mr. Mbaya, that concerns are objectively reviewed and time for analysis and further queries are provided. I am a concerned resident, and must do this after business hours.

It is concerning that the same question needs to be redirected because it was not answered the first time. I am still waiting on an answer a week or more after submission.

Meeting with Dr. Alexander or the Proponent will not eliminate that concern. I just won't have the answer in writing.

Page 11 of A GUIDE TO ENVIRONMENTAL IMPACT ASSESSMENT IN NEW BRUNSWICK states:

“Complete and Accurate Submissions EIAs are ideally conducted early in the project planning stages, at the conceptual design stage and it is acknowledged that complete engineering details of a project may not be available at the time of registration. However, full and accurate descriptions of the location, proposed activities, existing environment, potential impacts, and proposed mitigation must be included in the registration document. A Project Manager with the EIA Branch is assigned to each EIA review (project) and will review the registration document for completeness prior to circulation to the Technical Review Committee (TRC). **Should information be lacking, the Project Manager will notify the proponent of the deficiencies and the proponent will be given the opportunity to provide a revised submission.** This will ultimately save time for both the proponent and the TRC. Any inaccurate or deficient information discovered after an undertaking has been registered could result in delays in processing the registration and could result in the issuance of an order by the Minister directing the discontinuance of the undertaking. It is in the proponent's best interest to provide a complete and accurate submission”.

Mr. Mbaya – will concerned residents be informed of the deficiencies identified and have an opportunity to review the revised submission before being presented to the TRC?

I look forward to your response,

[REDACTED]

From: Mbaya, Patrick (ELG/EGL) <Patrick.Mbaya@gnb.ca>
Sent: April 8, 2022 11:17 AM

COMMENTER J

To: Matthew Alexander <matt.alexander@fundyeng.com>

Subject: RE: Question submission deadline.

Hi Ms. [REDACTED],

Apologies for the delay in responding to your question:

How much time is available before you (Mr. Mbaya) decide what goes to the TRC?

The public consultation report will be submitted to DELG – EIA Branch and I will forward it to the TRC for review before project determination/decision

I hope this answer your question but do feel free to clarify it for me if I have not answered it.

Regards

Patrick Mbaya

Environmental Impact Assessment Specialist/ Spécialiste des études d'impact sur l'environnement

Environmental Assessment Branch/Direction etude d'impact sur l'environnemental

NB - DELG/MELG

P.O.Box 6000, Fredericton, NB, E3B 5H1

Marysville Place, 20 McGloin Street, Fredericton, NB

Email/courriel: Patrick.Mbaya@gnb.ca

Mobile/cell: +1-506-429-6170

Landline/fixe: +15064443820



From: Matthew Alexander <matt.alexander@fundyeng.com>

Sent: Wednesday, April 6, 2022 3:55 PM

To: [REDACTED] Mbaya, Patrick (ELG/EGL) <Patrick.Mbaya@gnb.ca>

Subject: RE: Question submission deadline.

ATTENTION! External email / courriel externe.

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to two of your questions. The third is a question for the NBDELG.

My follow up questions depends on the answer I received. Will that time be available?

As indicated within the notice placed in the *Telegraph Journal* on 19 March 2022 comments from the public are requested on or before 20 April 2022. As indicated within the materials distributed at the Open House on 23 March 2022, Irving Pulp & Paper Ltd. (IPP) is following the Province's Environmental Impact Assessment (EIA) process that includes public consultation. All questions received related to the Environmental Impact Assessment before 20 April

COMMENTER J

2022 will be included along with answers within the Public Involvement Summary submitted to the Province that is scheduled for release on or before 20 May 2022.

All questions submitted through IPP's website (www.ippmodernization.com), to the consultant, and to the EIA Project Manager will be answered in writing as part of the public review process. Those questions and answers will be taken into consideration during the EIA process and as the Project advances.

If you have questions after 20 April 2022, you can still submit them.

Is there any opportunity for consultation with you regarding incomplete or unanswered questions?

As was offered to you at the Open House on 23 March 2022, IPP representatives and the consultant will sit down with you and have a discussion regarding the proposed Project. If you are agreeable to this, please provide some times and dates that will work for you.

Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager



Bio-Resources | Building Systems | Environmental | Geotechnical & Surveying | Project Management

From: [REDACTED]
Sent: April 5, 2022 7:55 AM
To: Matthew Alexander <matt.alexander@fundyeng.com>; Mbaya, Patrick (ELG/EGL) <patrick.mbaya@gnb.ca>
Subject: Question submission deadline.

Good Morning Gentlemen,

I'd like some clarification on question submission dates, turnaround time for answers, and hard deadlines.

I have posed questions and am waiting on answers.

My follow up questions depends on the answer I received. Will that time be available?

How much time is available before you (Mr. Mbaya) decide what goes to the TRC?

Is there any opportunity for consultation with you regarding incomplete or unanswered questions?

I look forward to your response,

[REDACTED]

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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 10, 2022 6:42 PM
To: Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL)
Subject: RE: Sector Specific Guidelines regulations 87-83

Gentlemen,

Will you please answer the question below and keep them email thread intact so I can see what emails you have answered and what ones you have not.

Thanks

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

[REDACTED]

From: [REDACTED]
Sent: March 29, 2022 9:06 AM
To: info@jdirving.com
Cc: [REDACTED]
Subject: Sector Specific Guidelines regulations 87-83

What sector specific guidelines were used for the EIA?

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

[REDACTED]

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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 10, 2022 10:14 PM
To: Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL)
Subject: Environmental Health Risks and Housing Values: Evidence from 1,600 Toxic Plant - Author(s): Janet Currie, Lucas Davis, Michael Greenstone and Reed Walker
Attachments: Housing value Curry 2015 highlights.pdf

Hi Dr. Alexander,

Your statements of “ It is not believed that this Project will negatively affect property assessment values in the area.” And “ The Project team does not anticipate a decrease in property tax revenue to the City of Saint John as a result of this proposed Project” **are, in my opinion, unsubstantiated.**

The attached report by Currie; Department of Economics – Princeton, Davis; Haas School of Business UC-Berkley, Greenstone; Department of Economics University of Chicago, and Walker; Haas School of Business UC-Berkley **outline the impact to housing values and their study identified an immediate 11% decrease.**

I am waiting on clarification from a subject matter expert on the requirements of the Economic Impact Statement. In the meantime, I have attached a study with findings published in 2015 regarding Housing Values and toxic plants (heavy industry).

I understand the importance of forestry and paper industry in NB and the importance of clean water. I too want the mill to continue and to have cleaner water. I also want all potentially effected parties to be fully informed about the short- and long-term impacts.

The EIA is project specific. **Using the benefits of the IPP mill and the provincial forestry industry is not relevant to this project. They are not part of the EIA.** The forestry industry and the IPP mill will continue to operate if the proposed location is rejected. It will be in a different location. The IPP facility has a valuation of more than \$2 Billion dollars. A \$150 Million dollar project does not jeopardize an entire industry or a \$2 Billion dollar facility. **This total project is 5% or less of the total value of the IPP facility!**

I have no issues with the project. My issue is the location and lack of scientific/independent/complete information being provided to impacted residents. As I stated above, I am waiting on confirmation from a subject matter expert regarding the requirements of the Economic Impact Statement.

“ As the EIA document notes, the proposed Project represents \$150 million in capital expenditure that is 100 % funded by JDI. Approximately 120 person years of construction employment will be generated and it is expected that many of the contractors working on the Project will be from Greater Saint John”

- What % of the \$150 capital investment will be spent with organizations outside NB?
- 120 person years = 60 temporary contractors
 - What is the forecasted dollars spent on these temporary positions?
- There is zero new jobs or long term net new economic benefit to Saint John or NB – yes/no?
 - No economic benefit to the city or residents from this project (excluding the mill and the forestry industry). Yes or No?

COMMENTER J

“In conjunction with this Project, there is an opportunity to build a landscaped berm along Milford Road, which the Project team believes will improve the aesthetics of the street landscape for local residents.”

- “the project team believes”
 - **What do the residents believe?**
 - **There is a large group of residents that do not agree with the project team.**

“It is understood that Gardner Pinfold Consultants Inc. prepared a report in 2020 for the Greater Saint John Regional Task Force Analysis. It is also understood that a comparison was drawn between Fredericton, Moncton, and Saint John three New Brunswick cities, which have vastly different socioeconomic characteristics. **The report suggested that the value of residential properties within 2 km of industrial properties is negatively impacted by comparing Saint John that has industry within the core to Moncton and Fredericton that have industry at their outskirts. The relevance of the report is not recognized for this Project.** The Mill, in various forms, has existed since 1836. Residential development has continued to grow and in some instances densify around the Mill site since that time.

It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000.”

- I will reserve commenting on the statement below as I am waiting on additional information that is not yet available.
 - The Mill, in various forms, has existed since 1836. Residential development has continued to grow and in some instances densify around the Mill site since that time
- Attached is a publication from the American Economic Review, 2015.
 - **That attached publication supports the findings of the Gardner Pinfold Consultants report**
 - The report suggested that the value of residential properties within 2 km of industrial properties is negatively impacted by comparing Saint John that has industry within the core to Moncton and Fredericton that have industry at their outskirts. **The relevance of the report is not recognized for this Project.**
 - **This report states : “ plant openings lead to 11 percent declines in housing values within 0.5 miles or a loss of about \$4.25 Million for these households”**
 - The mean value used for this calculation page 10 table 1 was \$124,000 to \$134,000
 - The property values provided in your previous attachment show the average values of more than \$200,000 to \$225,000 on average
 - 67% higher than the mean used in the report
 - **That is a conservative estimated of \$ 7,097,500 drop in property value based on the attached publication without any real calculations.**
- **“the Project team** reviewed the property assessments and sales records for 519 single-family residential properties within the Milford and Randolph Area.”
 - The comments and analysis below relate to property assessments. Those increased assessments have nothing to do with this proposed facility and the impact it will have on the residents.
 - **Page 15 through 22 of the attached report document the calculations to determine the change in value from a “new plant”**
 - **Formula on page 15:**

COMMENTER J

- “jdt = $\beta_0 + \beta_1$ [Plant Operating] + β_2 [Near] + (1 [Plant Operating] jt x l[Near]jd) + r]+ /?4(X1990 jd x Tt”

[REDACTED]

From: Matthew Alexander <matt.alexander@fundyeng.com>

Sent: April 7, 2022 11:26 AM

To: [REDACTED]

Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

Thank you for your emails regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. A Guide to Environmental impact assessment in New Brunswick 2(c) “describe the market potential, benefit to society, economic benefits, job creation benefit, consumer and/or industrial demand, and other relevant issues that make the proposal viable and desirable for the local and/or New Brunswick economy”. I understand that the IPP mill has considerable benefits, and that treating the industrial waste water has benefits. My concern is the location. What I don’t see in the report are the benefits of this location to the residents. What are the benefits to the residents that reside within a 2km radius?

This Project is of Provincial importance. As noted in Section 2.2 the Environmental Impact Assessment (EIA) document, Irving Pulp & Paper, Limited’s Reversing Falls Mill is the anchor of New Brunswick’s forest products industry. In 2022, J.D. Irving, Limited (JDI), Irving Pulp & Paper, Limited’s (IPP) parent company, had 4 925 full-time employees working within their forest products industry. Those jobs are linked to the IPP’s Reversing Falls Mill. That same year, JDI spent \$1.63 billion on local suppliers. The Mill complex in Saint John directly employs 480, many of whom reside in the Greater Saint John area and some who reside in the Milford and Randolph area of West Saint John. IPP is mandated to install an Environmental Treatment Facility (ETF) at the Reversing Falls Mill. If the ETF is not built and operated, it would cause the Mill to be shutdown and affect the livelihood of thousands of New Brunswickers and hundreds of Saint Johners.

Section 2.4 of the EIA document provides additional information on how New Brunswick’s Forest Products Industry is an integral component of the Province’s natural resource-based industry and how Saint John is the industry’s hub. As the EIA document notes, the proposed Project represents \$150 million in capital expenditure that is 100 % funded by JDI. Approximately 120 person years of construction employment will be generated and it is expected that many of the contractors working on the Project will be from Greater Saint John.

In conjunction with this Project, there is an opportunity to build a landscaped berm along Milford Road, which the Project team believes will improve the aesthetics of the street landscape for local residents.

2. How many residential properties are within a 2km radius of the proposed site?

COMMENTER J

It is understood that Gardner Pinfold Consultants Inc. prepared a report in 2020 for the Greater Saint John Regional Task Force Analysis. It is also understood that a comparison was drawn between Fredericton, Moncton, and Saint John, three New Brunswick cities, which have vastly different socioeconomic characteristics. The report suggested that the value of residential properties within 2 km of industrial properties is negatively impacted by comparing Saint John that has industry within the core to Moncton and Fredericton that have industry at their outskirts. The relevance of the report is not recognized for this Project. The Mill, in various forms, has existed since 1836. Residential development has continued to grow and in some instances densify around the Mill site since that time.

It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000.

3. What is the forecasted impact to property values within a 2 km radius over the life of the project? Reference material please for calculation

During preparation of the Environmental Impact Assessment (EIA) document, the Project team reviewed the property assessments and sales records for 519 single-family residential properties within the Milford and Randolph Area. The attached Google Earth image shows the single-family residential properties that were reviewed (*i.e.*, red polygon) and a 2 km radius (*i.e.*, red circle) around the Project site (*i.e.*, yellow pushpin). Overall, no negative impacts to property values were identified, which is the reason why it was not included in the EIA document.

It is not believed that this Project will negatively affect property assessment values in the area. This is based on our detailed review of the local property assessment values presented below. The majority of these homes have existed adjacent to the Mill site since 1951 and their values have continued to increase. The Project team also believes that the beautification work along Milford Road will improve aesthetics of the area.

NB Property Assessment determines an assessed value for each real property in New Brunswick on an annual basis. A property's assessment reflects the property's market value. Market value is the price the property would likely sell for on the open real estate market on January 1 of each assessment year for which the assessment was made. The Province's assessment process is the most common method of property assessment used in North America. It is based on market value because it is transparent, easy to understand, and a fair and realistic measure of a property's value. The Province's assessors look at a variety of factors when assessing the value of a property including lot size, sale prices of homes and properties in the area, property condition, age of buildings, and any recent renovations and/or improvements made to the property. More information on how a property is assessed can be found on the Province's website at: <https://www2.snb.ca/content/snb/en/sites/property-assessment/understanding/valued.html>

The 2022 assessed values of New Brunswick properties reflect a strong real estate market provincewide. While 28 % of properties showed no change in assessed value when compared to 2021, 28 % of properties increased by up to 5 %, and 23 % increased ranging from 5 % to 10 %. While 19 % increased by greater than 10 %, 77 % of those are protected by the Province's Spike Protection Mechanism whereby the increase is phased in over time to make assessment growth much more stable and predictable.

Within the Milford and Randolph areas of west Saint John, there are approximately 659 properties (*i.e.*, vacant land, residential, institutional, commercial, and industrial) within the Service New Brunswick database. Of those, 85 % (*i.e.*, 562) saw a property assessment increase between 2021 and 2022, 1 % (*i.e.*, 6) experienced a decrease, and 14 % (*i.e.*, 91) showed no change. These data suggest that property values in the Milford and Randolph areas grew more, on average, than New Brunswick as a whole.

Because property assessments were frozen across the Province between 2020 and 2021, assessment changes over the past five years were also reviewed. Those data show that 82 % (*i.e.*, 542) of those same properties showed an assessment increase, 5 % (*i.e.*, 34) experienced a decrease, and 13 % (*i.e.*, 83) saw no change. On average, assessments increased by 19 % over those five years (*i.e.*, 2018 to 2022).

The Saint John Real Estate Board reported on 13 January 2022 that Saint John 2021 MLS® home sales smashed the record set in 2020. During 2021, 3 142 residential units were sold. Sales were up in 2021 by 21 % over the 2020 annual sales setting record. Buyers are fiercely competing over a low inventory, which is driving price growth; the composite benchmark price extended the streak of double-digit year-over year percentage gains to 15 months in December 2021. The average price of homes sold in December 2021 was \$249 527, up 31 % from December 2020.

Looking specifically at single-family residential, there are 519 properties in the Milford and Randolph area. Within the past five years (*i.e.*, 2018 to 2022), the average assessment for those properties increased by almost 13 %. The average value of a single-family residential property increased from about \$151 850 in 2018 to \$\$167 160 in 2022. The Saint John Real Estate Board expects record sales prices to continue in the foreseeable future.

Attached are the records that were used to calculate the above information.

4. What is the 30 to 50 year forecasted decrease in property tax revenue to the City of Saint John? Reference material please for calculation

This question would best be directed to New Brunswick’s property assessors. The Project team does not anticipate a decrease in property tax revenue to the City of Saint John as a result of this proposed Project. Property taxes on the Mill property will increase as a result of the proposed Project, which will generate more property tax revenue for the City of Saint John.

5. What is the benefit for the residents that reside within 2 km of the proposed site? Reference material please for calculation

Please refer to the response to question 3.

6. What do the residents of Saint John benefit from this site location? Calculation please

Please refer to the response to question 3.

7. Does IPP meets the current PPER requirements?

Absolutely IPP meets the 1992 Pulp and Paper Effluent Regulations (PPERs). This is demonstrated in the data included within Table 8 of the EIA document. If the Mill was not meeting the 1992 PPERs, it would not be permitted to operate.

8. There was a court ordered mandate? Under what regulations were the court orders completed? Copies of the court documents and mandates please

IPP is committed to the long-term environmental sustainability and economic viability of the Mill. This proposed Project will prepare the Mill for expected future changes to environmental regulations and that is beneficial for the community, the environment, and the Mill.

IPP was fined under the federal *Fisheries Act* related to self-reported environmental incidents. None of those self-reported incidents resulted in observed environmental harm or damage to the Sant John River watershed, nor were there any observed or reported fish deaths. Although part of the court agreement, as reported in the media, is to build a new ETF, IPP has been considering building a facility since 1992. This ETF design and technology goes above and beyond that necessary within the court agreement. The detailed court agreement is not a public document.

9. The property on Milford Road was rezoned in the early 2000’s for the LNG pipeline. Special restrictions were put on that parcel of land at that time that restricted further development. When were those restrictions lifted? I’d like to have minutes to the zoning meetings please?

COMMENTER J

There was no rezoning on IPP's property for the LNG pipeline built in the early 2000's; however, in July 2003, Maritimes & Northeast Pipeline Limited Partnership (M&NPP) registered a 30 m wide easement / right-of-way on the Mill property. The Mill property where the pipeline easement was placed was already zoned heavy industrial, which was appropriate zoning for installing the pipeline.

Property re-zoning is all done within the public realm and in Saint John comprises public meetings with the Planning Approval Committee and Common Council. No rezoning was required so there are no rezoning meeting minutes available.

With respect to M&NPP's 30 m pipeline right-of-way, there are restrictions as to what activities can occur. Permanent structures are prohibited because the ability to access and maintain the pipeline must not be impaired. Permanent structures include, but are not limited to, houses, trailers, mobile homes, poles, decks, tool sheds, garages, swimming pools, leaching fields, and septic tanks. Although fences may be placed on the right-of-way, fence posts must be located a minimum of 1.5 m from the pipeline. Driveways, road, and parking lots are generally permitted if they are built to M&NPP's standards. The National Energy Board of Canadian Standards Association regulations require that M&NPP maintain a safe amount of cover over the pipeline. Accordingly, the grade over the pipeline cannot be reduced or increased without permission from M&NPP. Shrubs and bushes may be planted on the right-of-way provided they are less than 1.2 m in height at maturity and are not within 3 m of the pipeline. Plants and trees that grow taller than 1.2 m are not permitted because they inhibit access and hinder aerial surveillance of the right-of-way.

IPP is committed to working within the existing guidelines for maintaining pipeline integrity.

10. I believe that the court order were a result of DFO charges. If so, does the EIA have a federal component since DFO is involved?

EIA approval is the first step in the environmental permitting process. As described in Section 6 of the EIA document, there are several federal, provincial, and municipal permits, authorizations, or approvals that may be required for various components of the proposed Project. Federal Regulators, such as the Department of Fisheries and Oceans and Environment and Climate Change Canada, are included as members of the EIA Technical Review Committee.

No federal approvals are required for building and operating the ETF component of the Project. Federal permit, authorizations, or approvals are only required for the water use reduction component of the Project.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER J

Environmental Health Risks and Housing Values: Evidence from 1,600 Toxic Plant Openings and Closings

Author(s): Janet Currie, Lucas Davis, Michael Greenstone and Reed Walker

Source: *The American Economic Review*, FEBRUARY 2015, Vol. 105, No. 2 (FEBRUARY 2015), pp. 678-709

Published by: American Economic Association

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Environmental Health Risks and Housing Values: Evidence from 1,600 Toxic Plant Openings and Closings[†]

By JANET CURRIE, LUCAS DAVIS, MICHAEL GREENSTONE,
AND REED WALKER*

Regulatory oversight of toxic emissions from industrial plants and understanding about these emissions' impacts are in their infancy. Applying a research design based on the openings and closings of 1,600 industrial plants to rich data on housing markets and infant health, we find that: toxic air emissions affect air quality only within 1 mile of the plant; plant openings lead to 11 percent declines in housing values within 0.5 mile or a loss of about \$4.25 million for these households; and a plant's operation is associated with a roughly 3 percent increase in the probability of low birthweight within 1 mile. (JEL I12, L60, Q52, Q53, Q58, R23, R31)

Industrial plants that emit toxic pollutants are ubiquitous in the United States today, and many lie in close proximity to major population centers. These plants emit nearly 4 billion pounds of toxic pollutants in the United States annually, including 80,000 different chemical compounds.¹ Whereas criteria air pollutants like particulate matter have been regulated for decades, regulation of airborne toxic pollutants remains in its infancy. The nascent state of regulation of these emissions is controversial because, on the one hand, most of the chemicals emitted have never undergone any form of toxicity testing (US Department of Health and Human Services 2010)², and, on the other hand, they are widely believed to cause cancer, birth defects, and damage to the brain and reproductive systems (Centers

*Currie: Department of Economics, Princeton University, 316 Wallace Hall, Princeton, NJ 08540 (e-mail: jcurrie@princeton.edu); Davis: Haas School of Business, University of California, Berkeley, Berkeley, CA 94720 (e-mail: ldavis@haas.berkeley.edu); Greenstone: Department of Economics, University of Chicago, 1126 E. 59th Street, Chicago, IL 60637 (e-mail: mgreenst@uchicago.edu); Walker: Haas School of Business, University of California, Berkeley, Berkeley, CA 94720 (e-mail: rwalker@haas.berkeley.edu). Currie thanks the John D. and Catherine T. MacArthur Foundation and the Environmental Protection Agency (RE: 83479301-0) for support. We thank seminar participants at University of Delaware, Princeton, MIT, Stanford, UC Davis, RAND, and the University of Oregon as well as Trudy Cameron for helpful comments. The research in this paper was conducted while the authors were Special Sworn Status researchers of the US Census Bureau with generous guidance from Jim Davis, Jonathan Fisher, and Maggie Levenstein. Research results and conclusions expressed are those of the author and do not necessarily reflect the views of the Census Bureau, the MacArthur Foundation, or the EPA. This paper has been screened to insure that no confidential data are revealed. Previous versions of this paper were circulated as "Toxic Pollutants and Infant Health: Evidence from Plant Openings and Closings" and "Do Housing Prices Reflect Environmental Health Risks? Evidence from More than 1,600 Toxic Plant Openings and Closings."

[†]Go to <http://dx.doi.org/10.1257/aer.20121656> to visit the article page for additional materials and author disclosure statement(s).

¹US Government Accountability Office, http://www.gao.gov/highrisk/risks/safety-security/epa_and_toxic_chemicals.php (accessed March 19, 2012).

²The Environmental Protection Agency characterizes their risk assessments as "not completely accurate"

for Disease Control and Prevention 2009). The unveiling of the Mercury and Air Toxics Standards in December 2011 represents the first time the US government has enforced limits on mercury and other toxic chemicals.

Toxic emissions are one of the reasons why siting industrial plants is so controversial. Policymakers must balance the negative externalities associated with industrial plants with their potential to create jobs, increase local economic activity, and lead to positive economic spillovers (Greenstone, Hornbeck, and Moretti 2010). While negative externalities often generate intense local opposition (e.g., “not in my backyard” or NIMBY movements), there is also frequently intense competition among communities to entice industrial plants to locate within their jurisdictions. If siting decisions are to be made efficiently, it is crucial that policymakers have reliable measures of the different costs and benefits.

This paper represents a first step toward understanding the external costs of industrial plants that emit toxic pollutants in terms of both individuals’ willingness to pay to avoid these facilities and population health. In order to address this question, we have assembled an extraordinarily rich dataset on the location and economic activity of industrial plants in five large US states. Our analysis focuses, in particular, on plants that report toxic emissions to the US Environmental Protection Agency’s *Toxic Release Inventory*. We link information on these “toxic” plants with administrative data that provides detailed information on the near-universe of housing transactions and birth outcomes in these states. All three datasets provide geographic coordinates, so we are able to perform the analysis with an unusually high degree of spatial detail.

Since the previous literature offers little guidance about how far toxic air pollutants travel, our first contribution is to measure the relationship between toxic emissions and air quality. Using data from pollution monitoring stations and a difference-in-differences estimator, we document that there are significantly higher levels of ambient toxic pollution within one mile of operating plants but no significant effect at further distances. On average, each birth in our sample lies within 1 mile of 1.27 toxic plants, so our results imply that the total amount of exposure could be substantial.

The findings on the distance that toxic air emissions travel guide our research design, which is based on the sharp changes in local amenities that result from more than 1,600 toxic plant openings and closings.³ Our estimates are based on comparing housing prices and birth outcomes within 0.5 miles or 1 mile of plants with these same outcomes measured 1–2 miles away from plants, after adjustment for all unobserved time-varying factors that are common within 2 miles of the plants.⁴ Further, the estimates are based on millions of births and hundreds of thousands of housing transactions.

This research design reveals that housing prices within 0.5 miles of a toxic plant’s site decrease by about 11 percent after a plant opens, relative to the period before the plant

because “scientists don’t have enough information on actual exposure and on how toxic air pollutants harm human cells. The exposure assessment often relies on computer models when the amount of pollutant getting from the source(s) to people can’t be easily measured. Dose-response relationships often rely on assumptions about the effects of pollutants on cells for converting results of animal experiments at high doses to human exposures at low doses” (EPA 1991).

³Our approach is inspired by pioneering studies by C. Arden Pope and collaborators who examined the health effects of opening and closing the Geneva steel mill near Provo, Utah in the late 1980s (Pope 1989; Ransom and Pope 1992; Pope, Schwartz, and Ransom 1992). These studies have been influential largely because the resulting sharp changes in airborne particulates over a short period of time make the empirical analyses transparent and highly credible.

⁴There have been attempts to study the health and housing price responses of toxic emissions at the county level (Agarwal, Banerghansa, and Bui 2010; Bui and Mayer 2003; Currie and Schmieder 2009), but counties are too large due to the short transport distances of most airborne toxic pollutants (see Figure 1).

was constructed. This decline implies an aggregate loss in housing values of approximately \$4.25 million for the average plant opening. Housing prices are largely unaffected by a plant closing, relative to the period when the plant was operating, implying that toxic plants continue to negatively affect housing prices after they cease operations. Potential explanations for a plant's lasting effect include persistent visual disamenities, concerns about local contamination, or an expectation that the plant will reopen.

Many toxic pollutants are colorless, odorless, and not well monitored, making them less salient than other negative externalities. Thus, it is valuable to contrast housing prices with health outcomes, which should immediately respond to changes in plant activity. We find that the incidence of low birthweight increases by roughly 3 percent within 1 mile of operating toxic plants, with comparable magnitudes between 0 and 0.5 miles and 0.5 and 1 miles. Like the housing price impacts, the impacts on infant birthweight appear to be highly localized, with no impact beyond one mile.

We believe our study is the first large-scale empirical analysis of the external costs of toxic plants.⁵ The availability of 1,600 plant openings and closings allows us to begin to characterize the heterogeneity of effects across plants. In additional results, we stratify plants by size, the amount and toxicity of emissions, and local demographic characteristics and find that the housing price and health impacts are experienced broadly across different types of plants. There is some evidence that housing price responses are stronger in lower income communities, whereas the estimated health effects are relatively uniform across plant and community types.

The rest of the paper proceeds as follows: Section I presents an analytical framework which helps motivate the empirical analysis. Section II discusses the data, and Section III discusses the research design. Sections IV and V outline the econometric specifications and results for housing values and infant health respectively. Finally, Section VI interprets the results, and Section VII concludes.

I. Conceptual Framework for the Incidence of Toxic Plant Openings

To motivate our empirical strategy, we outline a partial equilibrium model of housing incidence in the context of toxic plant externalities.⁶ A local economy consists of a continuum of agents of measure one (denoted L) who choose to live in one of two locations $g \in \{N, F\}$; some choose to live near a plant ($g = N$) and others choose to live further away from a plant ($g = F$), but in the same local labor market. Toxic plant activity is assumed to generate local economic benefits for both sets of residents in the form of wage income, w . Wages are assumed to be an exogenous function of local productivity and are the same across groups. Residents in each location enjoy location-specific amenities net of any housing costs, A_g , associated with their location. Lastly, each resident i has some idiosyncratic preference for both locations, ϵ_{ig} , representing heterogeneity in the valuation of local amenities. The ϵ_{ig} s

⁵Studies of individual plants include the studies by C. Arden Pope mentioned above, as well as Blomquist (1974), Nelson (1981), and Kiel and McClain (1995). For studies of multiple plants see, e.g., Bui and Mayer (2003) and Davis (2011).

⁶The results from this partial equilibrium exercise generalize into a model of general equilibrium of the sort found in Kline (2010) and Moretti (2011). These models are themselves generalizations of the canonical models of Rosen (1974) and Roback (1982).

are independently and identically distributed across individuals and assumed to possess a continuous multivariate distribution with mean zero.

An individual seeks to maximize utility by choosing over locations

$$U_{ig} = \max\{v_N + \epsilon_{iN}, v_F + \epsilon_{iF}\},$$

where v_g represents mean utility in location g . Individuals will locate in whichever community yields the highest utility. Without heterogeneity in locational preferences, all individuals will locate in the community that offers the highest amenities. With heterogeneity in tastes, individuals in location N will have $v_N - v_F > \epsilon_{iF} - \epsilon_{iN}$. Define the distribution function $\eta_i \equiv \epsilon_{iF} - \epsilon_{iN}$ by $G(\cdot)$. Then, $L_N \equiv \Pr(\eta_i < v_N - v_F)$ is the measure of individuals in location N .

Write the total welfare of workers in location N and F as

$$V = E[\max\{v_N + \epsilon_{iN}, v_F + \epsilon_{iF}\}]$$

and consider a positive economic shock stemming from a toxic plant opening in the community. We model this shock as a marginal improvement in productivity in the local community, which is assumed to increase wages in both the near and far locations equally. The plant opening, however, creates a negative externality for residents living near the plant through, for example, air pollution and related health effects.

Taking the derivative of workers' welfare with respect to the economic shock associated with a plant opening yields the expression:

$$(1) \quad \frac{dV}{d\theta} = L_F \cdot \frac{\partial W}{\partial \theta} + L_N \cdot \left[\frac{\partial W}{\partial \theta} + \frac{\partial A_N}{\partial \theta} \right] = L \cdot \frac{\partial W}{\partial \theta} + L_N \cdot \frac{\partial A_N}{\partial \theta},$$

where $d\theta$ represents the marginal effect of a plant opening and $\frac{dV}{dv_g} = L_g$.⁷ Equation (1) suggests the incidence of the plant opening may be summarized by two terms. The first term is the total wage effect associated with the plant opening. Since in our empirical application, all residents near or far live within two miles of a plant, we assume that the wage effects are similar for both nearby residents and those a little further from a plant. The second term consists of the non-wage changes in amenities associated with a plant opening for residents near the plant. Since negative plant externalities in the form of noise or air pollution are highly localized, these costs will only accrue to the residents living near the plant.

After the plant opening some "marginal" residents who initially lived near the plant are better off moving further away. However, since workers are assumed to be optimizing with respect to location decisions, a simple envelope result suggests that workers who switch locations in response to a change in local amenities experienced small gains

⁷The relationship $\frac{dV}{dv_g} = L_g$ follows directly from assuming that preference heterogeneity is drawn from a Type I Extreme Value distribution (Train 2003). However, this relationship also holds independent of the distribution of the taste heterogeneity. See Busso, Gregory, and Kline (2013).

in private utility by doing so.⁸ Therefore, the incidence of the plant opening may be approximated simply by the change in prices experienced by the immobile population.⁹

This paper aims to estimate the local disamenities of toxic plant operation, $\frac{\partial A_N}{\partial \theta}$, holding all other factors fixed. We do this by comparing residents near a plant to those within the same local labor market who live slightly further away. Since, by assumption, both groups are affected similarly by the productivity shock, the difference-in-differences estimate will approximate $\frac{\partial A_N}{\partial \theta}$. By explicitly controlling for the first component of equation (1) in this way, our estimates will reflect the gross external costs/benefits of a toxic plant opening or closing rather than the net external costs/benefits after accounting for any local economic gains associated with toxic plant production.

II. Data Sources and Summary Statistics

A. The Toxic Release Inventory Data

We identify plants that emit airborne toxic pollutants using the Toxic Release Inventory (TRI), a publicly available database established and maintained by the US Environmental Protection Agency (EPA).¹⁰ The TRI was established by the Emergency Planning, Community Right to Know Act (EPCRA) in 1986, in response to the Bhopal disaster and a series of smaller spills of dangerous chemicals at American Union Carbide plants. Bhopal added urgency to the claim that communities had a “right to know” about hazardous chemicals that were being used or produced in their midst. EPCRA requires manufacturing plants (those in Standard Industrial Classifications 2000 to 3999) with more than 10 full-time employees that either use or produce more than threshold amounts of listed toxic substances to report releases to the EPA.¹¹

The toxic emissions measures in the TRI have been widely criticized (de Marchi and Hamilton 2006; Koehler and Spengler 2007; Bennear 2008). The emissions data are self-reported, and believed to contain substantial measurement error.¹² Moreover, coverage has expanded over time to include additional industries and

⁸Although the change in amenities induces changes in behavior, these behavioral responses cannot have a first-order effect on private welfare; if they did, agents would not be optimizing. Alternatively, in this model the marginal migrant is indifferent between location 1 and location 2. Thus, any marginal shift in amenities in location 1 cannot make the agent much better off given the pre-intervention indifference between the two locations. Of course, plant openings and closings might not be marginal changes.

⁹In the case of non-marginal changes in productivity or local amenities, the envelope theorem no longer holds, and taste-based sorting may also have first-order implications for welfare. However, in the case of localized disamenities such as a single plant, Bartik (1987) and Palmquist (1992) show that the slope of the hedonic price function is an approximate measure of the willingness to pay for a non-marginal change. See Greenstone and Gallagher (2008) for a more complete discussion of non-marginal changes in the context of environmental amenities. Equilibrium sorting models may also yield insight into the welfare effects of non-marginal changes in the context of environmental disamenities. See Kuminoff, Smith, and Timmins (2013) for a recent review.

¹⁰See EPA (2009a) and EPA (2012) for detailed descriptions of the TRI.

¹¹Currently, facilities are required to report if they manufactured or processed more than 25,000 pounds of a listed chemical or “otherwise used” 10,000 pounds of a listed chemical. For persistent bio-accumulative toxins, the thresholds are lower. These thresholds have changed periodically over the life of the program. For example, in 1998, EPA added the receipt or disposal of chemical waste to the definition of “otherwise used.”

¹²The EPCRA explicitly states that plants need not engage in efforts to measure their emissions. The EPA provides guidance about possible estimation methodologies, but plants estimate their emissions themselves, and estimating methodologies vary between plants and over time. In addition, EPA enforcement of TRI reporting has typically taken the form of ensuring compliance rather than accuracy (de Marchi and Hamilton 2006).

chemicals, making comparisons of total emissions levels over time extremely misleading.¹³ Finally, because of the minimum thresholds for reporting, plants may go in and out of reporting even if they are continually emitting toxic chemicals. This feature of the TRI introduces additional measurement error, and also makes the TRI poorly suited for identifying plant openings and closings.

The TRI is extremely useful, however, for identifying which US industrial plants emit toxic pollutants. The approach we adopt in this paper is to ignore the self-reported magnitudes and instead exploit variation introduced by plant openings and closings. Using the publicly available TRI data, we create a list of all US “toxic” plants by keeping every plant that ever reported toxic emissions to the TRI in any year. This method sidesteps the problems introduced by changes in reporting requirements because plants end up being classified as “toxic” plants, even if, for example, they are in industries which were not included in the early years of the TRI. We then link this list of toxic plants to establishment-level data from the US Census Bureau to determine the years in which each plant opened (and closed, if applicable).

B. *The Longitudinal Business Database*

We determine the exact years in which plants open and close using the US Census Bureau’s Longitudinal Business Database (LBD). Started in 1975, the LBD is a longitudinal, establishment-level database of the universe of establishments in the United States.¹⁴ The LBD has been used widely by economists, for example, in studying plant-level employment dynamics (Davis et al. 2010), and is by far the most accurate existing record of US plant activity.

These data must be accessed at a Census Research Data Center under authorization from the Census Bureau. In addition to the year of opening and closing (if applicable) for each plant, these data report mean annual employment and mean annual total salaries.¹⁵ We merge the LBD with a second restricted access Census database called the Standard Statistical Establishment List (SSEL), which contains plant names and addresses for all plants in the LBD. Finally, we merge the LBD/SSEL dataset with the EPA’s TRI database via a name- and address-matching algorithm.¹⁶

C. *Housing Values*

The housing data for this project includes housing transactions in five large states (Texas, New Jersey, Pennsylvania, Michigan, and Florida). These data report the date, price, mortgage amount, and address of all property sales for these five states from approximately 1998 to 2005.¹⁷ The data also include the exact street address of

¹³Federal facilities were added in 1994. Mining, electric utilities, hazardous waste treatment and disposal facilities, chemical wholesale distributors, and other additional industrial sectors were added in 1998. Treatment of persistent bio-accumulative toxins was changed in 2000. By the EPA’s own admission, the TRI is not well suited for describing changes in total amounts of toxic releases over time (EPA 2012).

¹⁴For more information about the LBD, see Davis, Haltiwanger, and Schuh (1998) and Jarmin and Miranda (2002).

¹⁵The year of a plant opening is left-censored for those plants that were operating on or before 1975.

¹⁶See Walker (2013) for further details pertaining to the match algorithm.

¹⁷The transaction records are public due to state information disclosure acts, but the raw data are often housed in PDF images on county websites making them inaccessible for computational analysis on a large scale. We used an external data provider who compiled the information from the county registrar websites into a single

the property, which allows us to link the housing data with plant level data from the TRI based on the latitude and longitude of the geocoded address (described in more detail below). The main limitation of the housing data is that it contains very little information pertaining to housing unit characteristics.¹⁸ These data include both residential and commercial real estate transactions; we focus only on single-family, residential properties. To limit the influence of outliers and focus on “arms length” transactions, we exclude properties that sold for less than \$25,000 or more than \$10 million. All housing prices have been adjusted to year 2000 dollars.

D. Vital Statistics Data

Data on infant health comes from vital statistics natality and mortality data for the same five large states: Texas, New Jersey, Pennsylvania, Michigan, and Florida, from 1990 to 2002. Together, these states accounted for 10.9 million births between 1990 and 2002, approximately 37 percent of all US births. The substantial advantage of these restricted-access data is their geographic detail, including the residential address of the mother. This precision is crucial in our context because the health consequences of toxic plants are highly localized.

These data include detailed information about the universe of births and infant deaths in each state. We focus, in particular, on whether the infant is low birthweight defined as birthweight less than 2,500 grams. Low birthweight is not uncommon, affecting about seven percent of the births in our sample. Low birthweight is also one of the most widely used overall indicators of infant health, in part because it has been shown to predict adult well-being.¹⁹ Other birth outcomes that we examine include a continuous measure of birthweight, very low birthweight (defined as birthweight less than 1,500 grams), prematurity (defined as gestation less than 37 weeks), congenital abnormalities, and infant mortality (death in the first year).²⁰ Focusing on infant health is advantageous, relative to adult outcomes, because infants do not have a long unobserved health history, reducing concerns about time lags between exposure and outcomes.

In addition to these health outcomes, the vital statistics data include a number of important maternal characteristics including age, education, race, and smoking behavior. In the empirical analyses below we control explicitly for these factors, as well as for month of birth, birth order, and gender of child. In all analyses we exclude multiple births since they are likely to have poor birth outcomes for reasons that have little to do with environmental pollution. We also test whether plant openings and closings have affected these characteristics directly, either by changing the composition of neighborhoods near plants and/or by changing fertility.

dataset. Data availability and temporal coverage varies by county but is fairly consistent between 1998–2005, the years of our housing analysis.

¹⁸For example, we observe square footage of the housing unit for less than half of the transactions.

¹⁹Black, Devereux, and Salvanes (2007) use twin and sibling fixed effects models on data for all Norwegian births over a long time period to show that birthweight has a significant effect on height and IQ at age 18, earnings, and education. Using US data from California, Currie and Moretti (2007) find that mothers who were low birthweight have less education at the time they give birth and are more likely to live in a high poverty zip code. They are also more likely to have low birthweight children.

²⁰These are all outcomes that have been previously examined in the environment-infant health literature (e.g., Chay and Greenstone 2003; Currie, Neidell, and Schmieder 2009; Currie, Greenstone, and Moretti 2011; and Currie and Walker 2011).

The fact that the LBD data is annual, while births are reported monthly raises the question of how to appropriately structure the empirical models for infant health outcomes. We focus the analysis on a data file comprised of births in November, December, January, and February. Births in November and December are merged to LBD data from the same calendar year, while births from January and February are merged to LBD data from the preceding calendar year. The idea is that a baby born January 1, 2002 has not been exposed to any of the toxic plant activity for calendar year 2002, but was exposed to toxic emissions in 9 out of 12 months of 2001. Similarly, a baby born in November 2001 was exposed to toxic emissions for 9 out of 12 months of 2001. This restriction has the additional advantage of limiting the extent to which seasonality in plant activity or birth outcomes affects our findings. The robustness of the results to alternative timing assumptions is explored in the subsequent analysis.

E. Data Linkages and Aggregation

We link plants in the TRI and LBD to the housing and vital statistics, based on the latitude and longitude of the plants, houses, and mother's residence. Specifically, we first create a large dataset consisting of all pairwise combinations of plants and outcome variables (i.e., births and/or housing transactions). We keep outcome and explanatory variables within two miles of a plant. This means that any house or birth observation within two miles of more than one plant will contribute one observation for each plant-outcome pair. For the primary specifications, we collapse the outcome measures into various distance bins surrounding plants in a given year to minimize the computational burden of working with the universe of birth and housing transactions crossed with plants. That is, for each plant-year, we construct the mean of the outcome variable and key covariates for outcomes that occurred within 0 to 0.5, 0.5 to 1.0, 0 to 1.0, and 1.0 to 2.0 miles of a plant. In addition to easing the computational burden, the collapsing of the data accounts for issues pertaining to inference when the identifying variation occurs at a more aggregate level. In supplementary specifications, we analyze subsamples using the underlying microdata.

F. Summary Statistics

Panel A of Table 1 presents summary statistics for the 3,438 plants that form the basis for our analysis. The three columns reflect the sample characteristics for plants that were always open, newly opened, and newly closed within our sample frame respectively. A plant can appear in both columns 2 and 3, and we have about 1,600 total plants that either open or close. In practice, the plants in our sample tend to be long-lived, with a median age of around 17 years.²¹ For continuously operating plants, the mean value of plant equipment and structures is \$22 million, and mean annual salary and wages is \$11.7 million.²² Mean salary and wages is lower for plants that opened or closed. The table also reports mean annual toxic emissions,

²¹ Plant age in the LBD is left-censored in 1975 (the first year the plants are observed in the sample). Therefore, the median age of the plants in our sample is likely to be a bit larger.

²² The capital stock measures come from the Annual Survey of Manufacturers, and are computed using a modified perpetual inventory method (Mohr and Gilbert 1996). Since the ASM is a sample and oversamples large establishments, these statistics are not available for all plant years and reflect statistics for larger plants.

