NORTHERN PULP
NOVA SCOTIA CORPORATION
A PAPER EXCELLENCE COMPANY

February 28, 2022

Environmental Assessment Branch
Nova Scotia Environment and Climate Change
Attn: Jeremy Higgins
P.O. Box 442
Halifax, Nova Scotia B3J 2P8
Via email: Jeremy.Higgins@novascotia.ca

Mr. Higgins,

Re: Northern Pulp Nova Scotia Corporation ("Northern Pulp") Draft Terms of Reference ("ToR") for the Preparation of an Environmental Assessment ("EA") Report issued for the Mill Transformation and Effluent Treatment Facility Project (the "Project")

Northern Pulp is pleased to submit its comments on the Draft Terms of Reference for the justified preparation of an Environmental Assessment Report issued for the Mill Transformation and Effluent Treatment Facility Project.

As outlined in our Environmental Assessment Registration Document ("EARD"), we are proposing to transform Northern Pulp into a best-in-class operation and one of the Canada's cleanest and most environmentally focused mills. It is important to observe that at least three provinces with a large number of pulp and paper mills (British Columbia, Alberta and Quebec) have regulatory standards for pulp and paper effluent derived from the current PPER. Additionally, it is requested that the Province of Nova Scotia import air regulatory standards from one of or a combination of the standards from the above aforementioned provinces.

The operation of a transformed Northern Pulp mill will reinstate well-paying rural jobs and support the local and provincial forestry sector. An operating Northern Pulp will provide a market for pulp grade wood and wood chips to support the full implementation of sustainable, ecological forestry practices in Nova Scotia as envisioned in the Lahey Report.

The more than $350 million investment in the mill transformation is expected to provide 600 construction jobs for two years. The project will also provide significant longer-term benefits to the Province of Nova Scotia including 330 direct and about 2,700 indirect jobs and contribute $128 million in employment income annually. It will support 1,379 supplier companies, including 943 in Nova Scotia, and generate $279 million annual spending, most within Nova Scotia with a consequent increase in tax revenue for the Province.

For this to become a reality, a well-defined ToR and a transparent, yet vigorous, process is needed. The final ToR issued pursuant to Section 19(6) of the *Environmental Assessment Regulations* will set out the work plan that Northern Pulp must follow when preparing the EA in order to address the legislated requirements. A well-defined ToR will provide Nova Scotians

with the transparency and confidence they demand from the EA process, which will lead to more trust in the final EA decision.

Northern Pulp is committed to operating in Nova Scotia in an environmentally sustainable manner in conjunction with meeting or performing better than environmental protection and other objectives. Northern Pulp looks forward to working with Nova Scotia Environment and Climate Change ("NSECC") to develop a clear understanding of the objectives expected by regulators within an outcome-based EA process that is focused on the specific proposed environmental improvements at the mill. The EA process must be thorough, and the requirements clear and established from the outset, including in respect of any industrial operating approval limits.

Close to 1,500 submissions were received by NSECC as part of the Draft ToR comment period. We were pleased to see over 93% of the submissions expressed support for the re-opening of a transformed mill. In addition, an overwhelming number of submissions requested the EA process be led by independent experts and that the terms of reference include national standards for both effluent and air quality. Northern Pulp agrees with these requested changes to the ToR and would go so far as to state that these changes are required to ensure the public has confidence in the EA process and the final EA decision.

Northern Pulp has reviewed and considered all the public comments in putting together our response to the Draft ToR. We have organized our response into the following sections:

1. Improvements required to the current regulatory process
2. Public comments on the Draft ToR
3. Requested changes to the Draft ToR

A Draft ToR with suggested changes described in the above-referenced sections is enclosed. Northern Pulp has also enclosed a table outlining substantive public comments and our response to each of them. We understand and appreciate the desire of an unending number of studies and reports from a variety of organizations, but we feel quite strongly that the ToR must not simply include every request made in this process. It must instead consider the additional scientific value of any studies or research being requested and determine if that work is necessary to mitigate unacceptable risk and should be in the scope of the EA.

We thank the public for the interest they have demonstrated through their submissions and for improving the quality of our commentary, which will lead to greater confidence in the EA process and the ultimate decision by the Minister of Environment and Climate Change.

Northern Pulp is prepared to have the Mill Transformation and Effluent Treatment Project measured against the most stringent regulations in Canada, but a clear and well-defined ToR is essential.

Northern Pulp does not believe the Draft ToR provides sufficient clarity with respect to the guidelines for limits for air emission and treated effluent. In fact, NSECC has stated that such limits will only be established in a subsequent Industrial Approval to Operate ("IA") issued after the Project is complete. It is unworkable and unreasonable to expect Northern Pulp to invest

significant time and resources to design the Project, complete the EA process and construct the Project upon receipt of EA approval, without knowing what limits the Project or Northern Pulp is required to meet. At a minimum, any EA approval issued for the Project must therefore have conditions specifying the applicable air emission and treated effluent limits that Northern Pulp is required to meet.

In addition, Northern Pulp recommends the EA process be led by one or more independent administrators with expertise in both kraft pulp production and environmental management. Appointing neutral third-party administrator(s) from the outset to manage the EA process, review the draft EA Report, and make an informed and unbiased decision on the acceptability of the EA Report will provide more confidence in the EA process. This is consistent with the current mandate letter to the Minister of Environment and Climate Change and statements from Premier Houston. These administrators should be appointed without delay.

Thank you for your consideration and attention to our suggested revisions to the Draft ToR. All questions or correspondence regarding the ToR and the EA process should be directed to me, Dale Paterson, at 506-425-3253 or dale.paterson@northernpulp.com.

Yours sincerely,

Dale Paterson
Northern Pulp EA Project Lead

Cc: Hon. Tim Houston, Premier
Hon. Tim Halman, Minister, Environment and Climate Change
Hon. Kim Masland, Minister, Public Works
Hon. Tory Rushton, Minister, Natural Resources and Renewables
Lora MacEachern, Deputy Minister, Environment and Climate Change

TABLE OF CONTENTS

Item 1.0: IMPROVEMENTS REQUIRED TO THE CURRENT REGULATORY PROCESS

1.1 Need to Establish Limits

A principal concern of Northern Pulp that is echoed by the majority of the public comments received is NSECC's refusal to set air and effluent quality limits for the Project. Nova Scotia does not have established air emission or effluent limits for pulp and paper mills. NSECC has said those limits for the mill will be set later in an Industrial Approval ("IA") to Operate. This approach is inconsistent with a One Window approach requested below. It is also improper for the EA Branch at the ToR stage to attempt to limit the discretion of the Minister to establish limits as a condition to granting an EA approval for the Project. Additionally, it is important to observe that at least three provinces with a large number of pulp and paper mills (British Columbia, Alberta and Quebec) have regulatory standards for pulp and paper effluent derived from the current PPER. Furthermore, the federal government has, after lengthy study and consultation, issued a draft revised Pulp and Paper Effluent Regulations ("Canadian PPER") that would specify effluent limits considered to provide an acceptable level of environmental protection.

Sections 111(1)(a) and 105(3)(c) of the Environment Act provide authority to implement these regulatory standards.

Northern Pulp requests that the Minister develop and implement regulatory standards for air emission and effluent from pulp and paper mills (similar to approach in British Columbia, Alberta and Quebec) or otherwise adopt the Canadian PPER and existing Canadian Ambient Air Quality Standards (CAAQS).

1.2 Need for Coordinated One Window Approach

According to NSECC, Northern Pulp must obtain an environmental assessment approval after submitting an environmental assessment report and consideration by an independent review panel, then secondly it must apply for an IA to Construct and then, and only then, may it apply for an IA to Operate, at which time Northern Pulp would have invested more than $350 million in the Project. The key question at each of these stages is the same: will the construction and operation of the mill give rise to adverse environmental and other effects that cannot be mitigated? Given that these three distinctive processes seek to address the same outcome, we question why these three separate processes run consecutive and not concurrent especially when there will have been an in-depth consideration of the EA report by an independent review panel. In the current proposed process, the future limits established during the IA process that conflict with what the already designed and constructed facility could not meet.

The Province itself has recognized that this system needed reform and established the "One Window" process for mining and marine renewal energy projects. According to the Proponent's

Guide the One Window process "allows the proponent to meet with relevant government departments during the project planning stage to discuss the undertaking and the department requirements from the proponent, including other approvals."

Ontario has also recognized that a system based on environmental assessments followed by numerous other approvals was unduly complex and time-consuming; a risk to the proponent that lacked an ability to fully mitigate. In a discussion paper released in 2019, the Ontario Ministry of Environment suggested the adoption of a One Window approach:

> The One-Window approach could be reformed to achieve greater coordination, providing an efficient working system that balances environmental protection with the need for projects to proceed in a timely manner.
>
> The current system could be modernized in different ways to achieve the 'one-window' vision. Some ideas include:
>
> - Add timelines to reviews from all government agencies involved to ensure that they do not unnecessarily hold up projects.
> - Allow applicants to initiate and streamline certain permit and approval applications during the environmental assessment process to speed up the overall timelines for projects.
> - Take action to better coordinate ongoing assessment requirements to allow similar work completed in one process to be used for other processes.

If the One Window approach is appropriate for mining and marine renewable projects in Nova Scotia, it should be appropriate for the pulp and paper sector.