TABLE 1—CHARACTERISTICS OF TOXIC PLANTS AND THE SURROUNDING COMMUNITY

	Open continuously 1990–2002 (1)	Opened between 1990–2002 (2)	Closed between 1990–2002 (3)	
<i>Panel A. Plant characteristics by opening and closing status</i>				
Number of plants	1,846	689	1,062	
Average plant employment (total workers)	224	90	114	
Average plant age (years)	18.6	2.0	16.2	
Mean value of plant equipment (in millions)	\$15.8	\$15.4	\$14.9	
Mean value of plant structures (in millions)	\$6.2	\$5.8	\$5.1	
Mean annual salary and wages (in millions)	\$11.7	\$5.5	\$6.2	
Mean annual toxic emissions (in pounds)	22,016	23,303	17,919	
	$0 < d \leq 0.5$ (1)	$0.5 < d \leq 1$ (2)	$0 < d \leq 1$ (3)	$1 < d \leq 2$ (4)
<i>Panel B. Community characteristics by distance, d, from plants that opened or closed 1990–2002</i>				
<i>Housing characteristics</i>				
Mean housing value	\$124,424	\$126,492	\$125,927	\$132,227
Aggregate housing value (in millions)	\$38.56	\$60.00	\$98.57	\$174.80
<i>Birth and maternal characteristics</i>				
Mother's education	11.93	12.08	12.05	12.22
Mother's age	26.33	26.50	26.46	26.70
Proportion teenage mother	0.15	0.15	0.15	0.15
Proportion smoker	0.14	0.13	0.13	0.13
Proportion African American	0.23	0.25	0.25	0.26
Proportion Hispanic	0.32	0.30	0.31	0.29
Proportion white/Caucasian	0.72	0.71	0.71	0.70

Notes: Panel A describes the 3,438 plants in Florida, Michigan, New Jersey, Pennsylvania, and Texas that reported to the Toxic Release Inventory at least one year between 1990 and 2002. In calculating plant characteristics in columns 2 and 3, the sample is restricted to observations in the 2 years after a plant opening or 2 years before a plant closing, and a single plant can appear in both columns. Plant age is right censored, as the year a plant opened is not available for plants opened before 1975 in the Longitudinal Business Database. The value of plant equipment, structures, and salary and wages come from the NBER Productivity Database microdata and is only available for a subset of our data that matches the NBER Productivity Database in a given year. The value of plant equipment and structures is constructed using the perpetual inventory method from investment data (Mohr and Gilbert 1996). All dollar amounts are in 2000 dollars. Panel B statistics describe community characteristics surrounding toxic plants that either opened or closed between 1990 and 2002. Housing sales and births may appear in multiple columns if they are within 2 miles of more than one plant opening or closing, but within each column a house or birth appears only once.

which exceeds 17,000 pounds in all three columns. These are the self-reported measures of airborne toxic emissions from the TRI, and are averaged over all non-missing observations (i.e., if a plant does not report to the TRI during a particular year in which we know the plant is operating, we treat this as missing rather than zero).

Panel B of Table 1 describes community characteristics near plants that either opened or closed during our sample period. Statistics are reported separately by distance to the plant and observations are restricted to the two years after a plant opening or the two years before a plant closing. Note that a house or birth can be close to more than one plant, and so the same house or birth can appear in more than one column. Within columns, we have restricted houses and births so that they appear only once in this panel, implicitly giving equal weight to each birth and housing outcome.

Both housing values and maternal characteristics tend to improve with distance from the plant. The average housing value is \$124,424 within a half mile of a plant compared to \$132,227 for houses between one and two miles away. Similarly, average maternal education rises from 11.93 to 12.22 over the same distance. Rather than rely on equality of levels, our difference-in-differences-style identification strategy relies on the assumption that trends in the unobserved determinants of the outcomes

are evolving equally in the 0–1 (or 0–0.5 and 0.5–1.0) and 1–2 mile distance from the plant categories. The subsequent analysis provides graphical evidence supporting the validity of this assumption.

III. The Transport of Airborne Toxic Pollutants as the Basis of a Research Design

Our difference-in-differences strategy compares houses and births in areas “near” a toxic plant to those in areas slightly farther away. While this is a simple idea conceptually, there is little guidance in the literature about how near a household must be to a plant for proximity to affect either housing prices or birth outcomes (or alternatively, about how far toxic emissions are transported). Hence the first step in our analysis is to characterize this relationship empirically. This evidence is of significant independent interest and an important contribution of our paper.

Our approach uses data from monitoring stations about ambient levels of hazardous air pollution. While the EPA has been monitoring criteria air pollutants for four decades, they have only recently begun monitoring hazardous air pollutants (HAPs).²³ The first year of data availability was 1998, and monitors have been gradually added over time. As of 2005, the last year of our sample, there were 84 pollutants being monitored across the 5 states we examine. We investigate the ways in which plant operating status maps into local ambient hazardous air pollution in two separate ways. First, we take the eight most monitored pollutants in our data and examine pollutant-by-pollutant heterogeneity in emissions transport as a function of plant operating status and distance between a plant and a monitor. Second, we combine all pollutants into a single summary measure by standardizing each pollutant to have mean zero and standard deviation of one.²⁴

We matched the monitoring station data to our data on toxic plants using latitude and longitude, keeping monitor-plant pairs in which the plant had ever reported releasing the monitored pollutant and in which the monitor was less than four miles away from the plant. We then estimate the following linear regression model:

$$(2) \quad \text{Poll}_{jmt} = \beta_0 + \beta_1 1[\text{Plant Operating}]_{jt} \\ + (1[\text{Plant Operating}]_{jt} \cdot \text{Distance}_{jm})' \beta_d + \eta_{jm} + \tau_t + \varepsilon_{jmt},$$

where the dependent variable is one of the pollution measures described in the previous paragraph for monitor m linked to plant j in year t . The regression includes an indicator variable for whether a plant is operating in a given year, and the interaction between the indicator and a quartic polynomial in the distance between the plant and

²³ Hazardous air pollutants, also known as toxic air pollutants, are defined by the EPA as “pollutants that are known or suspected to cause cancer or other serious health effects, such as reproductive effects or birth defects, or adverse environmental effects” (EPA 2011). In contrast, criteria air pollutants, are the more commonly found air pollutants that are regulated according to the EPA’s National Ambient Air Quality Standards (NAAQS), such as particulate matter.

²⁴ Note that some pollutants are more toxic or hazardous than others. For the purposes of this particular econometric exercise, we are simply trying to understand if *any* detectible relationship exists between toxic plant activity and ambient levels of hazardous air pollutants, irrespective of the toxicity of a given pollutant.

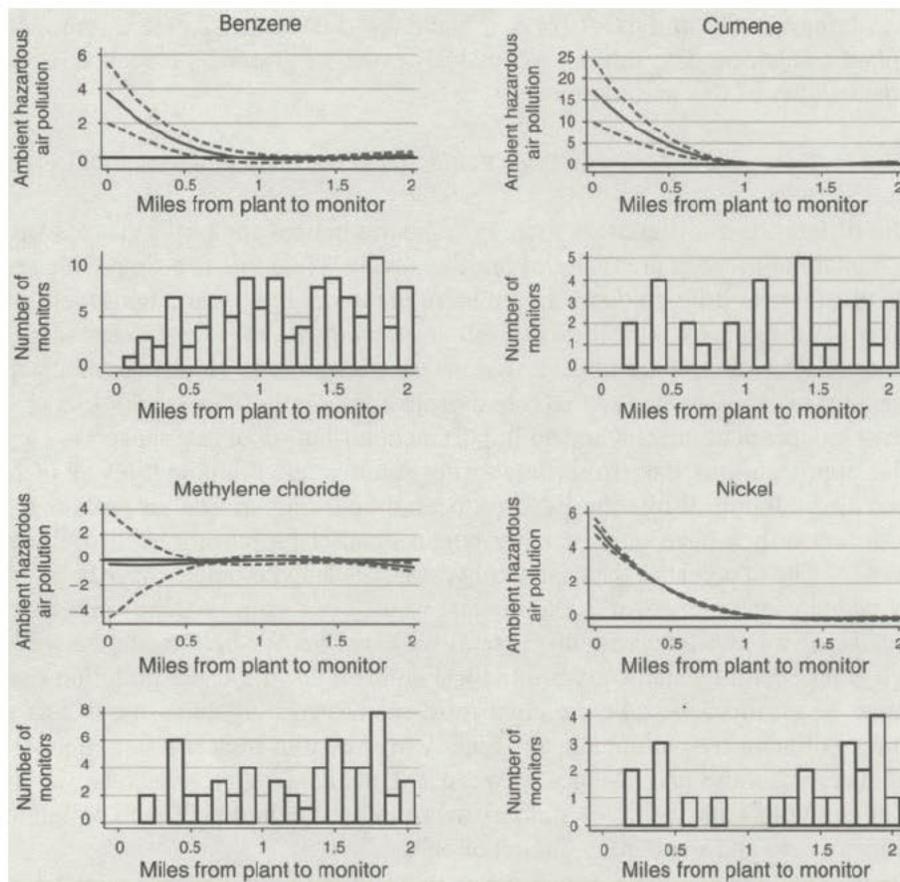


FIGURE 1. THE EFFECT OF TOXIC PLANTS ON AMBIENT HAZARDOUS AIR POLLUTION (Continued)

the monitor.^{25,26} We also include monitor-plant pair fixed effects, η_{jm} , which are collinear with the main effect of the distance polynomial. The inclusion of these fixed effects ensures that identification comes from plant openings and closings. Lastly, we include year fixed effects, τ_t , to control for overall trends in ambient pollution concentrations. The standard errors are two-way clustered on monitor and plant.

Figure 1 plots the marginal effect of an operating plant on hazardous air pollution as a function of distance from the plant for eight of the most widely monitored pollutants. Each panel of Figure 1 presents the pollutant-specific distance gradient, showing how the marginal effect of plant operation fades with distance. Each pollutant has been standardized by subtracting the pollutant-specific mean and dividing by the standard deviation so that the distance gradient may be interpreted as standard

²⁵We have also examined different functional forms for distance and the results are similar. Models using more flexible distance specifications, such as replacing a continuous distance measure with dummy variables for different distance bins yield similar results, but the models are less precisely estimated.

²⁶The LBD provides information on the first year and last year that a plant is observed in the data. We define $1[Plant\ Operating]_{jt} = 1$ if year t is greater than or equal to the first year the plant is observed in the data and less than or equal to the last year the plant is observed in the data.

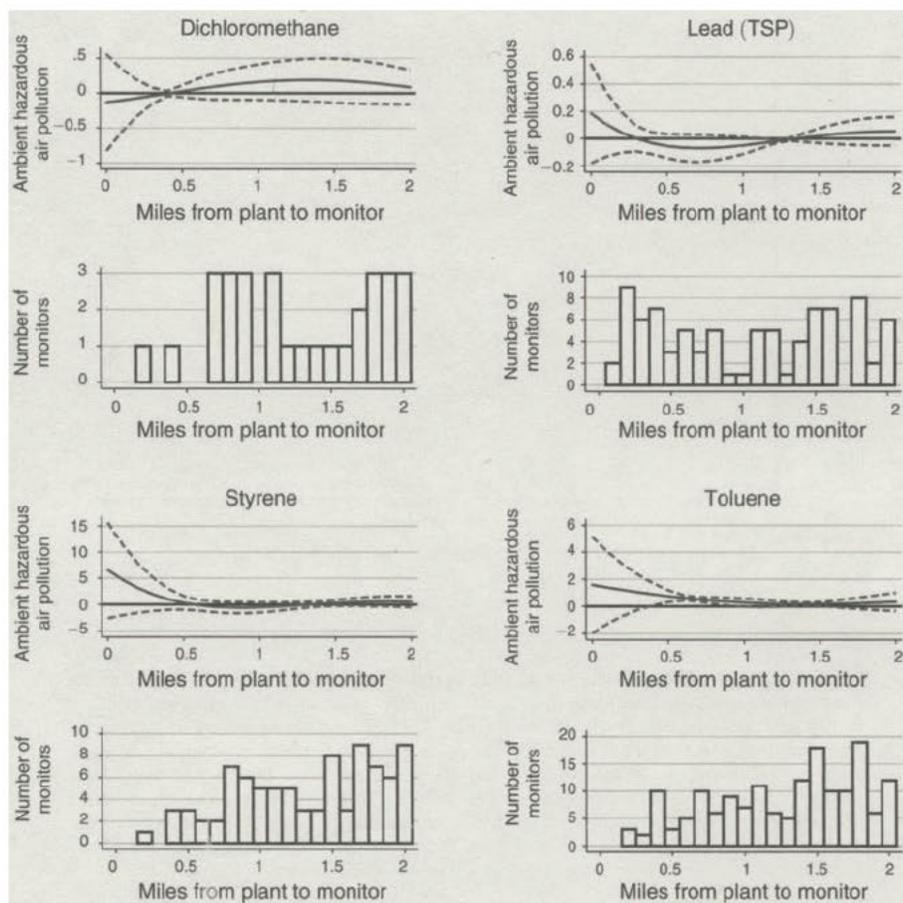


FIGURE 1. THE EFFECT OF TOXIC PLANTS ON AMBIENT HAZARDOUS AIR POLLUTION (*Continued*)

Notes: This figure plots marginal effects and ninety-fifth percentile confidence intervals from 8 separate regressions of a single form of ambient hazardous pollution on a quartic in distance to the nearest operating toxic plant. The unit of observation is the monitor-plant pair and all regressions include monitor-plant fixed effects so the distance gradient is identified using plant openings and closings. In the regression sample, each pollutant has been standardized to be mean 0 and standard deviation 1. The distance gradient can therefore be interpreted as standard deviations from the mean value. Standard errors for the regression are two-way clustered on plant and monitor, and the pointwise standard errors in the figure are calculated using the delta method. Below each pollutant specific graph is a histogram, representing the number of monitors at various distance bins from the plants in the sample.

deviations from the mean value. Below each graph is a histogram showing the number of monitors in 0.1 mile increments. There is some heterogeneity across pollutants, and in future work it might be possible to take advantage of these differences to disentangle the impacts of specific pollutants. For the most part, however, pollution levels tend to fall exponentially with distance from the plant. In most cases, pollution is only detectable within one mile of a plant.

Figure 2 plots the standardized pollution measure pooling over all 84 pollutants in our sample. Average levels of ambient hazardous air pollution are one standard deviation higher immediately adjacent to an operating plant, and decline exponentially with distance, reaching zero at roughly one mile from a plant. Most previous

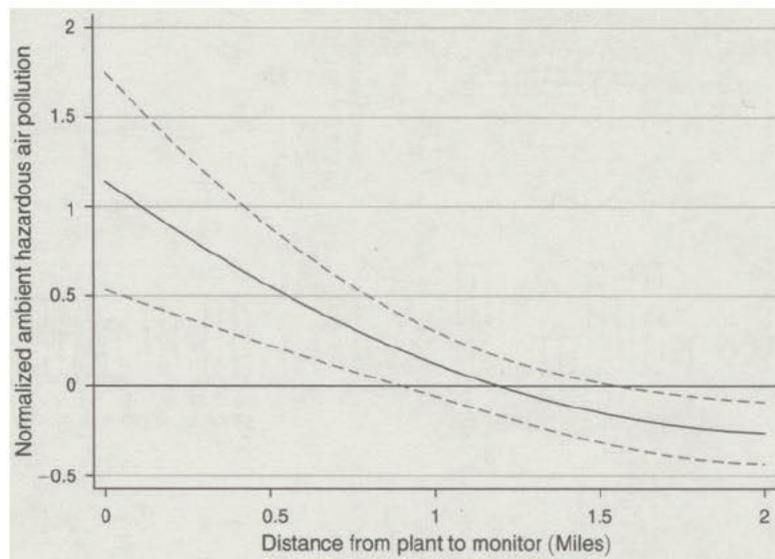


FIGURE 2. THE EFFECT OF TOXIC PLANTS ON AMBIENT HAZARDOUS AIR POLLUTION, ALL POLLUTANTS

Notes: This figure plots marginal effects and ninety-fifth percentile confidence intervals from a regression of ambient hazardous pollution on a quartic in distance to the nearest operating toxic plant. The unit of observation is the monitor-plant pair and the regression includes monitor-plant fixed effects so the distance gradient is identified using plant openings and closings. In the regression sample, pollutants are pooled, standardizing each pollutant to be mean 0 and standard deviation 1. The distance gradient can therefore be interpreted as standard deviations from the mean value. Standard errors for the regression are two-way clustered on plant and monitor, and the pointwise standard errors in the figure are calculated using the delta method.

analyses of the economic impacts of toxic emissions have used county-level data, making it impossible to measure these highly localized impacts. An important exception is Banzhaf and Walsh (2008), who use block-level aggregates from the 1990 and 2000 censuses for urban areas in California to examine localized changes in average household income.

Documenting this relationship between toxic plant activity and ambient levels of hazardous air pollution helps to motivate our empirical specification. There are several ways for an industrial plant to affect housing values and human health including aesthetics, congestion, and noise. Toxic emissions may be among the channels that have the most distant effects, and the evidence suggests that on average emissions do not reach further than one mile.²⁷ This finding underscores the importance of performing the analyses that follow using spatial data at a high level of resolution. In most analyses below, we define “near” as within 0.5 or 1 mile of a plant and “far” as one to two miles away. That is, houses and households between one and two miles are used as comparison groups. We also present results using alternative distances. As discussed above, the underlying assumption is that the comparison groups are close enough to experience the wage and productivity effects of the plant.

²⁷ A recent literature also finds that other forms of housing externalities are very localized (see, for example, Linden and Rockoff 2008; Harding, Rosenblatt, and Yao 2009; Rossi-Hansberg, Sarte, and Owens 2010; and Campbell, Giglio, and Pathak 2011).

A second assumption is that outcomes in the near and far areas are evolving with similar trends. Under these assumptions, differences in the impact of plant operations reflect the effects of the local disamenities of plant operation.

IV. Housing Values

A. Housing Values: Empirical Strategy

We begin our investigation of the effects of toxic plants on housing values by fitting the following econometric model:

$$(3) \quad Y_{jdt} = \beta_0 + \beta_1 1[\text{Plant Operating}]_{jt} + \beta_2 1[\text{Near}]_{jd} \\ + \beta_3 (1[\text{Plant Operating}]_{jt} \times 1[\text{Near}]_{jd}) + \eta_{jd} + \tau_t \\ + \beta_4 (X1990_{jd} \times T_t) + \varepsilon_{jdt},$$

where Y_{jdt} denotes the natural log of average housing values near plant site j , within distance group d , in year t . For each plant j , there are two observations per year. In each plant-year, one observation consists of average housing prices “near” a plant (i.e., within 0.5, 0.5 to 1.0, or 1 mile of the plant). The second observation per plant-year consists of average house prices for houses within 1–2 miles of the plant; this second group provides a counterfactual for housing prices near the plant. The availability of these two groups allows for a difference-in-differences-style estimator.

The variable $1[\text{Plant Operating}]_{jt}$ is an indicator equal to one if a toxic plant j is operating in year t and zero otherwise. It is equal to one for both distance groups associated with a plant. The indicator $1[\text{Near}]_{jd}$ is equal to one for observations from the near category, regardless of whether the plant is currently operating. Equation (3) also includes plant-by-distance fixed effects η_{jd} to control for all time-invariant determinants of house prices in a plant-by-distance group, which in practice is collinear with the indicator $1[\text{Near}]_{jd}$. Additional controls include 1990 census tract characteristics, $X1990_{jd}$, interacted with quadratic time-trends T_t .²⁸

Equation (3) also includes time fixed effects, τ_t , to flexibly account for trends in housing values over time. We report specifications that include either state-by-year fixed effects to account for state-level trends in housing prices or plant-by-year fixed effects to account for highly localized trends. The richer specification adds approximately 10,000 fixed effects, one for each plant-year.

The parameter of interest in equation (3) is β_3 , the coefficient on the interaction term: $1[\text{Plant Operating}]_{jt} \times 1[\text{Near}]_{jd}$. It captures the differential impact of an open plant on locations “near” the plant, relative to those one to two miles away. Given that our models include plant-by-distance fixed effects, η_{jd} , β_3 is identified by changes in the operating status of a plant (i.e., plant openings and closings).

²⁸ Census tract characteristics were mapped to plant radii using ArcGIS, where the radius characteristics consist of the area weighted averages of census tracts that intersect the distance circle/radius. Results are similar with and without these controls.

The model with plant-by-year and plant-by-distance fixed effects provides an average of the estimates that would be derived from the roughly 1,600 case studies of plant openings and closing that underlie this analysis. Specifically, β_3 is identified by within-year differences in the change in house prices among houses “near” and 1–2 miles from toxic plant openings and closings.

We also estimate a “repeat-sales” model with individual-level, rather than grouped, data. The advantage of this model is that our housing value data contain few housing characteristics, so the estimates of β_3 from equation (3) may confound willingness to pay to avoid a toxic plant with changes in the composition or type of house sold. To distinguish between these two possibilities we focus on a sample of houses that sold more than once between 1998–2005, allowing us to difference out the unobserved time invariant qualities of a house.

We use several versions of the following first differenced specification:

$$(4) \quad \Delta Y_{ijt,t-\alpha} = \beta_1 \Delta 1[\text{Plant Operating}]_{jt,t-\alpha} + \beta_2 \Delta 1[\text{Near}]_{ij} \\ + \beta_3 \Delta (1[\text{Plant Operating}]_{jt,t-\alpha} \times 1[\text{Near}]_{ij}) + \Delta \tau_{t,t-\alpha} \\ + \beta_4 \Delta (X1990_{jd} \times T_{t,t-\alpha}) + \Delta \varepsilon_{jdt,t-\alpha},$$

where $\Delta Y_{ijt,t-\alpha}$ denotes the difference in $\ln(\text{house price})$ between sales of house i , near plant site j , in years t and $t - \alpha$. Notice that the time between sales varies across houses so α takes different values across houses. Since houses are in fixed locations, there is no variation in $\Delta 1[\text{Near}]_{ij}$ and it is infeasible to obtain estimates of β_2 .

The coefficient of interest remains β_3 , which captures the variation in housing prices when there is a change in plant operating status for houses “near” sites, relative to the change in housing prices among houses 1–2 miles from the site. It is important to recognize that β_3 does not compare the operating period to either the period before a plant opened or to the period after it closed. Rather, it compares the operating period to a weighted average of periods before the plant opened and periods after the plant closed that is specific to this sample, so that its external validity may be limited.

Because of these important issues of interpretation, we also estimate an alternative version of equation (4) that allows us to separately identify the effects of plant openings and plant closings. For these models, the variable $1[\text{Plant Operating}]_{jt}$ is replaced by two separate indicators $1[\text{Plant Opened}]_{jt}$ and $1[\text{Plant Closed}]_{jt}$. The variable $1[\text{Plant Opened}]_{jt}$ is an indicator equal to zero before the plant opens, and equal to one in all years after the plant opens, even if the plant subsequently closed. The variable $1[\text{Plant Closed}]_{jt}$ is an indicator variable equal to zero before the plant opens and while it is operating, and then equal to one for all years after the plant closes.²⁹ These indicators are then interacted with $1[\text{Near}]_{jd}$.

²⁹Formally, we define $1[\text{Plant Closed}]_{jt} = 1$ if year t is greater than the last year the plant is observed in the LBD and $1[\text{Plant Opened}]_{jt} = 1$ if year t is greater than or equal to the first year the plant is observed in the LBD.

The result is that the $1[Plant\ Opened]_{jt}$ interaction measures the effect on housing prices in near locations, relative to the 1–2 mile locations, during the period that the plant is operating, relative to the period before it opened. Because of the way that the indicators are defined, the interaction with $1[Plant\ Closed]_{jt}$ tests for an additional effect on housing prices in near locations, relative to 1–2 mile locations, after the plant has closed, relative to the period when it was operating; so, the coefficient associated with this interaction provides a direct test of whether plant closings affect housing prices, relative to the period that the plant was operating. We also report on tests of the hypothesis that the parameters associated with the two interactions are equal and of opposite sign, which would be the case if a plant's closing completely reversed the effect of its opening.

Note that housing values reflect both current and expected future amenities. In our setting, these expectations are likely to include valuations of local air pollution, visual disamenities, traffic related to plant activity, and soil and water pollution, as well as expectations about how long the plant will operate and whether it will reopen if it closes. These expectations are, of course, unobservable (see, e.g., Bishop 2012), but it is nevertheless important to keep in mind that housing values reflect the present discounted value of the entire stream of amenities associated with a particular location when interpreting the estimates.

B. Housing Values: Results

We first present event study graphs that motivate the regression analyses that follow. These graphs are derived from the estimation of versions of equation (3) that include plant-by-year fixed effects and allow the coefficients on $1[Plant\ Opened]_{jt} \times [Near]_{jd}$ and $1[Plant\ Closed]_{jt} \times 1[Near]_{jd}$ to vary with event time; here, year zero is the year that the plant's operating status changes (i.e., the year of the plant opening or closing). The figures plot these coefficients and their 95 percent confidence intervals.³⁰ They provide an opportunity to judge the validity of the difference-in-differences-style approach that is based on the assumption of similar trends in advance of the opening or closing.

Figure 3 plots event study coefficients from two separate regressions. Panel A of Figure 3 plots event study coefficients for years before/after a plant opening, and panel B plots event time coefficients before/after a plant closing. The plotted coefficients represent the time path of housing values within 0–1 miles from a plant, relative to 1–2 miles from a plant, conditional on plant-by-distance and plant-by-year fixed effects. Both panels support the validity of the design as there is little evidence of differential trends in housing prices between houses 0–1 and 1–2 miles from the plant in the years preceding the opening or the closing. There is clear evidence that plant openings lead to housing price declines in the year that the plant opens. The plant-closing figure provides less decisive evidence, although on average prices rise slightly after the year of a closing.

Table 2 reports baseline estimates for the effect of toxic plants on housing values. Panel A shows least squares estimates from various versions of equation (3), in each

³⁰The available housing price data only allow for the estimation of the coefficients for event years –3 through +5 for plant openings and –5 through +5 for plant closings since plant openings are concentrated in the earlier part of our sample.

COMMENTER J

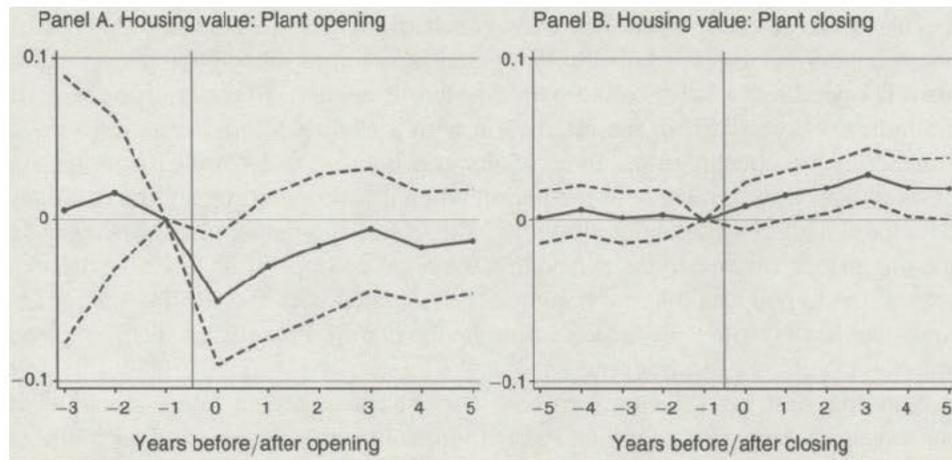


FIGURE 3. EVENT STUDY: THE EFFECT OF TOXIC PLANT OPENINGS AND CLOSINGS ON LOCAL HOUSING VALUES

Notes: These are event study plots created by regressing log housing sale price for a plant-by-distance-by-year cell on a full set of event time indicators interacted with an indicator for “near,” plant-by-distance fixed effects, plant-by-year fixed effects, and census controls (interacted with quadratic trends), weighting by the group-level cell size. Reported are the coefficients for event-time, which plot the time path of housing values “near” relative to “far” before and after a plant opening or closing. “Near” is defined as less than 1 mile between a plant and a house, and “far” is defined as 1–2 miles between a house and plant. The dashed lines represent 95 percent confidence intervals, where standard errors are computed using two-way cluster-robust standard errors, clustering on plant and year. Time is normalized relative to the year that the plant’s operating status changes ($\tau = 0$), and the coefficients are normalized to zero in the year prior to a change in operating status ($\tau = -1$). The coefficients corresponding to four or more years before a plant opening are not identified due to the lack of openings in the second half of our sample period and the lack of housing data prior to 1998.

case reporting the coefficient and standard error associated with the interaction of $1[Plant\ Operating]_{jt} \times Near_{jd}$. We estimate these models on a balanced panel of plant-by-distance-by-year observations, excluding a subset of plants for which no housing values occurred in a specific distance-by-year cell.³¹ Panels B and C report estimates of equation (4), where panel B reports the coefficient and standard error associated with the interaction of $1[Plant\ Operating]_{jt} \times Near_{jd}$, and panel C allows the effects of openings and closings to differ.

In all regressions the comparison group is homes located between one and two miles from the plant, whereas the definition of “near” changes across regressions, as indicated by the column headings. The odd-numbered columns report estimates from specifications that include state-by-year fixed effects and the even-numbered columns report estimates from specifications that use plant-by-year fixed effects (or county-by-year fixed effects in the repeat sales analysis).³²

The estimates in columns 1 and 2 of panel A show that an operating toxic plant within a half-mile is associated with a 2 to 3 percent decrease in housing values.

³¹ Results using an unbalanced panel are similar. Models estimated using plant-by-year fixed effects are estimated in two steps. The first step demeans all regression model variables by plant-by-year. The second step then estimates the model on the remaining covariates using the demeaned data. Given all the fixed effects in these models, it is not surprising that they explain a lot of the variation in housing prices. The R^2 s are around 0.7 and 0.9 for models with and without the repeat sales, respectively.

³² We ran into computational challenges when estimating the full set of plant-by-year fixed effects in the first difference setting, and thus we rely on county-by-year fixed effects as a compromise. This being said, estimates using equation (3) with county-by-year or plant-by-year fixed effects are almost identical.

TABLE 2—THE EFFECT OF TOXIC PLANTS ON LOCAL HOUSING VALUES

	0–0.5 Miles		0.5–1 Miles		0–1 Miles		0–1 Miles (+/- 2 years)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Panel A. Estimated effect of plant operation</i>								
1(Plant Operating) × Near	-0.030*** (0.007)	-0.022*** (0.006)	-0.010** (0.005)	-0.012*** (0.004)	-0.015*** (0.005)	-0.014*** (0.004)	-0.009** (0.004)	-0.010*** (0.003)
Observations (plant-distance- year cells)	34,736	34,736	34,736	34,736	34,736	34,736	30,492	30,492
Plant × distance-bin FE	X	X	X	X	X	X	X	X
State × year FE	X		X		X		X	
Plant × year FE		X		X		X		X
<i>Panel B. First difference: Estimated effect of plant operation</i>								
1(Plant Operating) × Near	-0.020** (0.010)	-0.014** (0.007)	-0.008* (0.004)	-0.003 (0.004)	-0.010** (0.005)	-0.005 (0.004)	-0.005 (0.006)	-0.002 (0.005)
Observations	1,114,248	1,114,248	1,305,780	1,305,780	1,375,751	1,375,751	1,196,000	1,196,000
<i>Panel C. First difference: Estimated effect of plant openings and closings</i>								
1(Plant Opening) × Near	-0.096*** (0.036)	-0.107*** (0.034)	-0.007 (0.023)	-0.008 (0.020)	-0.020 (0.022)	-0.022 (0.019)	-0.030 (0.028)	-0.038 (0.025)
1(Plant Closing) × Near	0.017 (0.011)	0.010 (0.009)	0.008 (0.005)	0.003 (0.004)	0.010* (0.006)	0.005 (0.005)	0.005 (0.007)	0.001 (0.005)
H ₀ : Opening = -Closing (p-value)	0.051	0.013	0.968	0.827	0.688	0.438	0.402	0.164
Observations	1,114,248	1,114,248	1,305,780	1,305,780	1,375,751	1,375,751	1,196,000	1,196,000
State × year fixed FE	X		X		X		X	
County × year FE		X		X		X		X

Notes: This table reports regression coefficients from 24 separate regressions, 8 per panel, from a sample of 2,171 plants. The dependent variable in all regressions is housing values (in logs). Both the regression sample and the indicator variable “Near” change as one moves across the columns, indicated by the column headings. For example, the specification in columns 1 and 2 examines how group-level average housing values within 0.5 miles of a plant (i.e. “Near”) respond to plant operating status, relative to the comparison group. The comparison group in all columns is homes between 1 and 2 miles from a plant. In columns 7 and 8, the sample removes observations more than two years before and after changes in plant activity. In panel A, the data have been aggregated to plant-by-distance-by-year cells and regressions are weighted by the group-level cell size. Panel B reports the same estimates as panel A using the set of houses we observe selling more than once in our sample and estimating in first differences. Panel C estimates of the asymmetric effect of plant openings/closings using the first difference specification, including *p*-values from tests that the two coefficients are equal, but of opposite sign. All specifications control for census tract characteristics (interacted with quadratic trends). Standard errors two-way clustered by plant and year are in parentheses.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

The point estimates in columns 3 and 4 are smaller in magnitude, suggesting that the effects of plant operations on housing values tend to fade with distance. For example, the point estimate in column 3 suggests that the effect of an operating plant falls to one percent in the half mile to one mile range. The standard errors are large enough, however, that their 95 percent confidence intervals overlap the 95 percent confidence intervals of the estimates in columns 1 and 2. Hence, in columns 5 and 6 we compare the entire zero to one mile area with the one to two mile zone.³³

³³The column 6 specification is the difference-in-differences analogue to the event-time regression plotted in Figure 2.

Not surprisingly given the previous estimates, the overall impact on housing values within one mile is about -1.5 percent.

The last two columns of Table 2 report estimates from specifications that restrict observations to within two years of a change in plant operation. In the short-run, prices will do a better job of capturing the full welfare effects because supply is relatively inelastic over short periods of time; over the longer run, the full welfare effects are captured by adjustments in prices and quantities (which are unobservable in our data). This restriction attenuates the point estimates, but the 95 percent confidence intervals overlap those associated with the estimates in columns 5 and 6.

Panels B and C present the repeat sales estimates from fitting equation (4). For the most part, the estimates in panel B are similar to those found in panel A, albeit somewhat smaller in absolute magnitude. The differences between the two panels are consistent with the interpretation that some of the estimated impacts in panel A are driven by less expensive houses selling near to a plant whenever a plant is operating. The disparities between the results in panels A and B are also consistent with greater attenuation due to measurement error in a first difference setting. However, the 95 percent confidence intervals overlap across all estimates, and thus we are not able to make strong conclusions about the difference in magnitudes.

Panel C presents parameter estimates associated with $1[Plant\ Opened]_{jt} \times 1[Near]_{jd}$ and $1[Plant\ Closed]_{jt} \times 1[Near]_{jd}$. Within 0.5 miles, a plant's operation is associated with a 10 percent–11 percent decline in housing prices; these estimates are economically large and statistically significant. There is little evidence of an effect on housing prices between 0.5 and 1.0 miles from the plant. As Figure 3 foreshadowed, plant closings appear to modestly increase housing prices, but this effect is small economically (less than 2 percent, even less than 0.5 miles from a plant) and statistically indistinguishable from zero.

The final row reports the results from a test that the opening and closing coefficients are equal and opposite in sign. This null hypothesis can be rejected in the 0–0.5 mile range. One possible interpretation is that households expect closed plants to reopen. However, we measure closings using the last year that a plant is observed in the LBD. Consequently, our data generally pick up permanent (not temporary) plant closures, though home buyers and sellers may not realize this at the time of the closure.³⁴ Other potential explanations for a plant's lasting effect include persistent visual disamenities and concerns about local contamination.

Thus far we have concentrated on the average effect of plant openings and closings. We next explore heterogeneity in our baseline estimates by stratifying plants by observable characteristics. Since the housing price impacts are almost entirely concentrated within 0.5 miles of a plant, we focus on housing values within this range.

We group plants into whether the median value of a particular variable (taken over all years of plant operation) is above or below the population median (taken over

³⁴ We also tested whether plant openings and closings affect the volume of housing transactions. We used the baseline housing regression approach (aggregated at the plant-distance-year level), but replaced mean log(sales price) with the number of houses sold (in logs). While the housing price regressions weight cells by the number of houses sold, we excluded regression weights from this volume regression so as to not weight observations by the outcome variable. The results suggest that the number of transactions decreases when there is an operating toxic plant nearby, especially within 0.5 miles after plants open. It is difficult to draw definitive conclusions, however, because most of the estimates are not statistically significant.

the plant-level medians). The plant characteristics we explore are plant employment, payroll, stack emissions, fugitive emissions, and total emissions, as well as the mean and maximum toxicity of the chemicals that are released. Plants in the TRI report both stack and fugitive emissions. Stack emissions occur during the normal course of plant operations, and are emitted via a smoke stack or some other form of venting equipment which is, in many cases, fitted with pollution abatement equipment. Because stacks are often extremely high, these emissions tend to be dispersed over a wide geographic area. Fugitive emissions are those that escape from a plant unexpectedly, generally without being treated. These emissions may be more likely to be manifest to households in the form of noxious odors or residues. The toxicity measures were calculated using the EPA's Risk-Screening Environmental Indicators.³⁵ We also stratify plants based on the characteristics of the nearby communities (i.e., within 2 miles), including the fraction of the population that is college educated, the fraction of the population that is Caucasian, the median housing value surrounding a plant, and median income.

Table 3 reports the results of this exploration. We focus on the baseline first-differences specification, augmenting equation (4) to include an additional interaction term for whether or not a plant is above the median for each of the above listed characteristics. We then estimate the full three-way interaction, allowing for all lower order interaction terms. The estimates indicate that the housing results are fairly homogeneous across various plant types (columns 1–6) but that the negative impacts appear to be concentrated in relatively disadvantaged communities (columns 7–10). If households were aware of the toxicity measures and they were valued (negatively) by households, then one might have expected to see relative toxicity reflected in housing price differentials. A possible explanation for the absence of such a pattern is that households have imperfect information. Given the lack of scientific evidence about the health effects of exposure, such ignorance would not be surprising.

The online Appendix presents estimates from several additional specifications. Appendix Table A2 examines the sensitivity of the baseline estimates to varying sets of controls. The qualitative findings are unchanged across several different approaches. Appendix Table A3 presents estimates of equation (3) that use a comparison group of two to four miles from a plant instead of one to two miles, and the results are similar to the baseline results in Table 2. This is reassuring because it suggests that the results are not driven by patterns in housing prices in the one to two mile zone. Appendix Table A4 presents regressions identical to the baseline estimates of equation (3) except that each regression is estimated using only observations from a single distance bandwidth (e.g., 0 to 0.5 miles, 0.5 to 1 miles, 1 to 1.5 miles, 1.5 to 2.0 miles, etc. . . .) for each plant. Identification in these models comes from differential timing of openings and closings across plants. Estimates from this specification corroborate our baseline findings and choice of comparison group; the effects of plant operating status are highly localized, and there seems to be little negative effect of plant openings in areas more than one mile away from a plant.

³⁵ Surprisingly little is known about the relative toxicity of different chemicals. Although animal testing is broadly used for evaluating the toxicity of chemical compounds, these studies are of limited relevance for evaluating which chemicals are likely to be most damaging for human health.

TABLE 3—THE EFFECT OF TOXIC PLANTS ON LOCAL HOUSING VALUES:
ABOVE/BELOW MEDIAN (0–0.5 MILES), FIRST-DIFFERENCE

	Employment (1)	Payroll (2)	Fugitive emissions (3)	Stack emissions (4)	Mean toxicity (5)
1(Plant Operating) × 1(< 0.5 Miles)	−0.005 (0.009)	−0.002 (0.009)	−0.009 (0.006)	−0.008 (0.006)	−0.010 (0.006)
1(Plant Operating) × 1(< 0.5 Miles) × 1(Above Median)	−0.012 (0.012)	−0.017 (0.012)	−0.010 (0.015)	−0.010 (0.014)	−0.006 (0.014)
Observations	1,140,399	1,140,399	1,140,399	1,140,399	1,140,399
	Max toxicity (6)	Fraction college (7)	Fraction white (8)	Housing value (9)	Median income (10)
1(Plant Operating) × 1(< 0.5 Miles)	−0.003 (0.008)	−0.014** (0.007)	−0.016** (0.006)	−0.012 (0.007)	−0.024*** (0.006)
1(Plant Operating) × 1(< 0.5 Miles) × 1(Above Median)	−0.016 (0.013)	0.007 (0.014)	0.014 (0.012)	0.002 (0.012)	0.032*** (0.009)
Observations	1,140,399	1,140,399	1,140,399	1,140,399	1,140,399

Notes: This table reports regression coefficients from 10 separate regressions, where we interact our treatment variable $1(\text{Plant Operating}) \times 1(< 0.5 \text{ Miles})$ with an indicator for whether the plant/community is above or below the median characteristic indicated in the column heading. The median indicator is equal to 1 if the plant-level median of the column variable (taken over plant operating years) is above or below the sample median value (taken over median plant values). The dependent variable in all regressions is housing values (in logs). All regressions control for county by year fixed effects and census tract characteristics (interacted with quadratic trends), and the model is estimated in first differences. Standard errors are two-way clustered by plant and year.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

V. Infant Health

A. Infant Health: Empirical Strategy

The empirical strategy for examining infant health outcomes is very similar to the approach used for housing values. Again, our main focus is on comparing outcomes “near” a plant with outcomes one to two miles away. We estimate models of the form:

$$\begin{aligned}
 (5) \quad Z_{jdt} &= \alpha_0 + \alpha_1 1[\text{Plant Operating}]_{jt} + \alpha_2 1[\text{Near}]_{jd} \\
 &+ \alpha_3 (1[\text{Plant Operating}]_{jt} \times 1[\text{Near}]_{jd}) + \eta_{jd} + \tau_t \\
 &+ \beta_4 (X1990_{jd} \times T_t) + \epsilon_{jdt},
 \end{aligned}$$

where Z_{jdt} denotes the average incidence of low birthweight or another measure of infant health near plant site j , within distance group d , in year t . As before, the specification includes plant-by-distance fixed effects, η_{jd} , year fixed effects τ_t (which in practice are state-by-year or plant-by-year fixed effects), and census controls, $X1990_{jd}$, interacted with quadratic time-trends T_t .

As in the housing equations, the coefficient of interest, now denoted α_3 , is the differential impact of an operating plant within one mile. We again explore a version of this specification that replaces the $1[Plant\ Operating]_{jt}$ variable with the $1[Plant\ Opened]_{jt}$ and $1[Plant\ Closed]_{jt}$ variables. For this richer specification, we again test whether the coefficients on the interactions of these variables with $1[Near]_{jd}$ are equal and opposite in sign. If air toxic emissions are the channel for any infant health effects, then the plausibility of this null is stronger than in the housing price regressions where plant closings may be perceived as temporary and visual disamenities could remain after a closure.

The vital statistics data include a rich set of mother's characteristics that can be used to control for possible changes in the composition of mothers. However, the identifying variation in our models comes at a much higher level of aggregation; hence, in order to avoid overstating the precision of our estimates and to limit the computational burden of our most stringent specifications we control for mother's characteristics using a two-step, group-level estimator (Baker and Fortin 2001; Donald and Lang 2007). In the first step, we estimate the relationship between low birthweight (Z_{jdt}) and plant-by-distance by year indicators (g_{jdt}), after controlling for mother's characteristics (m_{it}):

$$(6) \quad Z_{jdt} = m_{it}'\theta + g_{jdt} + \xi_{jdt}.$$

The vector m_{it} controls for maternal characteristics including indicators for: age categories (19–24, 25–34, and 35+), education categories (< 12, high school, some college, and college or more), race (African American or Hispanic), smoking during pregnancy, month of birth, birth order, and gender of child.³⁶ The estimated \widehat{g}_{jdt} provides group-level, residualized averages of each specific birth outcome after controlling for the observable characteristics of the mother. These averages are used as the dependent variable in equation (5), instead of Z_{jdt} . In this second step, the equation is weighted by the group-level cell size.^{37,38}

B. Infant Health: Results

We start by presenting event study graphs for the incidence of low birthweight (i.e., an infant born weighing less than 5.5 pounds or 2,500 grams) based on a version of equation (5). The plotted estimates and 95th percentile confidence intervals correspond to the interaction of event-time indicators with $1[Plant\ Opened]_{jt} \times 1[Near]_{jd}$ and $1[Plant\ Closed]_{jt} \times 1[Near]_{jd}$. The specification includes plant-by-distance and

³⁶For a small number of observations there is missing data for one or more of these control variables and we include indicator variables for missing data for each variable.

³⁷To limit the computational burden of estimating the first stage of the full sample, the first stage is estimated separately by state. Alternative group-level weights include the inverse of the sampling error on the estimated fixed effects, but since we are estimating state by state, the estimated standard errors are likely to be inefficient (although the group level estimates are still consistent) making this weighting mechanism less attractive. Donald and Lang (2007) present an alternative feasible GLS specification where the weights come from the group level residual and the variance of the group effect. Since all of these weights are proportional and highly correlated, the choice of weights has little effect on the results. We follow Angrist and Lavy (2009), who weight by the group cell size. These models have R^2 s of about 0.3.