Subsection 6(2) of the Approval and Notification Procedures Regulations provides authority for the Minister to avoid duplication and redundancy in approvals (to construct and operate) and apply for these at the same time: "The Minister may waive in writing any of the requirements of subsection (1) if the Minister is satisfied that a requirement is not relevant to a particular application or that the application is an application for a renewal."

Northern Pulp requests that NSECC adopt a One-Window approach to achieving all required approvals under the *Environment Act* in a coordinated manner that balances environmental protection with the need for the Project to proceed in a timely way.

1.3 Need to establish guidelines and codes of practice to ensure a cooperative approach

There are no specific guidelines or codes of practice in Nova Scotia containing provisions that:

1. Promote the objective that all persons interested in a particular proposal (proponent, public, NSECC, and others) work together as much as possible to address issues;
2. Require NSECC to provide information and guidance in a timely manner within its area of responsibility for proponents to consider (including standards and potential evaluation criteria) and provide consistent advice in a timely manner throughout the decision-making process, or providing relevant reasons if their position changes; and
3. That encourage and facilitate the resolution of outstanding issues during the process as necessary.

It has long been recognized that an effective and efficient EA process requires close collaboration between proponents and the agencies of government that have the responsibility to review EA reports. The collaboration is necessary to ensure that appropriate boundaries for the EA are established early in the process and that proponents focus their attention on the matters of most significant concern. In a report prepared by the Canadian Environmental Law Research Foundation in 1986 entitled *Environmental Assessment in Ontario*, it was observed that it was important that:

> the boundaries be clear and that they are drawn in open decision-making exercises at the beginning of the assessments. Decisions on what does and does not get considered are usually among the most important in environmental assessment. If clarity, openness, and timeliness are not assured, confusion, suspicion, and delay are likely results.

In this context "boundaries" refer to:

> what problems or opportunities are to be addressed, what range of alternative responses needs to be examined, and what related undertakings or other contextual factors (policies, plans, programs, standards, guidelines, etc.) warrant special attention.

The Report notes that it was "certain" that the "efficiency of environmental assessment would be improved if special efforts were made early in the process to identify and respond to boundary issues".

The Report called for an "iterative process" which would consist of "repeated consultations between the proponent and potential reviewers (affected agencies and the public)." This iterative process would follow a path of "increasingly well-informed discussion leading to firmer conclusions about appropriate foci at subsequent stages, including study design and implementation and the review of draft assignments."

If reviewers such as NSECC staff do not give early attention to study design and implementation, for instance, and wait until the EA report is submitted, their comments on deficiencies in the report may give rise, as noted in *Environmental Assessment in Ontario*, to "costly delays for further research, amendments and re-submission of documents."

The NSECC's *A Proponent's Guide to Environmental Assessment* ("Proponent's Guide") refers to the fact that the "EA Branch continually interacts with industry, various interest groups, First Nations, government departments and the general public to ensure that EA is open, transparent, accountable and effective." It also states that the EA Branch works with proponents at the early stages of project development "in identifying and addressing environmental concerns."

It is the opinion of Northern Pulp that the environmental assessment registration process of 2019 did not achieve this level of being an "open, transparent, accountable and effective" EA process for the replacement effluent treatment facility. Northern Pulp notes that in specific instances, the EA Branch:

- Refused, or neglected, to provide comments or input on the proposed models to be used in studies;
- Refused, or neglected, to provide guidelines on the "appropriate regulations and/or guidelines" to use in the required comparisons of effluent discharge characteristics and quality for the Project;
- Requested that Northern Pulp, in the late stages of the EA process, run a new assimilative capacity study in the receiving environment;
- Were considering regulatory effluent limits that were not derived from mixing or the assimilative capacity study undertaken for the receiving water; and
- Were considering requiring a multiyear modelling study to be completed prior to commencement of construction as a condition to any EA approval.

This approach is to be contrasted with the role that other environmental assessment agencies in Canada play in the EA process. For example, the Ontario Ministry of Environment has issued a Code of Practice for preparing and reviewing environmental assessments in Ontario (the "Code of Practice") pursuant to section 31(1)(e) of the *Environmental Assessment Act* (Ontario) which empowers the Minister of the Environment to gather, publish and disseminate information with respect to the environment or environmental assessments for the purposes of administrating and enforcing the *Environmental Assessment Act* and regulations made thereunder.

According to the Code of Practice, it is the "intent of the [EA] process that all persons interested in a particular proposal (proponent, public, government agency and others) work together as much as possible to address issues."

Describing the role of the Environmental Approvals Branch Staff in Ontario, the Code of Practice states, in relevant part, as follows:

> The Branch is responsible for providing guidance about the environmental assessment process to assist proponents and interested persons in the preparation and review of the environmental assessment. Staff at the Branch also coordinate the review of the final environmental assessment to enable the Minister to make an informed decision about an undertaking. These roles fall to a Project Officer at the Branch. The Project Officer's other roles are to:
>
> - Provide advice and guidance about the requirements of the *Environmental Assessment Act*, and other ministry legislation or procedures;
> - Facilitate coordination with other review processes, such as the federal environmental assessment process, in order to minimize unnecessary duplication and inconsistency; …
> - Encourage and facilitate the resolution of outstanding issues during the process as necessary;

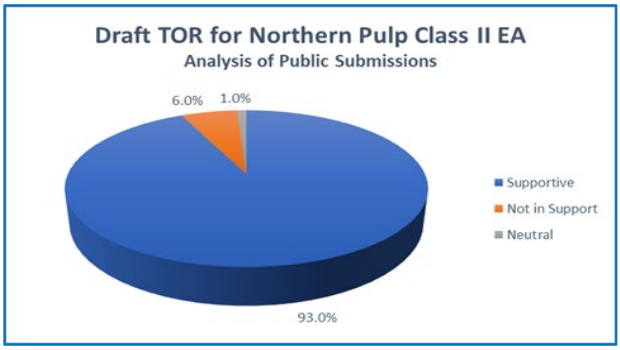
Describing the environmental assessment principles, the Code of Practice states in relevant part as follows:

> There are a number of environmental assessment principles that are key to successful planning and approval under the *Environmental Assessment Act*. These principles form the foundation for the overall guidance of an environmental assessment process and provide direction when challenges present themselves. The proponent should incorporate these principles into its environmental planning process to increase the likelihood that the proposed undertaking will meet the requirements of the *Environmental Assessment Act*. The environmental assessment will be evaluated against these principles, amongst other things. The principles include:
>
> - Consult with potentially affected and other interested persons;
> - Consider a reasonable range of alternatives.

The Minister may establish and administer policies, programs, guidelines, objectives, and approval processes pertaining to the protection and stewardship of the environment pursuant to Section 8(2)(b) of the Environment Act.

Northern Pulp requests that the Minister review and adopt the principles from the Code of Practice set forth above from the Province of Ontario.

2.0: PUBLIC COMMENTS ON THE DRAFT ToR



Northern Pulp has reviewed and considered the public comments on the Draft ToR provided pursuant to Section 19(5) of the *Environmental Assessment Regulations.*

In total, 1,465 public comments were received on the Draft ToR. Ninety-three percent (93%) of the submissions were supportive of a transformed mill and revitalized forestry sector in Nova Scotia. The comments request that NSECC establish clear standards, an expert independent panel, a fair EA process and a revitalized forestry sector in Nova Scotia.

2.1 Proposed Guidelines

The Project should be measured against the most stringent regulations in Canada, with a clear and well-defined ToR being essential. If no regulatory limits are adopted, the ToR should confirm that Canada's draft Pulp and Paper Effluent Regulations (the Canadian PPER) and existing Canadian Ambient Air Quality Standards (CAAQS) or a combination of the standards from the previously mentioned provinces should be the guiding standards for the Project. These standards are to be subject to the completion of the required studies that confirm there are no adverse effects or significant environmental effects that cannot or will not be avoided or mitigated through the application of environmental control technology. The results of the receiving water study and human health and ecological risk assessment are examples of the studies that will be used to review the environmental impacts.

Northern Pulp requests that the Minister develop and implement regulatory standards for air emission and effluent from pulp and paper mills (similar to approach in British Columbia, Alberta and Quebec) or otherwise adopt the Canadian PPER and existing Canadian Ambient Air Quality Standards. (CAAQS).

2.2 Independent Expertise Required

Pursuant to section 21(1) of the Environment Act, the Minister may appoint as an administrator a person who has the qualifications and experience to be an administrator for the purpose of all or part of the Act.

The EA process needs to be led by one or more independent administrators (an independent expert panel) with expertise in kraft pulp production and environmental management. Appointing neutral third-party administrator(s) from the outset to manage the EA process, review the draft EA Report, and make an informed and unbiased decision on the acceptability of the EA Report will provide more confidence in the EA process. This is consistent with the current mandate letter to the Minister of Environment, which requires the Minister to "establish blue ribbon panels of subject matter experts to assess complex applications to ensure our environment is protected with the highest level of scrutiny", and consistent with previous statements from Premier Houston. It is imperative that independent subject matter experts be involved at all stages of the EA process to ensure it is thorough and fair. These administrators should be appointed without delay to ensure that concerns expressed above regarding the process for setting limits are addressed in the final ToR.

Northern Pulp requests that the Minister appoint a panel of independent expert administrators with expertise in kraft pulp production and environmental management to lead and oversee the EA process for the Project.