³⁸We obtain similar results from group-level models that convert micro-level covariates into indicator variables and take means within cells.

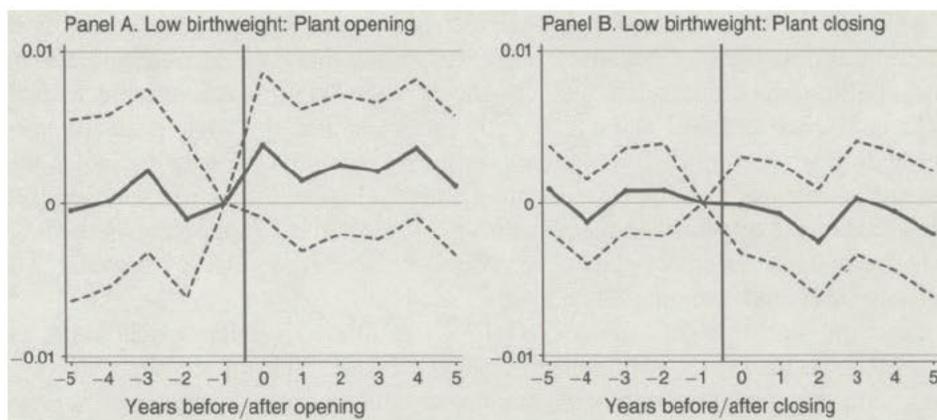


FIGURE 4. EVENT STUDY: THE EFFECT OF TOXIC PLANT OPENINGS AND CLOSINGS ON THE INCIDENCE OF LOW BIRTHWEIGHT

Notes: These are event study plots created by regressing the incidence of low birthweight for a plant-by-distance by year cell on a full set of event time indicators interacted with an indicator for “near,” plant-by-distance fixed effects, plant-by-year fixed effects, and census controls (interacted with quadratic trends), weighting by the group-level cell size. The dependent variable in the regression is the residualized mean incidence of low birthweight for a plant-by-distance-by-year, adjusted for micro-level covariates in a first stage. Reported are the coefficients for event-time, which plot the time path of low birthweight “near” relative to “far” before and after a plant opening or closing. “Near” is defined as less than 1 mile between a plant and a house, and “far” is defined as 1–2 miles between a house and plant. The dashed lines represent 95 percent confidence intervals, where standard errors are computed using two-way cluster-robust standard errors, clustering on plant and year. Time is normalized relative to the year that the plant’s operating status changes ($\tau = 0$), and the coefficients are normalized to zero in the year prior to a change in operating status ($\tau = -1$).

plant-by-year fixed effects, as well as the census controls interacted with a quadratic time trend. The birth data cover a longer period than the housing prices data and we can estimate the parameters of interest for all event years from five years before an opening/closing through five years after an opening/closing.

Figure 4 suggests that operating plants raise the incidence of low birthweight. There is little evidence of differential trends in the adjusted incidence of low birthweight between mothers living 0–1 and 1–2 miles away during the years leading up to plant openings or closings, which supports the validity of the design. After plant openings, there is a relative increase in the incidence of low birthweight among mothers living within one mile of a plant. After plant closings, there is some evidence of an opposite effect. Specifically, the incidence of low birthweight within one mile decreases modestly relative to what is observed between one and two miles although the decline is less sharp than in the plant opening panel.

Table 4 presents regression estimates, and is structured similarly to panels B and C of Table 2 which reports the housing price results. We focus on the panel B results, which have a clearer counterfactual and greater external validity. Further, due to the finding that toxic air emissions travel roughly 1 mile on average, we concentrate on the 0–1 mile results.

The final four columns suggest that an operating toxic plant increases the incidence of low birthweight by 0.0024–0.0037 percentage points or 3.3 percent–5.1 percent. The effects among infants born to mothers in the 0–0.5 mile and 0.5–1 mile ranges are nearly identical. It is also interesting that the larger estimates come from the restricted sample that only includes births within 2 years of a change in operating status.

TABLE 4—THE EFFECT OF TOXIC PLANTS ON LOW BIRTHWEIGHT

	0–0.5 Miles		0.5–1 Miles		0–1 Miles		0–1 Miles (+/- 2 years)	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<i>Panel A. Estimated effect of plant operation</i>								
1(Plant Operating)	0.0010	0.0012	0.0014**	0.0015**	0.0013**	0.0014**	0.0021**	0.0026***
× Near	(0.0010)	(0.0012)	(0.0006)	(0.0006)	(0.0006)	(0.0007)	(0.0009)	(0.0009)
Observations	88,958	88,958	88,958	88,958	88,958	88,958	63,324	63,324
Plant count	3,438	3,438	3,438	3,438	3,438	3,438	3,438	3,438
<i>Panel B. Estimated effect of plant openings and closings</i>								
1(Plant Opened)	0.0025	0.0022	0.0024***	0.0027***	0.0024**	0.0024***	0.0031*	0.0037**
× Near	(0.0019)	(0.0018)	(0.0009)	(0.0010)	(0.0009)	(0.0008)	(0.0017)	(0.0017)
1(Plant Closed)	-0.0002	-0.0007	-0.0009	-0.0009	-0.0007	-0.0009	-0.0016	-0.0021*
× Near	(0.0016)	(0.0016)	(0.0009)	(0.0010)	(0.0009)	(0.0009)	(0.0012)	(0.0013)
H_0 : Opening = -Closing (<i>p</i> -value)	0.44	0.56	0.32	0.28	0.22	0.24	0.51	0.48
Observations	88,958	88,958	88,958	88,958	88,958	88,958	63,324	63,324
Plant count	3,438	3,438	3,438	3,438	3,438	3,438	3,438	3,438
Plant × Distance-bin FE	X	X	X	X	X	X	X	X
State × Year FE	X		X		X		X	
Plant × Year FE		X		X		X		X

Notes: This table reports regression coefficients from 16 separate regressions, 8 per panel. The dependent variable in all regressions is the mean incidence of low birthweight where the data have been aggregated to plant by distance by year cells. Cell level averages have been adjusted for maternal characteristics including age, education, race, and smoking behavior, as well as for month of birth, birth order, and gender of child. See text for details. The mean incidence of low birthweight in our sample is 0.07. Both the regression sample and the indicator variable “Near” change as one moves across the columns, indicated by the column headings. For example, the specification in columns 1 and 2 examines how group-level average birth outcomes within 0.5 miles of a plant (i.e. “Near”) respond to plant operating status, relative to the comparison group. The comparison group in all columns is births between 1 and 2 miles from a plant. In columns 7 and 8, the sample removes observations more than two years before and after changes in plant activity. Panel A estimates the effect of plant operating status on local birth outcomes, where 1(Plant Operating) is an indicator variable equal to one for plants that have opened and/or have not yet closed. Panel B estimates the asymmetric effect of plant openings/closings. Panel B reports *p*-values from tests that the two coefficients are equal in magnitude but of opposite sign. All columns control for census tract characteristics (interacted with quadratic trends) and regressions are weighted by the group-level cell size. Multiple births are dropped from regressions. Standard errors are two-way clustered by plant and year.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

The results are less conclusive on the question of whether a plant closing reverses the negative effects of a plant’s operation on the incidence of low birthweight. On the one hand, all of the point estimates suggest that low birthweight declines after a plant closing. This decline, however, is only statistically significant at the 95 percent level of confidence in column (8), though this specification is perhaps the most reliable one. The null that the coefficients are equal and of opposite sign cannot be rejected in any of the specifications.

Table 5 examines plant heterogeneity, stratifying plants as was done in the housing regressions (i.e., Table 3) using the version of equation (5) that includes plant-by-year fixed effects. There is little evidence of heterogeneity across these cuts of the data, except that there are no effects on low birthweight in areas with above median housing values. It is possible that richer households are better able to take compensatory measures to protect themselves.

We probed the robustness of these results in several ways. The results are qualitatively similar when we vary the set of controls used in our baseline regressions (see online Appendix Table A5), and when we use a comparison group of births that occur two to four miles from a plant, rather than one to two miles (see online

TABLE 5—THE EFFECT OF TOXIC PLANTS ON LOW BIRTHWEIGHT: ABOVE/BELOW MEDIAN (0–1 Miles)

	Employment (1)	Payroll (2)	Fugitive emissions (3)	Stack emissions (4)	Mean toxicity (5)
1(Plant Operating) × 1(< 1 Mile)	0.0016** (0.0007)	0.0012 (0.0007)	0.0010 (0.0007)	0.0008 (0.0007)	0.0013* (0.0007)
1(Plant Operating) × 1(< 1 Mile) × 1(Above Median)	−0.0010 (0.0013)	0.0003 (0.0014)	0.0007 (0.0013)	0.0010 (0.0011)	−0.0001 (0.0017)
Observations	88,958	88,958	88,958	88,958	88,958
	Max toxicity (6)	Fraction college (7)	Fraction white (8)	Housing value (9)	Median income (10)
1(Plant Operating) × 1(< 1 Mile)	0.0006 (0.0007)	0.0007 (0.0007)	0.0010* (0.0005)	0.0028*** (0.0010)	0.0014* (0.0007)
1(Plant Operating) × 1(< 1 Mile) × 1(Above Median)	0.0020 (0.0013)	0.0017 (0.0017)	0.0009 (0.0010)	−0.0028* (0.0017)	−0.0003 (0.0013)
Observations	88,958	88,958	88,958	88,958	88,958

Notes: This table reports regression coefficients from 10 separate regressions, where we interact our treatment variable $1(\text{Plant Operating}) \times 1(< 1 \text{ Mile})$ with an indicator for whether the plant/community is above or below the median characteristic indicated in the column heading. The median indicator is equal to 1 if the plant-level median of the column variable (taken over plant operating years) is above or below the sample median value (taken over median plant values). The dependent variable in all regressions is the mean incidence of low birthweight, where the data have been aggregated to plant by distance by year cells. Cell level averages have been adjusted for micro covariates, and all regressions control for plant by distance and plant by year fixed effects, as well as census tract characteristics (interacted with quadratic trends). Regressions are weighted by the group-level cell size. Standard errors are two-way clustered by plant and year.

***Significant at the 1 percent level.

**Significant at the 5 percent level.

*Significant at the 10 percent level.

Appendix Table A3). The results are also similar when we estimate the regressions separately by distance group (see online Appendix Table A4). These alternate specifications corroborate the main results, again indicating that the effects of plant operating status are highly localized, and providing additional empirical support for the choice of comparison group.

We also tested for changes in the composition of mothers giving birth in online Appendix Table A6. Documenting this type of compositional change is of significant independent interest (see, for example, Cameron and McConaha 2006; Banzhaf and Walsh 2008; and Currie 2011). Overall, impacts of plant openings and closings on mothers' characteristics are small and generally statistically insignificant, suggesting that the low birthweight estimates are not driven by changes in the composition of mothers who live near plants. If anything, toxic plants appear to be associated with a small *increase* in the socioeconomic status of mothers; if the regressions fail to adequately adjust for these changes, then the measured health effects may modestly understate the true effects.

When assigning plant events to birth outcomes, there is some ambiguity as to whether the plant event occurred before or after a birth because we observe plant operating status just once a year in the LBD. In online Appendix Table A7 we investigate the sensitivity of our results to alternative approaches to timing. Estimates from

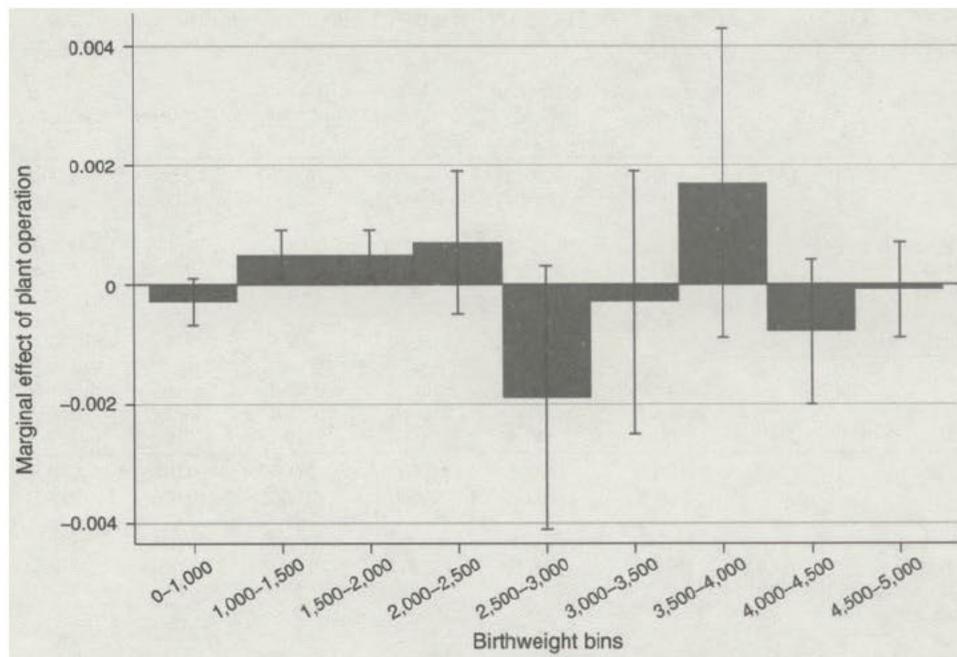


FIGURE 5. EFFECT OF PLANT OPERATION ON THE DISTRIBUTION OF BIRTHWEIGHT 0-1 MILES FROM A PLANT

Notes: This figure reports regression coefficients from nine separate regressions. The dependent variable in each regression is an indicator variable for whether a birth falls in a particular birthweight range as indicated on the x-axis, and the data have been aggregated to plant-by-distance by year cells. The estimates reflect the effect of plant operation on “near” relative to “far” birth outcomes. All regression estimates control for census tract characteristics (interacted with quadratic trends) and regressions are weighted by the group-level cell size. Multiple births are dropped from regressions. Standard errors are two-way clustered by plant and year, and reported confidence intervals reflect 2 standard errors above and below the estimate.

these alternative specifications are largely consistent with our baseline findings. See the online Appendix for details.

C. Alternative Measures of Infant Health: Results

This section presents estimates for alternative measures of infant health. We begin by examining the influence of toxic plant activity on the birthweight distribution. We first create indicators for births falling within 500-gram birthweight intervals, and we aggregate these outcomes to the plant-by-distance bin by year level. We then use these binned averages as the dependent variable when estimating nine different versions of equation (5), one per bin. The resulting estimates of the parameter associated with $1[Plant\ Operating]_{jt} \times 1[Near]_{jd}$ are plotted in Figure 5. All regressions compare birth outcomes for mothers less than one mile from a plant to those of mothers living one to two miles away, so that these models are comparable to those presented in columns 5 and 6 of Table 4. Figure 5 suggests that when a plant is operating the birthweight distribution is skewed to the left, increasing the likelihood of births below 2,500 grams. Appendix Table A8 reports the regression results that

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TABLE 6—THE EFFECT OF TOXIC PLANTS ON ALTERNATIVE MEASURES OF INFANT HEALTH

	Birthweight (grams, in logs) (1)	Birthweight (grams, in logs) (2)	Very low birthweight (3)	Very low birthweight (4)	Premature (5)	Premature (6)
$1(\text{Plant Op}) \times 1(< 1 \text{ Mile})$	-0.0011*** (0.0003)	-0.0012*** (0.0004)	0.0001 (0.0002)	0.0001 (0.0001)	0.0009** (0.0004)	0.0009** (0.0005)
Observations	88,958	88,958	88,958	88,958	88,404	88,404
Mean	8.09	8.09	0.0113	0.0113	0.0845	0.0845
Plant \times dist-bin FE	X	X	X	X	X	X
State \times year FE	X		X		X	
Plant \times year FE		X		X		X
	Congenital anomaly (7)	Congenital anomaly (8)	Infant death (9)	Infant death (10)	Summary index (11)	Summary index (12)
$1(\text{Plant Op}) \times 1(< 1 \text{ Mile})$	-0.0003 (0.0009)	-0.0005 (0.0010)	0.0001 (0.0001)	0.0000 (0.0001)	0.0165** (0.0066)	0.0158** (0.0071)
Observations	88,212	88,212	89,388	89,388	89,388	89,388
Mean	0.0679	0.0679	0.0068	0.0068	-0.0004	-0.0004
Plant \times dist-bin FE	X	X	X	X	X	X
State \times year FE	X		X		X	
Plant \times year FE		X		X		X

Notes: This table reports regression coefficients from 12 separate regressions on a sample of 3,438 plants. The dependent variable is listed in the column heading, and data have been aggregated to plant by distance by year cells. Cell level averages have been adjusted for maternal characteristics. See text for details. The comparison group in all columns is births between 1 and 2 miles from a plant. Columns 11 and 12 present results from a summary index measure of outcomes to address concerns pertaining to inference with a large number of outcomes. Outcomes for the summary index measure include those listed above, in addition to low birthweight, and outcomes are standardized to be mean 0 and standard deviation 1. Before combining, birthweight is multiplied by -1 so that an increase in the summary index measure reflects an increase in adverse health outcomes. All regressions control for tract characteristics (interacted with quadratic trend). Multiple births are dropped from regressions. Regressions are weighted by the group-level cell size. Standard errors are two-way clustered by plant and year.

underlie this figure, as well as results that replace the $1[\text{Plant Operating}]_{jt}$ variable with the $1[\text{Plant Opened}]_{jt}$ and $1[\text{Plant Closed}]_{jt}$ variables.

Table 6 reports estimates of equation (5) using additional measures of infant health as the dependent variables. These estimates support the hypothesis that toxic plants damage infant health; birthweight decreases and the incidence of prematurity increases. The other birth outcomes are not individually statistically different from zero although this is perhaps unsurprising given that many of these outcomes, such as the incidence of very low birthweight (i.e., an infant born weighing less than 3.3 pounds or 1500 grams) and infant deaths, are an order of magnitude more rare than low birthweight.

In light of this issue of precision, the last two columns show models using a summary index measure of infant health as the dependent variable. We first convert each birth outcome measure so that they all move in the same direction (i.e., an increase is undesirable) and then subtract the mean and divide by the standard deviation of each outcome. We construct our summary measure by taking the mean over the standardized outcomes, weighting by the inverse covariance matrix of the transformed outcomes in order to ensure that outcomes that are highly correlated with each other receive less weight than those that are uncorrelated, and thus represent new information, receive more weight (Hochberg 1988; Kling, Liebman, and Katz

2007; Anderson 2008).³⁹ An operating plant has a small but statistically significant positive effect on the index, increasing the probability of a bad health outcome by 0.016–0.017 standard deviations.

VI. Interpretation

The estimates in Table 2 indicate that the opening of a toxic plant reduces housing values by roughly 11 percent within 0.5 miles and this effect appears to persist even after the plant ceases operations.⁴⁰ As with all of our estimates, this effect is measured relative to homes 1 to 2 miles away. Since the mean housing value within 0.5 miles of a plant is \$125,927, this decrement corresponds to about \$14,000 for the average house. In our sample, the value of the housing stock within 0.5 miles of a toxic plant is \$38.5 million. Multiplying this figure by 11 percent yields a decline in local housing values of about \$4.25 million per plant. Although non-negligible, these housing price changes are small compared to the capital cost of new industrial plants; for example, a typical natural gas power plant (620MW) costs about \$570 million to build.⁴¹

It is important to bear in mind that this is an incomplete measure of these plants' total welfare consequences. For example, it misses the effects of increased emissions of criteria pollutants, such as particulates, ozone, and sulfur dioxide, which may harm human health over a much broader geographic area. Further, it does not include any impacts on non-residential property (which could even be positive if there are spillovers in production efficiency).⁴² Moreover under our imposed assumption that the economic benefits of plant production accrue equally to homes within two miles of the plant, this estimate reflects an upper bound on the net costs associated with toxic plants. As we have emphasized throughout, these plants have positive as well as negative externalities, bringing jobs to local communities and potentially raising wages and housing prices over a wide area.

An appealing feature of the analysis is that it provides estimates of the effect of toxic plant openings on *both* housing prices and on an important health outcome. It is interesting to compare the estimates from the housing value analysis with a valuation of the low birthweight impacts. The point estimate in Table 4, column 6 implies that an operating toxic plant within one mile reduces the incidence of low birthweight by 0.0024 percentage points or 3.1 percent. There is an average of 67 births within 1 mile of each toxic plant per year. Thus, the estimate implies that there are approximately 0.16 additional low birthweight births per toxic plant per year. Using estimates in the literature, this corresponds to about \$5,600 in decreased lifetime earnings per toxic plant per year.⁴³ This measure is small compared to the estimated

³⁹ Alternatively, we have created summary index measures that weight each outcome variable equally, as in Kling, Liebman, and Katz (2007), with little appreciable effect on our results.

⁴⁰ Potential explanations for a plant's lasting effect on property values even after it closes include persistent visual disamenities, concerns about local contamination, and an expectation that the plant will reopen.

⁴¹ US Department of Energy, Energy Information Administration. 2013. "Updated Capital Cost Estimates for Utility Scale Electricity Generation Plants." <http://www.eia.gov/forecasts/capitalcost/> (accessed May 2012).

⁴² The \$4.25 million measure does not capture changes to the value of industrial, commercial, or undeveloped property. While some industrial uses may not be substantially affected by toxic plant proximity, commercial property and, perhaps more importantly, the price of undeveloped land may be affected.

⁴³ Black, Devereux, and Salvanes (2007) estimate that each 1 percent decrease in birthweight decreases expected earnings by about 0.13 percent. Based on our analysis of the distribution of birthweight, the impact appears to be more births 1,000–2,000 grams, compared to about 3,200 grams for the average birth, for a back-of-the-envelope

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value of losses in the housing market but, of course, low birthweight is only one of many potential health consequences of exposure to toxic plants. Further, the finding that housing prices remain depressed after the plant has closed and air toxic emissions have ceased suggests that willingness to pay is comprised of more than health effects in this setting.

VII. Conclusion

Toxic emissions are widely believed to cause birth defects, cancer, and other severe health impacts, yet there is little evidence about their effects on humans. Governments have only recently begun to regulate these emissions. In many respects, this state of affairs resembles the situation that prevailed more than four decades ago when the Clean Air Act compelled the EPA to begin to regulate airborne particulate matter and other criteria air pollutants. This paper represents a first step toward understanding the local external effects of toxic plant production on the health and well-being of local residents.

The application of a research design based on more than 1,600 plant openings and closings matched to extraordinarily detailed, geocoded data yields three primary findings. First, on average, toxic air pollutants affect ambient air quality only within 1 mile of the plants, suggesting that health effects from these emissions should be concentrated in this range. The highly localized range differs substantially from particulate matter emissions, which can affect ambient air quality several hundred miles away from their source. Second, the opening of a plant that emits these pollutants leads to a roughly 11 percent decline in housing prices within 0.5 miles, or a loss of about \$4.25 million per operating plant. Housing prices are largely unaffected by a plant closing, implying that toxic plants continue to negatively affect housing prices after they cease operations. Third, the incidence of low birthweight increases by roughly 3 percent within one mile of an operating toxic plant, with comparable magnitudes between 0 and 0.5 miles and 0.5 and 1 miles.

These results underscore opportunities for further research in several areas. We interpret the estimated effects of low birthweight to be a rejection of the null hypothesis that there are no health effects from toxic air emissions. This finding opens the door to seeking creative approaches to testing for longer run health effects on children and adults. It is also possible that toxic air emissions cause households to engage in costly behaviors to protect themselves and documenting these costs would be a contribution (see e.g., Deschenes, Greenstone, and Shapiro 2012).

This paper also raises broader questions around the determinants of housing prices. As computing power increases and more detailed data are accessible, it will be possible to assess the degree to which housing markets fully capture the present discounted value of all present and expected future amenities associated with a particular location. A related and important question is the degree to which health effects are capitalized into housing prices. Finally, we believe that a better understanding of belief formation

average reduction of about 50 percent. So a low birthweight birth would be associated with approximately 6.5 percent lower lifetime earnings. Isen, Rossin-Slater, and Walker (2014) calculate that the mean present value of lifetime earnings at age zero in the US population is \$542,000 (2000\$) using a real discount rate of 3 percent (i.e., a 5 percent discount rate with 2 percent wage growth), so this is equivalent to \$35,320 per low birthweight birth.

around local amenities and how these beliefs interact with willingness to pay in the context of local housing markets is a critical area for future research.

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COMMENTER J

Matthew Alexander

From: Matthew Alexander
Sent: April 11, 2022 8:11 AM
To: [REDACTED]
Cc: Mbaya, Patrick (ELG/EGL)
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: Property Assessments.pdf; Property Assessment Map.pdf; WastewaterTreatment.pdf

Hi Ms. [REDACTED]:

A compilation of all questions posed and the proponent's responses is being maintained as part of the public involvement component of the project. We are not sure if some of the responses back to you have been missed, or not; however, below are all of the questions asked by you up until 8 April 2022 along with the proponent's responses. Responses to your most recent questions will be provided in due course. We are still preparing responses to Mr. Steele's questions.

1. I was told that questions and answers that were made will be made public. Where do I find that information? I can't find a link on the website.

The Project website (www.ippmodernization.ca) contains a clickable FAQ link near the bottom. Here is the direct link to the most recent version of the Frequently Asked Questions: <https://www.ippmodernization.ca/wp-content/uploads/2022/03/PPD-EIA-QA-8.5x11-V3.pdf>

2. Will you please provide me with the contact information for the Department of the Environment person?

The representative with the New Brunswick Department of Environment and Local Government that has been assigned as Project Manager to this Project is Patrick Mbaya. His contact information is as follows: Phone: (506) 444-5382; Email: patrick.mbaya@gnb.ca

3. Will you please provide me with the Social and Economic Study for this project?

The Socio-Economic baseline assessment is provided in Section 3.3 of the Environmental Impact Assessment (EIA) document. The Potential Project Impacts and Proposed Mitigation are provided in Section 4.4.4 of the EIA document. The EIA document can be downloaded from the Province's EIA website at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

4. What sector specific guidelines were used for the EIA?

As noted in Section 2.3 of the Environmental Impact Assessment (EIA) document, the "EIA meets the requirements of the NBDELG [2018] guide to EIAs and the NBDELG [2004] Sector Guidelines for Wastewater Treatment Projects."

5. Will you please send me the sector specific guidelines used when the EIA was submitted?

The NBDELG's EIA information and guidelines can be found at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment.html The Sector Guidelines for Wastewater Treatment Projects can be found under the *Sector Guidelines* tab (they have also been attached to this email for your reference). Please note that these are guidelines and are meant to help the proponent prepare the EIA document for review. Also, please note that this proposed Project is with respect to an

COMMENTER J

industrial treatment system, not a municipal system and there can be considerable differences between those two types of projects and effluents. Much of the aforementioned guideline is not applicable to this project because it is strictly for treating industrial effluent.

The assessment of potential environmental impacts for all EIAs is based on the scope and complexity of the proposed Project. The scope and complexity of this proposed Project are described within Section 2 of the EIA document. The potential environmental impacts and definition of Valued Environmental Components were determined by overlaying the Project on top of the baseline environment.

6. Will you please provide me with the Social and Economic Study for this project?

As noted in the response to 3 above, the Socio-Economic baseline assessment is provided in Section 3.3 of the Environmental Impact Assessment (EIA) document. The Potential Project Impacts and Proposed Mitigation are provided in Section 4.4.4 of the EIA document. The EIA document can be downloaded from the Province's EIA website at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

7. I understand that the federal government provides funding for Indigenous communities, individuals, and organizations to take part in the federal EIA process. Does the Provincial Government have funding for the provincial EIA process for individuals, organizations or Indigenous communities?

In some instances, the Impact Agency of Canada does provide funding to support various groups, including members of the public, scientists, and Indigenous peoples to play a more active role in assessments and policy development of the Impact Assessment process under the federal *Impact Assessment Act* [SC 2019, c. 28, s. 1]. There are no known funding processes to support the provincial environmental impact assessment process for individuals, organizations, or Indigenous communities.

8. Of the 5 PIN noted on the EIA, which PIN's are volatile heavy and which ones are offensive heavy? Will you please describe what the difference is?

There are five Property Identification (PID) numbers that make up the Reversing Falls Mill site: 55162416; 55223739; 55232649; 55232656; and 55233001. All of those properties are zoned for heavy industrial use. Definitions for a volatile industrial use and an offensive industrial use from the City of Saint John's Zoning By-Law are provided below.

A volatile industrial use is where the type of material used, produced, or stored and or the type of manufacturing process involved may be harmful or detrimental to a person's health and or property due to the potential of fire, explosion, or the accidental release of toxic gases, fumes, or otherwise, and without limiting the generality of the foregoing, shall include, but not be limited to, a chemical plant, crude import and or export terminal, fertilizer manufacture and storage, liquefied natural gas terminal, petro-chemical plant, or petroleum refinery, but not a nuclear power plant, nuclear storage facility, or a nuclear enrichment plant.

An offensive industrial use is where the type of manufacturing process involved or the type of material used, produced, or stored may cause a dangerous gas or fume, dust, objectionable odour, noise or vibration, or the unsightly storage of goods, wares, merchandise, salvage, junk, waste, or other material to a condition that could be hazardous or injurious as regards to a person's health or safety, or which prejudices the character of the surrounding neighbourhood, or could interfere with the normal enjoyment of any land, building, or structure, and shall include, but not be limited to, a brewery, pulp and paper mill or a scrap or salvage yard.

Based on the definitions above, all five of the properties zoned for heavy industrial owned by Irving Pulp & Paper, Limited are for an offensive industrial use, which is appropriate for siting the proposed Project.

COMMENTER J

9. A Guide to Environmental impact assessment in New Brunswick 2(c) “describe the market potential, benefit to society, economic benefits, job creation benefit, consumer and/or industrial demand, and other relevant issues that make the proposal viable and desirable for the local and/or New Brunswick economy”. I understand that the IPP mill has considerable benefits, and that treating the industrial waste water has benefits. My concern is the location. What I don’t see in the report are the benefits of this location to the residents. What are the benefits to the residents that reside within a 2km radius?

This Project is of Provincial importance. As noted in Section 2.2 the Environmental Impact Assessment (EIA) document, Irving Pulp & Paper, Limited’s Reversing Falls Mill is the anchor of New Brunswick’s forest products industry. In 2022, J.D. Irving, Limited (JDI), Irving Pulp & Paper, Limited’s (IPP) parent company, had 4 925 full-time employees working within their forest products industry. Those jobs are linked to the IPP’s Reversing Falls Mill. That same year, JDI spent \$1.63 billion on local suppliers. The Mill complex in Saint John directly employs 480, many of whom reside in the Greater Saint John area and some who reside in the Milford and Randolph area of West Saint John. IPP is mandated to install an Environmental Treatment Facility (ETF) at the Reversing Falls Mill. If the ETF is not built and operated, it would cause the Mill to be shutdown and affect the livelihood of thousands of New Brunswickers and hundreds of Saint Johners.

Section 2.4 of the EIA document provides additional information on how New Brunswick’s Forest Products Industry is an integral component of the Province’s natural resource-based industry and how Saint John is the industry’s hub. As the EIA document notes, the proposed Project represents \$150 million in capital expenditure that is 100 % funded by JDI. Approximately 120 person years of construction employment will be generated and it is expected that many of the contractors working on the Project will be from Greater Saint John.

In conjunction with this Project, there is an opportunity to build a landscaped berm along Milford Road, which the Project team believes will improve the aesthetics of the street landscape for local residents.

10. How many residential properties are within a 2km radius of the proposed site?

It is understood that Gardner Pinfold Consultants Inc. prepared a report in 2020 for the Greater Saint John Regional Task Force Analysis. It is also understood that a comparison was drawn between Fredericton, Moncton, and Saint John, three New Brunswick cities, which have vastly different socioeconomic characteristics. The report suggested that the value of residential properties within 2 km of industrial properties is negatively impacted by comparing Saint John that has industry within the core to Moncton and Fredericton that have industry at their outskirts. The relevance of the report is not recognized for this Project. The Mill, in various forms, has existed since 1836. Residential development has continued to grow and in some instances densify around the Mill site since that time.

It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000.

11. What is the forecasted impact to property values within a 2 km radius over the life of the project? Reference material please for calculation

During preparation of the Environmental Impact Assessment (EIA) document, the Project team reviewed the property assessments and sales records for 519 single-family residential properties within the Milford and Randolph Area. The attached Google Earth image shows the single-family residential properties that were reviewed (*i.e.*, red polygon) and a 2 km radius (*i.e.*, red circle) around the Project site (*i.e.*, yellow pushpin). Overall, no negative impacts to property values were identified, which is the reason why it was not included in the EIA document.

It is not believed that this Project will negatively affect property assessment values in the area. This is based on our detailed review of the local property assessment values presented below. The majority of these homes have existed adjacent to the Mill site since 1951 and their values have continued to increase. The Project team also believes that the beautification work along Milford Road will improve aesthetics of the area.

COMMENTER

NB Property Assessment determines an assessed value for each real property in New Brunswick on an annual basis. A property's assessment reflects the property's market value. Market value is the price the property would likely sell for on the open real estate market on January 1 of each assessment year for which the assessment was made. The Province's assessment process is the most common method of property assessment used in North America. It is based on market value because it is transparent, easy to understand, and a fair and realistic measure of a property's value. The Province's assessors look at a variety of factors when assessing the value of a property including lot size, sale prices of homes and properties in the area, property condition, age of buildings, and any recent renovations and/or improvements made to the property. More information on how a property is assessed can be found on the Province's website at: <https://www2.snb.ca/content/snb/en/sites/property-assessment/understanding/valued.html>

The 2022 assessed values of New Brunswick properties reflect a strong real estate market provincially. While 28 % of properties showed no change in assessed value when compared to 2021, 28 % of properties increased by up to 5 %, and 23 % increased ranging from 5 % to 10 %. While 19 % increased by greater than 10 %, 77 % of those are protected by the Province's Spike Protection Mechanism whereby the increase is phased in over time to make assessment growth much more stable and predictable.

Within the Milford and Randolph areas of west Saint John, there are approximately 659 properties (*i.e.*, vacant land, residential, institutional, commercial, and industrial) within the Service New Brunswick database. Of those, 85 % (*i.e.*, 562) saw a property assessment increase between 2021 and 2022, 1 % (*i.e.*, 6) experienced a decrease, and 14 % (*i.e.*, 91) showed no change. These data suggest that property values in the Milford and Randolph areas grew more, on average, than New Brunswick as a whole.

Because property assessments were frozen across the Province between 2020 and 2021, assessment changes over the past five years were also reviewed. Those data show that 82 % (*i.e.*, 542) of those same properties showed an assessment increase, 5 % (*i.e.*, 34) experienced a decrease, and 13 % (*i.e.*, 83) saw no change. On average, assessments increased by 19 % over those five years (*i.e.*, 2018 to 2022).

The Saint John Real Estate Board reported on 13 January 2022 that Saint John 2021 MLS® home sales smashed the record set in 2020. During 2021, 3 142 residential units were sold. Sales were up in 2021 by 21 % over the 2020 annual sales setting record. Buyers are fiercely competing over a low inventory, which is driving price growth; the composite benchmark price extended the streak of double-digit year-over-year percentage gains to 15 months in December 2021. The average price of homes sold in December 2021 was \$249 527, up 31 % from December 2020.

Looking specifically at single-family residential, there are 519 properties in the Milford and Randolph area. Within the past five years (*i.e.*, 2018 to 2022), the average assessment for those properties increased by almost 13 %. The average value of a single-family residential property increased from about \$151 850 in 2018 to \$167 160 in 2022. The Saint John Real Estate Board expects record sales prices to continue in the foreseeable future.

Attached are the records that were used to calculate the above information.

12. What is the 30 to 50 year forecasted decrease in property tax revenue to the City of Saint John? Reference material please for calculation

This question would best be directed to New Brunswick's property assessors. The Project team does not anticipate a decrease in property tax revenue to the City of Saint John as a result of this proposed Project. Property taxes on the Mill property will increase as a result of the proposed Project, which will generate more property tax revenue for the City of Saint John.

13. What is the benefit for the residents that reside within 2 km of the proposed site? Reference material please for calculation

COMMENTER J

Please refer to the response to 11 above.

14. What do the residents of Saint John benefit from this site location? Calculation please

Please refer to the response to 11 above.

15. Does IPP meets the current PPER requirements?

Absolutely IPP meets the 1992 Pulp and Paper Effluent Regulations (PPERs). This is demonstrated in the data included within Table 8 of the EIA document. If the Mill was not meeting the 1992 PPERs, it would not be permitted to operate.

16. There was a court ordered mandate? Under what regulations were the court orders completed? Copies of the court documents and mandates please

IPP is committed to the long-term environmental sustainability and economic viability of the Mill. This proposed Project will prepare the Mill for expected future changes to environmental regulations and that is beneficial for the community, the environment, and the Mill.

IPP was fined under the federal *Fisheries Act* related to self-reported environmental incidents. None of those self-reported incidents resulted in observed environmental harm or damage to the Sant John River watershed, nor were there any observed or reported fish deaths. Although part of the court agreement, as reported in the media, is to build a new ETF, IPP has been considering building a facility since 1992. This ETF design and technology goes above and beyond that necessary within the court agreement. The detailed court agreement is not a public document.

17. The property on Milford Road was rezoned in the early 2000's for the LNG pipeline. Special restrictions were put on that parcel of land at that time that restricted further development. When were those restrictions lifted? I'd like to have minutes to the zoning meetings please?

There was no rezoning on IPP's property for the LNG pipeline built in the early 2000's; however, in July 2003, Maritimes & Northeast Pipeline Limited Partnership (M&NPP) registered a 30 m wide easement / right-of-way on the Mill property. The Mill property where the pipeline easement was placed was already zoned heavy industrial, which was appropriate zoning for installing the pipeline.

Property re-zoning is all done within the public realm and in Saint John comprises public meetings with the Planning Approval Committee and Common Council. No rezoning was required so there are no rezoning meeting minutes available.

With respect to M&NPP's 30 m pipeline right-of-way, there are restrictions as to what activities can occur. Permanent structures are prohibited because the ability to access and maintain the pipeline must not be impaired. Permanent structures include, but are not limited to, houses, trailers, mobile homes, poles, decks, tool sheds, garages, swimming pools, leaching fields, and septic tanks. Although fences may be placed on the right-of-way, fence posts must be located a minimum of 1.5 m from the pipeline. Driveways, road, and parking lots are generally permitted if they are built to M&NPP's standards. The National Energy Board of Canadian Standards Association regulations require that M&NPP maintain a safe amount of cover over the pipeline. Accordingly, the grade over the pipeline cannot be reduced or increased without permission from M&NPP. Shrubs and bushes may be planted on the right-of-way provided they are less than 1.2 m in height at maturity and are not within 3 m of the pipeline. Plants and trees that grow taller than 1.2 m are not permitted because they inhibit access and hinder aerial surveillance of the right-of-way.

IPP is committed to working within the existing guidelines for maintaining pipeline integrity.

18. I believe that the court order were a result of DFO charges. If so, does the EIA have a federal component since DFO is involved?

COMMENTER J

EIA approval is the first step in the environmental permitting process. As described in Section 6 of the EIA document, there are several federal, provincial, and municipal permits, authorizations, or approvals that may be required for various components of the proposed Project. Federal Regulators, such as the Department of Fisheries and Oceans and Environment and Climate Change Canada, are included as members of the EIA Technical Review Committee.

No federal approvals are required for building and operating the ETF component of the Project. Federal permit, authorizations, or approvals are only required for the water use reduction component of the Project.

19. Sheldon’s point was not a considered location during this EIA. Why?

Section 2.6.2 of the Environmental Impact Assessment (EIA) document describes five locations in west Saint John that were considered for constructing and operating the environmental treatment facility: Bald Mountain; Gault Road; Saint’s Rest; Mill West; and Lee Cove. The Saint’s Rest site is the exact same location as the Sheldon’s Point location considered in 1992 for the process water treatment system.

20. Your current report states that this proposed (northwest of the mill – Milford) site is still withing 100M of residential homes. Please provide me with engineered specific analysis of the rational for the change between 1993 and today?

In 1992, Irving Pulp & Paper, Limited (IPP) was proposing to build and operate a process water treatment system comprising an Aerated Stabilization Basin (ASB) / lagoon. At that time, ASBs and Activated Sludge Treatment (AST) were the standard for treating process water from pulp and paper mills. Technology has advanced considerably in the 30 years between 1992 and 2022.

For this Project, six different treatment technologies were considered: ASB; AST; Moving Bed Biofilm Reactor (MBBR); Nutrient Limited Biological Activated Sludge (NLBAS); Sequential Batch Reactors (SBR); and Membrane Biological Reactors (MBR). As described in Section 2.6.3 of the EIA document, the six technologies were assessed in detail. ASB, AST, and MBR technology did not meet the current needs assessment for IPP. SBR technology was considered too complex in its design and was dropped for further consideration. The remaining two technologies, MBBR and NLBAS, were further assessed through bench-top studies and piloting (*i.e.*, operating small-scale treatment systems onsite using actual process water). MBBR was the clear leader and selected for this Project because it is easy to operate, recovers quickly from upsets, uses tanks with a small footprint, integrates well within the existing pollution prevention systems, and IPP is familiar with the technology having operated a small MBBR onsite since 1993.

Although ASB technology can achieve treatment levels required under the 1992 Pulp and Paper Effluent Regulations (PPERs), it will not be able to achieve treatment levels under proposed future changes to the PPERs. Another advantage of MBBR over ASB is the reduction in overall facility footprint.

The ASB treatment facility proposed in 1992 would have had a footprint over three times the size of the technology being proposed today as part of this Project. That footprint size is why the Milford Road site was discounted in 1992 because there was insufficient space to build and operate an ASB.

21. My follow up questions depends on the answer I received. Will that time be available?

As indicated within the notice placed in the *Telegraph Journal* on 19 March 2022 comments from the public are requested on or before 20 April 2022. As indicated within the materials distributed at the Open House on 23 March 2022, Irving Pulp & Paper Ltd. (IPP) is following the Province’s Environmental Impact Assessment (EIA) process that includes public consultation. All questions received related to the Environmental Impact Assessment before 20 April 2022 will be included along with answers within the Public Involvement Summary submitted to the Province that is scheduled for release on or before 20 May 2022.

COMMENTER J

All questions submitted through IPP's website (www.ippmodernization.com), to the consultant, and to the EIA Project Manager will be answered in writing as part of the public review process. Those questions and answers will be taken into consideration during the EIA process and as the Project advances.

If you have questions after 20 April 2022, you can still submit them.

22. Is there any opportunity for consultation with you regarding incomplete or unanswered questions?

As was offered to you at the Open House on 23 March 2022, IPP representatives and the consultant will sit down with you and have a discussion regarding the proposed Project. If you are agreeable to this, please provide some times and dates that will work for you.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

Serving Our Clients' Needs First

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NOTE: Wastewater Treatment Sector Guidelines and nearby property assessment attachments are found elsewhere in this Commenter's files so were removed below for brevity.

COMMENTER J

Matthew Alexander

From: Matthew Alexander
Sent: April 13, 2022 9:11 AM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. What % of the \$150 capital investment will be spent with organizations outside NB?

Detailed design for this Project has not been completed and vendors have not yet been selected. As a result, it is unknown what percentage of the overall \$150 million capital investment will be spent on organizations outside New Brunswick. Irving Pulp & Paper, Limited, where possible and practical, desires to spend locally.

2. 120 person years = 60 temporary contractors. What is the forecasted dollars spent on these temporary positions?

It is estimated that the amount spent on contractors during construction will range between \$7.5 million and \$9 million. Contracts have not been awarded for the proposed Project so a definitive value is unable to be provided.

3. There is zero new jobs or long term net new economic benefit to Saint John or NB – yes/no?

There are no direct new long-term positions being created as a result of this proposed Project because as described within the Environmental Impact Assessment document, it is believed the proposed Project can be operated using Irving Pulp & Paper, Limited's current compliment of employees at the Mill.

As noted in Section 3.3.2 of the EIA document, J.D. Irving, Limited, the parent company of IPP, is one of the largest employers in the southwest economic region of New Brunswick and the Mill is a considerable direct economic generator for the City of Saint John. The 2020 annual spend on the Mill's 400 employees was \$28.6 million.

There will be indirect local jobs created as a result of this proposed Project. Those indirect jobs include: the shipping of collected solids to the compost facility in Clarendon, New Brunswick; the delivery of nutrients and polymers used in the treatment process; third-party monitoring of the treatment process; and contractors required for routine inspection and maintenance activities.

4. No economic benefit to the city or residents from this project (excluding the mill and the forestry industry). Yes or No?

Yes, this proposed Project will provide economic benefits to residents of the City of Saint John. The Project is required to support the ongoing operation of the Mill, which directly employs 400 people.

The proposed Project will generate new property taxes for the City of Saint John; however, it is not currently known what that value will be until the proposed Project is built and assessed by the Province's assessors.

As noted in the response to Q3 above, there will be indirect jobs associated with this proposed Project. Those indirect employees will likely spend some money locally, such as at local food establishments and local service stations.