The administrators should be: (i) independent of government (no conflict in fact or appearance); (ii) qualified across the spectrum of outcomes to be evaluated; (iii) transparent in undertakings.

2.3 Socio-Economic/Forestry Related Concerns

The socio-economic concerns of employment in the forest sector, the forestry operation, and impacts on the Nova Scotia economy are expressed as a concern by many Nova Scotians providing public input to the ToR. The restart of Northern Pulp will assist in providing much-needed stimulus to economic recovery for the Province of Nova Scotia as we emerge from a global pandemic. Indeed, the Gardner Pinfold Northern Pulp Economic Impact Assessment in 2019 indicated:

- A significant number of well-paying jobs in typically high unemployment areas
    - 330 direct; 2,679 indirect
- $128 million in worker income gained throughout the Nova Scotia economy
- 1,379 companies support mill operation
    - 943 suppliers in Nova Scotia

- $279 million annual spending with most spent in Nova Scotia
- More than $38.4 million indirect tax revenues
- $135 million in GDP lift

Additionally, a $350 million capital transformation over a duration of two years of construction with an estimated 50% in worker income equivalent to 600 full-time constriction jobs will take place upon an Environmental Assessment approval in two years.

Additionally, one of the foundations of a successful forestry industry is maximizing the use of the resource. In other words, if a tree is to be cut, the goal should be to maximize the return from the harvest; saw logs should be converted to dimensional lumber, pulpwood and sawmill chips should be converted to pulp and paper and bark and sawdust used for fuel either as hog fuel or wood pellets. Otherwise, the maximum return is not realized, the resource is wasted, and the Nova Scotia forest sector is not competitive.

Today Northern Pulp works in close cooperation with the Department of Natural Resources in the Provincial Forestry program and additionally is committed to the implementation of the Lahey Report which provided a holistic report and framework for protecting and enhancing ecosystems and biodiversity. The report also identified the critical need to find markets for low-grade pulp and sawmill residuals to ensure that ecological forestry can be successfully implemented.

When operating, Northern Pulp consumed approximately 600,000 tonnes of pulpwood. Following its closure, a significant volume of pulpwood is now being left in the forest, woodchips are sold at a lower price. In 2021, 865,000 tonnes of pulpwood was left in the forest after the closure of the mill. This erosion of harvest value is not sustainable, and, in fact, sawmills have stated that without the current unprecedented price of lumber, there will be closures and the decline of the forest sector will accelerate.

Northern Pulp is also accredited under the third party yearly audited program for sustainable forestry called the Sustainable Forestry Initiatives (SFI). The public is welcome at any time to review the Forestry program with our Forestry Manager at Northern Pulp.

The impacts of Northern Pulp on the provincial forest resource are complex when considering ecosystems, biodiversity, ecological values, carbon sequestration, climate change/adaptation, species at risk, harvesting and wood supply.

Numerous Federal and Provincial regulations and policies already address the harvesting of our provincial forest resource. Northern Pulp does not support the public comment requesting a description and details of our “impacts on forests, biodiversity and species at risk” as it is out of scope for the EA and already addressed by existing Federal and Provincial measures.

2.4 Environment

Environmental concerns, issues, and suggestions were raised in the Public Response to the Draft Terms of Reference by concerned citizens and various organizations. We have responded to this input in Items 2 and 3 attached to this document with some suggestions being accepted and some not accepted based on providing clarity, identification of science and evidence requirements, and the objectives of the EA process.

> Northern Pulp requests that the Minister develop and implement regulatory standards for air emission and effluent from pulp and paper mills (similar to approach in British Columbia, Alberta and Quebec) or otherwise adopt the Canadian PPER and existing Canadian Ambient Air Quality Standards.

2.5 Need for Focused EA Review

The Draft ToR is open-ended with a broad scope of review. This will lead to unnecessary frustrations and disputes, delays, and expenditures later in the EA process. There is a need for the Province to adopt a consultative EA approach to ensure a timely and focused assessment and describe that process in the final ToR.

> Northern Pulp request NSECC include in the final ToR the specific changes set forth in the enclosed highlighted Draft ToR to ensure a well-defined ToR to guide a focused EA process.

2.6 First Nations

Northern Pulp acknowledges we operate in Mi'kma'ki, the ancestral homeland of the Mi'kmaq Nation. We are committed to building relationships, respecting Mi'kmaq rights, and supporting the social, cultural, environmental, and educational goals of First Nations. Northern Pulp is also prepared to assist the Province in satisfying its constitutional consultation obligations for the Project.

A First Nations community and an organization representing out of community First Nations submitted individual letters as part of the comment period. We acknowledge the comments received. Northern Pulp believes some of the comments made are outside of the scope of the EA and have been sent to our legal counsel.

2.7 ToR Public Comment Review

See table of ToR comments beginning on the next page.

Draft EA Terms of Reference (TOR)		Public Comments	NPNS Response to Public Comments
Section	**Title**	**Public Comments**	
	EXECUTIVE SUMMARY	•Project critical to the health and management of private woodlots (multiple landowners, sawmills and individuals)	Private woodlots, including the implementation of Lahey recommendations, will be discussed in the socio-economic section.
	EXECUTIVE SUMMARY	•PLFN has suggested that the TOR be clear that the environmental assessment of the project will take into account the impacts of the operation of a restarted mill operation compared to the current status quo. It is insufficient to leave operational issues concerning the mill as a whole to later stages of the project, i.e. the industrial approval stage following environmental approval. (PLFN/EXP)	NPNS agrees that the Industrial Approval to Operate should not be left to the later stages of the project.
	EXECUTIVE SUMMARY	•Priority for the review panel - should be made up of health experts (short and long term effects), inshore and offshore fisheries (commercial and recreational). (Town of Pictou)	Comment directed to NSECC.
	EXECUTIVE SUMMARY	•Any new information submitted to the EA Panel after the filling of the EA Report must be shared with the public - process should allow time for public review and input (Town of Pictou)	NPNS will continue to be transparent throughout the EA process through the sharing of information.
1	**INTRODUCTION**		
1.1	**Background**	•Lahey Report recommends having a market for low grade fibre is a key to ecological forestry (multiple landowners, companies, groups and individuals)	NPNS agrees that a market for low grade fibre is an essential key to ecological forestry, but ecological forestry is outside the scope of the ToR.
1.1	**Background**	•Tim Houston letter of May 2020; immediate appointment of experts given the level of complexity and history. (multiple companies, groups and individuals)	NPNS agrees that the immediate appointment of a panel is beneficial to the process.
1.1	**Background**	•Expectations of NPNS should not be determined or measured by comparison to other mills in Canada and around the world. Specific regulatory standards (minimums) should not be provided. Unique receiving environment. Completely eliminate any risk of water or air contamination. (Town of Pictou)	There are hundreds of kraft mills worldwide, NPNS is not unique in this regard. Much worldwide research has led to regulations and standards designed to be protective of all receiving environments.
1.1	**Background**	•Port of Halifax's largest local shipper - helped to reduce shipping costs having containers full in both directions. (Halifax Longshoremen)	At a high level, NPNS impact on the Port will be addressed under socio-economic impacts.

1.1	**Background**	• Workers related to the port of Halifax want to be considered as people affected by NPNS project - don't restrict to geographic areas or groups. (Halifax Employers Association - serving the Port)	Workers related to the Port of Halifax will be included as an impacted group, their comments will be taken into consideration under socio-economic impacts.
1.1	**Background**	•Nova Scotia must compete for capital investment with other jurisdictions - requires a thorough, fair and clear EA process based on science and national standards. Rigorous and prudent standards set in other provinces and already consider variable conditions in the plant location and receiving environment. (Freeman Lumber)	NPNS agrees, reflected in our comments to NSECC on the draft ToR.
1.2	**Purpose of the Terms of Reference**	•EA should be for a new mill, not a restart of an existing mill (EAC)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the *EA Regulations*. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.
1.2	**Purpose of the Terms of Reference**	•Project should be considered a new mill. (ECELAW)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the *EA Regulations*. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.
1.3	**Proposed Project**	•the Mill is currently not operating and has not been operating for 2 years; exact predicted/planned economic life should be included (PLFN/EXP)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the *EA Regulations*. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.
1.4	**Environmental Assessment Requirements**		
1.5	**Access to Information for the Environmental Assessment Process**		

2	**PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT**	• It is recommended that the proponent make all reports, supporting studies and data developed in connection with the EA Report, and/or relevant to the proposed project, available to the public as soon as each report, study or data set is completed or collected. In the EA Report, where documents, information and reports are referenced or relied upon, copies shall be appended, or working weblinks to current electronic versions shall be provided. (EcoJustice)	NPNS will continue to be transparent throughout the EA process through the sharing of information.
2	**PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT**	• All maps and charts included in the EA Report or supporting reports shall use and provide coordinates in a manner that is understandable and accessible to the public without specialized surveyor knowledge (i.e. using standard latitude and longitude coordinates in addition to GPS and UTM references). (EcoJustice)	NPNS will endeavor to provide information in the easiest possible format for the public to understand.
2	**PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT**	• All models used to evaluate and predict environmental effects and conditions shall be calibrated, set up, operated and interpreted in accordance with the applicable program manuals and established industry standards. The standards, manuals and methodologies used, and the steps taken to conduct all aspects of the modelling exercises, must be set out and justified in detail in the applicable study discussing the modelling exercise and results. All aspects of each modelling exercise must be performed by qualified and trained personnel, and credentials for all personnel must be provided. (EcoJustice)	NPNS will employ modelling programs that are required by NSECC and other regulatory agencies. Qualified third parties will be tasked with conducting the modelling and verification.
2	**PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT**	• All input data for all models must be included in the EA Report package in appropriate useable formats such that the modelling exercises can be replicated by independent modellers using the same or comparable modelling applications. Modelling studies shall discuss all available data, and data ranges, for all modelling conducted, and the selection of all particular input data for each model must be explained and justified. As well, modelling of alternative scenarios shall be conducted using alternative input data and parameters, also drawn from available baseline data (following compilation of the comprehensive data required by all sections of these terms of reference). The study shall detail efforts made to ensure that data is accurate and representative of actual, possible and worst-case conditions in the entire study area over the full year, in all seasons and in all conditions. (EcoJustice)	NPNS will employ modelling programs that are required by NSECC and other regulatory agencies. Qualified third parties will be tasked with conducting the modelling and verification.

2	**PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT**	•Fair to establish minimum goal posts. If the EA process shows that the receiving environment requires higher minimum standards than they can be set when the final approval is issued. Minimum baseline should be set to provide transparency to all participating in the process to understand what passing and failing on emissions means in a quantifiable way (FNS)	NPNS agrees, reflected in our comments to NSECC on the draft ToR.
2	**PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT**	•Thousands of woodlot owners and sawmill owners should be added to the 6 target audiences (FNS, Wagner, woodlot owners, individuals)	Added to groups that should be consulted with in the ToR.
2	**PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT**	•Can't manage woodlots effectively or implement Lahey without outlet for low grade wood (FNS)	NPNS agrees that a market for low grade fibre is an essential key to ecological forestry, but ecological forestry is outside the scope of the ToR.
2	**PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT**	•NSECC should employ experts from across the country who know the industry. (FNS)	NPNS agrees, reflected in our comments to NSECC on the draft ToR.
3	**PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT**	• All such information shall be made public within a timely manner, to permit meaningful review and informed comment from all concerned individuals, organizations and groups. (EcoJustice)	NPNS will continue to be transparent throughout the EA process through the sharing of information.
3	**PROJECT DESCRIPTION**	• leachate collection systems, landfills and other facilities, whether existing, proposed, or contemplated, to be used for collection and/or disposal of hazardous substances and materials. (EcoJustice)	Any changes to these systems will be addressed in the EA Report.
3	**PROJECT DESCRIPTION**	•Describe the commissioning, operation, maintenance and decommissioning of the existing mill as a whole in sufficient detail to allow the reader to understand how the mill, as modified by the proposed project, the effluent treatment facility and the pipeline and	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the *EA Regulations*. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.

		diffuser operating as a whole will have an impact on the environment and the valued ecological components. (PLFN/EXP)	
3.1	**The Proponent**		
3.2	**Project Location**	• Provide a detailed description of the NPNS mill site and property at Abercrombie Point, including historical and current site uses, and a comprehensive description of current environmental conditions and environmental issues associated with past activities and operations at the mill or on the Abercrombie Point site (including, but not limited to, the operations and site impacts of the Canso Chemicals facility). (EcoJustice)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. The current state of the construction site of the project will be part of the EA.
3.2	**Project Location**	• Conduct a study to investigate the presence of contaminants in soils, water and bedrock. The study shall address all known or suspected spills and contaminants, historical and recent, present on or under the site, along with detailed information as to their extent, delineation, precise location, depth, concentration, mobility and composition, and potential and actual migration pathways, and shall be depicted on appropriate maps, charts and diagrams, accompanied by a complete set of sampling and test results. The above shall include, but is not limited to, known and suspected mercury contamination, and/or other contamination, on the mill site. The study shall obtain and include baseline data and delineation of contamination, and describe and evaluate measures that will be put into place to prevent mobilization of, fully contain and remove all on-site contamination. The study will assess all risks and potential impacts, over time, due to the presence of mercury and other contamination on the mill site. The study shall further identify and delineate all sources, characterization, composition, accumulation and migration pathways of leachate that are, or may be, in soils, groundwater or surface water on the site, and/or migrating off-site. (EcoJustice)	Some of this is outside of the scope of the Project. Other items, including geotechnical work, will be undertaken by a third party as part of the Project.

3.2	**Project Location**	• As NPNS relies on large quantities of wood products to make pulp at the mill, provide a detailed description of all forested lands that will be harvested to obtain raw materials, including lands owned or leased directly by NPNS or a related company, and/or in respect of which it has harvesting rights or access due to its association and/or agreements with WestFor Management Inc. (EcoJustice)	Outside the scope of the project.
3.2	**Project Location**	• Clearly describe the marine uses in the surrounding waters and discuss the compatibility of the project with these uses. Describe Scallop Buffer Zone SFA 24 and its proximity to the project. (CPAWS & individual)	NPNS added Scallop Buffer Zone SFA 24 to our ToR comments as an area that will be assessed.
3.3	**Project Design and Components**	•Describe the current mill. Detailed assessment of mill life expectancy including limiting factors such as equipment not directly connected to the project. (PLFN/EXP)	Outside the scope of the project.
3.3	**Project Design and Components**	• A plan for on-site leachate collection, monitoring and disposal. (EcoJustice)	Already part of the mill's environmental monitoring and any changes will be addressed in the EA Report.
3.3	**Project Design and Components**	•Describe the current mill. Describe the design plans and appropriate design standards for all project components, associated and ancillary works, and other characteristics that will assist in understanding the project, including: all planned changes to mill infrastructure and in-mill improvements, the ETF, land and marine based sections of effluent pipeline and the diffuser. All associated existing infrastructure and components must be detailed. In cases where existing equipment are proposed to be re-purposed, converted or modified to support the proposed project, provide detailed assessments and engineering re-design plans to address the suitability for the proposed purpose, condition of equipment and life expectancy, including the effect of gases and chemicals proposed to be collected on mill equipment and infrastructure. Provide detailed assessment of the mill life expectancy of the mill as a whole, assuming the project is carried out, including identifying any limiting factors such as existing equipment not directly implicated in the project. Also discuss environmental controls planned for the project and how environmental protection, conservation, best management	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the *EA Regulations*. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system. Environmental controls planned for the project and how environmental protection, conservation, best management practices (BMPs), and best available technology have been considered in the design will be part of the EA Report.

		practices (BMPs), and best available technology have been considered in the design. (PLFN/EXP)	
3.3	**Project Design and Components**	•Add changes to the mill infrastructure and processes since mill closure in Jan 2020. Identify all changes to the existing mill infrastructure, including but not limited to any runoff or storm water controls, that have or will change the operation of the mill upon startup. (PLFN/EXP)	Already part of the mill's environmental monitoring and any changes will be addressed in the EA Report.
3.3	**Project Design and Components**	• Description of the time duration, sequence and volumes for effluent generation and treatment through all phases and steps until discharge; (EcoJustice)	Details will be included in the EA Report.
3.3	**Project Design and Components**	•Clear and significant margin of error for upsets, model discharge of untreated effluent (Atlantic Salmon Federation)	NPNS will employ modelling programs that are required by NSECC and other regulatory agencies. Qualified third parties will be tasked with conducting the modelling and verification. Modelling is conservative and includes margins for upset conditions in scenarios.
3.3	**Project Design and Components**	•Full and complete waste dangerous goods management plan for the entire mill operations - referencing existing EMS and SOPs not sufficient, must be fully provided. Include a requirement to address specifically mercury contamination on the mill site as a whole. (PLFN/EXP)	Outside the scope of the project.
3.3	**Project Design and Components**	•Proponent should use units of measure and only use weekly and monthly averages for nitrogen and phosphorous consistent with PPER. Need more than PPER to cover other PCOCs (EAC).	PPER will be the regulation used to evaluate nutrients. The HHERA will address PCOCs.
3.3	**Project Design and Components**	• Influent and effluent characterization must identify all components and characteristics, including contaminants of potential concern and persistent organic pollutants (EcoJustice)	The HHERA will screen all parameters of concern present in the effluent.