COMMENTER J

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 11, 2022 8:16 AM
To: Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL)
Subject: Re: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Good morning,

Thank you for your response. I will confirm the with my records.

I submitted question from Mr. [REDACTED] and we have not had a response to those.

When will they be sent?

Thanks

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From: Matthew Alexander <matt.alexander@fundyeng.com>
Sent: Monday, April 11, 2022 8:10:50 AM
To: [REDACTED]
Cc: Mbaya, Patrick (ELG/EGL) <patrick.mbaya@gnb.ca>
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

A compilation of all questions posed and the proponent's responses is being maintained as part of the public involvement component of the project. We are not sure if some of the responses back to you have been missed, or not; however, below are all of the questions asked by you up until 8 April 2022 along with the proponent's responses. Responses to your most recent questions will be provided in due course. We are still preparing responses to Mr. Steele's questions.

1. I was told that questions and answers that were made will be made public. Where do I find that information? I can't find a link on the website.

The Project website (www.ippmodernization.ca) contains a clickable FAQ link near the bottom. Here is the direct link to the most recent version of the Frequently Asked Questions: <https://www.ippmodernization.ca/wp-content/uploads/2022/03/PPD-EIA-QA-8.5x11-V3.pdf>

2. Will you please provide me with the contact information for the Department of the Environment person?

The representative with the New Brunswick Department of Environment and Local Government that has been assigned as Project Manager to this Project is Patrick Mbaya. His contact information is as follows: Phone: (506) 444-5382; Email: patrick.mbaya@gnb.ca

3. Will you please provide me with the Social and Economic Study for this project?

COMMENTER J

The Socio-Economic baseline assessment is provided in Section 3.3 of the Environmental Impact Assessment (EIA) document. The Potential Project Impacts and Proposed Mitigation are provided in Section 4.4.4 of the EIA document. The EIA document can be downloaded from the Province's EIA website at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

4. What sector specific guidelines were used for the EIA?

As noted in Section 2.3 of the Environmental Impact Assessment (EIA) document, the "EIA meets the requirements of the NBDELG [2018] guide to EIAs and the NBDELG [2004] Sector Guidelines for Wastewater Treatment Projects."

5. Will you please send me the sector specific guidelines used when the EIA was submitted?

The NBDELG's EIA information and guidelines can be found at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment.html The Sector Guidelines for Wastewater Treatment Projects can be found under the *Sector Guidelines* tab (they have also been attached to this email for your reference). Please note that these are guidelines and are meant to help the proponent prepare the EIA document for review. Also, please note that this proposed Project is with respect to an industrial treatment system, not a municipal system and there can be considerable differences between those two types of projects and effluents. Much of the aforementioned guideline is not applicable to this project because it is strictly for treating industrial effluent.

The assessment of potential environmental impacts for all EIAs is based on the scope and complexity of the proposed Project. The scope and complexity of this proposed Project are described within Section 2 of the EIA document. The potential environmental impacts and definition of Valued Environmental Components were determined by overlaying the Project on top of the baseline environment.

6. Will you please provide me with the Social and Economic Study for this project?

As noted in the response to 3 above, the Socio-Economic baseline assessment is provided in Section 3.3 of the Environmental Impact Assessment (EIA) document. The Potential Project Impacts and Proposed Mitigation are provided in Section 4.4.4 of the EIA document. The EIA document can be downloaded from the Province's EIA website at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

7. I understand that the federal government provides funding for Indigenous communities, individuals, and organizations to take part in the federal EIA process. Does the Provincial Government have funding for the provincial EIA process for individuals, organizations or Indigenous communities?

In some instances, the Impact Agency of Canada does provide funding to support various groups, including members of the public, scientists, and Indigenous peoples to play a more active role in assessments and policy development of the Impact Assessment process under the federal *Impact Assessment Act* [SC 2019, c. 28, s. 1]. There are no known funding processes to support the provincial environmental impact assessment process for individuals, organizations, or Indigenous communities.

8. Of the 5 PIN noted on the EIA, which PIN's are volatile heavy and which ones are offensive heavy? Will you please describe what the difference is?

There are five Property Identification (PID) numbers that make up the Reversing Falls Mill site: 55162416; 55223739; 55232649; 55232656; and 55233001. All of those properties are zoned for heavy industrial use. Definitions for a volatile industrial use and an offensive industrial use from the City of Saint John's Zoning By-Law are provided below.

COMMENTER J

A volatile industrial use is where the type of material used, produced, or stored and or the type of manufacturing process involved may be harmful or detrimental to a person's health and or property due to the potential of fire, explosion, or the accidental release of toxic gases, fumes, or otherwise, and without limiting the generality of the foregoing, shall include, but not be limited to, a chemical plant, crude import and or export terminal, fertilizer manufacture and storage, liquefied natural gas terminal, petro-chemical plant, or petroleum refinery, but not a nuclear power plant, nuclear storage facility, or a nuclear enrichment plant.

An offensive industrial use is where the type of manufacturing process involved or the type of material used, produced, or stored may cause a dangerous gas or fume, dust, objectionable odour, noise or vibration, or the unsightly storage of goods, wares, merchandise, salvage, junk, waste, or other material to a condition that could be hazardous or injurious as regards to a person's health or safety, or which prejudices the character of the surrounding neighbourhood, or could interfere with the normal enjoyment of any land, building, or structure, and shall include, but not be limited to, a brewery, pulp and paper mill or a scrap or salvage yard.

Based on the definitions above, all five of the properties zoned for heavy industrial owned by Irving Pulp & Paper, Limited are for an offensive industrial use, which is appropriate for siting the proposed Project.

9. A Guide to Environmental impact assessment in New Brunswick 2(c) "describe the market potential, benefit to society, economic benefits, job creation benefit, consumer and/or industrial demand, and other relevant issues that make the proposal viable and desirable for the local and/or New Brunswick economy". I understand that the IPP mill has considerable benefits, and that treating the industrial waste water has benefits. My concern is the location. What I don't see in the report are the benefits of this location to the residents. What are the benefits to the residents that reside within a 2km radius?

This Project is of Provincial importance. As noted in Section 2.2 the Environmental Impact Assessment (EIA) document, Irving Pulp & Paper, Limited's Reversing Falls Mill is the anchor of New Brunswick's forest products industry. In 2022, J.D. Irving, Limited (JDI), Irving Pulp & Paper, Limited's (IPP) parent company, had 4 925 full-time employees working within their forest products industry. Those jobs are linked to the IPP's Reversing Falls Mill. That same year, JDI spent \$1.63 billion on local suppliers. The Mill complex in Saint John directly employs 480, many of whom reside in the Greater Saint John area and some who reside in the Milford and Randolph area of West Saint John. IPP is mandated to install an Environmental Treatment Facility (ETF) at the Reversing Falls Mill. If the ETF is not built and operated, it would cause the Mill to be shutdown and affect the livelihood of thousands of New Brunswickers and hundreds of Saint Johners.

Section 2.4 of the EIA document provides additional information on how New Brunswick's Forest Products Industry is an integral component of the Province's natural resource-based industry and how Saint John is the industry's hub. As the EIA document notes, the proposed Project represents \$150 million in capital expenditure that is 100 % funded by JDI. Approximately 120 person years of construction employment will be generated and it is expected that many of the contractors working on the Project will be from Greater Saint John.

In conjunction with this Project, there is an opportunity to build a landscaped berm along Milford Road, which the Project team believes will improve the aesthetics of the street landscape for local residents.

10. How many residential properties are within a 2km radius of the proposed site?

It is understood that Gardner Pinfold Consultants Inc. prepared a report in 2020 for the Greater Saint John Regional Task Force Analysis. It is also understood that a comparison was drawn between Fredericton, Moncton, and Saint John, three New Brunswick cities, which have vastly different socioeconomic characteristics. The report suggested that the value of residential properties within 2 km of industrial properties is negatively impacted by comparing Saint John that has industry within the core to Moncton and Fredericton that have industry at their outskirts. The relevance of the report is not recognized for this Project. The Mill, in various forms, has existed since 1836. Residential development has continued to grow and in some instances densify around the Mill site since that time.

It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000.

11. What is the forecasted impact to property values within a 2 km radius over the life of the project? Reference material please for calculation

During preparation of the Environmental Impact Assessment (EIA) document, the Project team reviewed the property assessments and sales records for 519 single-family residential properties within the Milford and Randolph Area. The attached Google Earth image shows the single-family residential properties that were reviewed (*i.e.*, red polygon) and a 2 km radius (*i.e.*, red circle) around the Project site (*i.e.*, yellow pushpin). Overall, no negative impacts to property values were identified, which is the reason why it was not included in the EIA document.

It is not believed that this Project will negatively affect property assessment values in the area. This is based on our detailed review of the local property assessment values presented below. The majority of these homes have existed adjacent to the Mill site since 1951 and their values have continued to increase. The Project team also believes that the beautification work along Milford Road will improve aesthetics of the area.

NB Property Assessment determines an assessed value for each real property in New Brunswick on an annual basis. A property's assessment reflects the property's market value. Market value is the price the property would likely sell for on the open real estate market on January 1 of each assessment year for which the assessment was made. The Province's assessment process is the most common method of property assessment used in North America. It is based on market value because it is transparent, easy to understand, and a fair and realistic measure of a property's value. The Province's assessors look at a variety of factors when assessing the value of a property including lot size, sale prices of homes and properties in the area, property condition, age of buildings, and any recent renovations and/or improvements made to the property. More information on how a property is assessed can be found on the Province's website at: <https://www2.snb.ca/content/snb/en/sites/property-assessment/understanding/valued.html>

The 2022 assessed values of New Brunswick properties reflect a strong real estate market provincially. While 28 % of properties showed no change in assessed value when compared to 2021, 28 % of properties increased by up to 5 %, and 23 % increased ranging from 5 % to 10 %. While 19 % increased by greater than 10 %, 77 % of those are protected by the Province's Spike Protection Mechanism whereby the increase is phased in over time to make assessment growth much more stable and predictable.

Within the Milford and Randolph areas of west Saint John, there are approximately 659 properties (*i.e.*, vacant land, residential, institutional, commercial, and industrial) within the Service New Brunswick database. Of those, 85 % (*i.e.*, 562) saw a property assessment increase between 2021 and 2022, 1 % (*i.e.*, 6) experienced a decrease, and 14 % (*i.e.*, 91) showed no change. These data suggest that property values in the Milford and Randolph areas grew more, on average, than New Brunswick as a whole.

Because property assessments were frozen across the Province between 2020 and 2021, assessment changes over the past five years were also reviewed. Those data show that 82 % (*i.e.*, 542) of those same properties showed an assessment increase, 5 % (*i.e.*, 34) experienced a decrease, and 13 % (*i.e.*, 83) saw no change. On average, assessments increased by 19 % over those five years (*i.e.*, 2018 to 2022).

The Saint John Real Estate Board reported on 13 January 2022 that Saint John 2021 MLS® home sales smashed the record set in 2020. During 2021, 3 142 residential units were sold. Sales were up in 2021 by 21 % over the 2020 annual sales setting record. Buyers are fiercely competing over a low inventory, which is driving price growth; the composite benchmark price extended the streak of double-digit year-over-year percentage gains to 15 months in December 2021. The average price of homes sold in December 2021 was \$249 527, up 31 % from December 2020.

COMMENTER J

Looking specifically at single-family residential, there are 519 properties in the Milford and Randolph area. Within the past five years (*i.e.*, 2018 to 2022), the average assessment for those properties increased by almost 13 %. The average value of a single-family residential property increased from about \$151 850 in 2018 to \$167 160 in 2022. The Saint John Real Estate Board expects record sales prices to continue in the foreseeable future.

Attached are the records that were used to calculate the above information.

12. What is the 30 to 50 year forecasted decrease in property tax revenue to the City of Saint John? Reference material please for calculation

This question would best be directed to New Brunswick's property assessors. The Project team does not anticipate a decrease in property tax revenue to the City of Saint John as a result of this proposed Project. Property taxes on the Mill property will increase as a result of the proposed Project, which will generate more property tax revenue for the City of Saint John.

13. What is the benefit for the residents that reside within 2 km of the proposed site? Reference material please for calculation

Please refer to the response to 11 above.

14. What do the residents of Saint John benefit from this site location? Calculation please

Please refer to the response to 11 above.

15. Does IPP meets the current PPER requirements?

Absolutely IPP meets the 1992 Pulp and Paper Effluent Regulations (PPERs). This is demonstrated in the data included within Table 8 of the EIA document. If the Mill was not meeting the 1992 PPERs, it would not be permitted to operate.

16. There was a court ordered mandate? Under what regulations were the court orders completed? Copies of the court documents and mandates please

IPP is committed to the long-term environmental sustainability and economic viability of the Mill. This proposed Project will prepare the Mill for expected future changes to environmental regulations and that is beneficial for the community, the environment, and the Mill.

IPP was fined under the federal *Fisheries Act* related to self-reported environmental incidents. None of those self-reported incidents resulted in observed environmental harm or damage to the Saint John River watershed, nor were there any observed or reported fish deaths. Although part of the court agreement, as reported in the media, is to build a new ETF, IPP has been considering building a facility since 1992. This ETF design and technology goes above and beyond that necessary within the court agreement. The detailed court agreement is not a public document.

17. The property on Milford Road was rezoned in the early 2000's for the LNG pipeline. Special restrictions were put on that parcel of land at that time that restricted further development. When were those restrictions lifted? I'd like to have minutes to the zoning meetings please?

There was no rezoning on IPP's property for the LNG pipeline built in the early 2000's; however, in July 2003, Maritimes & Northeast Pipeline Limited Partnership (M&NPP) registered a 30 m wide easement / right-of-way on the Mill property. The Mill property where the pipeline easement was placed was already zoned heavy industrial, which was appropriate zoning for installing the pipeline.

COMMENTER J

Property re-zoning is all done within the public realm and in Saint John comprises public meetings with the Planning Approval Committee and Common Council. No rezoning was required so there are no rezoning meeting minutes available.

With respect to M&NPP's 30 m pipeline right-of-way, there are restrictions as to what activities can occur. Permanent structures are prohibited because the ability to access and maintain the pipeline must not be impaired. Permanent structures include, but are not limited to, houses, trailers, mobile homes, poles, decks, tool sheds, garages, swimming pools, leaching fields, and septic tanks. Although fences may be placed on the right-of-way, fence posts must be located a minimum of 1.5 m from the pipeline. Driveways, road, and parking lots are generally permitted if they are built to M&NPP's standards. The National Energy Board of Canadian Standards Association regulations require that M&NPP maintain a safe amount of cover over the pipeline. Accordingly, the grade over the pipeline cannot be reduced or increased without permission from M&NPP. Shrubs and bushes may be planted on the right-of-way provided they are less than 1.2 m in height at maturity and are not within 3 m of the pipeline. Plants and trees that grow taller than 1.2 m are not permitted because they inhibit access and hinder aerial surveillance of the right-of-way.

IPP is committed to working within the existing guidelines for maintaining pipeline integrity.

18. I believe that the court order were a result of DFO charges. If so, does the EIA have a federal component since DFO is involved?

EIA approval is the first step in the environmental permitting process. As described in Section 6 of the EIA document, there are several federal, provincial, and municipal permits, authorizations, or approvals that may be required for various components of the proposed Project. Federal Regulators, such as the Department of Fisheries and Oceans and Environment and Climate Change Canada, are included as members of the EIA Technical Review Committee.

No federal approvals are required for building and operating the ETF component of the Project. Federal permit, authorizations, or approvals are only required for the water use reduction component of the Project.

19. Sheldon's point was not a considered location during this EIA. Why?

Section 2.6.2 of the Environmental Impact Assessment (EIA) document describes five locations in west Saint John that were considered for constructing and operating the environmental treatment facility: Bald Mountain; Gault Road; Saint's Rest; Mill West; and Lee Cove. The Saint's Rest site is the exact same location as the Sheldon's Point location considered in 1992 for the process water treatment system.

20. Your current report states that this proposed (northwest of the mill – Milford) site is still withing 100M of residential homes. Please provide me with engineered specific analysis of the rational for the change between 1993 and today?

In 1992, Irving Pulp & Paper, Limited (IPP) was proposing to build and operate a process water treatment system comprising an Aerated Stabilization Basin (ASB) / lagoon. At that time, ASBs and Activated Sludge Treatment (AST) were the standard for treating process water from pulp and paper mills. Technology has advanced considerably in the 30 years between 1992 and 2022.

For this Project, six different treatment technologies were considered: ASB; AST; Moving Bed Biofilm Reactor (MBBR); Nutrient Limited Biological Activated Sludge (NLBAS); Sequential Batch Reactors (SBR); and Membrane Biological Reactors (MBR). As described in Section 2.6.3 of the EIA document, the six technologies were assessed in detail. ASB, AST, and MBR technology did not meet the current needs assessment for IPP. SBR technology was considered too complex in its design and was dropped for further consideration. The remaining two technologies, MBBR and NLBAS, were further assessed through bench-top studies and piloting (*i.e.*, operating small-scale treatment systems onsite using actual process water). MBBR was the clear leader and selected for this Project because it is easy to operate, recovers

COMMENTER J

quickly from upsets, uses tanks with a small footprint, integrates well within the existing pollution prevention systems, and IPP is familiar with the technology having operated a small MBBR onsite since 1993.

Although ASB technology can achieve treatment levels required under the 1992 Pulp and Paper Effluent Regulations (PPERs), it will not be able to achieve treatment levels under proposed future changes to the PPERs. Another advantage of MBBR over ASB is the reduction in overall facility footprint.

The ASB treatment facility proposed in 1992 would have had a footprint over three times the size of the technology being proposed today as part of this Project. That footprint size is why the Milford Road site was discounted in 1992 because there was insufficient space to build and operate an ASB.

21. My follow up questions depends on the answer I received. Will that time be available?

As indicated within the notice placed in the *Telegraph Journal* on 19 March 2022 comments from the public are requested on or before 20 April 2022. As indicated within the materials distributed at the Open House on 23 March 2022, Irving Pulp & Paper Ltd. (IPP) is following the Province's Environmental Impact Assessment (EIA) process that includes public consultation. All questions received related to the Environmental Impact Assessment before 20 April 2022 will be included along with answers within the Public Involvement Summary submitted to the Province that is scheduled for release on or before 20 May 2022.

All questions submitted through IPP's website (www.ippmodernization.com), to the consultant, and to the EIA Project Manager will be answered in writing as part of the public review process. Those questions and answers will be taken into consideration during the EIA process and as the Project advances.

If you have questions after 20 April 2022, you can still submit them.

22. Is there any opportunity for consultation with you regarding incomplete or unanswered questions?

As was offered to you at the Open House on 23 March 2022, IPP representatives and the consultant will sit down with you and have a discussion regarding the proposed Project. If you are agreeable to this, please provide some times and dates that will work for you.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.



Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

Serving Our Clients' Needs First

The content of this email is confidential and intended for the recipient specified in the message only. It is strictly forbidden to share any part of this message with any third-party, without a written consent of the sender. If you received this message by mistake, please reply to this message and follow with its deletion. This will ensure such a mistake does not occur in the future.

COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 12, 2022 8:25 PM
To: Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL)
Subject: EIS - Appendix IX Valued Environmental Component Impact Assessment Matrices
Attachments: Housing value Curry 2015.pdf

Dr. Alexander,

The following statement was extracted from your email dated April 7, 2022:

“It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000”

Appendix IX of the EIA documents does not include any documentation for the financial loss incurred by the city and residents as a result of this project; 11% drop in value as noted in the attached report published in 2015.

Based on the information you provided and the 11% decrease in value

- **Impact to property owners**
 - \$40,000,000 to \$70,000,000 drop in value to the residents
- **Impact to residential property tax to the city**
 - Annually = \$688,000 to \$1,204,000
 - 50-year decrease = \$34,400,000 to \$60,200,000
- **Combined impact**
 - **Between \$74,000,000 to \$130,200,000**

My question:

1. How will the residents be compensated for the decrease in property values excluded Appendix IX?
2. How will the City be compensated for the decrease in property values?

I look forward to your response,

[REDACTED]

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COMMENTER J

NOTE: This article was attached to a previous email of this Commenter so was not included below for brevity.

COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 12, 2022 10:07 PM
To: Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL)
Subject: Zoning
Attachments: Zoning By-Law_0.pdf

Dr. Alexander,

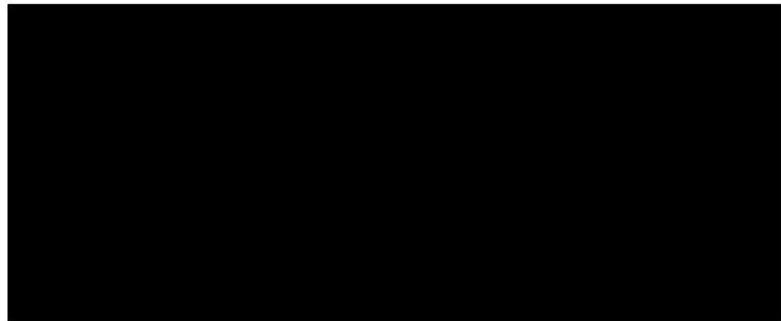
In the EIA report, the zoning of the proposed site is identified as Heavy Industry.

Table 12-1 page 186 on the attached document identifies “Wastewater Treatment and Water Treatment” as requiring zoning of “US”. Pages 211 and 212 outline the specifics of the “US” zoning requirements.

Has a rezoning application been made to the City to change the zoning HI to US as required by the attached zoning by-laws?

If not, when will that application happen?

I look forward to your response,



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NOTE: Although attached to the email, the City of Saint John Zoning By-Law was not reproduced below. Only pages 1, 211, and 212 are attached. The complete document can be accessed at: https://saintjohn.ca/sites/default/files/2021-02/Zoning%20By-Law_0.pdf

COMMENTER J



12 Industrial Zones

The following Table 12-1 is intended to provide a general list of the uses allowed in the Industrial zones. This table is provided for convenience only and reference should be made to each zone for a complete list of permitted uses, conditional uses, conditions of use, zone standards, as well as to the General Provisions of this By-law.

Table 12-1

Use	Zone Permitted			
Air Transport Facility			IH	T
Animal Shelter	IL	IM		
Asphalt Plant			IH	
Auction Facility		IM	IH	
Bulk Fuel Storage Depot			IH	
Business Support Service	IL	IM		
Caretaker Dwelling				PQ
Car Wash	IL	IM		
Cannabis Processing Facility	IL	IM		
Cannabis Production Facility		IM	IH	
Cement Plant			IH	
Composting Facility				USL
Concrete Plant			IH	
Contractor Service, Household	IL	IM		
Crushing and Washing of Aggregates				PQ
Distribution Facility	IL	IM		
Electrical Generation Station			IH	
Equipment Sales and Rental, Heavy	IL	IM		
Excavation of Deposits				PQ
Fleet Service	IL	IM		
General Contractor Service		IM	IH	
Government or Utility Works Depot				US
Harbour Facility			IH	T
Heavy Industrial Use			IH	
Kennel	IL	IM		
Landfill				USL
Landscape Material Supply	IL	IM		

COMMENTER J



Use	Zone Permitted		
Light Industrial Use	IL	IM	
Marshalling Yard		IH T	
Medium Industrial Use	IM	IH	
Office and Storage Buildings		PQ	
Outdoor Storage	IM	IH T	
Parking/Storage of Trucks & Heavy Equipment		PQ	
Pit		PQ	
Quarry		PQ	
Recreation Facility	IL	IM	
Recreational Vehicle Sales and Service, Large	IL	IM	
Recreational Vehicle Sales and Service, Small	IL	IM	
Recycling Facility		IM IH USL	
Redemption Centre	IL	IM USL	
Research and Development Facility	IL	IM	
Sales Centre, Model Home	IL	IM	
Scrap or Salvage Yard		IM IH	
Screening of Aggregates		PQ	
Self-Storage Facility	IL	IM	
Service and Repair, Industrial		IM IH	
Special Industrial Use	IL	IM	
Storage of Aggregates, Topsoil & Overburden		PQ	
Topsoil Removal		PQ	
Towing Service		IM IH	
Transportation Depot		IM IH T	
Transportation Terminal		IH T	
Utility Distribution Structure, Major			US
Vehicle Body and Paint Shop	IL	IM	
Vehicle Repair Garage	IL	IM	
Vehicle Sales, Incidental	IL	IM	
Warehouse Facility	IL	IM T	
Wastewater Treatment Facility			US
Water Treatment Facility			US
Weigh Scales		PQ	

COMMENTER J

[2016, C.P. 111-35], [2017, C.P. 111-41], [2018, C.P. 111-52], [2018, C.P. 111-53]



12.6 Utility Service (US) Zone

Municipal Plan Context



The Utility Service (US) zone accommodates a range of utility and service infrastructure, including operations centres and associated works yards.

The Utility Service (US) zone is intended for land inside or outside of the Primary Development Area in an appropriate designation.



12.6(1) Permitted Uses

Any land, building, or structure may be used for the purposes of, and for no other purpose than, the following, which may include outdoor storage as an accessory or secondary use subject to paragraph 12.6(2)(a):

- Government or Utility Works Depot, subject to paragraph 12.6(2)(b);
- Library; [2015, C.P. 111-13]
- Utility Distribution Structure, Major;
- Wastewater Treatment Facility;
- Water Treatment Facility;
- The *existing* use described in Schedule E: Exceptions, of each lot respectively, identified therein as being located in the US zone.

12.6(2) Conditions of Use

- (a) Outdoor Storage permitted as an accessory or secondary use to a main use in subsection 12.6(1) shall be subject to the following:
- (i) The yard shall not occupy any required front or flankage yard or any area required for parking;
 - (ii) The yard shall be completely enclosed by a solid board-on-board fence or a chain-link fence entirely covered by filler strips woven into the mesh or a walled structure or a berm, or any combination thereof, having a minimum height of 2 metres and including any gate constructed in the same manner and height as the enclosure;
 - (iii) Notwithstanding the above, the yard may instead be screened in accordance with paragraph 6.1(k), or by any combination of permitted structures, berms and landscaping; and [2016, C.P. 111-35]

COMMENTER J



- (iv) When the yard is developed within 15 metres of an abutting lot in a Residential zone, the yard shall also be in accordance with section 5.5.
- (b) A Government or Utility Works Depot permitted in subsection 12.6(1) shall not be located within 60 metres of a Residential zone.

12.6(3) Zone Standards

(a)	Minimum Lot Area	1,500	square metres
(b)	Minimum Lot Frontage	30	metres
(c)	Minimum Lot Depth	45	metres
(d)	Minimum Front Yard	7.5	metres
(e)	Minimum Rear Yard	7.5	metres
(f)	Minimum Side Yard	7.5	metres
(g)	Minimum Flankage Yard	7.5	metres
(h)	Maximum Building Height	11	metres
(i)	Maximum Lot Occupancy	40	percent of the lot
(j)	Other Requirements	In accordance with the General Provisions, Parts 4-9	

COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 12, 2022 10:17 PM
To: Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL)
Subject: Website questions

Dr. Alexander,

How often are the questions and answers posted onto the website? I am looking for answers to questions residents have sent, but do not see the question or the answer.

When will those questions be posted and the answers provided? How long after sending the answer is the question and answer posted on the website?

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures



The content of this email is confidential and intended for the recipient specified in message only. It is strictly forbidden to share any part of this message with any third party, without a written consent of the sender. If you received this message by mistake, please reply to this message and follow with its deletion, so that we can ensure such a mistake does not occur in the future.

COMMENTER J

Matthew Alexander

From: Matthew Alexander
Sent: April 14, 2022 1:27 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Ms. [REDACTED]:

Thank you for your emails regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. The following statement was extracted from your email dated April 7, 2022: “It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000”

Appendix IX of the EIA documents does not include any documentation for the financial loss incurred by the city and residents as a result of this project; 11% drop in value as noted in the attached report published in 2015.

Based on the information you provided and the 11% decrease in value

- **Impact to property owners**
 - **\$40,000,000 to \$70,000,000 drop in value to the residents**
- **Impact to residential property tax to the city**
 - **Annually = \$688,000 to \$1,204,000**
 - **50-year decrease = \$34,400,000 to \$60,200,000**
- **Combined impact**
 - **Between \$74,000,000 to \$130,200,000**

How will the residents be compensated for the decrease in property values excluded Appendix IX?

The following research paper provided was reviewed:

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Although the proposed Project is a new component of the Reversing Falls Mill site, the overall site would not be considered an “opening” by *Currie et al.* [2015], which means a new industrial facility emitting toxic pollutants. The land along Milford Road was incorporated within the overall Mill site in 1951.

The work by *Currie et al.* [2015] is focused on plants that present clear and present health and safety risks for the environment. As noted throughout the Environmental Impact Assessment (EIA) document, this proposed Project will yield substantial environmental benefits.

2. How will the City be compensated for the decrease in property values?

COMMENTER J

Please refer to the response to 1.

3. In the EIA report, the zoning of the proposed site is identified as Heavy Industry. Table 12-1 page 186 on the attached document identifies “Wastewater Treatment and Water Treatment” as requiring zoning of “US”. Pages 211 and 212 outline the specifics of the “US” zoning requirements. Has a rezoning application been made to the City to change the zoning HI to US as required by the attached zoning by-laws?

A rezoning application has not been made to the City of Saint John to change the zoning Heavy Industry to Utility Service.

As noted in Section 6.3.1 of the EIA document, the current zoning is most likely appropriate and will not have to be rezoned. This has been confirmed with the representatives from the City of Saint John. Wastewater treatment facility under the Utility Service zoning refers to municipal or sanitary wastewater. The Environmental Treatment Facility will be strictly for polishing effluent from a heavy industrial facility.

It is worth noting that Irving Paper’s aerated stabilization basin in east Saint John that treats effluent from the manufacturing of paper is located on a property that is zoned Heavy Industrial and not Utility Service, Irving Oil’s treatment facility in east Saint John that treats process water is located on a property that is zoned Heavy Industrial and not Utility Service, there is a facility in the Spruce Lake Industrial Park that treats contaminated soils that is zoned Medium Industrial and not Utility Service.

4. If not, when will that application happen?

At this time, the Project Team has identified no issues with the zoning of the property as it is Heavy Industrial; however, representatives with the City of Saint John will confirm this. Representatives with the City of Saint John’s Community Planning Department are members of the EIA Technical Review Committee (TRC). If the City’s representatives see any issues with the current zoning during their review, they will identify them.

The lands are currently zoned Heavy Industrial and several recent upgrades, such as the new pulp dryer (2019 - 2022) and the continuous cooking digester and chip handling project (2014 - 2016), which both underwent EIA review were completed on the same property (*i.e.*, PID 55162416). City representatives on the TRC during those EIA reviews did not identify any zoning issues or concerns.

5. How often are the questions and answers posted onto the website? I am looking for answers to questions residents have sent, but do not see the question or the answer.

The Frequently Asked Questions posted on Irving Pulp & Paper, Limited’s (IPP) website for this Project (www.ipmodernization.ca) were generated based on information collected at the Public Open House held on 23 March 2022 at St. Mark’s United Church, 50 Dexter Drive in West Saint John from 3PM to 8PM.

There is no requirement to have a Project website, nor is there a requirement to provide continuous updates of questions asked and the responses provided. IPP hosting a website and an Open House are voluntary to help the public learn more about the proposed Project.

The Project Team is following the NBDELG’s EIA process. As noted in Section 5 of the EIA document, it is standard practice for the proponent to receive questions during the first 30 days after the Project has been registered with the NBDELG. The EIA was registered on 17 March 2022 and public questions are requested before 20 April 2022.

On or before 60 days have elapsed since registration, the proponent issues a Public Involvement report with all questions received and answers provided. That report, which is due for submission on 20 May 2022, will form part of the TRC’s review. The Public Involvement report will be posted to the Project website (www.ipmodernization.ca) and

COMMENTER J

the NBDELG's portal for this

Project: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

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7. How long after sending the answer is the question and answer posted on the website?

Please refer to the response to 5 and 6.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 13, 2022 6:37 AM
To: [REDACTED] Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL); Harty, Crystale (ELG/EGL)
Subject: Re: IPP EIA 4561-3-1578

That question was already asked by [REDACTED].

He gave her a fluff answer and we redirected the question again.

Get [Outlook for iOS](#)

From: [REDACTED]
Sent: Wednesday, April 13, 2022 6:13:53 AM
To: Matthew Alexander <matt.alexander@fundyeng.com>
Cc: Mbaya, Patrick (ELG/EGL) <patrick.mbaya@gnb.ca>; Harty, Crystale (ELG/EGL) <Crystale.Harty@gnb.ca>
Subject: IPP EIA 4561-3-1578

Mr. Alexander,

In relation to the project 4561-3-1578, when these properties were all acquired and merged into what is referenced as heavy industrial is a question that has yet to be answered..

According to Crystale Harty these answers are to be provided by the proponent;

" Zoning, dates of rezoning and conditions attached to the properties that now make up the property are in question, these are not technical questions, who is responsible to provide these answers?

Zoning related questions should be directed to the proponent and they will respond."

Please provide the dates of purchases of the properties that now comprise the property between Milford Road and the Falls and the dates of the rezoning by Common Council along with all conditions attached.

Thank you

--
[REDACTED]

COMMENTER J

Matthew Alexander

From: [REDACTED]
Sent: April 19, 2022 7:34 PM
To: Matthew Alexander
Cc: Mbaya, Patrick (ELG/EGL)
Subject: RE: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: [REDACTED] EIA IPP April 18_2022.pdf; April 1 Second Submission Neighbourhood Input Proposed Irving Waste Water Facility (1).pdf; Neighbourhood Input Proposed Irving Waste Water Facility (003).pdf; Engineering By-Laws-2021-3.pdf

Dr. Alexander,

Thank you for your response. I would like to redirect a few key points and ask for clarification. **I have attached Mr. [REDACTED] unanswered questions submitted on March 31, April 1, and his follow up from April 18th.**

ENGINEERING

WHERE IS THE ENGINEERING ANALYSIS TO SUPPORT YOUR STATEMENT and the findings of the EIA report? AS NOTED BY MR. [REDACTED] (please see attached).

Engineering Code of Conduct

-sections:

1.8," be aware of and ensure that clients and employers are made aware of societal and environmental consequences of actions or projects and endeavour to interpret **engineering/geoscience issues to the public in an objective and truthful manner;**

Question : How can the report be objective as required by 1.8 if the engineering analysis is not completed as identified by Mr. Steels?

3.2 have due regard for the safety of life, health and **welfare of the public** and employees **who may be affected by the work for which they are responsible.**

Question : How can the regard for the welfare of the public who may be affected by the work for which they are responsible outlined in 3.2 be considered if the engineering analysis is not completed as identified by Mr. Steels?

3.5 **refrain from expressing publicly opinions on subjects relating to engineering or geoscience unless they are informed of the facts relating thereto**

Question : How can the authors be informed of the facts relating thereto as required in 3.5 if there is no analysis to support the findings as identified by Mr. Steels?

4.6 not sign or seal drawings, specifications, plans, reports or other documents pertaining to engineering works or systems or geoscience works unless actually prepared or verified by them or under their direct supervision;

COMMENTER J

Question : How can this report meet this requirement if there is no engineering analysis as identified by Mr. Steels?

4.17 be aware of and endeavour to ensure that clients and employers are made aware of societal and environmental consequences of actions or projects and endeavour to interpret engineering and geoscience issues to the public in an **objective and truthful manner**

Question: How can this report meet the “objective and truthful manner” required in 4.17 without engineered analysis or objective third party studies as identified by Mr. Steels and me?

EIA PURPOSE – IS THE FOLLOWING AN ACCURATE STATEMENT?

The purpose of an EIA is **to determine the potential environmental, social, and health effects of a proposed development**, so that those who take the decisions in developing the project and in authorising the project are informed about the likely consequences of their decisions before they take those decisions.

Question: How can the TRC be informed if the engineering analysis or independent studies are not included?

Economic Impact Statement

At the open house in March, **I was informed by a group, of which you were one, that no study was done because only benefits of the project were required as part of the Economic Impact Statement calculation.**

After requesting specifics in writing, I received a summary analysis that the “project team” did using historical increases in property values and the forecast for the market. **Nothing was included regarding heavy industry’s impact on property values.**

Question: When was this analysis completed? Who were the member of the project team that did it? How are realtors/subject matter experts on Economic impact?

Question: Which statement is true? There was no study done because only benefits were required? or the “project’s teams” analysis/opinion on property value not changing?

The reports done by subject matter experts were dismissed. Two were provided. There are many others available that state a similar outcome.

Question: Who are the members of the “project team”? What are their professional credentials? Why should the residents and the TRC accept the “project team’s opinion” and not the studies completed by objective subject matter experts?

LAND & Zoning

Dr. Alexander statement - “The land along Milford Road was incorporated within the overall Mill site in 1951.”

Our resident group has been trying to get confirmation of this from you for weeks with zero success. There is no documentation to support your statement. **There is documentation that shows that the land was not heavy industry on or before 1951.** Residents know that there has been no heavy industry on the land fronting on Milford Rd except for the natural gas pipeline in 2006 to 2009.

COMMENTER J

THE RESIDENTS BELIEVE that the land purchased by IPP in 1951 was never rezoned. IPP has amalgamated pin's into the IPP PIN that is zoned heavy industry.

Amalgamating into a heavy industry pin does not change the zoning of the original PIN. Unless you can provide rezoning documentation, your statement is unsubstantiated.

I look forward to your response,

[REDACTED]

From: Matthew Alexander <matt.alexander@fundyeng.com>
Sent: April 14, 2022 1:27 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Ms. [REDACTED]:

Thank you for your emails regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. The following statement was extracted from your email dated April 7, 2022: "It is not known how many residential properties are within 2 km of the proposed Project site, but it is probably on the order of 2 000 to 3 000"

Appendix IX of the EIA documents does not include any documentation for the financial loss incurred by the city and residents as a result of this project; 11% drop in value as noted in the attached report published in 2015.

Based on the information you provided and the 11% decrease in value

- **Impact to property owners**
 - **\$40,000,000 to \$70,000,000 drop in value to the residents**
- **Impact to residential property tax to the city**
 - **Annually = \$688,000 to \$1,204,000**
 - **50-year decrease = \$34,400,000 to \$60,200,000**
- **Combined impact**
 - **Between \$74,000,000 to \$130,200,000**

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COMMENTER J

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COMMENTER J

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Thanks,

Matt Alexander

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Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER J

[REDACTED]
Saint John, NB. E2M 5P9
Sgsteels4@gmail.com

April 18, 2022

Matt Alexander, Fundy Engineering, matt.alexander@fundyeng.com
cc Patrick Mbaya, Government of New Brunswick, Patrick.Mbaya@gnb.ca

Mr. Alexander,

Donna Mazerolle forwarded your response to my correct e-mail address. Your response to my EIA questions, regarding the "Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill" continues to be incomplete. It does not address the necessary engineering analysis and associated reports regarding noise, odour, air quality and light for the specific locations and receptors nearby and adjacent to the new IPP facility.

Odour

Your reference to anecdotal, unsupported, and undocumented evidence from other operators regarding odour does not constitute documented rigorous engineered analysis. What are the actual odour effects on various nearby specific residential receptors? What are the effects on air quality at nearby specific residential receptors?

Light

Your response does not state what the actual increased lighting levels will be from the new IPP facility lighting at the property line and at nearby specific residential receptors along Milford Road. What are the changes in lighting levels at the IPP property line and nearby residential receptors from the new lighting?

An engineered photometric lighting study is required to establish lighting levels along the IPP property line and at nearby specific receptors on Milford Road. The environmental impact of IPP lighting on nearby specific residences cannot be determined and there is no commitment from IPP to meet specific lighting performance targets. When will this engineered photometric lighting study be done?

Noise

The specific noise levels from the new IPP equipment and processes has not been determined at the various specific nearby residential receptors at various times of the day. The potential impact of the proposed landscaped berm for noise mitigation to the nearby specific residential receptors is unknown as an acoustic engineered study has not been completed. A proper assessment of the noise impact from the IPP facility to the specific nearby neighbourhood receptors cannot be made without an engineered acoustic noise study. Monitoring noise at a later date at the mill property as discussed does not allow for a proper acoustic environmental assessment at this time and does not commit IPP to meet specific acoustic performance targets. An acoustic study is needed as part of the EIA submission so when will it be done?

EIA requirements

In Section 2.3 of the EIA, you state: "*this EIA meets the requirements of the NBDELG (2018) Guide to EIAs and the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants*". In response to my question specific to the impact of odour within 500 m of a residence (Question 33), you state: "Those documents are guidelines, which are recommended, non-mandatory, optional procedures." Is this the approach the residents can expect for future IPP development along Milford Road?

Regards,

[REDACTED]
[REDACTED]

COMMENTER J

██████████
██████████
Saint John, NB E2M 5P9

March 31, 2022

New Brunswick Department of Environment and Local Government

To Whom It May Concern:

Re: Public Consultation : Response to Environmental Treatment Facility And Water Use Reduction Project at the Reversing Falls Mill,

EIA issued by Fundy Engineering/ Irving Pulp & Paper, March 17, 2022

We have become aware of the proposal to build a waste water treatment centre in our neighbourhood. The proposed Irving Pulp & Paper waste water facility borders a neighbourhood of homes, private businesses, churches, day care facilities, community centres, and municipal recreational sport facilities and fields. It is a neighbourhood where people for generations have lived, worked, played, and taken great pride in the community.

I am a retired Professional Engineer (P.Eng.– Retired, MBA) who until recently held licences in 6 provinces including New Brunswick. My engineering career includes many development and engineering projects across Canada including New Brunswick. I have reviewed the Environmental Impact Assessment, the Question and Answer Documents and Guidelines as referenced below.

Reference :

- a) Environmental Treatment Facility And Water Use Reduction Project at the Reversing Falls Mill, EIA issued by Fundy Engineering/ Irving Pulp & Paper, March 17, 2022 including the Questions and Answers document
- b) The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government , January 2018

I submit the following questions and comments to the New Brunswick Department of Environment and Local Government.

Section 1 : Noise

EIA Questions and Answers, Potential Impact Mitigation

1. WILL THERE BE NOISE OR ODOUR COMING FROM THE FACILITY
“This facility is not expected to generate additional noise or odour.”

EIA 4.4.2.2.4 , EIA Table 50 EIA

“During operation it is anticipated that there will be no change in sound emissions.”

“If there is a public concern regarding the possibility of additional sounds being emitted from the Project , additional vegetation could be planted within the landscaped berm.”

EIA 4.4.4.4.2 : Building will be 5.4 m above Milford Rd.

EIA Berm Figure 93, 94, 95 , 2.7.1.9

COMMENTER J

1. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional noise?
 - a. What are the current levels of noise at the various receptors (residences, businesses etc.) in very close proximity and within 2 kilometres at different times of day throughout the year? Ambient noise levels from existing sources vary during the day and night. What are ambient noise levels from these sources?
 - b. The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government, January 2018 section 3.0 requires that the existing ambient noise levels must be included in the EIA. The information provided in EIA 4.4.2.2 Sound Emissions is inadequate and does not meet proper engineering and planning practise. In the table in EIA 4.4.2.2, ambient noise is stated as typically 55 db at 15 m distance. There is no engineered data or analysis offered for this statement. Where are these levels measured? What are the levels at nearby receptors? What time of day are these levels measured?
 - c. A berm is proposed as a noise barrier with a few trees on top. The elevation of the top of the berm is not specified and may not be as high as the process building and its associated noise producing equipment. Process building will be 5.4 m above Milford Rd. as per EIA section 4.4.4.4.2. What is top of berm elevation? Is it higher than process building? Pictures provided imply it won't be as high.
 - d. In EIA, Figure 93, 94 and 95 the berm is shown as optional. Is the berm to be included or not?

The trees on the berm as presented are not an effective noise barrier and are unacceptable as they do not meet any engineered noise mitigation standard. There is no engineered data from an acoustic engineer supporting this design. In EIA, 4.4.2.2.4 *"If there is public concern regarding the possibility of additional sounds being emitted from the Project, additional vegetation could be planted within the landscaped berm"*. Adding more trees on the small berm will not provide any effective noise mitigation. In any case, adding mitigation effort after the facility is complete and operational is not guaranteed by IPP and is far too late in the process.

Typically, engineered acoustic walls are used as noise barriers. Examples can be seen on various highways, roads, commercial and industrial developments near residential communities across Canada. Wood fence noise barriers are often used in urban areas but they must meet engineered standards. Regardless of the type of noise barriers used it cannot be evaluated without a proper acoustic study.

- e. What will the noise levels be at the residence receptors in close proximity when all of the new equipment is included in the analysis?
- f. What will the noise levels be once the new facility and associated equipment is operational?

Residential receptors are extremely close to the proposed facility. There is no reference to a proper independent engineered noise acoustic study identifying noise receptors (residences, businesses, churches, day care, sports facilities etc.) that are closest and within a few kilometres and noise levels at various times of day and night due to the new facility. A noise study by an independent acoustic engineering firm with proper modelling can generate these results. At minimum, good development planning and engineering practise criteria requires this acoustic analysis and report. This needs to be done before any statement as per the EIA can be validated and the noise impact on residences in close proximity determined.