3.3	**Project Design and Components**	• To better assess toxicity of mixtures of toxic chemicals, transcript profiling must be carried out on several representative marine species to assess global gene expression changes in response to effluent exposure: (EcoJustice)	This type of toxicity testing goes beyond what we would consider a requirement for an Environmental Assessment. The report entitled: "Status report on the Pulp and Paper Effluent Regulations / [by] Forest Products and Fisheries Act Division, Industrial Sectors Directorate" prepared by Environment Canada (dated June 2012) [Status Report on Water Pollution Prevention and Control under the Pulp and Paper Effluent Regulations in 2008 (publications.gc.ca)] does not require this type of toxicity testing. Environmental effects monitoring (EEM) of 77 pulp and paper mills across Canada include toxicity testing that does not include transcript profiling, and the findings of the EEM for the wood pulp industry are provided in annual reports. To address the concerns related to toxicity of chemical mixtures, an alternative approach is to evaluate chemicals based on their ability to disrupt or damage endocrine hormones. Endocrine Disrupting Chemicals (EDCs) have been studied for several decades and we would recommend the review of relevant scientific publications to evaluate this health endpoint. If the findings of the Human Health and Risk Assessment (HHERA) identifies EDCs are of concern, we can include these contaminants in the environmental mitigation and monitoring program.
3.3	**Project Design and Components**	• Comparison of the effluent characterization results from the above assessment with appropriate regulations and/or guidelines, including, but not limited to, the draft Pulp and Paper Effluent Regulations (PPER) daily and monthly average limits, the Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations and all applicable standards. (EcoJustice)	NPNS agrees, reflected in our comments to NSECC on the draft ToR.
3.3	**Project Design and Components**	• Provide details of all operational conditions which have the potential to compromise the intended and effective functioning of any component of the proposed ETF and how any compromised function will be detected in a timely manner, the potential length of time any system or function could be compromised, and how materials in process, including effluent and other processing	Systems in place to protect the environment will be described in the EA Report.

		substances, will be addressed until proper system function is fully restored. (EcoJustice)	
3.3	**Project Design and Components**	• Evaluation of potential mobilization into soils, groundwater, surface water and marine areas of chemicals of concern and persistent organic pollutants associated with excavation, construction and operation of pipeline; (EcoJustice)	Details will be included in the EA Report.
3.3	**Project Design and Components**	• Identification of all points along the pipeline route that are susceptible to failure, including the segment of the pipeline that transitions from land-based to marine conditions; (EcoJustice)	Details will be included in the EA Report.
3.3	**Project Design and Components**	•The spill pond should have 48 hours retention time. (Individual).	Design of spill basin, including justification for sizing, will be addressed in the EA Report.
3.3	**Project Design and Components**	•The ToR at a minimum should reference the need for a preliminary design since it is impossible to provide a fair assessment of the potential impacts of the pipeline, if key details pertaining to construction and leak detection are omitted. (PLFN/EXP).	NPNS will endeavor to engage with PLFN on the pipeline design throughout the EA process.
3.4	**Construction**	•Add including all fuel dispensing locations for all phases and elements including marine work (PLFN/EXP)	NPNS agrees, reflected in our comments.
3.5	**Operation**	• Describe the quantities, types, condition of the raw materials that will be used to supply the mill, make pulp, and to be burned as fuel and for electrical generation. Describe the source lands on which these raw materials will be obtained, and the detailed methodology for obtaining these materials. (EcoJustice)	To aid the public is understanding the project, a high level explanation of kraft pulping will be included in the EA Report.
3.5	**Operation**	• Describe and provide detailed predictions of daily quantities, including maximum and minimum quantities, of bleached kraft pulp that the mill will produce and market. (EcoJustice)	Average and maximum production rates will be used for modelling.
3.5	**Operation**	• Describe maximum daily water withdrawals and usage, and maximum daily and annual effluent discharge. (EcoJustice)	Average and maximum water usage will be used for modelling.
3.5	**Operation**	•Describe the operation of the mill and all project components and supporting infrastructure to all components. The description of the	To aid the public is understanding the project, a high level explanation of kraft pulping will be included in the EA Report.

		operation shall include but not be limited to items in section 3.5. (PLFN/EXP)	
3.5	**Operation**	•Operation of the whole mill (EAC)	To aid the public is understanding the project, a high level explanation of kraft pulping will be included in the EA Report.
3.6	**Decommissioning and Reclamation**	•Replace the word project with mill , the eventual decommissioning of the mill as a whole must be taken into account. (PLFN/EXP)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.
4	**REGULATORY ENVIRONMENT**	•It is insufficient to leave operational issues concerning the mill as a whole to later stages of the project, i.e.. the industrial approval stage following environmental approval. (PLFN/EXP)	NPNS agrees with the comment and suggests a "One Window" approach.
4	**REGULATORY ENVIRONMENT**	• Where there is a choice as to which standard to apply, the content of each standard, and the advantages and disadvantages of using each standard, shall be examined and a detailed justification shall be provided as to why a particular standard has been chosen. (EcoJustice)	NPNS expects that standards will be set by NSECC and other regulatory bodies prior to commencement of the ToR studies for the EA.
4	**REGULATORY ENVIRONMENT**	•TOR should explicitly recongize the proponent's obligation to seek input and expertise from federal departments (EAC).	Federal regulators and regulations are part of the Project EA process.
5	**NEED FOR AND PURPOSE OF THE PROJECT**		
6	**DESCRIPTION OF ALTERNATIVES TO THE PROJECT**	• The analysis shall include examination of the full range of factors, benefits and drawbacks relating to the use of alternative and new technologies, including those that would not require effluent treatment and discharge, and other emissions into the environment. Alternatives will be considered in terms of all relevant factors, including but not limited to their relative effectiveness in preventing or controlling adverse environmental effects, and shall not be evaluated solely on the basis of their relative profitability for the proponent. (EcoJustice)	An analysis of alternatives will be undertaken based on Best Available Technology (BAT) for the pulp and paper industry. A zero effluent technology study was commissioned by the Department of Public Works in 2018; no bleached kraft mills in the world have a closed-loop system. The summary is available on the Nova Scotia government's freedom of information website. The complete document has not been released to the public.

6	**DESCRIPTION OF ALTERNATIVES TO THE PROJECT**	•TOR should name TCF and closed loop systems as technologies that could be used in a new mill and require the proponent to consider them fully. (EAC)	BAT (Best Available Technology) has legal status in both the USA and Europe when determining consents for the discharge of effluent. In the USA, the ECF (elemental chlorine free bleaching) process is regarded as being Best Available Technology and in Europe, the Commission has decided that there is no significant difference between TCF (non-chlorine bleaching) and ECF and, therefore, both are regarded as BAT. A zero effluent technology study was commissioned by the Department of Public Works in 2018; no bleached kraft mills in the world have a closed-loop system. The summary is available on the Nova Scotia government's freedom of information website. The complete document has not been released to the public.
7	**OTHER METHODS FOR CARRYING OUT THE PROJECT**	• Discuss other methods for meeting the need for the project, including but not limited to, in mill processes and technologies, pipelines and treatment technologies, including alternatives that use no chlorine and produce chlorine-free products. (EcoJustice)	BAT (Best Available Technology) has legal status in both the USA and Europe when determining consents for the discharge of effluent. In the USA, the ECF (elemental chlorine free bleaching) process is regarded as being Best Available Technology and in Europe, the Commission has decided that there is no significant difference between TCF (non-chlorine bleaching) and ECF and, therefore, both are regarded as BAT.
7	**OTHER METHODS FOR CARRYING OUT THE PROJECT**	• If alternative pipeline routes and discharge sites are proposed, each such route and site will be discussed and evaluated. (EcoJustice)	NPNS will continue to be transparent throughout the EA process through the sharing of information.
8	**ASSESSMENT METHODOLOGY**	• At a minimum, the project area is to include terrestrial areas encompassing and in proximity to, the mill site, the pipeline route, all terrestrial areas that could be impacted by an effluent leak or spill from the pipeline, all sections of the marine pipeline route and the near and far field marine areas as set out in NPNS's previous receiving water study models (EcoJustice);	Included in the EA Report.

8	**ASSESSMENT METHODOLOGY**	• For greater certainty, the project area shall include, inter alia, any areas and ecosystems that may come into contact with the mill's air emissions, effluent and suspended solids, leachate, and mobilized contaminants at any quantity or concentration. The marine portions of the project area shall include, at a minimum, the West River, Middle River and East River tributaries and estuaries, Caribou Harbour, Caribou Channel, Pictou Harbour, Pictou Island, Munroe's Island, Pictou Road, Pictou Landing, Boat Harbour, the coast of Nova Scotia from Cape John to Arisaig, the coast of Prince Edward Island from Point Prim to Murray Harbour, and the Northumberland Strait within and between all such areas, as well as all shoreline lands adjacent to these marine areas. (EcoJustice)	The project areas for studies will be defined by third party consultants following standard protocols and in consultation with NSECC and other relevant regulators.
8	**ASSESSMENT METHODOLOGY**	• In some cases, such as the impacts of the project on forests of Nova Scotia, the VEC may fall outside the geographical study area, but shall still be considered in respect of project impacts. (EcoJustice)	This is outside the scope of the project.
8	**ASSESSMENT METHODOLOGY**	•The assessment methodology must include best practices for analyzing (a) the cumulative effects that are likely to result from the operation of the mill in combination with other physical activities that have been or will be carried out and (b) the intersection of sex and gender with other cultural and identity factors. How will Mi'kmaq youth, women and gender minorities be impacted. In particular Mi'kmaq youth, women and gender minorities. (PLFN/EXP)	The Human Health Ecological Risk Assessment study will consider all peoples and factors in the analysis. NPNS looks forward to input from PLFN and others to assist with understanding the effect on Mi'kmaq youth, women and gender minorities.
8	**ASSESSMENT METHODOLOGY**	•TOR should clarify obligation to identify relevant env protection objectives for climate change mitigation and GHG reduction targets (EAC)	NPNS is, and will continue to be part, of the NSECC Climate Change Cap and Trade program.
9	**EXISTING ENVIRONMENT**	•Baseline without impacts of an operating mill (Juniper Law)	Baselines with and without impacts of an operating mill will be considered in the EA Report.
9	**EXISTING ENVIRONMENT**	•add "and the continued operation of the mill as a whole, once it is restarted". (PLFN/EXP)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.
9	**EXISTING ENVIRONMENT**	•add "from mill operations, runoff water and effluent" (PLFN/EXP)	Already part of the mill's environmental monitoring and any changes will be addressed in the EA Report.