- g. Will an engineered acoustic report be issued to properly determine noise levels at nearby receptors?

Section 2: Light

EIA Questions and Answers, Potential Impact Mitigation

5. WILL THIS NEW FACILITY GENERATE A LOT OF LIGHT AND MAKE IT DIFFICULT FOR US TO SLEEP?

“There is a minimal lighting associated with this Project. For employee safety and for process and security monitoring, there will be some lighting. Those lights will be designed to downwards and limit the amount of light that can spill into adjacent areas.”

Reference : EIA 2.7.2.6.1, 2.7.1.8.1.8, 4.4.4.4.1

2. How will the light at night impact the neighbourhood?

Exterior lighting at any retail, commercial and industrial site is always designed to point downwards and not into adjoining properties as this is basic good engineering practise and required by most municipalities. This statement does not mean that lighting levels will not affect nearby residences. Existing lighting levels at Milford Road residences must not be increased by the new facility exterior lighting.

As per EIA, Exterior lighting will be installed at 4.6 m above grade every 9m to 12 m. Actual lights and fixture strength are not specified only that they are LED. Lighting will be on at all times during the night.

EIA states light interference will be minimized so minimal effect on residences. There is no supporting documentation to specify what this means and what actual lighting levels will be. There is no commitment to any light level adjacent to residences and along Milford Rd.

There is no photometric (lighting) study presented to determine the light levels along the Irving property line and Milford Road. Lighting levels are not specified. Photometric studies are standard requirements for development approvals in urban municipalities in Canada.

The effect of the new exterior lighting on nearby residences cannot be determined from the EIA.

Will an engineered photometric lighting study be completed and mitigation implemented to ensure actual minimal specified lighting levels on nearby residences?

Section 3 : Odours and Emissions

Questions and Answers, Potential Impact Mitigation

1. WILL THERE BE NOISE OR ODOUR COMING FROM THE FACILITY

“This facility is not expected to generate additional noise or odour.”

EIA 4.4.4.2 Potential Impacts

Between the late 1990s and early 2000s, the mill reduced TRS emissions by about 80% which is demonstrated in the ambient air quality monitoring data included in Section 3.1.2.2. This project will not result in any material changes to the current TRS emissions from the Mill and there should be no changes in the surrounding air shed.

3. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?
 - a. The Statement regarding TRS does not address the odours generated by operations at the waste water facility but rather odour from the further away mill facility. Will the new waste water facility produce odours that will affect nearby residences?
 - b. What are the current odours at nearby receptors (residences, businesses, churches, day care etc.) and not just at the monitoring station? The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government, January 2018 section 3.0 requires that the existing air quality levels must be included in the EIA.

EIA 4.4.4.3 Proposed Mitigation

“Odour abatement systems (i.e. air scrubbers in the process building), or systems that help mitigate the generation of odours (e.g., subsurface air blowers, solids removal systems, etc.) should be maintained on appropriate schedules to limit the amount of odours generated.”

“IPP’s protocol for handling odour complaints should be reviewed to ensure that measures exist for receiving, investigating, managing, and tracking odour complaints from the environmental treatment facility in a timely manner.”

4. These statements confirm the presence of odours produced by the waste water facility. What level are the odours going to be limited to? What liability does IPP have to ensure the nearby residences are not affected by odour?
 - a. The proposed waste water technology and open tanks will release odours. Where is the technical engineered analysis and modelling determining odour levels at nearby receptors (residential, business, churches, day care, recreational municipal sports facilities etc).
 - b. What assurances can be provided to ensure IPP is responsible and liable to ensure nearby residential zoned properties are not negatively affected by odour?

“Irving Pulp & Paper is a modern mill with a strong environmental culture, which is reflected in mill collection and reuse systems that ensure a clean effluent with very little odour. We do not anticipate odour from the tanks.”

5. Clean effluent and very little odour are subjective terms. What engineered data supports this? Can this be quantified?

- a. Open tanks of effluent and biological treatment have the potential to give off odour and emissions to nearby receptors including residences. This is precisely the reason that a protocol to handle odour complaints from residences is recommended by Fundy Engineering in the EIA.
- b. This statement is not supported by any evidence, data or engineered analysis.

*“This is a water treatment facility, which treats **water only**. Because the water is warm, there could, at times, be some light water vapour visible near the surface of the tanks.”*

“Ventilation from the process building will be tempered, to prevent any dust, odours, or particulate matter from the part of the treatment process from leaving the building.”

- 6. The area is zoned as heavy industrial not water treatment. Is rezoning required?
- 7. The first statement that the facility “treats water only” is misleading. The process treats effluent from the mill which contains water, other materials/substances and chemicals. If it was pure water it would not need treatment. What are the actual emissions?
- 8. There is no data or engineered analysis to quantify emissions to nearby receptors in the EIA . There is no modelling or dispersion information to indicate what the emissions (type and level) will be at nearby receptors and in the general area. Where is the information to quantify actual emissions?
- 9. What are the emissions? Monitoring data from East Saint John and uptown Saint John is irrelevant and not adequate as it does not quantify existing air quality in the affected area. The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government, January 2018 section 3.0 requires that the existing ambient air quality must be included in the EIA.
- 10. Will the air quality levels in the affected areas and within 2 km of the waste water facility for all emissions be established and presented?

Please provide a response to my questions and concerns. The EIA as presented is incomplete as information is missing. The proposed facility as presented will negatively affect the very close residential zoned properties.

Yours truly,

██████████
██████████
██████████

COMMENTER J

██████████
██████████
Saint John, NB E2M 5P9

April 1, 2022

New Brunswick Department of Environment and Local Government

To Whom It May Concern:

Re: Public Consultation : Response to Environmental Treatment Facility And Water Use Reduction Project at the Reversing Falls Mill, Second Input Submission.

EIA issued by Fundy Engineering/ Irving Pulp & Paper, March 17, 2022

On March 31, 2022, I submitted questions and comments regarding the proposal to build a wastewater treatment facility. This second submission is specific to the Wastewater Treatment sector requirements “Additional information Requirements for Wastewater Treatment Projects version 04-11-25” – issued by the Government of New Brunswick.

The proposed Irving Pulp & Paper wastewater facility borders a neighbourhood of homes, private businesses, churches, day care facilities, community centres, and municipal recreational sport facilities and fields. It is a neighbourhood where people for generations have lived, worked, played, and taken great pride in the community.

I am a retired Professional Engineer (P.Eng.– Retired, MBA) who until recently held licences in 6 provinces including New Brunswick. My engineering career includes many development and engineering projects across Canada including New Brunswick. The Environmental Impact Assessment, the Question and Answer Documents and Guidelines have been reviewed.

References :

- Additional Information Requirements for Wastewater Treatment Projects version 04-11-25

EIA Questions and Answers, Potential Impact Mitigation

1. WILL THERE BE NOISE OR ODOUR COMING FROM THE FACILITY

“This facility is not expected to generate additional noise or odour.”

Additional information Requirements for Wastewater Treatment Projects version 04-11-25 issued by the New Brunswick Government:

Definition

This guideline is applicable to all municipal and industrial waste water disposal or treatment facilities, other than domestic, onsite sewage disposal systems.

Section 2.0 Undertaking

v) Siting Considerations:

- *Discuss the location with respect to existing sensitive land issues (e.g. residential properties, schools, recreational, facilities, tourist areas, etc.)*

Section 4.0 Summary of Environmental impacts

All anticipated impacts should be described and discussed. These will depend on the scope and complexity of the project as well as the project location. See registration Guide for further information. Examples of impacts resulting from this class of project may include but are not limited to the following:

COMMENTER J

- *Odour Impact – Provide an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property*

Questions and Comments

1. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?

In EIA Section 2.3: ***“this EIA meets the requirements of the NBDELG (2018) Guide to EIAs and the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants”***

In EIA, ***Table 3 Summary of the potential environmental constraints for locations evaluated for siting the environmental treatment facility proposed for the Reversing Falls Mill in Saint John New Brunswick , Other Potential Constraints, Residential Receptors, Mill West, 100m to nearest residence on Milford Road.***

The proposed Irving Pulp & Paper wastewater facility borders a neighbourhood of homes, private businesses, churches, day care facilities, community centres, and municipal recreational sport facilities and fields. As per the EIA, the nearest residence on Milford Road is 100 m from the facility.

- a) What will the odour impact from the proposed waste water facility be on the neighbourhood? It must be determined that these sensitive areas will not be affected by odour. Will information be provided to confirm the odour impact on the adjacent neighbourhood?
- b) Due to the sensitive adjacent receptors in very close proximity to the proposed facility, it is imperative that the requirement of the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants to provide an odour impact analysis within 500 m be met. This is not included in the EIA. Where is this information?
- c) The statement that the EIA meets the requirements of NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants is not supported.
- d) How will an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property be provided as required (certified and stamped by a Professional Engineer or Scientist)?

The EIA as presented is incomplete.

Yours truly,

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NOTE: Although attached to the email, the complete By-Laws under the Engineering and Geoscience Professions Act of New Brunswick were not reproduced below, only the Code of Ethics as it is referenced in the questions. The complete document can be accessed at:

<https://www.apegnb.com/wp-content/uploads/APEGNB-By-Laws.pdf>

COMMENTER J

PART II - CODE OF ETHICS

1. FOREWORD

Engineers, geoscientists and members-in-training shall conduct themselves with integrity and in an honourable and ethical manner. Engineers, geoscientists and members-in-training shall uphold the values of truth, honesty and trustworthiness and safeguard human life and welfare and the environment.

In keeping with these basic tenets, engineers, geoscientists and members-in-training shall:

- 1.1 hold paramount the safety, health and welfare of the public and the protection of the environment and promote health and safety within the workplace;
- 1.2 offer services, advise on or undertake engineering/geoscience assignments only in areas of their competence and practise in a careful and diligent manner and in compliance with applicable legislation;
- 1.3 act as faithful agents of their clients or employers, maintain confidentiality and avoid conflicts of interest, but, where such conflicts arise, fully disclose the circumstances without delay to the employer or client;
- 1.4 keep themselves informed in order to maintain their competence and strive to advance the body of knowledge within which they practise;
- 1.5 conduct themselves with equity, fairness, courtesy and good faith towards clients, colleagues and others, give credit where it is due, and accept, as well as give, honest and fair professional criticism;
- 1.6 present clearly to employers and clients the possible consequences if engineering/geoscience decisions or judgements are overruled or disregarded;

PARTIE II - CODE DE DÉONTOLOGIE

1. AVANT-PROPOS

L'ingénieur/géoscientifique/membre stagiaire fait preuve d'intégrité et se conduit honorablement et dans le respect de la déontologie. L'ingénieur/géoscientifique/membre stagiaire valorise la franchise, l'honnêteté et la fiabilité, et se porte à la défense de la vie humaine, du bien-être des personnes et de l'environnement.

Conformément à ces principes fondamentaux, l'ingénieur/géoscientifique/membre stagiaire:

- 1.1 tient pour primordiaux la sécurité, la santé et le bien-être des membres de la société et la protection de l'environnement, et participe à la promotion de la santé et de la sécurité au travail;
- 1.2 offre ses services, donne des conseils ou entreprend des mandats d'ingénierie/géosciences avec soin et diligence uniquement dans ses champs de compétence et d'exercice, et en conformité avec la législation applicable;
- 1.3 sert ses clients ou son employeur loyalement respecte la confidentialité et évite les conflits d'intérêts, étant entendu que, en cas de conflit il s'empresse d'en communiquer les circonstances au complet à l'employeur ou au client;
- 1.4 se tient au courant des développements dans sa discipline afin de maintenir sa compétence et s'efforce d'accroître les connaissances dans son domaine d'exercice;
- 1.5 se conduit avec équité, justice, courtoisie et bonne foi envers ses clients, ses collègues et toute autre personne, reconnaît l'apport de ses collaborateurs, accepte la critique professionnelle qui se veut sincère et juste et émet ce genre de critique;
- 1.6 explique clairement aux employeurs et aux clients quelles sont les conséquences possibles en cas de rejet ou de mépris des décisions ou des jugements d'ingénierie/géosciences;

1.7	report to their association or other appropriate agencies any illegal or unethical engineering/geoscience decisions or practices by engineers/geoscientists or others;	1.7	signale à son ordre professionnel ou à tout autre organisme pertinent toute décision ou pratique d'ingénierie/géosciences, de la part d'ingénieurs/géoscientifiques ou d'autres personnes, qui est contraire à la loi ou à la déontologie;
1.8	be aware of and ensure that clients and employers are made aware of societal and environmental consequences of actions or projects and endeavour to interpret engineering/geoscience issues to the public in an objective and truthful manner;	1.8	est conscient des effets sociaux et environnementaux que peuvent produire des travaux et projets et tâche de sensibiliser ses clients et employeurs en ce sens, et cherche à sensibiliser le public, aussi objectivement et franchement que possible, aux questions en jeu en matière d'ingénierie/géosciences;
1.9	treat equitably and promote the equitable and dignified treatment of people in accordance with human rights legislation; and	1.9	traite équitablement les personnes – et incite les autres à les traiter équitablement et avec dignité – en conformité avec la législation relative aux droits de la personne;
1.10	uphold and enhance the honour and dignity of the professions.	1.10	soutient et met en valeur l'honneur et la dignité des professions.
2.	CODE OF CONDUCT	2.	CODE DE CONDUITE
	Engineers, geoscientists, and members-in-training shall:		Les ingénieurs, géoscientifiques et membres stagiaires doivent :
2.1	hold paramount the safety, health and welfare of the public and the protection of the environment and promote health and safety within the workplace;	2.1	donner la plus haute importance à la sécurité à la santé et au bien-être du public ainsi qu'à la protection de l'environnement, et promouvoir la santé et la sécurité au travail;
2.2	cooperate in extending the effectiveness of the engineering and geoscience professions by interchanging information and experience with other members and students and by contributing to the work of engineering and geoscience societies, schools and the scientific press;	2.2	contribuer à accroître l'efficacité des professions d'ingénieur et de géoscientifique en partageant leurs connaissances et leur expérience avec d'autres membres et étudiants et en collaborant aux travaux des sociétés savantes en génie et en géosciences et de la presse scientifique et en participant aux activités pédagogiques;
2.3	encourage employees to improve their knowledge and education;	2.3	encourager les employés à parfaire leurs connaissances et leur formation;
2.4	keep themselves informed in order to maintain their competence, strive to advance the body of knowledge within which they practise and provide opportunities for the professional development of their subordinates;	2.4	se tenir informés pour demeurer compétents, s'efforcer de faire avancer le savoir dans leur spécialité et donner l'occasion à leurs subalternes de se perfectionner;

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2.5	report to their Association or other appropriate agencies any illegal or unethical decisions or practices by the membership or others;	2.5	signaler à leur Association ou aux autres autorités compétentes toute décision ou toute pratique illégales ou contraires à la déontologie imputables à des membres ou à d'autres;
2.6	observe the rules of professional conduct that apply in the country in which they practise and, if there are no such rules, observe those established by this Code of Ethics;	2.6	observer les règles de déontologie qui s'appliquent dans le pays où ils exercent ou, à défaut, celles énoncées dans le présent code;
2.7	not advertise their work or merit in a self-laudatory manner and avoid all conduct or practice likely to discredit or do injury to the dignity and honour of the profession;	2.7	s'abstenir de faire de la publicité auto-élogieuse au sujet de leur travail ou de leur mérite et éviter toute conduite ou pratique susceptible de discréditer leur profession ou de nuire à sa dignité et à son honneur;
2.8	not advertise or represent themselves in an unprofessional manner by making misleading statements regarding their qualifications or experience; and	2.8	s'abstenir de s'annoncer ou de se présenter d'une façon indigne d'un professionnel en faisant des déclarations trompeuses relativement à leurs titres de compétence et à leur expérience;
2.9	abide by all acts, regulations, by-laws, codes and standards concerning the practice of engineering or geoscience in any jurisdiction in which they may practise.	2.9	respecter toute loi, tout règlement, tout règlement administratif, tout code et toute norme relatifs à l'exercice de la profession d'ingénieur ou de géoscientifique dans l'étendue territoriale d'exercice.
3.	RELATIONS WITH THE PUBLIC	3.	RAPPORTS AVEC LE PUBLIC
	Engineers, geoscientists, and members-in-training shall:		Les ingénieurs, géoscientifiques et membres stagiaires doivent :
3.1	endeavour to extend public knowledge of engineering and geoscience and discourage the spreading of untrue, unfair and exaggerated statements regarding engineering and geoscience;	3.1	s'efforcer de mieux faire connaître le génie et les géosciences et décourager la propagation de propos inexacts, injustes et exagérés concernant ces disciplines;
3.2	have due regard for the safety of life, health and welfare of the public and employees who may be affected by the work for which they are responsible;	3.2	se soucier de la sécurité, de la santé et du bien-être du public et des employés qui peuvent être touchés par le travail dont ils sont chargés;
3.3	when giving testimony before a court, commission or other tribunal, express opinions only when they are founded on adequate knowledge and honest conviction;	3.3	lorsqu'ils sont appelés à témoigner devant une commission ou tout autre tribunal judiciaire ou administratif, n'exprimer que des opinions fondées sur une connaissance suffisante et une conviction sincère;
3.4	not issue <i>ex parte</i> statements, criticism or arguments on matters connected with public policy that are inspired or paid for by private	3.4	s'abstenir de formuler des déclarations, des critiques ou des arguments <i>ex parte</i> inspirés ou financés par des intérêts privés sur des

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interests, unless it is indicated on whose behalf the arguments are made;

- 3.5 refrain from expressing publicly opinions on subjects relating to engineering or geoscience unless they are informed of the facts relating thereto;
- 3.6 conduct themselves with equity, fairness, courtesy and good faith towards clients, colleagues and others, give credit where it is due, and accept, as well as give, honest and fair professional criticism; and
- 3.7 treat equitably and promote the equitable treatment of all clients, colleagues and co-workers, regardless of race, religion, gender, sexual orientation, age, physical or mental ability, marital or family status, and national origin.

4. RELATIONS WITH CLIENTS AND EMPLOYERS

Engineers, geoscientists, and members-in-training shall:

- 4.1 act faithfully for their clients or employers, maintain confidentiality and avoid conflicts of interest;
- 4.2 act with fairness and justice between the client or employer and the contractor when dealing with contracts;
- 4.3 make their status clear to clients or employers before undertaking engagements if they are called upon to decide on the use of inventions, apparatus, etc. in which they may have a financial interest;
- 4.4 ensure that the extent of their responsibility is fully understood by each client before accepting a commission;
- 4.5 offer services, advise on or undertake assignments only in areas of their competence and practise in a careful and diligent manner;

questions d'intérêt public, à moins de révéler pour qui ils sont faits;

- 3.5 s'abstenir d'exprimer publiquement des opinions en matière de génie ou de géosciences, à moins de connaître les faits qui s'y rattachent;
- 3.6 faire preuve d'équité, de justice, de courtoisie et de bonne foi envers la clientèle, les confrères et consœurs et les autres, reconnaître la contribution des collaborateurs et être prêts à accepter, comme à donner, des critiques professionnelles honnêtes et justes;
- 3.7 traiter équitablement la clientèle, les confrères et consœurs et les collègues de travail, et promouvoir le traitement équitable de ceux-ci sans égard à la race, à la religion, au sexe, à l'orientation sexuelle, à l'âge, à la capacité physique ou mentale, à l'état civil ou familial ou à l'origine nationale.

4. RAPPORTS AVEC LA CLIENTÈLE ET L'EMPLOYEUR

Les ingénieurs, géoscientifiques et membres stagiaires doivent :

- 4.1 servir loyalement leur clientèle ou leur employeur, faire preuve de discrétion et éviter les conflits d'intérêts;
- 4.2 agir avec équité et justice entre leur client ou employeur et l'entrepreneur lorsque des contrats sont en jeu;
- 4.3 révéler clairement leur position à leur clientèle ou à leur employeur avant d'entreprendre un mandat où ils sont appelés à décider de l'utilisation d'inventions, d'appareils ou d'autres choses dans lesquels ils sont intéressés financièrement;
- 4.4 s'assurer que l'étendue de leur responsabilité est bien comprise par le client avant d'accepter un mandat;
- 4.5 offrir leurs services, donner des conseils ou entreprendre des mandats dans leurs seuls domaines de compétence, et exercer avec application et diligence;

- | | | | |
|------|---|------|---|
| 4.6 | not sign or seal drawings, specifications, plans, reports or other documents pertaining to engineering works or systems or geoscience works unless actually prepared or verified by them or under their direct supervision; | 4.6 | s'abstenir d'apposer leur signature ou leur sceau sur des dessins, des devis, des plans, des rapports ou d'autres documents relatifs à des ouvrages ou systèmes d'ingénierie ou à des ouvrages géoscientifiques, à moins que ces documents n'aient été établis ou vérifiés par eux ou sous leur surveillance directe; |
| 4.7 | guard against conditions that are dangerous or threatening to life, limb or property, and on work for which they are not responsible, promptly call such conditions to the attention of those who are responsible; | 4.7 | prévenir les conditions qui présentent un danger de mort ou un risque de dommage corporel ou matériel et, dans le cas de travaux dont ils n'ont pas la responsabilité, porter immédiatement pareilles conditions à l'attention des responsables; |
| 4.8 | present clearly to employers and clients the possible consequences if engineering or geoscience decisions or judgments are overruled or disregarded; | 4.8 | expliquer clairement à leur employeur et à leur clientèle ce qui risque d'arriver s'il n'est pas tenu compte des décisions ou des conclusions d'ingénieur ou de géoscientifique; |
| 4.9 | engage or advise clients or employers to engage and cooperate with other experts and specialists whenever the clients' or employers' interests are best served by such service; | 4.9 | engager d'autres experts et spécialistes et collaborer avec eux, ou conseiller à leur clientèle ou à leur employeur d'ainsi faire lorsque les intérêts de ces derniers seront mieux servis; |
| 4.10 | not disclose information concerning the business affairs or technical processes of clients or employers without their consent; | 4.10 | s'abstenir de divulguer des renseignements concernant les activités commerciales ou les procédés techniques de leur clientèle ou employeur sans le consentement de ceux-ci; |
| 4.11 | not accept compensation, financial or otherwise, from more than one interested party for the same service, or for services pertaining to the same work, without the consent of all interested parties; | 4.11 | s'abstenir d'accepter une rétribution pécuniaire ou autre, de plus d'un intéressé pour le même service ou pour des services reliés aux mêmes travaux, sans le consentement de tous les intéressés; |
| 4.12 | not accept commissions or allowances, directly or indirectly, from contractors or other parties dealing with clients or employers in connection with work for which they are responsible; | 4.12 | s'abstenir d'accepter, directement ou indirectement, des mains d'entrepreneurs ou d'autres parties qui font affaire avec leur clientèle ou leur employeur, des commissions ou des indemnités dans le cadre de travaux dont ils sont chargés; |
| 4.13 | not be financially interested in bids as contractors on work for which they are engaged as engineers or geoscientists unless they have the consent of the client or employer; | 4.13 | s'abstenir de participer financièrement, à titre d'entrepreneurs, dans des soumissions sur des travaux qui leur ont été confiés en tant qu'ingénieurs ou géoscientifiques, sauf consentement du client ou de leur employeur; |
| 4.14 | promptly disclose to clients or employers any interest in a business that may compete with or affect the business of the client or employer | 4.14 | s'empresse de révéler à leur clientèle ou à leur employeur tout intérêt qu'ils possèdent dans une entreprise qui puisse faire concurrence ou |

and not allow an interest in any business to affect their decisions regarding work for which they are employed, or that they may be called upon to perform;

- 4.15 while serving as members of any public body, not act as vendors of goods or services to that body without disclosure of their interest;
- 4.16 respect the right of employees to voice their professional concerns in an appropriate manner about works that they believe to be dangerous or threatening to life, limb, or property; and
- 4.17 be aware of and endeavour to ensure that clients and employers are made aware of societal and environmental consequences of actions or projects and endeavour to interpret engineering and geoscience issues to the public in an objective and truthful manner.

5. RELATIONS WITH ENGINEERS AND GEOSCIENTISTS

Engineers, geoscientists, and members-in-training shall:

- 5.1 endeavour to protect the engineering and geoscience professions collectively and individually from misrepresentation and misunderstanding;
- 5.2 take care that credit for work is given to those to whom credit is properly due;
- 5.3 not use or duplicate a design of others without the express permission of the designer or owner;
- 5.4 uphold the principles of appropriate and adequate compensation for those engaged in engineering or geoscience work, including those in a subordinate capacity, as being in the public interest and maintaining the standards of the professions;
- 5.5 not accept financial or other considerations, including free engineering or geoscience

nuire à l'activité commerciale du client ou de l'employeur, et éviter que pareil intérêt n'influence leurs décisions à l'égard des travaux qui leur sont confiés par le client ou l'employeur;

- 4.15 s'abstenir, pendant qu'ils occupent une charge publique, de vendre des marchandises ou des services à l'organisme qu'ils servent, sans divulguer leur intérêt;
- 4.16 respecter le droit des employés d'exprimer d'une manière convenable leurs inquiétudes professionnelles à l'égard de travaux qu'ils craignent présenter un danger de mort ou un risque de dommage corporel ou matériel;
- 4.17 être conscients et faire prendre conscience à leur clientèle et à leur employeur des répercussions sociétales et environnementales de leurs actes ou projets et s'efforcer de sensibiliser le public, objectivement et honnêtement, aux problèmes liés à l'ingénierie et aux géosciences.

5. RAPPORTS AVEC LES INGÉNIEURS ET LES GÉOSCIENTIFIQUES

Les ingénieurs, géoscientifiques et membres stagiaires doivent :

- 5.1 s'efforcer de préserver les professions d'ingénieur et de géoscientifique, prises collectivement et individuellement, des faussetés et de l'incompréhension;
- 5.2 veiller à ce que la part de chacun des collaborateurs dans un projet leur soit dûment reconnue;
- 5.3 s'abstenir d'utiliser ou de reproduire le dessin d'autrui sans la permission expresse du concepteur ou du propriétaire du dessin;
- 5.4 faire respecter le principe voulant qu'il soit dans l'intérêt du public et de la profession qu'une rétribution appropriée et juste soit donnée aux personnes, subalternes compris, qui participent à des travaux de génie ou de géosciences;
- 5.5 refuser toute récompense pécuniaire ou autre, y compris sous forme de dessins d'ingénierie ou

	designs, from material or equipment suppliers in return for specifying their product;		géoscientifiques gratuits, de fournisseurs de matériel ou d'équipement en échange de promotion de leur produit;
5.6	not solicit or accept an engineering or geoscience engagement that requires the engineer or geoscientist to give a preconceived conclusion or opinion;	5.6	s'abstenir de solliciter ou d'accepter un mandat d'ingénierie ou de géosciences qui les oblige à donner une conclusion ou une opinion prédéterminée;
5.7	endeavour to provide opportunity for the professional development and advancement of engineers or geoscientists in their employ;	5.7	s'efforcer de fournir des occasions de perfectionnement et d'avancement professionnels aux ingénieurs ou aux géoscientifiques qu'ils emploient;
5.8	not directly or indirectly injure the professional reputation, prospects or practice of other engineers or geoscientists; however, if they consider that an engineer or geoscientist is guilty of unethical, illegal or unfair practice, they shall present the information to the proper authority for action;	5.8	s'abstenir de porter atteinte directement ou indirectement à la réputation professionnelle, aux perspectives d'avenir ou à la pratique d'autres ingénieurs ou géoscientifiques, étant entendu qu'ils sont tenus de signaler aux autorités compétentes toute pratique illégale déloyale ou contraire à la déontologie qu'ils perçoivent de la part d'un ingénieur ou d'un géoscientifique;
5.9	exercise due restraint in criticizing another engineer's or geoscientist's work in public, recognizing that the technical societies and the technical press provide the proper forum for technical discussions and criticism;	5.9	faire preuve de retenue lorsqu'ils critiquent en public les travaux d'un autre ingénieur ou géoscientifique, sachant que les sociétés savantes et la presse technique sont les lieux qui conviennent pour les débats et les critiques de cette nature;
5.10	not try to supplant another engineer or geoscientist in a particular employment after becoming aware that definite steps have been taken toward the other's employment;	5.10	s'abstenir d'essayer de supplanter un autre ingénieur ou géoscientifique dans un poste, sachant que des dispositions définitives ont été prises en vue de son engagement;
5.11	not compete with another engineer or geoscientist by reducing normal fees after having been informed of the charges named by the other;	5.11	s'abstenir de faire concurrence à un autre ingénieur ou géoscientifique en réduisant ses honoraires normaux après avoir pris connaissance des prix donnés par cet autre;
5.12	not use the advantages of a salaried position to compete unfairly with another engineer or geoscientist;	5.12	s'abstenir de tirer profit d'un poste salarié pour faire une concurrence déloyale à un autre ingénieur ou géoscientifique;
5.13	not provide a commission, a gift or other consideration in order to secure work; and	5.13	s'abstenir de fournir une commission, un cadeau ou toute autre récompense en vue d'obtenir un mandat;
5.14	not associate with any enterprise that does not conform to ethical practices.	5.14	s'abstenir de s'associer avec une entreprise qui ne respecte pas les normes déontologiques.

Matthew Alexander

From: Matthew Alexander
Sent: April 21, 2022 1:11 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. Where is the engineering analysis to support your statement and the findings of the EIA report?

There is scientific and engineering analysis, where warranted, throughout the Environmental Impact Assessment document that supports the findings.

2. How can the report be objective as required by 1.8 [of the Association of Professional Engineers and Geoscientists of New Brunswick (APEGNB) Code of Ethics] if the engineering analysis is not completed as identified by Mr. Steels?

Differences of opinion are welcomed and are part of the open and transparent Environmental Impact Assessment (EIA) review process. The New Brunswick Department of Environment and Local Government (NBDELG) uses a Technical Review Committee (TRC) comprised of federal, provincial, and municipal government representatives. The TRC's role is to review the project details and identify and assess proposed impacts and mitigation. The TRC will take all information under consideration during their review, including comments from the public.

3. How can the regard for the welfare of the public who may be affected by the work for which they are responsible outlined in 3.2 [of the APEGNB Code of Ethics] be considered if the engineering analysis is not completed as identified by Mr. Steels?

The regard for the welfare of the public has been considered within the EIA document.

4. How can the authors be informed of the facts relating thereto as required in 3.5 [of the APEGNB Code of Ethics] if there is no analysis to support the findings as identified by Mr. Steels?

Please refer to the response to 2.

5. How can this report meet this requirement if there is no engineering analysis as identified by Mr. Steels?

Please refer to the response to 2.

6. How can this report meet the "objective and truthful manner" required in 4.17 [of the APEGNB Code of Ethics] without engineered analysis or objective third party studies as identified by Mr. Steels and me?

Please refer to the response to 2.

7. EIA purpose – is the following an accurate statement? The purpose of an EIA is to determine the potential environmental, social, and health effects of a proposed development, so that those who take the decisions in developing the project and in authorising the project are informed about the likely consequences of their decisions before they take those decisions.

COMMENTER J

The Province of New Brunswick defines EIA as a process through which the environmental impacts potentially resulting from a proposed project are identified and assessed early in the planning process. EIA identifies steps that can be taken to avoid negative environmental impacts or reduce them to acceptable levels before they occur. EIA therefore, represents a proactive, preventative approach to environmental management and protection.

8. How can the TRC be informed if the engineering analysis or independent studies are not included?

The Technical Review Committee is comprised of federal, provincial, and municipal government representatives. Composition of the TRC is tailored to each individual project. The TRC's role is to review the project details and identify and assess proposed impacts and mitigation. The TRC has the opportunity, during the review process, to ask the Proponent to provide additional information.

9. At the open house in March, I was informed by a group, of which you were one, that no study was done because only benefits of the project were required as part of the Economic Impact Statement calculation. After requesting specifics in writing, I received a summary analysis that the "project team" did using historical increases in property values and the forecast for the market. Nothing was included regarding heavy industry's impact on property values. When was this analysis completed?

The analysis was completed in winter 2021 / 2022 during preparation of the EIA document.

10. Who were the member of the project team that did it?

Fundy Engineering & Consulting Ltd. completed the analysis.

11. How are realtors subject matter experts on Economic impact?

Realtors are regulated professionals in their field, which includes knowledge about housing in specific neighbourhoods monitoring market trends, assessing market conditions, and identifying price points for properties. The majority of information provided previously related to property values was obtained from Service New Brunswick databases. The property values, as previously indicated, were determined by the Province's Property Assessors.

12. Which statement is true? There was no study done because only benefits were required? or the "project's teams" analysis/opinion on property value not changing?

It is the Project team's opinion that property values will not be negatively affected based on the analysis provided.

During preparation of the EIA document, the Project team reviewed the property assessments and sales records for 519 single-family residential properties within the Milford and Randolph Area. Overall, no negative impacts to property values were identified, which is the reason why it was not included in the EIA document.

It is not believed that this Project will negatively affect property assessment values in the area. This is based on our detailed review of the local property assessment values presented below. The majority of these homes have existed adjacent to the Mill site since 1951 and their values have continued to increase. The Project team also believes that the beautification work along Milford Road will improve aesthetics of the area.

NB Property Assessment determines an assessed value for each real property in New Brunswick on an annual basis. A property's assessment reflects the property's market value. Market value is the price the property would likely sell for on the open real estate market on January 1 of each assessment year for which the assessment was made. The Province's assessment process is the most common method of property assessment used in North America. It is based on market value because it is transparent, easy to understand, and a fair and realistic measure of a property's value. The Province's assessors look at a variety of factors when assessing the value of a property including lot size, sale

COMMENTER J

prices of homes and properties in the area, property condition, age of buildings, and any recent renovations and/or improvements made to the property. More information on how a property is assessed can be found on the Province's website at: <https://www2.snb.ca/content/snb/en/sites/property-assessment/understanding/valued.html>

The 2022 assessed values of New Brunswick properties reflect a strong real estate market provincewide. While 28 % of properties showed no change in assessed value when compared to 2021, 28 % of properties increased by up to 5 %, and 23 % increased ranging from 5 % to 10 %. While 19 % increased by greater than 10 %, 77 % of those are protected by the Province's Spike Protection Mechanism whereby the increase is phased in over time to make assessment growth much more stable and predictable.

Within the Milford and Randolph areas of west Saint John, there are approximately 659 properties (*i.e.*, vacant land, residential, institutional, commercial, and industrial) within the Service New Brunswick database. Of those, 85 % (*i.e.*, 562) saw a property assessment increase between 2021 and 2022, 1 % (*i.e.*, 6) experienced a decrease, and 14 % (*i.e.*, 91) showed no change. These data suggest that property values in the Milford and Randolph areas grew more, on average, than New Brunswick as a whole.

Because property assessments were frozen across the Province between 2020 and 2021, assessment changes over the past five years were also reviewed. Those data show that 82 % (*i.e.*, 542) of those same properties showed an assessment increase, 5 % (*i.e.*, 34) experienced a decrease, and 13 % (*i.e.*, 83) saw no change. On average, assessments increased by 19 % over those five years (*i.e.*, 2018 to 2022).

The Saint John Real Estate Board reported on 13 January 2022 that Saint John 2021 MLS® home sales smashed the record set in 2020. During 2021, 3 142 residential units were sold. Sales were up in 2021 by 21 % over the 2020 annual sales setting record. Buyers are fiercely competing over a low inventory, which is driving price growth; the composite benchmark price extended the streak of double-digit year-over-year percentage gains to 15 months in December 2021. The average price of homes sold in December 2021 was \$249 527, up 31 % from December 2020.

Looking specifically at single-family residential, there are 519 properties in the Milford and Randolph area. Within the past five years (*i.e.*, 2018 to 2022), the average assessment for those properties increased by almost 13 %. The average value of a single-family residential property increased from about \$151 850 in 2018 to \$167 160 in 2022. The Saint John Real Estate Board expects record sales prices to continue in the foreseeable future.

13. The reports done by subject matter experts were dismissed. Two were provided. There are many others available that state a similar outcome. Who are the members of the "project team"?

The rationale as to why those reports were discounted by the Project Team was provided previously and restated below.

It is understood that Gardner Pinfold Consultants Inc. prepared a report in 2020 for the Greater Saint John Regional Task Force Analysis. It is also understood that a comparison was drawn between Fredericton, Moncton, and Saint John, three New Brunswick cities, which have vastly different socioeconomic characteristics. The report suggested that the value of residential properties within 2 km of industrial properties is negatively impacted by comparing Saint John that has industry within the core to Moncton and Fredericton that have industry at their outskirts. The relevance of the report is not recognized for this Project. The Mill, in various forms, has existed since 1836. Residential development has continued to grow and in some instances densify around the Mill site since that time.

Currie et al. [2015] assessed "toxic" plant openings and closings. They assessed a different set of parameters than for the proposed Project. "Toxic" within *Currie et al.* [2015] refers to airborne pollutants that are harmful to human health and are widely believed to cause cancer, birth defects, and damage to the brain and reproductive systems. The New Brunswick Department of Environment and Local Government (NBDELG) issues Approvals To Operate for facilities under the Air Quality Regulation [97-133] of the *Clean Air Act* [S.N.B. 1997, c. C-5.2]. For this proposed Project, there are no

COMMENTER J

emissions to air that will require approval under the *Clean Air Act* (i.e., there are no vents or stacks emitting substances to the air).

Although the proposed Project is a new component of the Reversing Falls Mill site, the overall site would not be considered an “opening” by *Currie et al.* [2015], which means a new industrial facility emitting toxic pollutants. The land along Milford Road was incorporated within the overall Mill site in 1951.

The work by *Currie et al.* [2015] is focused on plants that present clear and present health and safety risks for the environment. As noted throughout the EIA document, this proposed Project will yield substantial environmental benefits.

There are many members of the Project team from Fundy Engineering, IPP, J.D. Irving, and several other engineering and scientific consultants.

14. What are their [Project Team’s] professional credentials?

Members of the Project team have a variety of professional credentials, including being technologists, scientists, professional engineers, professional geoscientists, lawyers, project management professionals, etc.

15. Why should the residents and the TRC accept the “project team’s opinion” and not the studies completed by objective subject matter experts?

Please refer to the response to 2.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.



Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER J

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 30, 2022 8:56 AM
To: Matthew Alexander
Cc: Mosher, Mark; Clark, Chris
Subject: FW:

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Tuesday, March 29, 2022 5:02 PM
To: Info <info2@jdirving.com>
Subject:

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is this gonna bring down house prices I was planning on selling my house and it directly across the street from me in video look over at pulp mill on Milford Rd that would be my house that whoever or drone is talking video is behind them I'm a hundred feet from powerlines on even side of road tried to sell once but they were doing construction on natural gas and cause of that the buyers backed out. So was just asking if this is gonna hurt market.

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COMMENTER K

Matthew Alexander

From: Matthew Alexander
Sent: April 6, 2022 3:11 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hello Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

It is not believed that this Project will negatively affect property assessment values in the area. This is based on our detailed review of the local property assessment values presented below. The majority of these homes have existed adjacent to the Mill site since 1951 and their values have continued to increase. The Project team also believes that the beautification work along Milford Road will improve aesthetics of the area.

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COMMENTER K

value of a single-family residential property increased from about \$151 850 in 2018 to \$\$167 160 in 2022. The Saint John Real Estate Board expects record sales prices to continue in the foreseeable future.

Thanks,

Matt Alexander

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FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER K

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 30, 2022 9:52 AM
To: Matthew Alexander
Subject: FW: Water treatment plant

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

-----Original Message-----

From: [REDACTED]
Sent: Wednesday, March 30, 2022 9:07 AM
To: Info <info2@jdirving.com>
Subject: Water treatment plant

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Sent from my iPhone
What was the lot size (dimensions) of the land purchased with the mill in 1946?

What was the total square footage of the mill buildings?

What was the zoning in 1946?

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COMMENTER L

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: April 5, 2022 11:04 AM
To: Matthew Alexander
Subject: FW: Water treatment plant

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

-----Original Message-----

From: [REDACTED]
Sent: Tuesday, April 5, 2022 7:16 AM
To: Info <info2@jdirving.com>
Subject: Water treatment plant

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Still no response. Resending

Sent from my iPhone

What was the lot size (dimensions) of the land purchased with the mill in 1946?

What was the total square footage of the mill buildings?

What was the zoning in 1946?

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COMMENTER L

Matthew Alexander

From: Matthew Alexander
Sent: April 6, 2022 3:41 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: 14972 Mill Site and Zoning.pdf

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

What was the lot size (dimensions) of the land purchased with the mill in 1946?

The Mill site as it existed during a 1951 survey is attached and shows that the lot size is fairly similar today; however, some additional lands were acquired by Irving Pulp & Paper, Limited (IPP) over the years along the eastern boundary in the vicinity of the "School Lot" shown in the 1951 survey.

What was the total square footage of the mill buildings?

Although an exact plan is not available for 1946, it is estimated that the buildings occupied a footprint of 25 000 m².

What was the zoning in 1946?

As described in Section 3.3.5 of the Environmental Impact Assessment (EIA) document, a Mill has existed at Union Point since at least 1836 when the St. John Mills and Canal Company constructed and operated the Cunnabells Sawmill. Over the next century, the site underwent process changes, expansions, and ownership changes. In 1946, K.C. Irving purchased Port Royal Pulp & Paper Co. that was operated as Saint John Sulphite Ltd. at Union Point. In 1951, the Mill was renamed IPP.

The attached survey plan from 10 December 2002 shows the current boundaries of the Mill site. It encompasses the lands along Milford Road up to civic 317 and includes all the lands where the Project is proposed to be located. Parcels of land are identified in the New Brunswick Geographical Corporation's database using a Parcel Identifier (PID). Today the Mill site is made up of five PIDs as noted in the EIA document: 55162416; 55223739; 55232649; 55232656; and 55233001.

The attached survey plan from 30 July 1951 shows the boundaries when the Mill underwent renaming to IPP. The accompanying deed indicates that the lands along Milford Road to the property boundary with civic 317 were purchased by IPP from Investment Securities, Limited. Those lands, which were identified as Parcel "A" were originally part of the land grant from the Crown issued to Phineas Lovitt. The survey confirms that the lands along Milford Road were amalgamated in to the overall Mill property in 1951.

The attached survey from 1996 also confirms that the lands along Milford Road between civic 453 and 317 are part of the Mill property. That survey indicates that a 30 m strip of land of PID 55162416 adjacent to Milford Road is zoned two-unit residential while the remaining portion of the PID 55162416 is zoned heavy industrial. That swath of R-2 zoned land is also shown in the attached City of Saint John zoning map.

Community planning legislation was first enacted in New Brunswick in 1912 under the statute *An Act Relating to Town Planning*. That Act, which was renamed in 1917 as *The Town Planning Act*, did not allow for zoning or land use control. In 1922, a plan to guide development was prepared for Saint John. In 1936, *The New Brunswick Town Planning*

COMMENTER L

Act was introduced. Although the 1936 Act allowed for the provision of zoning by-laws, Saint John did not appear to implement any zoning by-laws that year but they did update their Master Plan in 1936 to guide development, which was further updated in 1945. The 1946 Master Plan for Saint John noted that Saint John had zoning by-laws in place. In 1952, all previous amendments to the Act were consolidated and planning then was more about preserving the *status quo* (i.e., zoning land as it had been developed). In 1961, the Act was renamed the *Community Planning Act* and revised in 1973. The 1966 comprehensive community plan for Saint John identified three zones for industrial activity: heavy industrial; light industrial; and restricted industrial. The current *Community Planning Act* [S.N.B. 2017, c. 19] was assented on 5 May 2017. Saint John's current Zoning By-Law designates industrial zones as either: heavy industrial; medium industrial; light industrial; pit and quarry; transportation; utility service; and utility service landfill.

Although the exact dates are not known when the lands along Milford Road were zoned Heavy Industrial or when the narrow strip along Milford Road was zoned two-unit residential, they have been that way since at least 1996 (i.e., the earliest available survey available showing the zoning designations) and most likely since IPP had the survey done on 30 July 1951 around the time when land use was being preserved as the *status quo* under *The New Brunswick Town Planning Act*.

Thanks,

Matt Alexander

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FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER L

DEED NO. 152010 - INVESTMENT SECURITIES, LIMITED - TO - IRVING PULP & PAPER, LIMITED
For Plan See: Drawer 6-#34.

THIS INDENTURE made this 9th day of August in the year of our Lord one thousand nine hundred and fifty-one under and by virtue of "The Property Act" of the Province of New Brunswick, BY AND BETWEEN INVESTMENT SECURITIES, LIMITED, a company duly incorporated by virtue of letters patent issued under the authority of The New Brunswick Companies Act and having its head office and chief place of business at the City of Saint John in the Province of New Brunswick, hereinafter called "the grantor" of the first part, AND IRVING PULP & PAPER, LIMITED, a company duly incorporated by virtue of letters patent issued under the authority of The New Brunswick Companies Act and having its head office and chief place of business at the City of Saint John in the Province of New Brunswick, hereinafter called "the grantee" of the second part.