9	**EXISTING ENVIRONMENT**	•Amended to include the forests of NS as impacted areas requiring assessment because they are impacted by the project. (EAC)	This is outside the scope of the project.
9	**EXISTING ENVIRONMENT**	•NPNS should be required to study and comment on all past and numerous studies of Pictou harbour (individual)	NPNS's consultant will review all available past studies.
9	**EXISTING ENVIRONMENT**	•The Pictou Harbour is a very important ecosystem for multiple species, for example lobster fished in the mouth of the harbour, rock crab fished right up into the harbour towards to causeway, I myself am a rock crab license holder and have fished in an around the Pictou Harbour. The rock crab species is a very important species for the lobster diet, as well as a new up and coming high value fishery and the TOR needs to ensure this species is looked after and not put in harm from the effluent that would be put into the harbour. Other fisheries in the harbour include silver sides, mackerel and gaspereau (local commercial fisherman)	All local knowledge from fishers is appreciated. NPNS looks forward to working with local fishers to identify key marine species in the study area.
9.1	**Geophysical Environment**		
9.1.1	**Topography, Geomorphology and Geology**	• A description of potential errors and/or changes in marine bathymetric datasets associated with geomorphic evolution should be provided particularly if datasets are outdated by more than 10 years. (EcoJustice)	NPNS's consultant will review all available past studies and determine if additional data sampling is warranted.
9.1.2	**Geology**	• Include a description of all on-site contaminants and leachate sources and the accumulation of contaminants in bedrock, soils, groundwater and surface waters. The description shall include the full chemical characterization, delineation, concentrations, extent, migration pathways and off-site impacts of all contaminants and leachate from all sources. The description shall reference and summarize all historical records, studies and investigations in respect of contaminants and leachate sources, concentrations and migration pathways on the mill site and leaving the mill site. Further investigations, studies and monitoring shall be completed as required to enable a comprehensive description of on- site contamination and migration pathways. The EA Report shall also consider the potential for mobilization of existing and future contaminants and contaminant migration on-site and off-site into	Some of this is outside of the scope of the Project. Other items, including geotechnical work, will be undertaken by a third party as part of the Project.

		groundwater, surface water, soils and the marine environment. (EcoJustice)	
9.2	**Water Resources**		
9.2.1	**Groundwater**	•Provide a map of all watercourses located on the subject property. Provide detailed sampling results from all baseline groundwater and surface water quality monitoring networks, inclusive of the Mill Monitoring Network and the Industrial Landfill Monitoring Network. Account for the full list of potential contaminants of concern in the freshwater and marine systems within the project footprint. While existing monitoring data from the Mill Monitoring Network and the Industrial Landfill Monitoring Network is to be included in the assessment of watercourses, the same should be utilized in the hydrogeological study referenced in Section 9.2.1. (PLFN/EXP)	Already part of the mill's environmental monitoring and any changes will be addressed in the EA Report.
9.2.2	**Surface Water**	• Past annual hydrographs of all inflowing streams impacting the study area should be analyzed along with modeled future hydrographs. (EcoJustice)	NPNS's consultant will consider any inflowing streams that impact the study area.
9.2.3	**Marine Water**	•The study area shall include Boat Harbour and shall be based on current conditions and conditions anticipated after remediation as outlined in the Environmental Impact Statement prepared by Nova Scotia Lands Inc. dated November 17, 2020. (PLFN/EXP)	This is outside of the scope of the Project. However, NPNS's consultant will consider the final tidal state of the Boat Harbour Basin in the Receiving Water Study.
9.2.3	**Marine Water**	•Collect data over a full year for hydrodynamics and currents in Pictou Harbour (GeoLimits)	NPNS's consultants will assess what is required to conduct a wholesome receiving water study of the Pictou Harbour.
9.2.3	**Marine Water**	•a comprehensive geoscientific survey of Pictou Harbour should be undertaken to identify the areas of erosion and deposition; the geomorphology of the seabed and potential geotechnical risks to an offshore pipeline and diffuser system. Multibeam echo-sounding of the seabed and sub-bottom geophysical data should be acquired not just along the proposed pipeline routing, but in a broader area to fully understand the physical conditions in the harbour. (GeoLimits)	NPNS's consultants will assess what is required to conduct a wholesome receiving water study of the Pictou Harbour.
9.2.3	**Marine Water**	•Full assessment of ice conditions in Pictou Harbour (GeoLimits)	Agreed, NPNS's consultants will assess what is required to conduct a wholesome receiving water study of the Pictou Harbour.

9.2.3	**Marine Water**	•Baseline for sediment contamination should be determined so that the effects of additional contribution of contaminants can be understood (GeoLimits)	Agreed, vibracore sampling and analysis will be part of the EA Report requirements.
9.2.4	**Wetlands**	•Carbon sequestering functions of wetlands should be assessed (EAC)	This is outside of the scope of the Project.
9.3	**Atmospheric Resources**	• Atmospheric resources will include baseline data, gathered over all seasons and through yearly fluctuations, regarding ambient air quality, temperature, wind speeds and direction, extreme weather, seasonal variability, the acoustic environment, greenhouse gas emissions, and impacts on climate. Baseline data will be obtained, from multiple sites in the study area which are representative of the conditions specific to key locations and overall. (EcoJustice)	NPNS will use pertinent atmospheric data that is available from local stations in the air modelling study area.
9.3.1	**Climate**	• Impacts of project operations shall also include sources and emissions of greenhouse gases caused by spraying and harvesting forests to supply the mill with raw materials. Carbon storage impacts of the project shall also be assessed over the lifetime of the project. (EcoJustice)	This is outside of the scope of the Project.
9.3.1	**Climate**	•Discuss infrastructure protection from storm surges (Juniper Law)	Climate change, including storm surges, is part of current standards in engineering design.
9.3.1	**Climate**	•Add adverse impacts assessment on carbon sequestering ecosystems due to the loss of carbon sinks. (EAC)	This is outside of the scope of the Project.
9.3.2	**Air Quality**	• Baseline data will be obtained, from multiple sites in the study area which are representative of the conditions specific to key locations and overall. Data shall be obtained over all seasons and through yearly fluctuations, regarding ambient air quality, temperature, wind speeds and direction, extreme weather, seasonal variability, the acoustic environment, greenhouse gas emissions, and impacts on climate. Baseline data will be obtained, from multiple sites in the study area which are representative of the conditions specific to key locations and overall. Selection of data collection locations shall be justified in the EA Report. (EcoJustice)	NPNS will use pertinent atmospheric data that is available from local stations in the air modelling study area.

9.3.2	**Air Quality**	•Remove scenario for reflecting historical data from when the mill was in operation. The only relevant baseline is the current baseline. Analyzing baseline air emissions when the mill previously in operation prior to January 31, 2020, would only serve to introduce data that was collected during a period when the mill had a continuous adverse environmental impact on PLFN which was imposed upon PLFN without its consent and which remained unabated for over five decades. The only proper baseline is the current baseline. (PLFN/EXP)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system. Historical data from when the mill was in operation will be included and used to show the future improvements that will result from the Mill Transformation Project implementation.
9.3.2	**Air Quality**	•Need to list all chemicals present in their air emissions so an accurate HHERA can be completed. (Individual)	The HHERA will screen all parameters of concern present in the air emissions.
9.3.2	**Air Quality**	•Assess as a new mill, assess adverse impacts on PLFN (EAC)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.
9.3.3	**Ambient Noise and Light Levels**	•Expand lighting evaluation to include the mill site and the operating phase (PLFN/EXP)	Agreed, the lighting evaluation will include the operating phase at the mill site.
9.4	**Wildlife, Wildlife Habitat and Species-at-Risk**	• over all four seasons (EcoJustice)	NPNS's consultant will adopt the normal protocols for wildlife surveys that all Nova Scotia projects follow.
9.4	**Wildlife, Wildlife Habitat and Species-at-Risk**	•cumulative impacts should be considered as well as direct impacts for flora, fauna, and habitat types. (EAC)	NPNS's consultant will adopt the normal protocols for wildlife surveys that all Nova Scotia projects follow.
9.4.1	**Terrestrial Environment**	• Identification of species of fauna (including lichens, and invertebrate species), sensitive fauna, fauna species-at-risk, migratory birds and other bird species subject to statutory protections, and potential habitat for fauna species-at-risk in the study area, and within all forested areas (identified with precision by the proponent) in Nova Scotia from which the proponent proposes to supply the mill with raw material. Current information shall be	NPNS's consultant will gather information using normal protocols for wildlife surveys that all Nova Scotia projects follow in the Project study area.

		obtained from field studies and baseline information obtained by the proponent, and from ... (EcoJustice)	
9.4.1	**Terrestrial Environment**	• Surveys of the forests that will be the source of raw materials for the mill when it begins operation and over the lifespan of the project. The information is to include age, species, condition, density, carbon storage capacity and general health of each forested area. (EcoJustice)	This is outside of the scope of the Project.
9.4.2	**Freshwater Aquatic and Marine Environment**	• Baseline survey and study of the abundance and health of all marine invertebrates, plankton and other marine ecosystem foundational species over the study area; (EcoJustice)	NPNS's consultant will adopt the normal protocols for marine studies that all Nova Scotia projects follow.
9.4.2	**Freshwater Aquatic and Marine Environment**	• Description of the marine habitat and species of fish, including pelagic and demersal finfish, shellfish, crustaceans, and marine mammals, as well as all marine invertebrates, plankton and other benthic organisms and marine ecosystem foundational species, likely to be present in the study area. (EcoJustice)	NPNS's consultant will adopt the normal protocols for marine studies that all Nova Scotia projects follow.
9.4.2	**Freshwater Aquatic and Marine Environment**	• Baseline gene expression profiling study on key representative species including, but not limited to, endocrine pathway genes for fish and shellfish; (EcoJustice)	This type of gene expression profiling goes beyond what we would consider a typical requirement for an Environmental Assessment. Endocrine Disrupting Chemicals (EDCs) have been studied for several decades and we would recommend the review of relevant scientific publications to evaluate this health endpoint. If the findings of the Human Health and Risk Assessment (HHERA) identifies EDCs are of concern, we can include these contaminants in the environmental mitigation and monitoring program.