WITNESSETH that the grantor for and in consideration of the sum of ONE DOLLAR of lawful money of Canada to it in hand well and truly paid by the grantee at or before the ensembling and delivery of these presents (the receipt whereof is hereby acknowledged) has granted, bargained, sold, aliened, released, conveyed and confirmed and by these presents does grant, bargain, sell, alien, release, convey and confirm unto the grantee its successors and assigns:

Those two certain lots, pieces or parcels of land situate, lying and being in the Parish of Lancaster, in the City and County of Saint John and Province aforesaid, the first thereof designated by the letter "A" and being a portion of the Grant from the Crown to Phineas Lovitt, and the second of the said lots being designated by the letter "B" and being a portion of the Grant to The Mayor, Aldermen and Commonalty of the City of Saint John, the whole having been conveyed from Walter Leo Collins to the aforesaid Company by Indenture bearing date the 6th day of April A. D. 1951, registered in the Office of the Registrar of Deeds in and for the aforesaid City and County of Saint John in Book 294 of Records, page 7, the two said parcels designated by the letters "A" and "B" being bounded and described in whole as follows, viz:-

"Beginning on the northwestern side line of Walnut Street or prolongation thereof, at the intersection thereof by the northeastern boundary of the Right of Way of the Canadian Pacific Railway, being also the southwestern line of a Reserved Street of fifty (50) feet in width laid out along the said boundary of the said Right of Way; going thence north forty seven (47) degrees seven (7) minutes west along the said boundary of the said Right of Way eight hundred and thirty three (833) feet to the eastern line of the "School Lot" so called; thence north four (4) degrees twenty nine (29) minutes west along the said line of the said School Lot, four hundred and sixteen and seven tenths (416.7) feet to an angle therein, continuing thence along the said line of the said lot north four (4) degrees nine (9) minutes west six hundred and forty eight (648) feet to another angle therein, continuing thence along the said line north five (5) degrees twenty four (24) minutes east two hundred and sixteen (216) feet to another angle in the said line, continuing thence along the said line north one (1) degrees thirty one (31) minutes west five hundred and forty four (544) feet to the southeastern line of Lovitt's Point Road; thence north sixty eight (68) degrees fifteen (15) minutes east along the said line of the said road eight hundred and fifty three and six tenths (853.6) feet to an angle in the said line of the said road, continuing thence along the said line of the said road north thirty one (31) degrees sixteen (16) minutes east two hundred and twenty five and eight tenths (225.8) feet to another angle in the said line of the said road, continuing thence north thirty nine (39) degrees five (5) minutes east along the line of the said road one hundred and sixty and two tenths (160.2) feet, continuing thence north forty two (42) degrees eighteen (18) minutes east ninety and seven tenths (90.7) feet to the line of division between the lands hereby conveyed and the adjoining property to the northeast thereof owned by the Trustee of the late Francis S. Scovil, thence along the said line south fifty four (54) degrees twenty (20) minutes east six hundred and ninety five (695) feet more or less to the bank or shore of Lee's Cove in the River Saint John; thence southwestwardly along the said bank or shore of the said river following

COMMENTER L

the various courses thereof to the aforesaid northwestern line of Walnut Street or its prolongation herein first described and thence south thirty six (36) degrees twenty eight (28) minutes west along the said line of the said street six hundred and thirty five (635) feet more or less to the place of beginning.

SAVING AND EXCEPTING thereout and therefrom that certain strip of land of forty (40) feet in width conveyed from the aforesaid Walter Leo Collins to Fort Royal Pulp & Paper Company Limited by Indenture bearing date the 25th day of May A. D. 1934, registered in Book 215 of Records page 99.

SUBJECT also to a certain Easement described in a conveyance from the aforesaid Walter Leo Collins to The New Brunswick Electric Power Commission dated the 16th day of September A. D. 1936, registered in Book 219 of records page 415.

SUBJECT also to a certain Easement conveyed from the aforesaid Walter Leo Collins to the Municipality of the City and County of Saint John and dated the 14th day of February, A. D. 1948, registered in Book 270 of Records page 212.

SUBJECT also to a certain Indenture of Lease described in an Assignment from Florence V. Ager to Audrey Madelyn Green dated the 19th day of August A. D. 1941, registered in Book 77 of Records page 516.

SUBJECT also to another lease from Investment Securities Limited to the aforesaid Walter Leo Collins, both of which said leases front on the Lovitts Point Road.

The total area of the aforesaid lots "A" and "B" exclusive of the forty foot strip along the shore of Lee's Cove, containing an area of fifty one (51) acres more or less.

Together with the right, title and interest of the grantors in the Reserved Roads and Streets included within the aforesaid Parcel "B".

The two said Parcels "A" and "B" hereby conveyed being shewn within red shading on a plan of the said property bearing date the 30th day of July A. D. 1951, filed in the Office of the Registrar of Deeds in and for the aforesaid City and County of Saint John."

TOGETHER with the appurtenances to the same belonging or in any manner appertaining.

TO HAVE AND TO HOLD the said land and premises hereby conveyed with the appurtenances unto and to the use of the grantee its successors and assigns, FOR EVER.

IN WITNESS WHEREOF the said grantor has caused these presents to be signed on its behalf by its duly authorized officers and its corporate seal to be hereunto affixed the day and year first above written.

SIGNED SEALED AND DELIVERED
in the presence of
SGD. COLIN B. MACKAY

L. S.

INVESTMENT SECURITIES, LIMITED
SGD. L. McC. RITCHIE, President
SGD. H. A. PORTER, Secretary

PROVINCE OF NEW BRUNSWICK - COUNTY OF THE CITY AND COUNTY OF SAINT JOHN SS

I, HORACE A. PORTER of the Village of Rothesay in the County of Kings and Province of New Brunswick, barrister, make oath and say:

1. That I am the Secretary of Investment Securities, Limited, a duly incorporated company maintaining an office in the City of Saint John in the said Province, and have the custody of the seal of the company.
2. That the president and secretary of Investment Securities, Limited, are authorized to execute the documents in the name and on behalf of the company.
3. That the seal affixed to the foregoing Indenture is the corporate seal of Investment Securities, Limited, and was so affixed by the authority of the directors of the company.
4. That the signature "L. McC. Ritchie" to the foregoing indenture is the signature of the president of Investment Securities, Limited, and the signature "Horace A. Porter" is in the proper handwriting of me the said Horace A. Porter, and that the signatures were subscribed to the said indenture for the purposes of the execution thereof.

COMMENTER L

SWORN TO at the City of Saint John
in the Province of New Brunswick,
this 9th day of August, A. D. 1951.
BEFORE ME

SGD. H. A. PORTER

SGD. COLIN B. MACKAY a Commissioner for taking affidavits to be read in the Supreme Court.

Registered August 9th A. D. 1951
Hour 4 P. M.

*P. H. Lawell
Deputy Regr*

60 DEED NO. 152011 - MARY MAUD STEPHENSON - TO - M. JEAN SAUNDERS

THIS INDENTURE made this Fifth day of April in the year of our Lord, one thousand nine hundred and forty-seven BETWEEN MARY MAUD STEPHENSON of Golden Grove, in the County of the City and County of Saint John and Province of New Brunswick, Widow, hereinafter called the Grantor of the first part; AND M. JEAN SAUNDERS of the City of Saint John, in the County of the City and County of Saint John, and Province of New Brunswick, wife of Ronald M. Saunders of the said City of Saint John, Accountant, hereinafter called the Grantee of the Second Part

WITNESSETH, that the said Grantor for and in consideration of the sum of ONE DOLLAR of lawful money of Canada, to her in hand well and truly paid at or before the ensealing and delivery of these presents, by the said Grantee the receipt whereof is hereby acknowledged, has granted, bargained, sold, aliened, released, conveyed and confirmed, and by these presents does grant, bargain, sell, alien, re-lease, convey and confirm unto the said Grantee, her heirs and assigns

"ALL that certain lot, piece or parcel of land situate, lying and being in the Parish of Simonds, in the City and County of Saint John and Province of New Brunswick, comprising the western portion of the lot designated by the letter "A" originally granted by the Crown to Moses H. Perley and bounded and described as follows, viz: - Beginning on the northern bank or shore of Lower Loch Lomond at the intersection thereof by the western line of the aforesaid lot "A", going thence along the said line north twenty nine (29) degrees west by the magnet of A. D. 1939 thirty eight (38) chains of four (4) poles each and fifty (50) links more or less to the northern line of the aforesaid lot; thence north sixty (60) degrees east along the said line twenty (20) chains twenty nine and one half (29½) links to a point midway between the eastern and western lines of the aforesaid lot "A"; thence south twenty nine (29) degrees east to the aforesaid bank or shore of Loch Lomond and thence westwardly along the same following the various courses thereof to the place of beginning, containing an area of eighty (80) acres more or less and being a portion of those certain lands or premises described in a certain conveyance from Nicholas Stephenson and Ellen his wife to T. Albert Stephenson under the name of Albert Stephenson and George Frederick Stephenson bearing date the fifth day of November A. D. 1906 and registered in the Office of the Registrar of Deeds in and for the aforesaid City and County of Saint John in Book "117" of Records page "204"."

Together with all houses, outhouses, barns, buildings, edifices, fences, improvements, profits privileges, and appurtenances, to the same belonging, or in any manner appertaining; and the reversion and reversions, remainder, remainders, rents, issues and profits thereof---and also, all the estate, right, title, right and title, homestead, dower, right and title to dower interest, use, possession, property claim and demand, the said either at Law or in Equity of the Grantor of, in, or out of the same and every Part and Parcel thereof with the Appurtenances.

TO HAVE AND TO HOLD the said lot, piece or parcel of land and premises hereby granted, bargained and sold, or meant, mentioned, or intended so to be, and every part and parcel thereof, with the Appurtenances, unto the said Grantee her Heirs and Assigns, to the only proper use, benefit and behoof of the said Grantee her Heirs and Assigns, FOREVER.

IN WITNESS WHEREOF, the said Grantor has hereunto set her Hand and Seal the day and year first above written.

COMMENTER L

SIGNED, SEALED AND DELIVERED
in presence of
SGD. E. N. HUESTIS

SGD. MARY MAUD STEPHENSON

L. S.

PROVINCE OF NEW BRUNSWICK - COUNTY OF THE CITY AND COUNTY OF SAINT JOHN SS.

I, ERNEST N. HUESTIS, a Notary Public in and for the Province of New Brunswick, duly commissioned, appointed and sworn, residing and practising in the City of Saint John in the said Province, DO HEREBY CERTIFY that Mary Maud Stephenson the Grantor named in the foregoing Indenture personally appeared before me, at the City of Saint John on the fifth day of April in the year of our Lord one thousand nine hundred and forty seven and acknowledged that she signed, sealed, executed and delivered the same as and for her act and deed to and for the uses and purposes therein expressed and contained.

IN TESTIMONY WHEREOF, I, the said Notary Public, have hereunto subscribed my name and affixed my Official Seal, at The City of Saint John aforesaid, the day and year last above written.

L. S.

SGD. ERNEST N. HUESTIS
Notary Public.

Registered August 10th A. D. 1951
Hour 11.10 A. M.

R. h. Sawell.
Deputy Regr.

Ed

DEED NO. 152012 - MARY MAUD STEPHENSON - TO - M. JEAN SAUNDERS

THIS INDENTURE made this Fifth day of April in the year of our Lord one thousand nine hundred and forty seven BETWEEN MARY MAUD STEPHENSON of Golden Grove, in the County of the City and County of Saint John and Province of New Brunswick, Widow, hereinafter called the Grantor of the first part; AND M. JEAN SAUNDERS of the City of Saint John, in the County of the City and County of Saint John, and Province of New Brunswick, wife of Ronald M. Saunders of the said City of Saint John, Accountant, hereinafter called the Grantee of the second part'

WITNESSETH, that the said Grantor for and in consideration of the sum of ONE DOLLAR of lawful money of Canada, to her in hand well and truly paid at or before the ensealing and delivery of these presents, by the said Grantee the receipt whereof is hereby acknowledged, has granted, bargained, sold, aliened, released, conveyed and confirmed, and by these presents does grant, bargain, sell, alien, release, convey and confirm unto the said Grantee, her heirs and assigns

ALL that certain lot, piece and parcel of land situate lying and being in the Parish of Simonds, in the City and County of Saint John, being the western half of the eastern half of a lot of land described in a certain Deed made between Walter A. McFate and Hester J. McFate his wife of the one part, and Nicholas Stephenson of the other part, bearing date the thirteenth day of September A. D. 1890 and duly recorded in the office of the Registrar of Deeds in and for the City and County of Saint John in Libro 64, folio 382 and 383 of said records, as all the easterly half part of the lot of land situate in the Parish of Simonds heretofore sold and conveyed by William A. Quinton and wife to the said Walter A. McFate, and dated the twentieth day of May A. D. 1886 and recorded in the office of the said Registrar of Deeds in Libro XXII, folio 242 and 243 the part hereby conveyed being bounded and described as follows; beginning at a point ten chains four poles each distant from a marked spruce tree or the rear line of the above mentioned lot; thence along the said rear line by the magnet 1817 north fifty three degrees east ten chains of four poles each or to the southwest line of lot No. 5 granted to one William Marks, thence along the said south-west line of lot No. 5 north thirty seven degrees west one hundred and ten chains to the south easterly line of the grant to the subscribers for the Westmorland road so-called; and thence along that line south fifty three degrees west ten chains or to a cedar stake distant ten chains from said south west line; thence south thirty-seven degrees east one hundred and ten chains or to the place of beginning and containing one hundred

COMMENTER L



COMMENTS

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: April 11, 2022 11:27 AM
To: Matthew Alexander
Subject: FW: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Did you get this directly as well?

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Sunday, April 10, 2022 11:12 AM
To: Info <info2@jdirving.com>
Subject: Fwd: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

External Email Alert

Caution: This email originated from outside the organization. If you suspect this email is suspicious, please forward the email to 'phishing@jdirving.com' to notify JDI Security

Sent from my iPhone

Begin forwarded message:

From: [REDACTED]
Date: April 10, 2022 at 8:33:10 AM ADT
To: [REDACTED]
Subject: RE: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Dr. Alexander,

The last paragraph of you email does not answer my question.

“Although the exact dates are not known when the lands along Milford Road were zoned Heavy Industrial or when the narrow strip along Milford Road was zoned two-unit residential, they have been that way since at least 1996 (*i.e.*, the earliest available survey available showing the zoning designations) and most likely since IPP had the survey done on 30 July 1951 around the time when land use was being preserved as the *status quo* under *The New Brunswick Town Planning Act*”.

COMMENTER L

Long term residents of this community recall special restrictions being placed on the rezoning of the land currently being proposed. I am trying to confirm that history.

My understanding is that without specifics regarding rezoning (when, restrictions, from what to what), it is essentially what it was in 1946.

Will you please provide me with the following:

- On the IPP “plan of property” it lists parcels of land A to K
 - What was the zoning of that land before it was acquired by IPP by parcel?
- What other properties were acquired after 1951? Specific PIN please?
 - What was the original zoning of the parcels acquired after 1951?
 - When were they zoned?
 - What special restrictions/conditions were placed on each parcel?

I look forward to your response,

From: Matthew Alexander <matt.alexander@fundyeng.com>

Date: April 6, 2022 at 3:41:37 PM ADT

To: [REDACTED]

Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

What was the lot size (dimensions) of the land purchased with the mill in 1946?

The Mill site as it existed during a 1951 survey is attached and shows that the lot size is fairly similar today; however, some additional lands were acquired by Irving Pulp & Paper, Limited (IPP) over the years along the eastern boundary in the vicinity of the “School Lot” shown in the 1951 survey.

What was the total square footage of the mill buildings?

Although an exact plan is not available for 1946, it is estimated that the buildings occupied a footprint of 25 000 m².

What was the zoning in 1946?

COMMENTER L

As described in Section 3.3.5 of the Environmental Impact Assessment (EIA) document, a Mill has existed at Union Point since at least 1836 when the St. John Mills and Canal Company constructed and operated the Cunnabells Sawmill. Over the next century, the site underwent process changes, expansions, and ownership changes. In 1946, K.C. Irving purchased Port Royal Pulp & Paper Co. that was operated as Saint John Sulphite Ltd. at Union Point. In 1951, the Mill was renamed IPP.

The attached survey plan from 10 December 2002 shows the current boundaries of the Mill site. It encompasses the lands along Milford Road up to civic 317 and includes all the lands where the Project is proposed to be located. Parcels of land are identified in the New Brunswick Geographical Corporation's database using a Parcel Identifier (PID). Today, the Mill site is made up of five PIDs as noted in the EIA document: 55162416; 55223739; 55232649; 55232656; and 55233001.

The attached survey plan from 30 July 1951 shows the boundaries when the Mill underwent renaming to IPP. The accompanying deed indicates that the lands along Milford Road to the property boundary with civic 317 were purchased by IPP from Investment Securities, Limited. Those lands, which were identified as Parcel "A" were originally part of the land grant from the Crown issued to Phineas Lovitt. The survey confirms that the lands along Milford Road were amalgamated in to the overall Mill property in 1951.

The attached survey from 1996 also confirms that the lands along Milford Road between civic 453 and 317 are part of the Mill property. That survey indicates that a 30 m strip of land of PID 55162416 adjacent to Milford Road is zoned two-unit residential while the remaining portion of the PID 55162416 is zoned heavy industrial. That swath of R-2 zoned land is also shown in the attached City of Saint John zoning map.

Community planning legislation was first enacted in New Brunswick in 1912 under the statute *An Act Relating to Town Planning*. That *Act*, which was renamed in 1917 as *The Town Planning Act*, did not allow for zoning or land use control. In 1922, a plan to guide development was prepared for Saint John. In 1936, *The New Brunswick Town Planning Act* was introduced. Although the 1936 *Act* allowed for the provision of zoning by-laws, Saint John did not appear to implement any zoning by-laws that year but they did update their Master Plan in 1936 to guide development, which was further updated in 1945. The 1946 Master Plan for Saint John noted that Saint John had zoning by-laws in place. In 1952, all previous amendments to the *Act* were consolidated and planning then was more about preserving the *status quo* (*i.e.*, zoning land as it had been developed). In 1961, the *Act* was renamed the *Community Planning Act* and revised in 1973. The 1966 comprehensive community plan for Saint John identified three zones for industrial activity: heavy industrial; light industrial; and restricted industrial. The current *Community Planning Act* [S.N.B. 2017, c. 19] was assented on 5 May 2017. Saint John's current Zoning By-Law designates industrial zones as either: heavy industrial; medium industrial; light industrial; pit and quarry; transportation; utility service; and utility service landfill.

Although the exact dates are not known when the lands along Milford Road were zoned Heavy Industrial or when the narrow strip along Milford Road was zoned two-unit residential, they have been that way since at least 1996 (*i.e.*, the earliest available survey available showing the zoning designations) and most likely since IPP had the survey done on 30 July 1951 around the time when land use was being preserved as the *status quo* under *The New Brunswick Town Planning Act*.

COMMENTER L

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER L

Matthew Alexander

From: Matthew Alexander
Sent: April 13, 2022 9:01 AM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: [REDACTED]

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. On the IPP “plan of property” it lists parcels of land A to K. What was the zoning of that land before it was acquired by IPP by parcel?

As noted in the response to the third question of the email sent to you on 6 April 2022 (see attached), zoning by-laws only began being implemented in Saint John around 1946. In 1952, all previous amendments to *The New Brunswick Town Planning Act* (i.e., the precursor to the existing *New Brunswick Community Planning Act [S.N.B. 2017, c. 19]*) were consolidated and planning then was more about preserving the *status quo* (i.e., zoning land as it had been developed). Parcel A and Parcel B, which are the areas where the proposed Project will be built and operated, were acquired in 1951 by Irving Pulp & Paper, Limited (IPP). Those Parcels, as were all other future parcels that were acquired by IPP, were amalgamated into the overall Mill site that is zoned for heavy industrial (n.b., there is a 30 m strip of land along Milford Road that is zoned for two-family residential).

2. What other properties were acquired after 1951? Specific PIN please?

The 1951 survey and deed described in the response to PC-30 shows that the lands the proposed Project will be built and operated on were acquired in 1951. Other properties, which were acquired after 1951 are not part of the lands where the proposed Project will be built and operated. Nevertheless, the lands (i.e., PID 55162416), save for a 30 m strip along Milford Road zoned for two-family residential, are currently zoned for heavy industrial use as described within the Environmental Impact Assessment document. An interactive zoning map for the City of Saint John that provides current zoning can be viewed online at: <https://catalogue-saintjohn.opendata.arcgis.com/datasets/SaintJohn::zoning/about>

3. What was the original zoning of the parcels acquired after 1951?

As noted in the response to the third question of the email sent to you on 6 April 2022 (see attached), it is believed Parcel A and Parcel B were zoned for heavy industrial use when they were acquired by IPP in August 1951 and amalgamated into the Mill’s overall site footprint.

4. When were they zoned?

The lands are zoned appropriately to allow the proposed Project to be built and operated. To the Project Team’s knowledge and based on a review of records, the lands for the proposed Project have never been rezoned. Please refer to the response to the third question of the email sent to you on 6 April 2022 (see attached) for additional information.

5. What special restrictions/conditions were placed on each parcel?

COMMENTER L

No special restrictions or conditions are known to exist other than those restrictions established in July 2003 with respect to Maritimes & Northeast Pipeline Limited Partnership's 30 m pipeline right-of-way. With respect to M&NPP's 30 m pipeline right-of-way, there are restrictions as to what activities can occur. Permanent structures are prohibited because the ability to access and maintain the pipeline must not be impaired. Permanent structures include, but are not limited to, houses, trailers, mobile homes, poles, decks, tool sheds, garages, swimming pools, leaching fields, and septic tanks. Although fences may be placed on the right-of-way, fence posts must be located a minimum of 1.5 m from the pipeline. Driveways, road, and parking lots are generally permitted if they are built to M&NPP's standards. The National Energy Board of Canadian Standards Association regulations require that M&NPP maintain a safe amount of cover over the pipeline. Accordingly, the grade over the pipeline cannot be reduced or increased without permission from M&NPP. Shrubs and bushes may be planted on the right-of-way provided they are less than 1.2 m in height at maturity and are not within 3 m of the pipeline. Plants and trees that grow taller than 1.2 m are not permitted because they inhibit access and hinder aerial surveillance of the right-of-way.

IPP is committed to working within the existing guidelines for maintaining pipeline integrity.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.



Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER L

Matthew Alexander

From: Matthew Alexander
Sent: April 6, 2022 3:41 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: 14972 Mill Site and Zoning.pdf

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

What was the lot size (dimensions) of the land purchased with the mill in 1946?

The Mill site as it existed during a 1951 survey is attached and shows that the lot size is fairly similar today; however, some additional lands were acquired by Irving Pulp & Paper, Limited (IPP) over the years along the eastern boundary in the vicinity of the "School Lot" shown in the 1951 survey.

What was the total square footage of the mill buildings?

Although an exact plan is not available for 1946, it is estimated that the buildings occupied a footprint of 25 000 m².

What was the zoning in 1946?

As described in Section 3.3.5 of the Environmental Impact Assessment (EIA) document, a Mill has existed at Union Point since at least 1836 when the St. John Mills and Canal Company constructed and operated the Cunnabells Sawmill. Over the next century, the site underwent process changes, expansions, and ownership changes. In 1946, K.C. Irving purchased Port Royal Pulp & Paper Co. that was operated as Saint John Sulphite Ltd. at Union Point. In 1951, the Mill was renamed IPP.

The attached survey plan from 10 December 2002 shows the current boundaries of the Mill site. It encompasses the lands along Milford Road up to civic 317 and includes all the lands where the Project is proposed to be located. Parcels of land are identified in the New Brunswick Geographical Corporation's database using a Parcel Identifier (PID). Today the Mill site is made up of five PIDs as noted in the EIA document: 55162416; 55223739; 55232649; 55232656; and 55233001.

The attached survey plan from 30 July 1951 shows the boundaries when the Mill underwent renaming to IPP. The accompanying deed indicates that the lands along Milford Road to the property boundary with civic 317 were purchased by IPP from Investment Securities, Limited. Those lands, which were identified as Parcel "A" were originally part of the land grant from the Crown issued to Phineas Lovitt. The survey confirms that the lands along Milford Road were amalgamated in to the overall Mill property in 1951.

The attached survey from 1996 also confirms that the lands along Milford Road between civic 453 and 317 are part of the Mill property. That survey indicates that a 30 m strip of land of PID 55162416 adjacent to Milford Road is zoned two-unit residential while the remaining portion of the PID 55162416 is zoned heavy industrial. That swath of R-2 zoned land is also shown in the attached City of Saint John zoning map.

Community planning legislation was first enacted in New Brunswick in 1912 under the statute *An Act Relating to Town Planning*. That Act, which was renamed in 1917 as *The Town Planning Act*, did not allow for zoning or land use control. In 1922, a plan to guide development was prepared for Saint John. In 1936, *The New Brunswick Town Planning*

COMMENTER L

Act was introduced. Although the 1936 Act allowed for the provision of zoning by-laws, Saint John did not appear to implement any zoning by-laws that year but they did update their Master Plan in 1936 to guide development, which was further updated in 1945. The 1946 Master Plan for Saint John noted that Saint John had zoning by-laws in place. In 1952, all previous amendments to the Act were consolidated and planning then was more about preserving the *status quo* (i.e., zoning land as it had been developed). In 1961, the Act was renamed the *Community Planning Act* and revised in 1973. The 1966 comprehensive community plan for Saint John identified three zones for industrial activity: heavy industrial; light industrial; and restricted industrial. The current *Community Planning Act* [S.N.B. 2017, c. 19] was assented on 5 May 2017. Saint John's current Zoning By-Law designates industrial zones as either: heavy industrial; medium industrial; light industrial; pit and quarry; transportation; utility service; and utility service landfill.

Although the exact dates are not known when the lands along Milford Road were zoned Heavy Industrial or when the narrow strip along Milford Road was zoned two-unit residential, they have been that way since at least 1996 (i.e., the earliest available survey available showing the zoning designations) and most likely since IPP had the survey done on 30 July 1951 around the time when land use was being preserved as the *status quo* under *The New Brunswick Town Planning Act*.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER L

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: April 20, 2022 9:41 AM
To: Matthew Alexander
Subject: FW: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Monday, April 18, 2022 8:52 PM
To: Info <info2@jdirving.com>
Subject: Fwd: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

External Email Alert

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Sent from my iPhone

Subject: FW: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Dr. Alexander,

Attached are additional questions regarding zoning that you did not answer. Will you please answer the questions I've outlined below?

Thanks:

Quotes from Dr. Alexander

"As noted in the response to the third question of the email sent to you on 6 April 2022 (see attached), zoning by-laws only began being implemented in Saint John around 1946"

COMMENTER L

“ Parcel A and Parcel B, which are the areas where the proposed Project will be built and operated, were acquired in 1951 by Irving Pulp & Paper, Limited (IPP). Those Parcels, as were all other future parcels that were acquired by IPP, were amalgamated into the overall Mill site that is zoned for heavy industrial (*n.b.*, there is a 30 m strip of land along Milford Road that is zoned for two-family residential).”

“zoning by-laws only began being implemented in Saint John around 1946”

Per attached documents:

Question #1 Was Union Point the existing site of the Pulp and Paper Mill when zoning was implemented in 1946?

Question #2: Were the parcels A (Lovill – excluding Union Point) through K were one of the following in 1946 and 1951:

- a. Vacant land
- b. Farmland
- c. Residential/City vacant land
- d. School lot

Question #3: Is the Union Point footprint in 1946 approximately 1/6th of the current PIN?

“In 1952, all previous amendments to *The New Brunswick Town Planning Act* (*i.e.*, the precursor to the existing *New Brunswick Community Planning Act* [S.N.B. 2017, c. 19]) were consolidated and planning then was more about preserving the *status quo* (*i.e.*, zoning land as it had been developed)”

“Those Parcels, as were all other future parcels that were acquired by IPP, were amalgamated into the overall Mill site that is zoned for heavy industrial (*n.b.*, there is a 30 m strip of land along Milford Road that is zoned for two-family residential)”

The 1946 and 1952 planning was “more about preserving the status quo” . The attached documents provided show those lands not to be heavy industry.

Question #4 Will you please provide the rezoning information from 1951 to date for parcels A (Lovill) through K including minutes of the meetings and special conditions attached to the land excluding Union Point?

“Other properties, which were acquired after 1951 are not part of the lands where the proposed Project will be built and operated. Nevertheless, the lands (*i.e.*, PID 55162416), save for a 30 m strip along Milford Road zoned for two-family residential, are currently zoned for heavy industrial use as described within the Environmental Impact Assessment document”

Question #5 Will you please provide the rezoning information from 1946 uses including minutes of the meetings and special conditions attached to the land for the land acquired after 1951?

“it is believed Parcel A and Parcel B were zoned for heavy industrial use when they were acquired by IPP in August 1951 and amalgamated into the Mill’s overall site footprint” is not supporting documentation.

COMMENTER L

Question #6: Amalgamation is not rezoning. Will you please provide the rezoning information from 1946 uses including minutes of the meetings and special conditions attached to the land noted as parcel A through K?

“The lands are zoned appropriately to allow the proposed Project to be built and operated. **To the Project Team’s knowledge and based on a review of records**, the lands for the proposed Project have never been rezoned. “

Question #7 Zoning for Water Treatment and Wastewater treatment falls under by-law zoning US per the Saint John Bylaws. How do you support the statement above that the project is zoned appropriately? Please provide supporting documentation.

Question # 8 : Are you saying that this land has never been rezoned since it was purchased in 1951? Yes or No please?

Question #9: Will you please provide the information and records the “project team reviewed” in to support the project team’s statement?

“**No special restrictions or conditions are known to exist** other than those restrictions established in July 2003 with respect to Maritimes & Northeast Pipeline Limited Partnership’s 30 m pipeline right-of-way. “

Question #10 “Are known to exist” did not answer my question. Will you please provide the documents to support the statement “**the project team’s knowledge**” please?

From: Matthew Alexander <matt.alexander@fundyeng.com>
Date: April 13, 2022 at 9:00:46 AM ADT
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. On the IPP “plan of property” it lists parcels of land A to K. What was the zoning of that land before it was acquired by IPP by parcel?

As noted in the response to the third question of the email sent to you on 6 April 2022 (see attached), zoning by-laws only began being implemented in Saint John around 1946. In 1952, all previous amendments to *The New Brunswick Town Planning Act* (i.e., the precursor to the existing *New Brunswick Community Planning Act* [S.N.B. 2017, c.

COMMENTER L

19]) were consolidated and planning then was more about preserving the *status quo* (*i.e.*, zoning land as it had been developed). Parcel A and Parcel B, which are the areas where the proposed Project will be built and operated, were acquired in 1951 by Irving Pulp & Paper, Limited (IPP). Those Parcels, as were all other future parcels that were acquired by IPP, were amalgamated into the overall Mill site that is zoned for heavy industrial (*n.b.*, there is a 30 m strip of land along Milford Road that is zoned for two-family residential).

2. What other properties were acquired after 1951? Specific PIN please?

The 1951 survey and deed described in the response to PC-30 shows that the lands the proposed Project will be built and operated on were acquired in 1951. Other properties, which were acquired after 1951 are not part of the lands where the proposed Project will be built and operated. Nevertheless, the lands (*i.e.*, PID 55162416), save for a 30 m strip along Milford Road zoned for two-family residential, are currently zoned for heavy industrial use as described within the Environmental Impact Assessment document. An interactive zoning map for the City of Saint John that provides current zoning can be viewed online at: <https://catalogue-saintjohn.opendata.arcgis.com/datasets/SaintJohn::zoning/about>

3. What was the original zoning of the parcels acquired after 1951?

As noted in the response to the third question of the email sent to you on 6 April 2022 (see attached), it is believed Parcel A and Parcel B were zoned for heavy industrial use when they were acquired by IPP in August 1951 and amalgamated into the Mill's overall site footprint.

4. When were they zoned?

The lands are zoned appropriately to allow the proposed Project to be built and operated. To the Project Team's knowledge and based on a review of records, the lands for the proposed Project have never been rezoned. Please refer to the response to the third question of the email sent to you on 6 April 2022 (see attached) for additional information.

5. What special restrictions/conditions were placed on each parcel?

No special restrictions or conditions are known to exist other than those restrictions established in July 2003 with respect to Maritimes & Northeast Pipeline Limited Partnership's 30 m pipeline right-of-way. With respect to M&NPP's 30 m pipeline right-of-way, there are restrictions as to what activities can occur. Permanent structures are prohibited because the ability to access and maintain the pipeline must not be impaired. Permanent structures include, but are not limited to, houses, trailers, mobile homes, poles, decks, tool sheds, garages, swimming pools, leaching fields, and septic tanks. Although fences may be placed on the right-of-way, fence posts must be located a minimum of 1.5 m from the pipeline. Driveways, road, and parking lots are generally permitted if they are built to M&NPP's standards. The National Energy Board of Canadian Standards Association regulations require that M&NPP maintain a safe amount of cover over the pipeline. Accordingly, the grade over the pipeline cannot be reduced or increased without permission from M&NPP. Shrubs and bushes may be planted on the right-of-way provided they are less than 1.2 m in height at maturity and

COMMENTER L

are not within 3 m of the pipeline. Plants and trees that grow taller than 1.2 m are not permitted because they inhibit access and hinder aerial surveillance of the right-of-way.

IPP is committed to working within the existing guidelines for maintaining pipeline integrity.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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<1946 land.pdf>
<land.pdf>

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COMMENTER L

DEED NO. 152010 - INVESTMENT SECURITIES, LIMITED - TO - IRVING PULP & PAPER, LIMITED
For Plan See: Drawer 6-#34.

THIS INDENTURE made this 9th day of August in the year of our Lord one thousand nine hundred and fifty-one under and by virtue of "The Property Act" of the Province of New Brunswick, BY AND BETWEEN INVESTMENT SECURITIES, LIMITED, a company duly incorporated by virtue of letters patent issued under the authority of The New Brunswick Companies Act and having its head office and chief place of business at the City of Saint John in the Province of New Brunswick, hereinafter called "the grantor" of the first part, AND IRVING PULP & PAPER, LIMITED, a company duly incorporated by virtue of letters patent issued under the authority of The New Brunswick Companies Act and having its head office and chief place of business at the City of Saint John in the Province of New Brunswick, hereinafter called "the grantee" of the second part.

WITNESSETH that the grantor for and in consideration of the sum of ONE DOLLAR of lawful money of Canada to it in hand well and truly paid by the grantee at or before the ensembling and delivery of these presents (the receipt whereof is hereby acknowledged) has granted, bargained, sold, aliened, released, conveyed and confirmed and by these presents does grant, bargain, sell, alien, release, convey and confirm unto the grantee its successors and assigns:

Those two certain lots, pieces or parcels of land situate, lying and being in the Parish of Lancaster, in the City and County of Saint John and Province aforesaid, the first thereof designated by the letter "A" and being a portion of the Grant from the Crown to Phineas Lovitt, and the second of the said lots being designated by the letter "B" and being a portion of the Grant to The Mayor, Aldermen and Commonalty of the City of Saint John, the whole having been conveyed from Walter Leo Collins to the aforesaid Company by Indenture bearing date the 6th day of April A. D. 1951, registered in the Office of the Registrar of Deeds in and for the aforesaid City and County of Saint John in Book 294 of Records, page 7, the two said parcels designated by the letters "A" and "B" being bounded and described in whole as follows, viz:-

"Beginning on the northwestern side line of Walnut Street or prolongation thereof, at the intersection thereof by the northeastern boundary of the Right of Way of the Canadian Pacific Railway, being also the southwestern line of a Reserved Street of fifty (50) feet in width laid out along the said boundary of the said Right of Way; going thence north forty seven (47) degrees seven (7) minutes west along the said boundary of the said Right of Way eight hundred and thirty three (833) feet to the eastern line of the "School Lot" so called; thence north four (4) degrees twenty nine (29) minutes west along the said line of the said School Lot, four hundred and sixteen and seven tenths (416.7) feet to an angle therein, continuing thence along the said line of the said lot north four (4) degrees nine (9) minutes west six hundred and forty eight (648) feet to another angle therein, continuing thence along the said line north five (5) degrees twenty four (24) minutes east two hundred and sixteen (216) feet to another angle in the said line, continuing thence along the said line north one (1) degrees thirty one (31) minutes west five hundred and forty four (544) feet to the southeastern line of Lovitt's Point Road; thence north sixty eight (68) degrees fifteen (15) minutes east along the said line of the said road eight hundred and fifty three and six tenths (853.6) feet to an angle in the said line of the said road, continuing thence along the said line of the said road north thirty one (31) degrees sixteen (16) minutes east two hundred and twenty five and eight tenths (225.8) feet to another angle in the said line of the said road, continuing thence north thirty nine (39) degrees five (5) minutes east along the line of the said road one hundred and sixty and two tenths (160.2) feet, continuing thence north forty two (42) degrees eighteen (18) minutes east ninety and seven tenths (90.7) feet to the line of division between the lands hereby conveyed and the adjoining property to the northeast thereof owned by the Trustee of the late Francis S. Scovil, thence along the said line south fifty four (54) degrees twenty (20) minutes east six hundred and ninety five (695) feet more or less to the bank or shore of Lee's Cove in the River Saint John; thence southwestwardly along the said bank or shore of the said river following

COMMENTER L

the various courses thereof to the aforesaid northwestern line of Walnut Street or its prolongation herein first described and thence south thirty six (36) degrees twenty eight (28) minutes west along the said line of the said street six hundred and thirty five (635) feet more or less to the place of beginning.

SAVING AND EXCEPTING thereout and therefrom that certain strip of land of forty (40) feet in width conveyed from the aforesaid Walter Leo Collins to Fort Royal Pulp & Paper Company Limited by Indenture bearing date the 25th day of May A. D. 1934, registered in Book 215 of Records page 99.

SUBJECT also to a certain Easement described in a conveyance from the aforesaid Walter Leo Collins to The New Brunswick Electric Power Commission dated the 16th day of September A. D. 1936, registered in Book 219 of records page 415.

SUBJECT also to a certain Easement conveyed from the aforesaid Walter Leo Collins to the Municipality of the City and County of Saint John and dated the 14th day of February, A. D. 1948, registered in Book 270 of Records page 212.

SUBJECT also to a certain Indenture of Lease described in an Assignment from Florence V. Ager to Audrey Madelyn Green dated the 19th day of August A. D. 1941, registered in Book 77 of Records page 516.

SUBJECT also to another lease from Investment Securities Limited to the aforesaid Walter Leo Collins, both of which said leases front on the Lovitts Point Road.

The total area of the aforesaid lots "A" and "B" exclusive of the forty foot strip along the shore of Lee's Cove, containing an area of fifty one (51) acres more or less.

Together with the right, title and interest of the grantors in the Reserved Roads and Streets included within the aforesaid Parcel "B".

The two said Parcels "A" and "B" hereby conveyed being shewn within red shading on a plan of the said property bearing date the 30th day of July A. D. 1951, filed in the Office of the Registrar of Deeds in and for the aforesaid City and County of Saint John."

TOGETHER with the appurtenances to the same belonging or in any manner appertaining.

TO HAVE AND TO HOLD the said land and premises hereby conveyed with the appurtenances unto and to the use of the grantee its successors and assigns, FOR EVER.

IN WITNESS WHEREOF the said grantor has caused these presents to be signed on its behalf by its duly authorized officers and its corporate seal to be hereunto affixed the day and year first above written.

SIGNED SEALED AND DELIVERED
in the presence of
SGD. COLIN B. MACKAY

L. S.

INVESTMENT SECURITIES, LIMITED
SGD. L. McC. RITCHIE, President
SGD. H. A. PORTER, Secretary

PROVINCE OF NEW BRUNSWICK - COUNTY OF THE CITY AND COUNTY OF SAINT JOHN SS

I, HORACE A. PORTER of the Village of Rothesay in the County of Kings and Province of New Brunswick, barrister, make oath and say:

1. That I am the Secretary of Investment Securities, Limited, a duly incorporated company maintaining an office in the City of Saint John in the said Province, and have the custody of the seal of the company.
2. That the president and secretary of Investment Securities, Limited, are authorized to execute the documents in the name and on behalf of the company.
3. That the seal affixed to the foregoing Indenture is the corporate seal of Investment Securities, Limited, and was so affixed by the authority of the directors of the company.
4. That the signature "L. McC. Ritchie" to the foregoing indenture is the signature of the president of Investment Securities, Limited, and the signature "Horace A. Porter" is in the proper handwriting of me the said Horace A. Porter, and that the signatures were subscribed to the said indenture for the purposes of the execution thereof.

COMMENTER L

SWORN TO at the City of Saint John
in the Province of New Brunswick,
this 9th day of August, A. D. 1951.
BEFORE ME

SGD. H. A. PORTER

SGD. COLIN B. MACKAY a Commissioner for taking affidavits to be read in the Supreme Court.

Registered August 9th A. D. 1951
Hour 4 P. M.

P. H. Lawell
Deputy Regr.

60 DEED NO. 152011 - MARY MAUD STEPHENSON - TO - M. JEAN SAUNDERS

THIS INDENTURE made this Fifth day of April in the year of our Lord, one thousand nine hundred and forty-seven BETWEEN MARY MAUD STEPHENSON of Golden Grove, in the County of the City and County of Saint John and Province of New Brunswick, Widow, hereinafter called the Grantor of the first part; AND M. JEAN SAUNDERS of the City of Saint John, in the County of the City and County of Saint John, and Province of New Brunswick, wife of Ronald M. Saunders of the said City of Saint John, Accountant, hereinafter called the Grantee of the Second Part

WITNESSETH, that the said Grantor for and in consideration of the sum of ONE DOLLAR of lawful money of Canada, to her in hand well and truly paid at or before the ensealing and delivery of these presents, by the said Grantee the receipt whereof is hereby acknowledged, has granted, bargained, sold, aliened, released, conveyed and confirmed, and by these presents does grant, bargain, sell, alien, release, convey and confirm unto the said Grantee, her heirs and assigns

"ALL that certain lot, piece or parcel of land situate, lying and being in the Parish of Simonds, in the City and County of Saint John and Province of New Brunswick, comprising the western portion of the lot designated by the letter "A" originally granted by the Crown to Moses H. Perley and bounded and described as follows, viz: - Beginning on the northern bank or shore of Lower Loch Lomond at the intersection thereof by the western line of the aforesaid lot "A", going thence along the said line north twenty nine (29) degrees west by the magnet of A. D. 1939 thirty eight (38) chains of four (4) poles each and fifty (50) links more or less to the northern line of the aforesaid lot; thence north sixty (60) degrees east along the said line twenty (20) chains twenty nine and one half (29½) links to a point midway between the eastern and western lines of the aforesaid lot "A"; thence south twenty nine (29) degrees east to the aforesaid bank or shore of Loch Lomond and thence westwardly along the same following the various courses thereof to the place of beginning, containing an area of eighty (80) acres more or less and being a portion of those certain lands or premises described in a certain conveyance from Nicholas Stephenson and Ellen his wife to T. Albert Stephenson under the name of Albert Stephenson and George Frederick Stephenson bearing date the fifth day of November A. D. 1906 and registered in the Office of the Registrar of Deeds in and for the aforesaid City and County of Saint John in Book "117" of Records page "204"."

Together with all houses, outhouses, barns, buildings, edifices, fences, improvements, profits privileges, and appurtenances, to the same belonging, or in any manner appertaining; and the reversion and reversions, remainder, remainders, rents, issues and profits thereof---and also, all the estate, right, title, right and title, homestead, dower, right and title to dower interest, use, possession, property claim and demand, the said either at Law or in Equity of the Grantor of, in, or out of the same and every Part and Parcel thereof with the Appurtenances.

TO HAVE AND TO HOLD the said lot, piece or parcel of land and premises hereby granted, bargained and sold, or meant, mentioned, or intended so to be, and every part and parcel thereof, with the Appurtenances, unto the said Grantee her Heirs and Assigns, to the only proper use, benefit and behoof of the said Grantee her Heirs and Assigns, FOREVER.

IN WITNESS WHEREOF, the said Grantor has hereunto set her Hand and Seal the day and year first above written.

COMMENTER L

SIGNED, SEALED AND DELIVERED
in presence of
SGD. E. N. HUESTIS

SGD. MARY MAUD STEPHENSON

L. S.

PROVINCE OF NEW BRUNSWICK - COUNTY OF THE CITY AND COUNTY OF SAINT JOHN SS.