9.4.2	**Freshwater Aquatic and Marine Environment**	• Baseline data for existing mercury concentrations in fish tissue and benthic invertebrates sampled in the study area (EcoJustice)	As outlined in the Focus Report, NPNS untreated effluent was non-detect for mercury and it is not used on the site. Mercury is not generated through a treatment facility if it is not present in the influent. Mercury pollution can be produced or released by natural sources, such as forest fires and by human activities such as waste incineration, coal-fired power generation, metal smelting, and cement clinker production. Recent studies have been completed by Nova Scotia universities for the NS Lands Boat Harbour Remediation Project that have assessed mercury and other contaminants in fish in the area of the Boat Harbour Effluent Treatment Facility (BHETF) outfall against the Canadian Food Inspection Agency (CFIA) guidelines. Mercury was found to be below regulatory guideline levels in both reports.
9.4.2	**Freshwater Aquatic and Marine Environment**	• Baseline study of algal blooms and cysts in the immediate area of the proposed discharge site, and over the study area. (EcoJustice)	As per standard protocol, NPNS will conduct a marine habitat survey to assess the immediate area surrounding the discharge.
9.4.2	**Freshwater Aquatic and Marine Environment**	•Identification of any existing or planned Marine Protected Areas (MPAs), Other Effective Area-Based Conservation Measures (OECMs) including marine refuges, and critical habitat for species at risk; (CPAWS)	All important marine habitats will be assessed in the EA Report.
9.4.2	**Freshwater Aquatic and Marine Environment**	•Please clearly outline the spatial and temporal scales that are expected by NSECC. If left undefined, the minimum level of assessment may not be undertaken. Specifically, if all four seasons are expected to be monitored and assessed then this should be clearly set out. (PLFN/EXP)	NPNS agrees that clarity and certainty is required.
9.4.2	**Freshwater Aquatic and Marine Environment**	•Expand beyond valued fish resource components to include the ecosystem as a whole so that non-monetarily valued fish resources are considered. Accurately reflect the Indigenous Eco-centered world view for the use of aquatic resources. (NCNS)	All local Indigenous knowledge is appreciated. NPNS looks forward to working with Indigenous Communities and Councils to gather information on all fish resources in the study area.
9.5	**Agriculture, Aquaculture and Forestry Resources**	• Describe all uses of marine waters for activities associated with fishing and fish processing. (EcoJustice)	All important marine waters uses will be assessed in the EA Report.

9.5	**Agriculture, Aquaculture and Forestry Resources**	• Identify and describe forests and forestry activities in the study area and/or in areas where forestry activity will be undertaken to obtain the wood required to supply the mill during its operating phase. (EcoJustice)	Additions are outside of the scope of the Project.
9.5	**Agriculture, Aquaculture and Forestry Resources**	•Add the Netukulimk fishery operated by PLFN. (PLFN/EXP)	NPNS will gather all available fisheries information from all sources available. NPNS looks forward to input from PLFN on details of the Netukulimk fishery.
9.5	**Agriculture, Aquaculture and Forestry Resources**	•Add fisheries (Juniper Law)	Fisheries are included in multiple sections of the ToR and will be studied and analyzed in the EA report.
9.6	**Socio-Economic Conditions**	• Socio-economic conditions shall be described in detail for the period from January 2010 to the present, and shall include a comparative analysis of conditions before and after the mill ceased operating in 2020. (EcoJustice)	Given the far reaching and significant impact of the global pandemic, it would be a virtually impossible to isolate the socioeconomic effects of the formerly operating mill and the new project.
9.6	**Socio-Economic Conditions**	•Environmental considerations should be dominant, but NSE must also focus on economic impacts - change in focus of the department to balance env and economy. Assess impacts on all of forestry, including long term impacts, private woodlots, env benefits derived from forestry, only way to implement Lahey. (HC Haynes)	NPNS will consider both positive and negative effects in the socio-economic evaluation undertaken.
9.6	**Socio-Economic Conditions**	•Include a detailed analysis of the impact of the operation of the mill and of the former Boat Harbour Treatment Facility on PLFN since 1967 so that cumulative effects can be considered. Provide description of methodology. (PLFN/EXP)	This is outside of the scope of the Project.
9.6	**Socio-Economic Conditions**	•The exact/planned economic life of the mill should be included in the EA report spanning operation over several decades (PLFN/EXP)	This is outside of the scope of the Project.
9.6	**Socio-Economic Conditions**	•The TOR should explicitly require the proponent to assess the socioeconomic effects of improved air quality following the closure of the formerly operating mill and evaluate how new mill operations would affect the new status quo. (EAC)	Both positive and negative socioeconomic impacts will be studied. Given the far reaching and significant impact of the global pandemic, it would be a virtually impossible to isolate the socioeconomic effects of the formerly operating mill and the new project.
9.6	**Socio-Economic Conditions**	•Economic effects for residential and commercial property owners in the Town of Pictou and surrounding area must be considered. (Town of Pictou)	Both positive and negative socioeconomic impacts will be studied. Given the far reaching and significant impact of the global pandemic, it would be a virtually impossible to isolate the socioeconomic effects of the formerly operating mill and the new project.

9.7	**Existing and Planned Land Uses**	•Include Scallop Buffer Zone SFA 24 (CPAWS)	Agreed, NPNS added Scallop Buffer Zone SFA 24 to our ToR comments as an area that will be assessed.
9.7	**Existing and Planned Land Uses**	•The TOR should explicitly reference the industrial legacy of Canso Chemicals and, in particular, should require that the effects of mercury contamination at the proposed project site be assessed. (EAC)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. This is outside the scope of the project.
9.8	**Archaeological Resources**		
10	**ADVERSE EFFECTS AND ENVIRONMENTAL EFFECTS ASSESSMENT**	• The EA Report shall identify and describe the accidents and/or malfunctions, as well as any process changes, system disruptions, planned or unplanned shutdowns and start-ups, and associated or other changes in emissions, including those that are caused by, or happen during, extreme weather events, that... (EcoJustice)	NPNS will address accidents and/or malfunctions as per requirements laid out in the EA Regulations and the draft ToR as written.
10	**ADVERSE EFFECTS AND ENVIRONMENTAL EFFECTS ASSESSMENT**	•add the mill operation and decommissioning, in addition to the Project. (PLFN/EXP)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.
10	**ADVERSE EFFECTS AND ENVIRONMENTAL EFFECTS ASSESSMENT**	•Adverse effects should include a section on socio-economics - potential negative impacts of the mill not being approved on economic conditions, populations and employment as Social-economic considerations are deeply routed in the Environment Act. TOR should be more explicit and clearly mention the role of the mill in the NS forestry sector. References NRCAN forestry integration. (Unifor)	NPNS will consider both positive and negative effects in the socio-economic evaluation undertaken.
10.1	**Geophysical Environment**		
10.2	**Aquatic Environment**	• Compliance with all applicable legislation and regulatory standards must be discussed and clearly evaluated and demonstrated, including compliance with the Fisheries Act, and the Canadian Environmental Protection Act, 1999, and regulations made thereunder, including but not limited to the Pulp and Paper Effluent Regulations and the Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations. (EcoJustice)	NPNS comments on appropriate regulations are discussed in our submission letter to the ToR.