I, ERNEST N. HUESTIS, a Notary Public in and for the Province of New Brunswick, duly commissioned, appointed and sworn, residing and practising in the City of Saint John in the said Province, DO HEREBY CERTIFY that Mary Maud Stephenson the Grantor named in the foregoing Indenture personally appeared before me, at the City of Saint John on the fifth day of April in the year of our Lord one thousand nine hundred and forty seven and acknowledged that she signed, sealed, executed and delivered the same as and for her act and deed to and for the uses and purposes therein expressed and contained.

IN TESTIMONY WHEREOF, I, the said Notary Public, have hereunto subscribed my name and affixed my Official Seal, at The City of Saint John aforesaid, the day and year last above written.

L. S.

SGD. ERNEST N. HUESTIS
Notary Public.

Registered August 10th A. D. 1951
Hour 11.10 A. M.

R. h. Sawell.
Deputy Regr.

Ed

DEED NO. 152012 - MARY MAUD STEPHENSON - TO - M. JEAN SAUNDERS

THIS INDENTURE made this Fifth day of April in the year of our Lord one thousand nine hundred and forty seven BETWEEN MARY MAUD STEPHENSON of Golden Grove, in the County of the City and County of Saint John and Province of New Brunswick, Widow, hereinafter called the Grantor of the first part; AND M. JEAN SAUNDERS of the City of Saint John, in the County of the City and County of Saint John, and Province of New Brunswick, wife of Ronald M. Saunders of the said City of Saint John, Accountant, hereinafter called the Grantee of the second part'

WITNESSETH, that the said Grantor for and in consideration of the sum of ONE DOLLAR of lawful money of Canada, to her in hand well and truly paid at or before the ensealing and delivery of these presents, by the said Grantee the receipt whereof is hereby acknowledged, has granted, bargained, sold, aliened, released, conveyed and confirmed, and by these presents does grant, bargain, sell, alien, release, convey and confirm unto the said Grantee, her heirs and assigns

ALL that certain lot, piece and parcel of land situate lying and being in the Parish of Simonds, in the City and County of Saint John, being the western half of the eastern half of a lot of land described in a certain Deed made between Walter A. McFate and Hester J. McFate his wife of the one part, and Nicholas Stephenson of the other part, bearing date the thirteenth day of September A. D. 1890 and duly recorded in the office of the Registrar of Deeds in and for the City and County of Saint John in Libro 64, folio 382 and 383 of said records, as all the easterly half part of the lot of land situate in the Parish of Simonds heretofore sold and conveyed by William A. Quinton and wife to the said Walter A. McFate, and dated the twentieth day of May A. D. 1886 and recorded in the office of the said Registrar of Deeds in Libro XXII, folio 242 and 243 the part hereby conveyed being bounded and described as follows; beginning at a point ten chains four poles each distant from a marked spruce tree or the rear line of the above mentioned lot; thence along the said rear line by the magnet 1817 north fifty three degrees east ten chains of four poles each or to the southwest line of lot No. 5 granted to one William Marks, thence along the said south-west line of lot No. 5 north thirty seven degrees west one hundred and ten chains to the south easterly line of the grant to the subscribers for the Westmorland road so-called; and thence along that line south fifty three degrees west ten chains or to a cedar stake distant ten chains from said south west line; thence south thirty-seven degrees east one hundred and ten chains or to the place of beginning and containing one hundred

COMMENTER L



COMMENTER L

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: March 31, 2022 9:10 AM
To: Matthew Alexander
Subject: FW: Waste water treatment facility

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Wednesday, March 30, 2022 5:04 PM
To: Info <info2@jdirving.com>
Subject: Waste water treatment facility

External Email Alert

Caution: This email originated from outside the organization. If you suspect this email is suspicious, please forward the email to 'phishing@jdirving.com' to notify JDI Security

Good day,

I have resided in Milford for many years. I remember many houses on Milford Rd.
When did Irving purchase the parcels of land from the end of Milford Rd. to Kingsville Rd.?
Secondly, what was the zoning on the property before it was purchased?

Thank you. Regards.

[REDACTED]

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COMMENTER M

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: April 5, 2022 11:03 AM
To: Matthew Alexander
Subject: FW: Waste water treatment facility

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Tuesday, April 5, 2022 8:51 AM
To: Info <info2@jdirving.com>
Subject: Re: Waste water treatment facility

External Email Alert

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Good Day.
I have re-sent my email from six days ago.

I would like an answer please!!!!

On Wed, Mar 30, 2022 at 5:04 PM [REDACTED] wrote:

Good day,

I have resided in Milford for many years. I remember many houses on Milford Rd.
When did Irving purchase the parcels of land from the end of Milford Rd. to Kingsville Rd.?
Secondly, what was the zoning on the property before it was purchased?

Thank you. Regards.

[REDACTED]

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COMMENTER M

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COMMENTER M

Matthew Alexander

From: Matthew Alexander
Sent: April 6, 2022 3:20 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hello Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill.

As shown in the 1953, 1962, 1976, 1984, 1994, and 2011 historical aerial photographs within Section 3.3.5 of the Environmental Impact Assessment (EIA) document, there have only ever been residences on civic 397 and 423 since at least 1951 along the stretch of Milford Road between the houses located at civic 453 and 317. Civic 397 and 423 were purchased by Irving Pulp & Paper, Limited (IPP) in 1951 from Investment Securities, Limited. Civic 423 continued as a long-term lease until the lease ended sometime between 1976 and 1984 and the building was demolished. Civic 397 continues to be leased. Civic 303 was purchased in December 2021.

Civic 397 and 423 continue to be zoned two-unit residential. Civic 303 is zoned as neighbourhood community facility; however, it has conditional zoning for light industrial. That was a historical dumpsite for construction waste and debris and at one time contained a waste incinerator (*n.b.*, all before IPP owned the property). Since IPP purchased that property, it is being cleaned up.

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER M

██████████
Dalila Court
Saint John, NB E2M 5P9

March 31, 2022

New Brunswick Department of Environment and Local Government

To Whom It May Concern:

Re: Public Consultation : Response to Environmental Treatment Facility And Water Use Reduction Project at the Reversing Falls Mill,

EIA issued by Fundy Engineering/ Irving Pulp & Paper, March 17, 2022

We have become aware of the proposal to build a waste water treatment centre in our neighbourhood. The proposed Irving Pulp & Paper waste water facility borders a neighbourhood of homes, private businesses, churches, day care facilities, community centres, and municipal recreational sport facilities and fields. It is a neighbourhood where people for generations have lived, worked, played, and taken great pride in the community.

I am a retired Professional Engineer (P.Eng.– Retired, MBA) who until recently held licences in 6 provinces including New Brunswick. My engineering career includes many development and engineering projects across Canada including New Brunswick. I have reviewed the Environmental Impact Assessment, the Question and Answer Documents and Guidelines as referenced below.

Reference :

- a) Environmental Treatment Facility And Water Use Reduction Project at the Reversing Falls Mill, EIA issued by Fundy Engineering/ Irving Pulp & Paper, March 17, 2022 including the Questions and Answers document
- b) The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government , January 2018

I submit the following questions and comments to the New Brunswick Department of Environment and Local Government.

Section 1 : Noise

EIA Questions and Answers, Potential Impact Mitigation

1. WILL THERE BE NOISE OR ODOUR COMING FROM THE FACILITY
“This facility is not expected to generate additional noise or odour.”

EIA 4.4.2.2.4 , EIA Table 50 EIA

“During operation it is anticipated that there will be no change in sound emissions.”

“If there is a public concern regarding the possibility of additional sounds being emitted from the Project , additional vegetation could be planted within the landscaped berm.”

EIA 4.4.4.4.2 : Building will be 5.4 m above Milford Rd.

EIA Berm Figure 93, 94, 95 , 2.7.1.9

1. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional noise?
 - a. What are the current levels of noise at the various receptors (residences, businesses etc.) in very close proximity and within 2 kilometres at different times of day throughout the year? Ambient noise levels from existing sources vary during the day and night. What are ambient noise levels from these sources?
 - b. The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government, January 2018 section 3.0 requires that the existing ambient noise levels must be included in the EIA. The information provided in EIA 4.4.2.2 Sound Emissions is inadequate and does not meet proper engineering and planning practise. In the table in EIA 4.4.2.2, ambient noise is stated as typically 55 db at 15 m distance. There is no engineered data or analysis offered for this statement. Where are these levels measured? What are the levels at nearby receptors? What time of day are these levels measured?
 - c. A berm is proposed as a noise barrier with a few trees on top. The elevation of the top of the berm is not specified and may not be as high as the process building and its associated noise producing equipment. Process building will be 5.4 m above Milford Rd. as per EIA section 4.4.4.4.2. What is top of berm elevation? Is it higher than process building? Pictures provided imply it won't be as high.
 - d. In EIA, Figure 93, 94 and 95 the berm is shown as optional. Is the berm to be included or not?

The trees on the berm as presented are not an effective noise barrier and are unacceptable as they do not meet any engineered noise mitigation standard. There is no engineered data from an acoustic engineer supporting this design. In EIA, 4.4.2.2.4 *“If there is public concern regarding the possibility of additional sounds being emitted from the Project, additional vegetation could be planted within the landscaped berm”*. Adding more trees on the small berm will not provide any effective noise mitigation. In any case, adding mitigation effort after the facility is complete and operational is not guaranteed by IPP and is far too late in the process.

Typically, engineered acoustic walls are used as noise barriers. Examples can be seen on various highways, roads, commercial and industrial developments near residential communities across Canada. Wood fence noise barriers are often used in urban areas but they must meet engineered standards. Regardless of the type of noise barriers used it cannot be evaluated without a proper acoustic study.

- e. What will the noise levels be at the residence receptors in close proximity when all of the new equipment is included in the analysis?
- f. What will the noise levels be once the new facility and associated equipment is operational?

Residential receptors are extremely close to the proposed facility. There is no reference to a proper independent engineered noise acoustic study identifying noise receptors(residences, businesses, churches, day care, sports facilities etc.) that are closest and within a few kilometres and noise levels at various times of day and night due to the new facility . A noise study by an independent acoustic engineering firm with proper modelling can generate these results. At minimum, good development planning and engineering practise criteria requires this acoustic analysis and report. This needs to be done before any statement as per the EIA can be validated and the noise impact on residences in close proximity determined.

- g. Will an engineered acoustic report be issued to properly determine noise levels at nearby receptors?

Section 2: Light

EIA Questions and Answers, Potential Impact Mitigation

5. WILL THIS NEW FACILITY GENERATE A LOT OF LIGHT AND MAKE IT DIFFICULT FOR US TO SLEEP?

“There is a minimal lighting associated with this Project. For employee safety and for process and security monitoring, there will be some lighting. Those lights will be designed to downwards and limit the amount of light that can spill into adjacent areas.”

Reference : EIA 2.7.2.6.1, 2.7.1.8.1.8, 4.4.4.4,1

2. How will the light at night impact the neighbourhood?

Exterior lighting at any retail, commercial and industrial site is always designed to point downwards and not into adjoining properties as this is basic good engineering practise and required by most municipalities. This statement does not mean that lighting levels will not affect nearby residences. Existing lighting levels at Milford Road residences must not be increased by the new facility exterior lighting.

As per EIA, Exterior lighting will be installed at 4.6 m above grade every 9m to 12 m. Actual lights and fixture strength are not specified only that they are LED. Lighting will be on at all times during the night.

EIA states light interference will be minimized so minimal effect on residences. There is no supporting documentation to specify what this means and what actual lighting levels will be. There is no commitment to any light level adjacent to residences and along Milford Rd.

There is no photometric (lighting) study presented to determine the light levels along the Irving property line and Milford Road. Lighting levels are not specified. Photometric studies are standard requirements for development approvals in urban municipalities in Canada.

The effect of the new exterior lighting on nearby residences cannot be determined from the EIA.

Will an engineered photometric lighting study be completed and mitigation implemented to ensure actual minimal specified lighting levels on nearby residences?

Section 3 : Odours and Emissions

Questions and Answers, Potential Impact Mitigation

1. WILL THERE BE NOISE OR ODOUR COMING FROM THE FACILITY

“This facility is not expected to generate additional noise or odour.”

EIA 4.4.4.2 Potential Impacts

Between the late 1990s and early 2000s, the mill reduced TRS emissions by about 80% which is demonstrated in the ambient air quality monitoring data included in Section 3.1.2.2. This project will not result in any material changes to the current TRS emissions from the Mill and there should be no changes in the surrounding air shed.

3. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?
 - a. The Statement regarding TRS does not address the odours generated by operations at the waste water facility but rather odour from the further away mill facility. Will the new waste water facility produce odours that will affect nearby residences?
 - b. What are the current odours at nearby receptors (residences, businesses, churches, day care etc.) and not just at the monitoring station? The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government, January 2018 section 3.0 requires that the existing air quality levels must be included in the EIA.

EIA 4.4.4.3 Proposed Mitigation

“Odour abatement systems (i.e. air scrubbers in the process building), or systems that help mitigate the generation of odours (e.g., subsurface air blowers, solids removal systems, etc.) should be maintained on appropriate schedules to limit the amount of odours generated.”

“IPP’s protocol for handling odour complaints should be reviewed to ensure that measures exist for receiving, investigating, managing, and tracking odour complaints from the environmental treatment facility in a timely manner.”

4. These statements confirm the presence of odours produced by the waste water facility. What level are the odours going to be limited to? What liability does IPP have to ensure the nearby residences are not affected by odour?
 - a. The proposed waste water technology and open tanks will release odours. Where is the technical engineered analysis and modelling determining odour levels at nearby receptors (residential, business, churches, day care, recreational municipal sports facilities etc).
 - b. What assurances can be provided to ensure IPP is responsible and liable to ensure nearby residential zoned properties are not negatively affected by odour?

“Irving Pulp & Paper is a modern mill with a strong environmental culture, which is reflected in mill collection and reuse systems that ensure a clean effluent with very little odour. We do not anticipate odour from the tanks.”

5. Clean effluent and very little odour are subjective terms. What engineered data supports this? Can this be quantified?

- a. Open tanks of effluent and biological treatment have the potential to give off odour and emissions to nearby receptors including residences. This is precisely the reason that a protocol to handle odour complaints from residences is recommended by Fundy Engineering in the EIA.
- b. This statement is not supported by any evidence, data or engineered analysis.

*“This is a water treatment facility, which treats **water only**. Because the water is warm, there could, at times, be some light water vapour visible near the surface of the tanks.”*

“Ventilation from the process building will be tempered, to prevent any dust, odours, or particulate matter from the part of the treatment process from leaving the building.”

- 6. The area is zoned as heavy industrial not water treatment. Is rezoning required?
- 7. The first statement that the facility “treats water only” is misleading. The process treats effluent from the mill which contains water, other materials/substances and chemicals. If it was pure water it would not need treatment. What are the actual emissions?
- 8. There is no data or engineered analysis to quantify emissions to nearby receptors in the EIA . There is no modelling or dispersion information to indicate what the emissions (type and level) will be at nearby receptors and in the general area. Where is the information to quantify actual emissions?
- 9. What are the emissions? Monitoring data from East Saint John and uptown Saint John is irrelevant and not adequate as it does not quantify existing air quality in the affected area. The Guide to Environmental Impact Assessment in New Brunswick, Department of Environment and Local Government, January 2018 section 3.0 requires that the existing ambient air quality must be included in the EIA.
- 10. Will the air quality levels in the affected areas and within 2 km of the waste water facility for all emissions be established and presented?

Please provide a response to my questions and concerns. The EIA as presented is incomplete as information is missing. The proposed facility as presented will negatively affect the very close residential zoned properties.

Yours truly,

██████████
██████████
██████████

COMMENTER N

██████████
██████ Dalila Court
Saint John, NB E2M 5P9

April 1, 2022

New Brunswick Department of Environment and Local Government

To Whom It May Concern:

Re: Public Consultation : Response to Environmental Treatment Facility And Water Use Reduction Project at the Reversing Falls Mill, Second Input Submission.

EIA issued by Fundy Engineering/ Irving Pulp & Paper, March 17, 2022

On March 31, 2022, I submitted questions and comments regarding the proposal to build a wastewater treatment facility. This second submission is specific to the Wastewater Treatment sector requirements “Additional information Requirements for Wastewater Treatment Projects version 04-11-25” – issued by the Government of New Brunswick.

The proposed Irving Pulp & Paper wastewater facility borders a neighbourhood of homes, private businesses, churches, day care facilities, community centres, and municipal recreational sport facilities and fields. It is a neighbourhood where people for generations have lived, worked, played, and taken great pride in the community.

I am a retired Professional Engineer (P.Eng.– Retired, MBA) who until recently held licences in 6 provinces including New Brunswick. My engineering career includes many development and engineering projects across Canada including New Brunswick. The Environmental Impact Assessment, the Question and Answer Documents and Guidelines have been reviewed.

References :

- Additional Information Requirements for Wastewater Treatment Projects version 04-11-25

EIA Questions and Answers, Potential Impact Mitigation

1. WILL THERE BE NOISE OR ODOUR COMING FROM THE FACILITY

“This facility is not expected to generate additional noise or odour.”

Additional information Requirements for Wastewater Treatment Projects version 04-11-25 issued by the New Brunswick Government:

Definition

This guideline is applicable to all municipal and industrial waste water disposal or treatment facilities, other than domestic, onsite sewage disposal systems.

Section 2.0 Undertaking

v) Siting Considerations:

- *Discuss the location with respect to existing sensitive land issues (e.g. residential properties, schools, recreational, facilities, tourist areas, etc.)*

Section 4.0 Summary of Environmental impacts

All anticipated impacts should be described and discussed. These will depend on the scope and complexity of the project as well as the project location. See registration Guide for further information. Examples of impacts resulting from this class of project may include but are not limited to the following:

COMMENTER N

- *Odour Impact – Provide an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property*

Questions and Comments

1. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?

In EIA Section 2.3: ***“this EIA meets the requirements of the NBDELG (2018) Guide to EIAs and the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants”***

In EIA, ***Table 3 Summary of the potential environmental constraints for locations evaluated for siting the environmental treatment facility proposed for the Reversing Falls Mill in Saint John New Brunswick , Other Potential Constraints, Residential Receptors, Mill West, 100m to nearest residence on Milford Road.***

The proposed Irving Pulp & Paper wastewater facility borders a neighbourhood of homes, private businesses, churches, day care facilities, community centres, and municipal recreational sport facilities and fields. As per the EIA, the nearest residence on Milford Road is 100 m from the facility.

- a) What will the odour impact from the proposed waste water facility be on the neighbourhood? It must be determined that these sensitive areas will not be affected by odour. Will information be provided to confirm the odour impact on the adjacent neighbourhood?
- b) Due to the sensitive adjacent receptors in very close proximity to the proposed facility, it is imperative that the requirement of the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants to provide an odour impact analysis within 500 m be met. This is not included in the EIA. Where is this information?
- c) The statement that the EIA meets the requirements of NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants is not supported.
- d) How will an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property be provided as required (certified and stamped by a Professional Engineer or Scientist)?

The EIA as presented is incomplete.

Yours truly,

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████████████████

██

COMMENTER N

Additional Information Requirements for Wastewater Treatment Projects

Pursuant to Section 5(2) of the *Environmental Impact Assessment Regulation* of the Clean Environment Act, this document is intended to assist proponents in preparing a registration submission for projects involving the above-mentioned sector. It should be read in conjunction with the General Information Requirements as outlined in the latest version of the Registration Guide. Note that the following items are requirements **in addition to** those outlined in the Registration Guide. The information requested in the Registration Guide must also be provided. For further assistance, please contact the Project Assessment and Approvals Branch, Department of Environment at (506)-444-5382.

After reviewing a registration submission, the Technical Review Committee may require other information beyond the items listed below and in the Registration Guide.

Definition

This guideline is applicable to all municipal and industrial wastewater disposal or treatment facilities, other than domestic, on-site sewage disposal systems.

A complete list of potential triggers for project registration is provided in Schedule “A” of the Regulation. To determine if registration is required for a specific project, please contact the Project Assessment and Approvals Branch at the number listed above.

1.0 THE PROPONENT

See Registration Guide

2.0 THE UNDERTAKING

(iii) Purpose/Rationale/Need for the Undertaking:

- How are the current wastewater treatment demands being met?

(v) Siting Considerations:

- Discuss the location with respect to existing sensitive land uses (e.g. residential properties, schools, recreational facilities, tourist areas, etc.)
- If the facility is intended for municipal use, does the community have communal potable water supply and where is it compared to the proposed waste water treatment plant (WWTP) location?

COMMENTER N

- Have the locations of existing or proposed *Wellfield Protected Areas* and *Watershed Protected Areas* been taken into consideration in the siting of the facility?
- Note that the proponents of new wastewater treatment facilities for municipal use should examine and fully exhaust potential locations within the municipal boundaries prior to looking outside the municipal limits.
- The current New Brunswick siting standards for wastewater treatment facilities state that these facilities cannot be located within a 1:20 year floodplain. If applicable, delineate the floodplain on the proposed site. Should a floodplain exist, its extent must be determined and clearly delineated using mapping using a scale of 1:10,000. Should floodplains exist within the proposed facility footprint or on the property of the proposed facility, the proponent is required to provide rationale for the facility location and to describe what mitigation the proponent is intending to implement. Specific attention in the registration document must be given to the location and design of the facility with respect to known flood levels, ice movement, freshet discharges and hydraulic upheavals.

(vi) Physical Components and Dimensions of the Project:

Provide a detailed description of the proposed project, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- The proponent is required to identify in general terms all infrastructures related to the collection and release of wastewater. Detailed engineering drawings are not required however the proponent should identify the following information on an appropriate scale map: location of all collection piping; number and location of all lift stations; location of outfall piping; proposed lagoon design features if applicable (type of liner, size, retention time, etc.).
- A design brief should be provided for the proposed facility, describing the type of treatment system that is planned (facultative lagoon, surface aeration lagoon, subsurface aeration lagoon, constructed wetland, rotating biological contactor, other mechanical system, etc.) and describing various design features (size, design capacity, detention time, effluent treatment criteria, etc.).
- If subsurface disposal of waste water is being proposed, please provide: a) a survey plan of the property to identify exact lot dimensions for an on-site waste disposal assessment, b) a contour plan should also be submitted if slopes on the lot are greater than 5%, and c) a description of the permeability (hydraulic conductivity) of the disposal area. (For soils with low permeability, indicate the source and estimated volume of imported material that will be required.)

(vii) Construction Details:

COMMENTER N

Provide a detailed description of the proposed construction activities and methods, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- If a subsurface wastewater disposal system is proposed, confirm that the area for the disposal field will be marked off or flagged off to prevent soil compaction by heavy equipment.

(viii) Operation and Maintenance Details:

Provide a detailed description of the proposed project's operation and maintenance characteristics, addressing the requirements contained in the Registration Guide. For this class of project the required information includes but is not limited to the following:

- Describe the point of discharge into the receiving environment. This description should also identify the diffusion/dispersion method for the discharge.
- For river or marine discharge locations, provide information regarding the flow volume and an anticipated dilution factor to be achieved from the facility. Include a description of the mixing zone. Will the receiving stream always have at least eight times more volume of water than effluent?
- Will disinfection be used prior to effluent discharge? If so, please identify the technology and operating procedures. The proponent should note that if chlorination of the treated effluent is the preferred option, it must be accompanied with a de-chlorination process.
- To what level of its nominal capacity will the facility be functioning at the beginning of its operation?
- For municipal systems provide a prediction of probable loading growth and future extension of municipal services. How many years of additional capacity does the design provide? The submission must also include a detailed listing of the number of residential, institutional, commercial and industrial users to be serviced with the system.
- If the system is an expansion of an existing municipal wastewater treatment lagoon with a combined (storm and sanitary) sewer system, how does the system operate during storm events? Please note that NBDELG does not approve any new combined sewer systems.
- Will the system discharge to the receiving environment be batch or continuous? If the discharge will be on a batch basis, when or how often are discharges likely to occur?
- For municipal systems, will any special industries or significant users be using the treatment facilities? Assess the possibility of either hazardous chemicals in the system or significant changes in the system loading as a result of such users.

- Will the facility be designed to allow it to receive hauled septage from septic service companies or other industrial facilities?
- Are pump or lift stations required? If so, please locate them on a map. Will they have emergency power? If the pumping station does not have back-up power, what mitigation measures are proposed to minimize environmental impacts from by-pass events?
- Describe the projected characteristics of the treated effluent (e.g., BOD, TSS, TKN, TP, etc.) and provide information on projected effluent flow volumes.
- Please note that NBDELG's effluent quality objectives for municipal wastewater systems are 20 mg/l for BOD and 20 mg/l for TSS. If the proposed municipal project does not meet these objectives, a thorough justification must be provided.
- Characteristics of the raw influent wastewater loadings to the wastewater treatment facility (chemical and physical) should be provided so that the adequacy of the design can be verified by reviewers.
- Operation and Maintenance (O&M) targets or criteria should be established for the proposed facility. This information is usually known relatively early in the planning process as the facility owner may have physical or budgetary considerations which limit options for long term O&M. This information can be used in the EIA registration document, in conjunction with other material, to inform TRC members of the rationale used by the proponent for decision-making.
- Will there be disposal of sludge in the future? How much will be produced and how and where will it be treated or disposed of?
- Who will be responsible for the maintenance of the system? Note that for residential subdivisions with communal water and wastewater systems outside incorporated areas, the department will require that a public entity (municipality, commission) own and maintain the infrastructure associated with the development.

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

Include all relevant environmental features as noted in the Registration Guide. Examples of issues that may be of particular relevance to this class of project include but are not limited to the following:

- Current uses of the receiving stream downstream of the outfall; (e. g. swimming, drinking water, shellfish harvesting)
- The presence of other effluent discharges upstream or downstream of the proposed discharge location.

- For systems discharging to surface water, the fish habitat in the zone of influence of the proposed discharge.
- If subsurface disposal of waste water is being proposed, the distances to wells and septic fields on neighbouring properties.

4.0 SUMMARY OF ENVIRONMENTAL IMPACTS

All anticipated impacts should be described and discussed. These will depend on the scope and complexity of the project as well as the project location. See the Registration Guide for further information. Examples of impacts resulting from this class of project may include but are not limited to the following:

- Odour impact - Provide an odour impact analysis for any existing sensitive land uses within 500m of the boundary of the subject property.

5.0 SUMMARY OF PROPOSED MITIGATION

Describe all mitigative measures that will be employed to minimize the potential environmental impacts identified above. These may include but are not limited to the following:

- Describe any proposed pollution control equipment and discharge monitoring programs.
- What contingency plans are in place for power failures and other malfunctions?
- What monitoring of nearby wells, receiving stream and/or of effluent is proposed?
- If surface aeration is the preferred option, how will potential concerns about aerosols impacting health of neighbours be addressed?
- In the case of municipal systems, will the consulting engineer be providing the municipality with sample bylaws concerning wastewater collection, such as allowable volumes or contaminants by users into the collection system?

Other mitigative measures will vary depending on the size, scope and complexity of the project and depending on its location with respect to environmental features. See the Registration Guide for additional guidance.

6.0 PUBLIC INVOLVMENT

See Registration Guide.

7.0 APPROVAL OF THE UNDERTAKING



See Registration Guide.

8.0 FUNDING

See Registration Guide.

9.0 SIGNATURE

See Registration Guide.

10.0 SUBMISSION INSTRUCTIONS

See Registration Guide.

COMMENTER N

Matthew Alexander

From: Matthew Alexander
Sent: April 14, 2022 1:45 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Mr. [REDACTED]:

Thank you for your two letters (via emails from Ms. [REDACTED]) regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions that have been gleaned from those letters.

1. Will there be noise or odour coming from the facility?

As noted within the Executive Summary of the Environmental Impact Assessment (EIA), there is little risk of loud sounds being emitted during Project operation. Equipment that will generate loud sounds, such as air blowers, pumps, and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds.

Also noted within the Executive Summary of the EIA, there is a negligible risk of odours being released from the Project. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool air and the process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.

Any exterior motors are being specified from vendors as low-noise.

2. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional noise?

All mechanical equipment is expected to emit sounds < 80 dBA at 1 m based on equipment vendor data. The Inverse Square Law can be used to estimate a sound pressure level at a distance. The principle of the Law is that a point source emits a sound wave uniformly in all directions and the sound wave energy at any given point away from the source is diminished as function of the total surface area of a sphere coincident with that point. The formula to calculate sound attenuation over a distance for a point source is:

$$Lp(r_2) = Lp(r_1) - 20 \text{ Log}_{10} (r_2 \div r_1)$$

Where:

$Lp(r_1)$ = known sound pressure level at the first location (typically equipment vendor data)

$Lp(r_2)$ = unknown sound pressure level at the second location

r_1 = distance from the sound source to location of known sound pressure level

r_2 = distance from sound source to the second source

The distance between the boundary of the proposed Project to the nearest non-JDI owned residential property is 90 m. The attenuated sound pressure level for that location would be 41 dBA. It is important to note that this would be for fully exposed equipment.

COMMENTER

There is minimal mechanical equipment associated with this proposed Project. None of the equipment that will emit sound, such as blowers, pumps, and fans, will be exposed. The Project Team is specifying low sound emission equipment (*i.e.*, < 80 dBA at 1 m). Additionally, loud equipment, as noted within the EIA document, will either be located within insulated wall rooms of buildings, or have shrouds attached to them for mitigating sound emissions.

A landscaped berm is also being included as part of the proposed Project. That landscaped berm will be constructed adjacent to Milford Road and will also serve to mitigate sound emissions from the Project site.

3. What are the current levels of noise at the various receptors (residences, businesses etc.) in very close proximity and within 2 kilometres at different times of day throughout the year?

It is unknown how measuring and reporting current sound levels at various receptors within a 2 km radius at different times of the day throughout the year is applicable to this proposed Project. As noted in Section 3.1.3 of the EIA document, Saint John has pockets of heavy industrialized areas and some dense urban residential neighbourhoods are found surrounding those industrialized areas because historically people wanted to be close to their places of work. Sound emissions will vary based on land-use and activity. A broad range of land uses and activities are found within a 2 km radius of the Mill site, including: rural; single-family residential; two-family residential; low-rise residential; mid-rise residential; high-rise residential; urban centre residential; parkland; neighbourhood community facility; major community facility; general commercial; corridor commercial; light industrial; medium industrial; transportation (highway and railway); and utility service.

4. What are ambient noise levels from these sources?

Please refer to the response to 3.

5. Where are these levels measured?

Every 18 months, the Mill undergoes a shutdown where the Mill is taken offline for routine inspection and maintenance is conducted on many of the key Mill systems not normally taken out of service under everyday operation. A sound level monitoring program is being undertaken as a component of the Mill shutdown that will occur in May 2022 because it provides a unique period to measure sound levels when the Mill is idle. Sound meters were placed at three locations in the Milford Road area as part of the sound level monitoring program. Those meters are currently monitoring sound levels at nearby receptors and are expected to be in place until a few weeks after the Mill shutdown is complete. This monitoring program will allow sound levels to be compared prior to, during, and after the shutdown. The meters are setup to record equivalent continuous sound levels.

6. What are the levels at nearby receptors?

Please refer to the response to 5.

7. What time of day are these levels measured?

Please refer to the response to 5.

8. What is top of berm elevation?

The exact top of berm elevation will be determined during detailed engineering design. It is expected that the berm will be about 2.5 m tall. The approximate elevation of Milford Road is 30 m, which means the top of berm elevation will be about 32.5 m. As shown in the conceptual images of Section 4.4.4.4.2 of the EIA document, trees with an approximate initial elevation of about 2 m will be planted along and atop the berm (*i.e.*, top elevation of 34.5 m). Those trees are expected to grow up to 1 m in height per year.

COMMENTER N

9. Is it higher than process building?

No, the elevation of the top of the berm (*n.b.*, not the top of the planted trees) will not be higher than the process building.

10. Is the berm to be included or not?

We thank you for pointing this out. The Note in the caption of Figure 93 and 94 of the EIA document should not have been included. During the initial conceptual design, the Project team considered the berm optional; however, it has since changed to be a required part of the overall Project as the Project team believes it will improve the aesthetics along the east side of Milford Road adjacent to the Mill.

11. What will the noise levels be at the residence receptors in close proximity when all of the new equipment is included in the analysis?

Please refer to the response to 2.

12. What will the noise levels be once the new facility and associated equipment is operational?

It is also important to note, as indicated in materials distributed at the Open House held on 23 March 2022, the Provincial government's EIA process is a proactive, preventative approach to environmental management and protection. The process is done early in the planning process of a Project and identifies steps that can be taken to avoid negative environmental impacts or reduce them to acceptable levels before they occur.

The landscaped berm is considered an environmentally-friendly sound abatement solution for this Project. It is believed that the landscaped berm will be more aesthetically pleasing than a sound wall of equal height. The natural appearance of the landscaped berm will allow it to blend into the surroundings and the sloping sides will reduce the perceived height and the feeling of confinement when travelling along Milford Road.

Sound barriers prevent direct line-of-sight propagation between sound sources and receivers. There are many types of sound barriers used, including: noise walls; rows of trees; hedges and shrubs; earthen berms; and gabions. Diffraction of sound over the horizontal edges of sound barriers typically dominates the sound field behind the barrier.

Earthen berms can be nearly as effective as sound walls erected at the same height. Research completed at the University of British Columbia found that earthen berms provide about 2 dBA less reduction in sound emissions than sound walls of the same height and position. Numerical modelling by others demonstrated that acoustically soft earthen berms should be chosen over vertically erected noise walls, where possible.

Vegetation planted along earthen berms absorbs some of the sound energy and redistributes and redirects some of the remaining sound energy. Coniferous species are best when incorporating vegetation because they provide year-round mitigation.

Should you be interested in learning more about landscaped berms and their use in the mitigation of sound emissions, the references below are offered.

- Barry, T.M. and J.A. Reagan. 1978. FHWA highway traffic noise prediction model. FHWA-RD-77-108, Washington D.C. US Department Transportation Federal Highway Administration.
- McPherson, E.G. 1988. Functions of buffer plantings in urban environments. *Agriculture, Ecosystems and Environment*, 22/23: 281-298.
- Busch, T. 1997. Scale-model investigation of highway traffic noise barriers. *Masters Thesis in Mechanical Engineering*, University of British Columbia. 184p.

COMMENTER N

Busch, T., M Hodgson, and C. Wakefield. 2003. Scale-model study of the effectiveness of highway noise barriers. *Journal of the Acoustical Society of America*, 114: 1947-1954.

Fang, C.-F. and D.-L. Ling. 2003. Investigation of the noise reduction provided by tree belts. *Landscape and Urban Planning*, 63: 187-195.

Fang, C.-F. and D.-L. Ling. 2005. Guidance for noise reduction provided by tree belts. *Landscape and Urban Planning*, 71: 29-34.

Van Renterghem, T., D. Botteldooren, and K. Verheyen. 2012. Road traffic noise shielding by vegetation belts of limited depth. *Journal of Sound and Vibration*, 331: 2404-2425.

Van Renterghem, T. and D. Botteldooren. 2012. On the choice between walls and berms for road traffic noise shielding including wind effects. *Landscape and Urban Planning*, 105: 199-210.

Oltean-Dumbrava, C., G. Watts, and A. Miah. 2013. Transport infrastructure: making more sustainable decisions for noise reduction. *Journal of Cleaner Production*, 42: 58-68.

Van Renterghem, T. 2014. Guidelines for optimizing road traffic noise shielding by non-deep tree belts. *Ecological Engineering*, 69: 276-286.

Young Hong, J. and J. Yong Jeon. 2014. The effects of audio-visual factors on perceptions of environmental noise barrier performance. *Landscape and Urban Planning*, 125: 28-37.

Van Renterghem, T., J. Forssén, K. Attenborough, P. Jean, J. Defrance, M. Hornikx, and J. Kang. 2015. Using natural means to reduce surface transport noise during propagation outdoors. *Applied Acoustics*, 92: 86-101.

Margaritis, E. and J. Kang. 2016. Relationship between urban green spaces and other features of urban morphology with traffic noise distribution. *Urban Forestry & Urban Greening*, 15: 174-185.

13. Will an engineered acoustic report be issued to properly determine noise levels at nearby receptors?

Based on the minimal sound emissions for the proposed Project, it is not believed that an engineered acoustic report is warranted. Rationale is provided in the response to 2.

14. Will this new facility generate a lot of light and make it difficult for us to sleep?

No, this new facility will not generate light at levels that will make it difficult for residents to sleep. Artificial lighting technology has changed considerably over the past few decades. For example, exterior luminaries for this proposed Project will be Light-Emitting Diodes (LEDs) that shine downwards. LED technology has only been commercially available for about the past decade. Streetworks OVF lighting, which is proposed for this Project, will minimize the effect on the environment and neighbours. The lighting will be designed to only light the area that needs it, be no brighter than necessary, minimize blue light emissions, and be full shielded. These features are not only important for mitigating impacts to residential neighbours, but protecting against attracting birds to avoid collisions.

This area is not a designated dark sky preserve. There are street lights on every second powerline pole along Milford Road and additional street lights at intersections, such as Violet Street and Williams Street. Those street lights, which are either sat-m or sat-s Satellite™ series luminaries, are placed for pedestrian and vehicle safety. Similar to the lights proposed for this Project, those street lights are modern and minimize sky glow, spill light, and glare.

15. How will the light at night impact the neighbourhood?

It is not expected that the artificial lighting from the proposed Project will impact the surrounding neighbourhood.

16. Will an engineered photometric lighting study be completed and mitigation implemented to ensure actual minimal specified lighting levels on nearby residences?

As described in Section 2.7.1.8.1.8 of the EIA document, artificial lighting will be limited to that necessary for employee safety and for process and security monitoring. The landscaped berm constructed adjacent to Milford Road will further mitigate light reaching nearby residences.

COMMENTER N

17. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?

It is important to note that this Project will be used to polish industrial effluent that has already undergone pollution prevention processing within the Mill. As noted in Section 2.7.1 of the Environmental Impact Assessment (EIA) document, the existing in-Mill pollution prevention equipment, save for the small Moving Bed Biofilm Reactor, will remain in service after this proposed Project is operational. The Mill's existing pollution prevention system is described in Section 2.2.1 and Appendix III of the EIA document. The effluent from the existing in-Mill pollution prevention system meets the current Pulp and Paper Effluent Regulations (PPERs) and does not produce any offensive odours. This proposed Project will polish the effluent from the existing pollution prevention system to allow IPP to meet or exceed any expected future changes to the PPERs. As such, there is a negligible risk of odours being released from the Project.

18. The Statement regarding TRS does not address the odours generated by operations at the waste water facility but rather odour from the further away mill facility. Will the new waste water facility produce odours that will affect nearby residences?

As noted within the Executive Summary of the EIA, there is a negligible risk of odours being released from the Project. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool air and the process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours. Up close, the additional concentrated solids removed by this proposed Project and contained within the Processing building will have an earthy smell as they are comprised of soluble wood materials.

19. What are the current odours at nearby receptors (residences, businesses, churches, day care etc.) and not just at the monitoring station?

Odours at nearby receptors, such as residences, businesses, churches, day cares, etc. would vary based on activities occurring at those properties.

20. What level are the odours going to be limited to?

Please refer to the response to PC68. Additionally, while reviewing the six effluent technologies, members of the Project team visited operating treatment plants at other locations around the world, which is described within Section 2.6.3.7.1 of the EIA document. Visits to facilities with identical technology proposed for this Project revealed minimal earthy odours at or within a few meters of the tanks only and discussions with operators of those facilities revealed no operational issues with odours. It is important to note that those other facilities do not have an upstream pollution prevention system in place. The upstream pollution prevention system is unique to the Reversing Falls Mill. The ETF will be used for polishing the effluent before discharge.

21. What liability does IPP have to ensure the nearby residences are not affected by odour?

IPP is one of the few pulp mills and paper mills operating in an urban setting. As a good neighbour, IPP has invested considerably in technology to ensure little to no odour affects nearby residences. As shown at the open house, Total Reduced Sulphur (*i.e.*, odour causing compounds) emissions have been reduced by 99.5 % since 1980, and SO₂ emissions have been reduced by 85 % since 1994. In the early 2000s, an exhaust stack scrubber was added at the Mill to further lower emissions. The Reversing Falls Mill is one of the lowest odour-emitting mills in the world.

IPP is committed to continue being a socially responsible company and good neighbour. IPP has an existing process for monitoring, investigating, managing, and tracking odour complaints from the Mill and are reported annually within J.D. Irving, Limited's Forest Products Sustainability Report. IPP commits to adhering to that process with respect to the proposed Project.

COMMENTER

22. Where is the technical engineered analysis and modelling determining odour levels at nearby receptors (residential, business, churches, day care, recreational municipal sports facilities etc).

Odour modelling was not done as part of the EIA because odour was not identified during the review to be an issue of major concern. The following are the primary reasons why odour was not identified as an issue of major concern with this proposed Project: it will be polishing effluent that has already undergone pollution prevention processing; visits to other facilities with identical technology identified minimal earthy odours at or within a few meters of the tanks only; and discussions with operators of other facilities with identical technology revealed no operational issues with odours.

23. What assurances can be provided to ensure IPP is responsible and liable to ensure nearby residential zoned properties are not negatively affected by odour?

Please refer to the response to 21.

24. Clean effluent and very little odour are subjective terms. What engineered data supports this?

Please refer to the response to 22 for odour and 17 for effluent.

25. Can this be quantified?

Please refer to the response to 22.

26. The area is zoned as heavy industrial not water treatment. Is rezoning required?

No, rezoning of the heavy industrial lands is not required for the environmental treatment facility and this has been confirmed with representatives from the City of Saint John.

27. The first statement that the facility “treats water only” is misleading. The process treats effluent from the mill which contains water, other materials/substances and chemicals. If it was pure water it would not need treatment. What are the actual emissions?

Please refer to the response to 17. As noted in the EIA document, there will be some substances and chemicals added during the polishing of the industrial effluent. Those substances include sulfuric acid and sodium hydroxide for pH control, nitrogen and phosphorous will be added to support microorganism growth, and a polymer may be added to aid with solids removal. The water discharge from the Reversing Falls Mill meets the 1992 PPERs that are in force today. This proposed Project will ensure the Mill meets or exceeds expected future changes to the Pulp and Paper Effluent Regulations.

28. There is no data or engineered analysis to quantify emissions to nearby receptors in the EIA. There is no modelling or dispersion information to indicate what the emissions (type and level) will be at nearby receptors and in the general area. Where is the information to quantify actual emissions?

There are no emissions to air from this proposed Project. Emissions related to this proposed Project are to waters of the Saint John River. As noted in Section 4.4.2.3.2 and Appendix XII of the EIA document, IPP contracted the Ocean, Coastal, and River Engineering Research Centre of the National Research Council to conduct modelling and assessment of the effluent discharge from the Mill on the Saint John River. The hydrodynamic modelling results show that the intensely turbulent flows through the Reversing Falls rapidly disperse the effluent plume. Reducing the effluent volume and extent, combined with the enhanced effluent quality through this proposed Project will be beneficial to the Saint John River.

29. What are the emissions?

COMMENTER N

The emissions are to waters of the Saint John River. Characteristics of the feed to and discharge from the proposed environmental treatment facility are presented in Table 7 and Table 8 of the EIA document.

30. Will the air quality levels in the affected areas and within 2 km of the waste water facility for all emissions be established and presented?

The NBDELG issues Approvals To Operate for facilities under the Air Quality Regulation [97-133] of the *Clean Air Act* [S.N.B. 1997, c. C-5.2] and the Water Quality Regulation [82-125] of the *Clean Environment Act* [R.S.N.B. 1973, c. C-6]. For this proposed Project, there are no emissions to air that will require approval under the *Clean Air Act* (i.e., there are no vents or stacks emitting substances to the air).

31. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?

It is important to note that this Project will be used to polish industrial effluent that has already undergone pollution prevention processing within the Mill. As noted in Section 2.7.1 of the Environmental Impact Assessment (EIA) document, the existing in-Mill pollution prevention equipment, save for the small Moving Bed Biofilm Reactor, will remain in service after this proposed Project is operational. The Mill's existing pollution prevention system is described in Section 2.2.1 and Appendix III of the EIA document. The effluent from the existing in-Mill pollution prevention system meets the current Pulp and Paper Effluent Regulations (PPERs) and does not produce any offensive odours. This proposed Project will polish the effluent from the existing pollution prevention system to allow IPP to meet or exceed any expected future changes to the PPERs.

The PPERs require that daphnia must be able to survive for 48 hours and rainbow trout must be able to survive 96 hours within the Mill's effluent. The Mill currently meets those requirements.

32. What will the odour impact from the proposed waste water facility be on the neighbourhood? It must be determined that these sensitive areas will not be affected by odour. Will information be provided to confirm the odour impact on the adjacent neighbourhood?

Please refer to the response to 31.

33. Due to the sensitive adjacent receptors in very close proximity to the proposed facility, it is imperative that the requirement of the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants to provide an odour impact analysis within 500 m be met. This is not included in the EIA. Where is this information?

The NBDELG's, *A Guide to Environmental Impact Assessment in New Brunswick*, and the 2004 Sector Guidelines for Wastewater Treatment Plants are designed to assist proponents and / or their consultant with the preparation of an EIA registration document. Those documents are guidelines, which are recommended, non-mandatory, optional procedures.

The following are the primary reasons why odour was not identified as a major concern with this proposed Project: it will be polishing effluent that has already undergone pollution prevention processing; visits to other facilities with identical technology identified minimal earthy odours at or within a few meters of the tanks only; and discussions with operators of other facilities with identical technology revealed no operational issues with odours.

34. How will an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property be provided as required (certified and stamped by a Professional Engineer or Scientist)?

Please refer to the response to 33.

COMMENTER N

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.

FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

Serving Our Clients' Needs First

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COMMENTER N

Matthew Alexander

From: [REDACTED]
Sent: April 11, 2022 9:08 AM
To: [REDACTED] Matthew Alexander; patrick.mbaya@gnb.ca
Subject: Re: FW: Questions from [REDACTED]

I have received no response to my questions of March 31 and April 1, 2022

I am waiting for answers to my questions regarding the impact to our neighbourhood and the EIA.

[REDACTED]

On Sun, Apr 10, 2022 at 8:53 AM [REDACTED] wrote:

Gentlemen,

I forwarded these questions to you on March 31 and have not had a response.

Further questions will be submitted depending on your response. The public consultation is scheduled to end on April 20th.

My questions in addition to Mr. [REDACTED] are:

- How do we get an extension to properly review the response and follow up with further questions?

Thanks,

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

[REDACTED]

COMMENTER N

From: [REDACTED]
Sent: March 31, 2022 3:53 PM
To: Matthew Alexander <matt.alexander@fundyeng.com>; Mbaya, Patrick (ELG/EGL) <Patrick.Mbaya@gnb.c>
Cc: [REDACTED]
Subject: Questions from [REDACTED]

Please see attached questions/concerns from Mr. [REDACTED].

Thanks,

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COMMENTER N

Matthew Alexander

From: Matthew Alexander
Sent: April 11, 2022 11:02 AM
To: [REDACTED] patrick.mbaya@gnb.ca
Subject: RE: FW: Questions from [REDACTED]

Mr. [REDACTED]:

As noted in the response to Ms. [REDACTED] this morning, we are still preparing responses to your questions. Once complete, they will be sent along.

Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager



Bio-Resources | Building Systems | Environmental | Geotechnical & Surveying | Project Management

From: [REDACTED]
Sent: April 11, 2022 9:08 AM
To: [REDACTED] Matthew Alexander <matt.alexander@fundyeng.com>;
patrick.mbaya@gnb.ca
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[REDACTED]

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COMMENTER N

Matthew Alexander

From: [REDACTED]
Sent: April 18, 2022 2:59 PM
To: Matthew Alexander
Cc: patrick.mbaya@gnb.ca; [REDACTED]
Subject: Re: FW: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill
Attachments: [REDACTED] EIA IPP April 18_2022.pdf

Dear Mr. Alexander,

Donna has forwarded your response to my correct email address. Please see attached by response and request for complete EIA information.

Regards,
[REDACTED]

On Sun, Apr 17, 2022 at 10:49 AM [REDACTED] wrote:

Hi [REDACTED],

Did he answer your questions?

Please note we are requiring Proof of Vaccination to enter the office as well as masks to be worn. We are happy to continue serving you virtually if you are unable to comply with our measures

[REDACTED]

From: Matthew Alexander <matt.alexander@fundyeng.com>
Sent: April 14, 2022 1:45 PM
To: [REDACTED]
Cc: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Mr. [REDACTED]:

COMMENTER N

Thank you for your two letters (via emails from Ms. [REDACTED]) regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions that have been gleaned from those letters.

1. Will there be noise or odour coming from the facility?

As noted within the Executive Summary of the Environmental Impact Assessment (EIA), there is little risk of loud sounds being emitted during Project operation. Equipment that will generate loud sounds, such as air blowers, pumps and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds.

Also noted within the Executive Summary of the EIA, there is a negligible risk of odours being released from the Project. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool air and the process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.

Any exterior motors are being specified from vendors as low-noise.

2. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional noise?

All mechanical equipment is expected to emit sounds < 80 dBA at 1 m based on equipment vendor data. The Inverse Square Law can be used to estimate a sound pressure level at a distance. The principle of the Law is that a point source emits a sound wave uniformly in all directions and the sound wave energy at any given point away from the source is diminished as function of the total surface area of a sphere coincident with that point. The formula to calculate sound attenuation over a distance for a point source is:

$$Lp(r_2) = Lp(r_1) - 20 \text{ Log}_{10} (r_2 \div r_1)$$

Where:

$Lp(r_1)$ = known sound pressure level at the first location (typically equipment vendor data)

COMMENTER N

$L_p(r_2)$ = unknown sound pressure level at the second location

r_1 = distance from the sound source to location of known sound pressure level

r_2 = distance from sound source to the second source

The distance between the boundary of the proposed Project to the nearest non-JDI owned residential property is 90 m. The attenuated sound pressure level for that location would be 41 dBA. It is important to note that this would be for fully exposed equipment.

There is minimal mechanical equipment associated with this proposed Project. None of the equipment that will emit sound, such as blowers, pumps, and fans, will be exposed. The Project Team is specifying low sound emission equipment (*i.e.*, < 80 dBA at 1 m). Additionally, loud equipment, as noted within the EIA document, will either be located within insulated wall rooms of buildings, or have shrouds attached to them for mitigating sound emissions.

A landscaped berm is also being included as part of the proposed Project. That landscaped berm will be constructed adjacent to Milford Road and will also serve to mitigate sound emissions from the Project site.

3. What are the current levels of noise at the various receptors (residences, businesses etc.) in very close proximity and within 2 kilometres at different times of day throughout the year?

It is unknown how measuring and reporting current sound levels at various receptors within a 2 km radius at different times of the day throughout the year is applicable to this proposed Project. As noted in Section 3.1.3 of the EIA document, Saint John has pockets of heavy industrialized areas and some dense urban residential neighbourhoods are found surrounding those industrialized areas because historically people wanted to be close to their places of work. Sound emissions will vary based on land-use and activity. A broad range of land uses and activities are found within a 2 km radius of the Mill site, including: rural; single-family residential; two-family residential; low-rise residential; mid-rise residential; high-rise residential; urban centre residential; parkland; neighbourhood community facility; major community facility; general commercial; corridor commercial; light industrial; medium industrial; transportation (highway and railway); and utility service.

4. What are ambient noise levels from these sources?

Please refer to the response to 3.

5. Where are these levels measured?

COMMENTER N

Every 18 months, the Mill undergoes a shutdown where the Mill is taken offline for routine inspection and maintenance is conducted on many of the key Mill systems not normally taken out of service under everyday operation. A sound level monitoring program is being undertaken as a component of the Mill shutdown that will occur in May 2022 because it provides a unique period to measure sound levels when the Mill is idle. Sound meters were placed at three locations in the Milford Road area as part of the sound level monitoring program. Those meters are currently monitoring sound levels at nearby receptors and are expected to be in place until a few weeks after the Mill shutdown is complete. This monitoring program will allow sound levels to be compared prior to, during, and after the shutdown. The meters are setup to record equivalent continuous sound levels.

6. What are the levels at nearby receptors?

Please refer to the response to 5.

7. What time of day are these levels measured?

Please refer to the response to 5.

8. What is top of berm elevation?

The exact top of berm elevation will be determined during detailed engineering design. It is expected that the berm will be about 2.5 m tall. The approximate elevation of Milford Road is 30 m, which means the top of berm elevation will be about 32.5 m. As shown in the conceptual images of Section 4.4.4.4.2 of the EIA document, trees with an approximate initial elevation of about 2 m will be planted along and atop the berm (*i.e.*, top elevation of 34.5 m). Those trees are expected to grow up to 1 m in height per year.

9. Is it higher than process building?

No, the elevation of the top of the berm (*n.b.*, not the top of the planted trees) will not be higher than the process building.

10. Is the berm to be included or not?

COMMENTER N

We thank you for pointing this out. The Note in the caption of Figure 93 and 94 of the EIA document should not have been included. During the initial conceptual design, the Project team considered the berm optional; however, it has since changed to be a required part of the overall Project as the Project team believes it will improve the aesthetics along the east side of Milford Road adjacent to the Mill.

11. What will the noise levels be at the residence receptors in close proximity when all of the new equipment is included in the analysis?

Please refer to the response to 2.

12. What will the noise levels be once the new facility and associated equipment is operational?

It is also important to note, as indicated in materials distributed at the Open House held on 23 March 2022, the Provincial government's EIA process is a proactive, preventative approach to environmental management and protection. The process is done early in the planning process of a Project and identifies steps that can be taken to avoid negative environmental impacts or reduce them to acceptable levels before they occur.

The landscaped berm is considered an environmentally-friendly sound abatement solution for this Project. It is believed that the landscaped berm will be more aesthetically pleasing than a sound wall of equal height. The natural appearance of the landscaped berm will allow it to blend into the surroundings and the sloping sides will reduce the perceived height and the feeling of confinement when travelling along Milford Road.

Sound barriers prevent direct line-of-sight propagation between sound sources and receivers. There are many types of sound barriers used, including: noise walls; rows of trees; hedges and shrubs; earthen berms; and gabions. Diffraction of sound over the horizontal edges of sound barriers typically dominates the sound field behind the barrier.

Earthen berms can be nearly as effective as sound walls erected at the same height. Research completed at the University of British Columbia found that earthen berms provide about 2 dBA less reduction in sound emissions than sound walls of the same height and position. Numerical modelling by others demonstrated that acoustically soft earthen berms should be chosen over vertically erected noise walls, where possible.

COMMENTER N

Vegetation planted along earthen berms absorbs some of the sound energy and redistributes and redirects some of the remaining sound energy. Coniferous species are best when incorporating vegetation because they provide year-round mitigation.

Should you be interested in learning more about landscaped berms and their use in the mitigation of sound emissions, the references below are offered.

Barry, T.M. and J.A. Reagan. 1978. FHWA highway traffic noise prediction model. FHWA-RD-77-108, Washington D.C. US Department Transportation Federal Highway Administration.

McPherson, E.G. 1988. Functions of buffer plantings in urban environments. *Agriculture, Ecosystems and Environment*, 22/23: 281-298.

Busch, T. 1997. Scale-model investigation of highway traffic noise barriers. *Masters Thesis in Mechanical Engineering*, University of British Columbia. 184p.

Busch, T., M Hodgson, and C. Wakefield. 2003. Scale-model study of the effectiveness of highway noise barriers. *Journal of the Acoustical Society of America*, 114: 1947-1954.

Fang, C.-F. and D.-L. Ling. 2003. Investigation of the noise reduction provided by tree belts. *Landscape and Urban Planning*, 63: 187-195.

Fang, C.-F. and D.-L. Ling. 2005. Guidance for noise reduction provided by tree belts. *Landscape and Urban Planning*, 71: 29-34.

Van Renterghem, T., D. Botteldooren, and K. Verheyen. 2012. Road traffic noise shielding by vegetation belts of limited depth. *Journal of Sound and Vibration*, 331: 2404-2425.

Van Renterghem, T. and D. Botteldooren. 2012. On the choice between walls and berms for road traffic noise shielding including wind effects. *Landscape and Urban Planning*, 105: 199-210.

Oltean-Dumbrava, C., G. Watts, and A. Miah. 2013. Transport infrastructure: making more sustainable decisions for noise reduction. *Journal of Cleaner Production*, 42: 58-68.

Van Renterghem, T. 2014. Guidelines for optimizing road traffic noise shielding by non-deep tree belts. *Ecological Engineering*, 69: 276-286.

Young Hong, J. and J. Yong Jeon. 2014. The effects of audio-visual factors on perceptions of environmental noise barrier performance. *Landscape and Urban Planning*, 125: 28-37.

Van Renterghem, T., J. Forssén, K. Attenborough, P. Jean, J. Defrance, M. Hornikx, and J. Kang. 2015. Using natural means to reduce surface transport noise during propagation outdoors. *Applied Acoustics*, 92: 86-101.

Margaritis, E. and J. Kang. 2016. Relationship between urban green spaces and other features of urban morphology with traffic noise distribution. *Urban Forestry & Urban Greening*, 15: 174-185.

COMMENTER N

13. Will an engineered acoustic report be issued to properly determine noise levels at nearby receptors?

Based on the minimal sound emissions for the proposed Project, it is not believed that an engineered acoustic report is warranted. Rationale is provided in the response to 2.

14. Will this new facility generate a lot of light and make it difficult for us to sleep?

No, this new facility will not generate light at levels that will make it difficult for residents to sleep. Artificial lighting technology has changed considerably over the past few decades. For example, exterior luminaries for this proposed Project will be Light-Emitting Diodes (LEDs) that shine downwards. LED technology has only been commercially available for about the past decade. Streetworks OVF lighting, which is proposed for this Project, will minimize the effect on the environment and neighbours. The lighting will be designed to only light the area that needs it, be no brighter than necessary, minimize blue light emissions, and be full shielded. These features are not only important for mitigating impacts to residential neighbours, but protecting against attracting birds to avoid collisions.

This area is not a designated dark sky preserve. There are street lights on every second powerline pole along Milford Road and additional street lights at intersections, such as Violet Street and Williams Street. Those street lights, which are either sat-m or sat-s Satellite™ series luminaries, are placed for pedestrian and vehicle safety. Similar to the lights proposed for this Project, those street lights are modern and minimize sky glow, spill light, and glare.

15. How will the light at night impact the neighbourhood?

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20. What level are the odours going to be limited to?

Please refer to the response to PC68. Additionally, while reviewing the six effluent technologies, members of the Project team visited operating treatment plants at other locations around the world, which is described within Section 2.6.3.7.1 of the EIA document. Visits to facilities with identical technology proposed for this Project revealed minimal earthy odours at or within a few meters of the tanks only and discussions with operators of those facilities revealed no operational issues with odours. It is important to note that those other facilities do not have an upstream pollution prevention system in place. The upstream pollution prevention system is unique to the Reversing Falls Mill. The ETF will be used for polishing the effluent before discharge.

COMMENTER N

21. What liability does IPP have to ensure the nearby residences are not affected by odour?

IPP is one of the few pulp mills and paper mills operating in an urban setting. As a good neighbour, IPP has invested considerably in technology to ensure little to no odour affects nearby residences. As shown at the open house, Total Reduced Sulphur (*i.e.*, odour causing compounds) emissions have been reduced by 99.5 % since 1980, and SO₂ emissions have been reduced by 85 % since 1994. In the early 2000s, an exhaust stack scrubber was added at the Mill to further lower emissions. The Reversing Falls Mill is one of the lowest odour-emitting mills in the world.

IPP is committed to continue being a socially responsible company and good neighbour. IPP has an existing process for monitoring, investigating, managing, and tracking odour complaints from the Mill and are reported annually within J.D. Irving, Limited's Forest Products Sustainability Report. IPP commits to adhering to that process with respect to the proposed Project.

22. Where is the technical engineered analysis and modelling determining odour levels at nearby receptors (residential, business, churches, day care, recreational municipal sports facilities etc).

Odour modelling was not done as part of the EIA because odour was not identified during the review to be an issue of major concern. The following are the primary reasons why odour was not identified as an issue of major concern with this proposed Project: it will be polishing effluent that has already undergone pollution prevention processing; visits to other facilities with identical technology identified minimal earthy odours at or within a few meters of the tanks only; and discussions with operators of other facilities with identical technology revealed no operational issues with odours.

23. What assurances can be provided to ensure IPP is responsible and liable to ensure nearby residential zoned properties are not negatively affected by odour?

Please refer to the response to 21.

24. Clean effluent and very little odour are subjective terms. What engineered data supports this?

Please refer to the response to 22 for odour and 17 for effluent.

COMMENTER N

25. Can this be quantified?

Please refer to the response to 22.

26. The area is zoned as heavy industrial not water treatment. Is rezoning required?

No, rezoning of the heavy industrial lands is not required for the environmental treatment facility and this has been confirmed with representatives from the City of Saint John.

27. The first statement that the facility “treats water only” is misleading. The process treats effluent from the mill which contains water, other materials/substances and chemicals. If it was pure water it would not need treatment. What are the actual emissions?

Please refer to the response to 17. As noted in the EIA document, there will be some substances and chemicals added during the polishing of the industrial effluent. Those substances include sulfuric acid and sodium hydroxide for pH control, nitrogen and phosphorous will be added to support microorganism growth, and a polymer may be added to aid with solids removal. The water discharge from the Reversing Falls Mill meets the 1992 PPERs that are in force today. This proposed Project will ensure the Mill meets or exceeds expected future changes to the Pulp and Paper Effluent Regulations.

28. There is no data or engineered analysis to quantify emissions to nearby receptors in the EIA. There is no modelling or dispersion information to indicate what the emissions (type and level) will be at nearby receptors and in the general area. Where is the information to quantify actual emissions?

There are no emissions to air from this proposed Project. Emissions related to this proposed Project are to waters of the Saint John River. As noted in Section 4.4.2.3.2 and Appendix XII of the EIA document, IPP contracted the Ocean, Coastal, and River Engineering Research Centre of the National Research Council to conduct modelling and assessment of the effluent discharge from the Mill on the Saint John River. The hydrodynamic modelling results show that the intensely turbulent flows through the Reversing Falls rapidly disperse the effluent plume. Reducing the effluent volume and extent, combined with the enhanced effluent quality through this proposed Project will be beneficial to the Saint John River.

29. What are the emissions?

COMMENTER N

The emissions are to waters of the Saint John River. Characteristics of the feed to and discharge from the proposed environmental treatment facility are presented in Table 7 and Table 8 of the EIA document.

30. Will the air quality levels in the affected areas and within 2 km of the waste water facility for all emissions be established and presented?

The NBDELG issues Approvals To Operate for facilities under the Air Quality Regulation [97-133] of the *Clean Air Act* [S.N.B. 1997, c. C-5.2] and the Water Quality Regulation [82-125] of the *Clean Environment Act* [R.S.N.B. 1973, c. C-6]. For this proposed Project, there are no emissions to air that will require approval under the *Clean Air Act* (i.e., there are no vents or stacks emitting substances to the air).

31. Where is the evidence, data or engineered analysis to support the statement that the facility is not expected to generate additional odour?

It is important to note that this Project will be used to polish industrial effluent that has already undergone pollution prevention processing within the Mill. As noted in Section 2.7.1 of the Environmental Impact Assessment (EIA) document, the existing in-Mill pollution prevention equipment, save for the small Moving Bed Biofilm Reactor, will remain in service after this proposed Project is operational. The Mill's existing pollution prevention system is described in Section 2.2.1 and Appendix III of the EIA document. The effluent from the existing in-Mill pollution prevention system meets the current Pulp and Paper Effluent Regulations (PPERs) and does not produce any offensive odours. This proposed Project will polish the effluent from the existing pollution prevention system to allow IPP to meet or exceed any expected future changes to the PPERs.

The PPERs require that daphnia must be able to survive for 48 hours and rainbow trout must be able to survive 96 hours within the Mill's effluent. The Mill currently meets those requirements.

32. What will the odour impact from the proposed waste water facility be on the neighbourhood? It must be determined that these sensitive areas will not be affected by odour. Will information be provided to confirm the odour impact on the adjacent neighbourhood?

Please refer to the response to 31.

33. Due to the sensitive adjacent receptors in very close proximity to the proposed facility, it is imperative that the requirement of the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants to provide an odour impact analysis within 500 m be met. This is not included in the EIA. Where is this information?

COMMENTER N

The NBDELG's, *A Guide to Environmental Impact Assessment in New Brunswick*, and the 2004 Sector Guidelines for Wastewater Treatment Plants are designed to assist proponents and / or their consultant with the preparation of an EIA registration document. Those documents are guidelines, which are recommended, non-mandatory, optional procedures.

The following are the primary reasons why odour was not identified as a major concern with this proposed Project: it will be polishing effluent that has already undergone pollution prevention processing; visits to other facilities with identical technology identified minimal earthy odours at or within a few meters of the tanks only; and discussions with operators of other facilities with identical technology revealed no operational issues with odours.

34. How will an odour impact analysis for any sensitive land uses within 500 m of the boundary of the subject property be provided as required (certified and stamped by a Professional Engineer or Scientist)?

Please refer to the response to 33.

Thanks,

Matt Alexander

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FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*

Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

COMMENTER N

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COMMENTER N

[REDACTED]
Dalila Court
Saint John, NB. E2M 5P9
[REDACTED]

April 18, 2022

Matt Alexander, Fundy Engineering, matt.alexander@fundyeng.com
cc Patrick Mbaya, Government of New Brunswick, Patrick.Mbaya@gnb.ca

Mr. Alexander,

Donna Mazerolle forwarded your response to my correct e-mail address. Your response to my EIA questions, regarding the "Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill" continues to be incomplete. It does not address the necessary engineering analysis and associated reports regarding noise, odour, air quality and light for the specific locations and receptors nearby and adjacent to the new IPP facility.

Odour

Your reference to anecdotal, unsupported, and undocumented evidence from other operators regarding odour does not constitute documented rigorous engineered analysis. What are the actual odour effects on various nearby specific residential receptors? What are the effects on air quality at nearby specific residential receptors?

Light

Your response does not state what the actual increased lighting levels will be from the new IPP facility lighting at the property line and at nearby specific residential receptors along Milford Road. What are the changes in lighting levels at the IPP property line and nearby residential receptors from the new lighting?

An engineered photometric lighting study is required to establish lighting levels along the IPP property line and at nearby specific receptors on Milford Road. The environmental impact of IPP lighting on nearby specific residences cannot be determined and there is no commitment from IPP to meet specific lighting performance targets. When will this engineered photometric lighting study be done?

Noise

The specific noise levels from the new IPP equipment and processes has not been determined at the various specific nearby residential receptors at various times of the day. The potential impact of the proposed landscaped berm for noise mitigation to the nearby specific residential receptors is unknown as an acoustic engineered study has not been completed. A proper assessment of the noise impact from the IPP facility to the specific nearby neighbourhood receptors cannot be made without an engineered acoustic noise study. Monitoring noise at a later date at the mill property as discussed does not allow for a proper acoustic environmental assessment at this time and does not commit IPP to meet specific acoustic performance targets. An acoustic study is needed as part of the EIA submission so when will it be done?

EIA requirements

In Section 2.3 of the EIA, you state: "*this EIA meets the requirements of the NBDELG (2018) Guide to EIAs and the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants*". In response to my question specific to the impact of odour within 500 m of a residence (Question 33), you state: "Those documents are guidelines, which are recommended, non-mandatory, optional procedures." Is this the approach the residents can expect for future IPP development along Milford Road?

Regards,

[REDACTED]
[REDACTED]

COMMENTER N

Matthew Alexander

From: Matthew Alexander
Sent: April 21, 2022 1:26 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. Your reference to anecdotal, unsupported, and undocumented evidence from other operators regarding odour does not constitute documented rigorous engineered analysis. What are the actual odour effects on various nearby specific residential receptors?

The Environmental Treatment Facility will be strictly for polishing effluent that has already undergone pollution prevention within the Mill. The effluent to be polished already meets the current Pulp and Paper Effluent Regulations. There are no issues with odours from the current effluent or the existing pollution prevention system.

The facility should not produce additional odour for residents. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool and process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.

2. What are the effects on air quality at nearby specific residential receptors?

The NBDELG issues Approvals To Operate for facilities under the Air Quality Regulation [97-133] of the *Clean Air Act* [S.N.B. 1997, c. C-5.2] and the Water Quality Regulation [82-125] of the *Clean Environment Act* [R.S.N.B. 1973, c. C-6]. For this proposed Project, there are no emissions to air that will require approval under the *Clean Air Act* (i.e., there are no vents or stacks emitting substances to the air). Because there are no air quality approvals required for this proposed Project, an assessment of the effects on air quality at nearby residential receptors was not deemed necessary as part of the EIA submission.

Section 3.1.2 of the EIA document describes the baseline air quality in the area.

The Environmental Treatment Facility will be strictly for polishing effluent that has already undergone pollution prevention within the Mill. The effluent to be polished already meets the current Pulp and Paper Effluent Regulations. There are no air quality issues with respect to the current effluent or the existing pollution prevention system.

3. Your response does not state what the actual increased lighting levels will be from the new IPP facility lighting at the property line and at nearby specific residential receptors along Milford Road. What are the changes in lighting levels at the IPP property line and nearby residential receptors from the new lighting?

The Provincial government's EIA process is a proactive, preventative approach to environmental management and protection. The process is done early in the planning process of a Project and identifies steps that can be taken to avoid negative environmental impacts or reduce them to acceptable levels before they occur. The detailed lighting package will be completed during detailed engineering design, which will be completed at a later date. The goal of that package

COMMENTER N

will be to limit artificial lighting to that necessary for employee safety and for process and security monitoring as described in Section 2.7.1.8.1.8 of the EIA document. As an added mitigative measure, a landscaped berm will be constructed adjacent to Milford Road.

Artificial lighting technology has changed considerably over the past few decades. For example, exterior luminaries for this proposed Project will be Light-Emitting Diodes (LEDs) that shine downwards. LED technology has only been commercially available for about the past decade. Streetworks OVF lighting, which is proposed for this Project, will minimize the effect on the environment and neighbours. The lighting will be designed to only light the area that needs it, be no brighter than necessary, minimize blue light emissions, and be full shielded. These features are not only important for mitigating impacts to residential neighbours, but protecting against attracting birds to avoid collisions.

This area is not a designated dark sky preserve. There are street lights on every second powerline pole along Milford Road and additional street lights at intersections, such as Violet Street and Williams Street. Those street lights, which are either sat-m or sat-s Satellite™ series luminaries, are placed for pedestrian and vehicle safety. Similar to the lights proposed for this Project, those street lights are modern and minimize sky glow, spill light, and glare.

4. An engineered photometric lighting study is required to establish lighting levels along the IPP property line and at nearby specific receptors on Milford Road. The environmental impact of IPP lighting on nearby specific residences cannot be determined and there is no commitment from IPP to meet specific lighting performance targets. When will this engineered photometric lighting study be done?

A photometric lighting study was not deemed necessary as part of the EIA submission for the reasons discussed in response to 3.

5. The specific noise levels from the new IPP equipment and processes has not been determined at the various specific nearby residential receptors at various times of the day. The potential impact of the proposed landscaped berm for noise mitigation to the nearby specific residential receptors is unknown as an acoustic engineered study has not been completed. A proper assessment of the noise impact from the IPP facility to the specific nearby neighbourhood receptors cannot be made without an engineered acoustic noise study. Monitoring noise at a later date at the mill property as discussed does not allow for a proper acoustic environmental assessment at this time and does not commit IPP to meet specific acoustic performance targets. An acoustic study is needed as part of the EIA submission so when will it be done?

There is minimal mechanical equipment associated with this proposed Project. None of the equipment that will emit sound, such as blowers, pumps, and fans, will be exposed. The Project Team is specifying low sound emission equipment (*i.e.*, < 80 dBA at 1 m). Additionally, loud equipment, as noted within the EIA document, will either be located within insulated wall rooms of buildings, or have shrouds attached to them for mitigating sound emissions.

A landscaped berm is also being included as part of the proposed Project. That landscaped berm will be constructed adjacent to Milford Road and will also serve to mitigate sound emissions from the Project site.

Using the Inverse Square Law, sound pressure levels at the property line resulting from this proposed Project will be < 45 dBA. Those levels are considered below acceptable levels from an industrial facility. Therefore, an acoustic study was not deemed necessary as part of the EIA submission.

6. In Section 2.3 of the EIA, you state: "this EIA meets the requirements of the NBDELG (2018) Guide to EIAs and the NBDELG (2004) Sector Guidelines for Wastewater Treatment Plants". In response to my question specific to the impact of odour within 500 m of a residence {Question 33}, you state: "Those documents are guidelines, which are recommended, non-mandatory, optional procedures." Is this the approach the residents can expect for future IPP development along Milford Road?

COMMENTER N

The NBDELG's, *A Guide to Environmental Impact Assessment in New Brunswick*, and the 2004 Sector Guidelines for Wastewater Treatment Plants are designed to assist proponents and / or their consultant with the preparation of an Environmental Impact Assessment (EIA) registration document. Those documents are guidelines, which are recommended, non-mandatory, optional procedures. Should you have additional questions regarding the use of those documents, they should be directed to representatives with the NBDELG EIA Branch.

IPP adheres to all conditions contained within their permits, approvals, and / or authorizations issued by various provincial and federal regulators to operate the Reversing Falls Mill.

Thanks,

Matt Alexander

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FUNDY Engineering

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER N

Matthew Alexander

From: [REDACTED]
Sent: April 13, 2022 9:23 PM
To: Matthew Alexander
Subject: Waste plant

Good Evening,

I am very concerned about the waste treatment plant going in my neighbourhood. I just bought my house in June 2020 and feel like I moved into an industrial park. Between the blasting of rocks the trains and the pulp mill noise, it's not a great place but yet my property tax keeps going up. Will there be more noise and odour coming from this waste plant? Is there some sort of information to say that there will be no noise from this plant? Will this create a lot of light? How will this light at night impact the neighbourhood? How much odour will come from this plant? I am very concerned this is in a residential area and I just found out about this and did not even get a letter. I heard about the meeting from a friend.

A concerned resident

[REDACTED]

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COMMENTER O

Matthew Alexander

From: Matthew Alexander
Sent: April 14, 2022 1:21 PM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. Will there be more noise and odour coming from this waste plant?

As noted within the Executive Summary of the Environmental Impact Assessment (EIA), there is little risk of loud sounds being emitted during Project operation. Equipment that will generate loud sounds, such as air blowers, pumps, and air compressors, will be located inside buildings. Walls of the rooms in those buildings will be insulated to help mitigate the emission of loud sounds.

Also noted within the Executive Summary of the EIA, there is a negligible risk of odours being released from the Project. Large volumes of air added to the system will ensure that the solids do not go septic and create odour. There is no risk of odour from the indirect air coolers because there will be no direct contact between the cool air and the process effluent. Continuous solids removal from the primary clarifier and dissolved air flotation tanks will further aid in odour abatement. All solids handling will be conducted indoors and air from those spaces will be tempered before release to eliminate odours.

Any exterior motors are being specified from vendors as low-noise.

2. Is there some sort of information to say that there will be no noise from this plant?

The EIA document provides details on the proposed Project. A copy of the EIA document can be viewed online at the Project website (www.ipmodernization.ca) or the New Brunswick Department of Environment and Local Government's EIA portal: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/environmental_impactassessment/1578.html

Paper copies are available for review at the Saint John Library in Market Square, the NBDELG's Saint John office (8 Castle Street), and Fundy Engineering's head office in Saint John (27 Wellington Row).

3. Will this create a lot of light?

As described in Section 2.7.1.8.1.8 of the EIA document, artificial lighting will be limited to that necessary for employee safety and for process and security monitoring. The design and selection of exterior lighting balances employee safety criteria with requirements to minimize the effects on the environment and neighbours. The lighting will be designed to only light the area that needs it, be no brighter than necessary, minimize blue light emissions, and be full shielded. These features are not only important for mitigating impacts to residential neighbours, but protecting against attracting birds to avoid collisions.

There are street lights on every second powerline pole along Milford Road and additional street lights at intersections, such as Violet Street and Williams Street. Those street lights, which are either sat-m or sat-s Satellite™ series

COMMENTER O

luminaries, are placed for pedestrian and vehicle safety. Similar to the lights proposed for this Project, those street lights are modern and minimize sky glow, spill light, and glare.

4. How will this light at night impact the neighbourhood?

Please refer to the response to 3.

5. How much odour will come from this plant?

It is important to note that this Project will be used to polish industrial effluent that has already undergone pollution prevention processing within the Mill. As noted in Section 2.7.1 of the Environmental Impact Assessment (EIA) document, the existing in-Mill pollution prevention equipment, save for the small Moving Bed Biofilm Reactor, will remain in service after this proposed Project is operational. The Mill's existing pollution prevention system is described in Section 2.2.1 and Appendix III of the EIA document. The effluent from the existing in-Mill pollution prevention system meets the current Pulp and Paper Effluent Regulations (PPERs) and does not produce any offensive odours. This proposed Project will polish the effluent from the existing pollution prevention system to allow IPP to meet or exceed any expected future changes to the PPERs. As such, there is a negligible risk of odours being released from the Project.

While reviewing the six effluent technologies, members of the Project team visited operating treatment plants at other locations around the world, which is described within Section 2.6.3.7.1 of the EIA document. Visits to facilities with identical technology proposed for this Project revealed minimal earthy odours at or within a few meters of the tanks only and discussions with operators of those facilities revealed no operational issues with odours. It is important to note that those other facilities do not have an upstream pollution prevention system in place. The upstream pollution prevention system is unique to the Reversing Falls Mill. The ETF will be used for polishing the effluent before discharge.

Thanks,

Matt Alexander

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Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

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COMMENTER O

Matthew Alexander

From: [REDACTED]
Sent: April 18, 2022 11:59 AM
To: Matthew Alexander
Cc: patrick.mbaya@gnb.ca
Subject: Fwd: JDI IPP EIA
Attachments: IPPEIA_f.docx; ATT00001.htm

Please find attached concerns & questions regarding the JD Irving Irving pulp & paper EIA for a wastewater treatment plant at the reversing falls site in Saint John.

COMMENTER P

[REDACTED]
Saint John, NB
[REDACTED]

April 17, 2022

Dr. Alexander

A few observations and several very important questions which require response.

Section 2.5, 2.6 and Table 3: There appears to be a significant amount of usable property closer to the mill adjacent to the chip piles and further from the river that was not considered. Using this would reduce the impact to residential and lower the distance from the mill to the facility. There are better options for location from an environmental perspective.

The table does not give a credible impact on Residential Receptors, Mill West site was selectively given green ratings on all categories in Table 3 except on site contamination and species at risk. Had the table accurately acknowledged the negative effect on residential receptors, the rank would have been lower than Bald Mountain and the same as Gault road or Lee Cove. Throughout the EIA, no mention of baseline data is presented to understand the impact currently on the dense residential neighbors in Milford and Greendale or any substantive benchmarks for what the operational numbers realistically are expected to be. To say "There will be no impact to residents" is a gross understatement. There will be air quality issues, noise issues, lighting issues, property valuation issues and potential health issues, all of which are completely ignored in this EIA. The intensity of impact will be dependent on environmental effects as well as proximity to the site. It can not simply be stated that some residences abut the site. Greendale and Milford are dense residential neighborhoods all within potential impact from this application. Also, worthy of note is that the Mill West site section of the mill property has not been actively utilized as heavy industry for a century.

Question: Is baseline data and projected operational data available from a third party (Air, Sound, Light and quality of life) for the EIA to be completed?

Page 65. diagram at Top. This photo is very dated. To understand the impact of the entire site on the neighborhoods one would expect recent photography showing the current extent of development on the site which in this photo is extremely understated.

2.8.2.3 Structural foundation:

Question: What are the sound levels at Milford road and Church Ave. expected to be from driving 210 piles and for what duration?

COMMENTER P

Section 2.8.2.7.

Question: What accommodations will be in place to ensure traffic disruptions occur at night to not add to heavy traffic in the daytime. Harbour bridge will be reduced to 2 lanes each year resulting in extreme traffic congestion during peak hours.

Section 2.8.3.

Question: Where is the off site compost facility located and what volume of solids are expected

Question: How will they be moved to off site, and what volume per day?

Question: Will there be a separate EIA for the compost of waste fibres and solids?

Section 2.8.5

Question: What information will be publicly available on mishaps and how will it be accessed?

Zoning: Section 6.3.1

The issue of zoning is a serious one as in the municipal zoning, bylaws, wastewater treatment plants are clearly required to be in utility services zones. This particular improvement at the Irving pulp and paper mill is certainly an industrial wastewater treatment plant and as such, must be zoned as US. Attempts to dodge a rezoning application by referring to these facilities as being anything other than wastewater should not be tolerated.

In summary, Heavy industry continues to encroach residential zones of west Saint John. This encroachment has eroded the value of life for the residents in the area who have tolerated the pulp mill for many years, which includes extreme noise some nights. Extreme nauseous odors and an extreme increase in truck traffic. This environmental impact assessment should consider all values of the environment namely transportation, air quality, noise and water quality. This EIA does not address statistically or scientifically, any of these items. It merely states that life will go on as normal. Life has never been normal in West Saint John in the last 20 years. We are continuously living with less enjoyment of our property due to industrial encroachment.

Regards

██████████

COMMENTER P

Matthew Alexander

From: Matthew Alexander
Sent: April 25, 2022 8:04 AM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Mr. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the responses below to your questions.

1. Is baseline data and projected operational data available from a third party (Air, Sound, Light and quality of life) for the EIA to be completed?

Fundy Engineering & Consulting Ltd. (Fundy Engineering) was contracted by Irving Pulp & Paper, Limited to conduct the Environmental Impact Assessment. Fundy Engineering is an independent engineering and scientific consultant experienced in completing Environmental Impact Assessments (EIAs) in New Brunswick. Baseline information was included in the document for air quality (Section 3.1.2), sound (Section 3.1.3), and quality of life (Section 3.3). Impacts were assessed in Sections 4.4.2.1 (air quality), 4.4.2.2 (sound emissions), 4.4.4.4 (light), and 4.4.4 (quality of life). Operational data contained throughout the document were provided by various sources, including potential vendors and other engineering consultants.

2. What are the sound levels at Milford road and Church Ave. expected to be from driving 210 piles and for what duration?

Sound levels are expected to be < 80 db(A) at 453 Milford Road and < 70 db(A) at the cul-de-sac of Church Avenue. As noted in Section 2.8.2.3 of the EIA document, it is anticipated that the piles would be driven over a one month period and suitable notification will be provided to neighbours in advance of the work (*i.e.*, one week advance notice as noted in Section 4.4.2.2.3). As noted in Section 2.8.2.4, loud work, such as pile driving, will be done between the regular work hours of 7AM to 7PM Monday through Friday.

3. What accommodations will be in place to ensure traffic disruptions occur at night to not add to heavy traffic in the daytime. Harbour bridge will be reduced to 2 lanes each year resulting in extreme traffic congestion during peak hours.

The Proponent and their consultants are aware of the lane reductions on Harbour Bridge and the conditions of The Reversing Falls Bridge. As noted in Section 2.8.2.7 of the EIA document, reasonable efforts will be made to ensure that increased traffic loads on local truck routes are confined to non-peak travel times (*i.e.*, not during morning or evening rush hour traffic). During the movement of overs-sized and / or heavy loads, there may be a requirement to have traffic controls in place, such as flagging crews or police escorts. Operating oversized loads on local truck routes requires approval from the New Brunswick Department of Transportation and Infrastructure (DTI) through special permits. Representatives from DTI are members of the Technical Review Committee for the EIA. Those representatives are aware of this proposed Project and the current conditions of Harbour Bridge and the Reversing Falls Bridge and will consider that information while reviewing any permit applications submitted for the proposed Project.

As stated in the EIA document, the largest amount of traffic associated with construction of this Project will travel on internal roadways.

4. Where is the off site compost facility located and what volume of solids are expected?

COMMENTER P

The offsite compost facility is Envirem Organics Inc. located in Clarendon, New Brunswick. On average, a total daily volume of 15.5 tonnes is expected (*n.b.*, this is at 20 % solids), which when dried equates to approximately 3 tonnes per day.

5. How will they be moved to off site, and what volume per day?

The solids will be transported to the offsite compost facility using semi-truck hoppers. On average, it is expected that one truck every two days will transport solids offsite.

6. Will there be a separate EIA for the compost of waste fibres and solids?

No, there will not be a separate EIA for the compost of waste fibres and solids as it is included in the scope of the proposed Project.

7. What information will be publicly available on mishaps and how will it be accessed?

IPP's Mill operates under various approvals issued by the provincial and federal government. IPP is required to meet specific conditions to operate under those approvals.

The Mill's Air Quality Approval To Operate under the Clean Air Act can be viewed online at: https://www2.gnb.ca/content/gnb/en/departments/elg/environment/content/air_quality/clean_air/approvals/class_1.html

The federal government issues an annual report with respect to the Pulp and Paper Effluent Regulations. The most recent report (*i.e.*, 2019), can be viewed online at: <https://publications.gc.ca/site/eng/9.898066/publication.html>

Both approvals require notification of any and all mishaps.

Annually, J.D. Irving, Limited publishes a sustainability report. The 2020 forest products sustainability report, which includes operation of IPP's Reversing Falls Mill can be viewed at: <https://www.jdirvingsustainability.com/en/>

The Appendix provides information on a broad range of categories including environmental compliance (page 129), environmental fines (page 130), and waste generation (page 131).

Thanks,

Matt Alexander

Local Knowledge. Local Talent. Local Solutions.



Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

T. 506.674.9422 | C. 506.636.1806 | Twitter: h2o_doc

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COMMENTER P

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COMMENTER P

Matthew Alexander

From: [REDACTED]
Sent: April 19, 2022 4:02 PM
To: [REDACTED]
Cc: Matthew Alexander; patrick.mbaya@gnb.ca
Subject: Re: JDI IPP EIA
Attachments: IPPEIA_f.docx; ATT00001.htm

Could I have confirmation of receipt of this document?

Sent from my iPad

On Apr 18, 2022, at 11:59 AM, [REDACTED] wrote:

Please find attached concerns & questions regarding the JD Irving Irving pulp & paper EIA for a wastewater treatment plant at the reversing falls site in Saint John.

COMMENTER P

Matthew Alexander

From: Matthew Alexander
Sent: April 19, 2022 5:07 PM
To: [REDACTED]
Cc: patrick.mbaya@gnb.ca
Subject: RE: JDI IPP EIA

Hi [REDACTED]:

Your email/letter has been received.

Thanks,

Matt Alexander

Matt Alexander, *Ph.D., P.Geo., FGC, EP*
Environmental Sciences Manager

FUNDY Engineering

Bio-Resources | Building Systems | Environmental | Geotechnical & Surveying | Project Management

From: [REDACTED]
Sent: April 19, 2022 4:02 PM
To: [REDACTED]
Cc: Matthew Alexander <matt.alexander@fundyeng.com>; patrick.mbaya@gnb.ca
Subject: Re: JDI IPP EIA

Could I have confirmation of receipt of this document?

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On Apr 18, 2022, at 11:59 AM, [REDACTED] wrote:

Please find attached concerns & questions regarding the JD Irving Irving pulp & paper EIA for a wastewater treatment plant at the reversing falls site in Saint John.

COMMENTER P

Matthew Alexander

From: Morais, Renee <Morais.Renee@jdirving.com> on behalf of Info <info2@jdirving.com>
Sent: April 25, 2022 2:37 PM
To: Matthew Alexander
Subject: FW: ETF project construction

Renée Morais, P.Eng.
Director of Environmental Affairs
J.D. Irving, Limited
(506)647-0418

From: [REDACTED]
Sent: Monday, April 25, 2022 1:59 PM
To: Info <info2@jdirving.com>
Subject: ETF project construction

External Email Alert

Caution: This email originated from outside the organization. If you suspect this email is suspicious, please forward the email to 'phishing@jdirving.com' to notify JDI Security

Hi there,

I'm a local resident on the west side, and am inquiring today to ask whether any construction has commenced yet on the new Environmental Treatment Facility. I am asking as it feels as though there has been an unusual amount of shaking/swaying/vibrations in my home on the west side. I'm wondering whether this might be related to the EFT project (or alternatively whether I have a very bad case of vertigo!!) Any details you might have about possible cause and/or timeline would be so appreciated!

Thanks,
[REDACTED]

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COMMENTER Q

Matthew Alexander

From: Matthew Alexander
Sent: April 26, 2022 7:44 AM
To: [REDACTED]
Subject: Proposed Environmental Treatment Facility and Water Use Reduction Project at Reversing Falls Mill

Hi Ms. [REDACTED]:

Thank you for your email regarding the proposed Environmental Treatment Facility and Water Use Reduction Project at the Reversing Falls Mill. Please see the response below to your question.

I'm a local resident on the west side, and am inquiring today to ask whether any construction has commenced yet on the new Environmental Treatment Facility. I am asking as it feels as though there has been an unusual amount of shaking/swaying/vibrations in my home on the west side. I'm wondering whether this might be related to the EFT project (or alternatively whether I have a very bad case of vertigo!!) Any details you might have about possible cause and/or timeline would be so appreciated!

Construction will not commence on the Environmental Treatment Facility until Regulatory approval has been received. It is anticipated that approval may take at least another month or longer to receive.

The construction season has begun in Saint John and there are several other projects near lower West Saint John that could be causing noise and perhaps vibrations. That work includes maintenance work on the Harbour Bridge, maintenance work on highway structures of the Saint John Throughway West near the Lancaster Avenue overpass, DP World Terminal wharf work at Port Saint John, breakwater installation at Long Wharf Slip, and work on the green covered Petroleum Coke Storage Shed at Port Saint John.

Thanks,

Matt Alexander

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COMMENTER Q

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