10.2	**Aquatic Environment**	• Any standard or guideline which the proponent seeks to apply to assist in evaluating adverse effects and environmental effects must be explained and its application justified, and all requirements of each such standard or guideline must be fully examined, in relation to actual and predicted ecosystem conditions, sensitivities and uses. As stated above, complete copies of such standards or guidelines must be appended or linked in an accessible manner to the EA Report or individual supporting study. (EcoJustice)	NPNS comments on appropriate regulations are discussed in our submission letter to the ToR.
10.2	**Aquatic Environment**	•thermal temperature shock to marine life should be contrary to fisheries act - should have plan to bring wastewater to within 1-5 degrees of the natural habitat (individual)	Potential thermal impacts will be addressed as part of the Receiving Water Study.
10.2	**Aquatic Environment**	•1969 DFO study identifies that Pictou Harbour has poor flushing (https://waves-vagues.dfo-mpo.gc.ca/library/24050.pdf (individual)	NPNS's consultant will review the current tidal action of Pictou Harbour in their Receiving Water Study.
10.2.1	**Groundwater**		
10.2.2	**Surface Water**		
10.2.3	**Marine**	• provide information on effluent dispersion, and long-term accumulation, of both dissolved and particulate matter, which will be applied in the human health and ecological risk assessment and environmental assessment of the project. (EcoJustice)	The effluent and sediment modelling will evaluate the potential for accumulation and include it in the HHERA.
10.2.3	**Marine**	• The study must clearly identify the scenarios included for consideration and justify the exclusion of reasonable alternative scenarios based on quantitative evidence derived from measurements in the study area (e.g. time series of top-bottom temperature indicate minimal effect of temperature stratification). (EcoJustice) 1) The three-dimensional, tidal nature of the Pictou and Caribou Harbours, their tributaries (the West River, Middle River and East River of Pictou), and the presence of the Harvey A. Veniot Pictou Causeway., 2) The potential for interaction with waste effluents from other industrial and municipal sources, including contaminants accumulated in Boat Harbour that may be discharged to Pictou Harbour. 3) The impact of waves and storm surge on both near- and far-field dilution.	Qualified third parties will be tasked with conducting the marine modelling work. NPNS will employ modelling programs that are required by NSECC and other regulatory agencies. The project scenarios to be studied will be defined by the third-party consultants following standard protocols and in consultation with NSECC and other relevant regulators.

		4) The impact of sea ice on the study area, including on the currents locally affecting the effluent dispersion and the reduction in tidal strength by the large-scale ice field in the Northumberland Strait. (EcoJustice)	
10.2.3	**Marine**	• The receiving water model used to evaluate the impact of the physical processes on the far-field dilution must be three-dimensional to account for potential adverse effects of temperature and salinity stratification. Use of a two-dimensional model must be justified with metrics based on insitu observations clearly indicating minimal effects of stratification. (EcoJustice)	Qualified third parties will be tasked with conducting the marine modelling work. NPNS will employ modelling programs that are required by NSECC and other regulatory agencies. The project scenarios to be studied will be defined by the third-party consultants following standard protocols and in consultation with NSECC and other relevant regulators.
10.2.3	**Marine**	•Provide data on distribution and abundance of local salmonids, surface water management procedures and the critical marine habitat and salmonid (salmon and trout) migratory routes in the area and utilize modelling over the appropriate scales to determine how the effluent plume/impact zone will overlap, both spatially and temporally, with these habitats and migratory routes (Atlantic Salmon Federation)	Agreed, NPNS has added salmonid migratory routes to our draft ToR comments and looks forward to working with the Atlantic Salmon Federation to gain knowledge of this marine habitat.
10.2.3	**Marine**	•The study must identify any impacts on Boat Harbour in its current state and its proposed remediated. (PLFN/EXP)	This is outside of the scope of the Project. However, NPNS's consultant will consider the final tidal state of the Boat Harbour Basin in the Receiving Water Study.

10.2.3	**Marine**	The adequacy of the receiving water study model in representing the receiving water environment including: 1) Validation with industry-standard statistical procedures such as goodness of fit and skill score when compared to in-situ observations to show that the model accurately captures quantities varying in time and throughout the water column such as currents, temperature, and salinity, and other quantities varying in time including water level, wave heights, and sea ice cover. Justification must be given for the appropriateness and accuracy of existing datasets used for model validation if field deployments are not conducted to obtain additional validation data. 2) The validation should be conducted to demonstrate model fidelity in reproducing tidal, fortnightly, and seasonal variability and storm-driven and strong river inflow events and other relevant scenarios. 3) Demonstration of the relevance and suitability of the outputs (parameters / data) from any one given model as inputs to any other given model (e.g., CORMIX (near-field) and Delft3D (Hydrodynamic / far- field). 4) A summary of model confidence in adequate representation of plume dispersion and multi-year effluent discharge transportation of COPCs and accretion/buildup within the receiving water environment is to be included. (EcoJustice)	Qualified third parties will be tasked with conducting the marine modelling work. NPNS will employ modelling programs that are required by NSECC and other regulatory agencies. The project scenarios to be studied will be defined by the third-party consultants following standard protocols and in consultation with NSECC and other relevant regulators.
10.2.3	**Marine**	• How the initial mixing and dispersal of the near-field plume are accounted for in model simulations of the far-field extent and effluent concentration. The parameters and assumptions employed for the near-field model must be justified based on quantitative evidence derived from in-situ observations (such as top-bottom density differences indicative of the effects of stratification on near-field mixing); (EcoJustice)	Qualified third parties will be tasked with conducting the marine modelling work. NPNS will employ modelling programs that are required by NSECC and other regulatory agencies. The project scenarios to be studied will be defined by the third-party consultants following standard protocols and in consultation with NSECC and other relevant regulators.
10.2.3	**Marine**	• Potential impacts of sediment transport within near-field and far-field areas using calibrated and validated sediment transport modelling, accounting for various transportation scenarios that may be possible, both of the minerogenic and organic suspended material including the potential for flocculation and its impact on settling. (EcoJustice)	NPNS will employ sediment transport modelling programs that are required by NSECC and other regulatory agencies. Qualified third parties will be tasked with conducting the analysis of the sediment transport.

10.2.3	**Marine**	• All marine models must incorporate all appropriate industry-standard modules designed specifically to account for all relevant conditions in the study area, including but not limited to the influence of sea ice and climate change effects in reaching the results and predictions. All marine models must include worst-case scenarios in the range of predicted outcomes and results. (EcoJustice)	NPNS will employ modelling programs that are required by NSECC and other regulatory agencies. Qualified third parties will be tasked with conducting the marine modelling work.
10.2.3	**Marine**	•All studies and reports on the suitability of Pictou Harbour as a receiving body of water for treated effluent completed since 1960 should be required evidence for the EA review panel to consider. At numerous times Pictou Harbour has been declared unsuitable as a receiving water for effluent as recently as 2017. (Town of Pictou)	NPNS' consultant will review the current tidal action of Pictou Harbour in their Receiving Water Study.
10.2.3	**Marine**		
10.2.4	**Wetlands**	•TOR fails to account for carbon sequestration as a crucial wetland function and should require assessment of carbon sinks (EAC)	Current wetland area identified to be disturbed is very small. Any destruction of wetland areas will be managed through the Compensation for Wetland Alternations Program. NPNS is, and will continue to be part, of the NSECC Climate Change Cap and Trade program.
10.3	**Atmospheric Resources**		
10.3.1	**Climate**	• For all project phases, (construction, operation and decommissioning), estimate the GHG emissions and provide an inventory of GHG emissions from all project components, including but not limited to GHG emissions from all forest harvesting that will supply the mill over its lifespan. (EcoJustice)	Additions outside the scope of the project.
10.3.1	**Climate**	•add adverse impacts of carbon sequestering systems and GHG emission reduction targets (EAC)	Effects of the Project on climate change will be addressed in the EA report.
10.3.2	**Air Quality**	•Provide a full statistical analysis for the ambient air quality monitoring data obtained at the Pictou monitoring station and at all monitoring stations within the study area, for the mill's prehibernation and hibernation periods. (EcoJustice)	Agreed, comment included in NPNS submission to the draft ToR to include all ambient air monitoring stations that NPNS can obtain data from.

10.3.2	**Air Quality**	• Describe how the proposed project emissions compare to the pre-hibernation and hibernation emissions, and the associated predicted changes in air quality. Evaluate the degree to which data obtained at the Pictou monitoring station represents, or does not represent, actual conditions at representative sites in the Town of Pictou and surrounding area. (EcoJustice)	NPNS believes that the impacts on air quality when the mill was operational is important for context in the EA.
10.3.2	**Air Quality**	•add including operation and decommissioning of the mill (PLFN/EXP)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. This is outside the scope of the project.
10.3.2	**Air Quality**	•add the monitoring station maintained by Nova Scotia Lands within the PLFN community, for the period from January 31, 2020 to current. Remove reference to pre-hibernation. For the reasons outlined elsewhere above, the relevant baseline air data is only available during the last two-year period, since the mill ceased pulp production. That is the only period currently free from the adverse impacts of previous environmental racism.(PLFN/EXP)	Agreed, comment included in NPNS submission to the draft ToR to include all ambient air monitoring stations that NPNS can obtain data from. NPNS believes that the impacts on air quality when the mill was operational is important for context in the EA.
10.3.2	**Air Quality**	• Air quality assessment of current situation as baseline (EAC)	Agreed, air quality assessment of current situation will be completed for the EA.
10.3.2	**Air Quality**	• All air dispersion models must incorporate all appropriate industry-standard modules designed specifically to account for all relevant conditions in the full study area, including but not limited to the influence of marine, coastal and terrestrial environments during all seasons, and including climate change effects in reaching the results and predictions. All models must include worst-case scenarios in predicted outcomes and results and take into account all weather conditions, including extreme weather, and daily and seasonal variability, including changing temperature, wind direction and speed and humidity. (EcoJustice)	Qualified third parties will be tasked with conducting the air dispersion modelling work. NPNS will employ modelling programs that are required by NSECC. The project scenarios to be studied will be defined by the third-party consultants following standard protocols and in consultation with NSECC.
10.3.2	**Air Quality**	•Well defined Compliance and Effects Monitoring requirements for Town of Pictou, Pictou Landing and Pictou West areas must be in place. Dependance on the NSECC air stations should not suffice. A rigorous real time testing regimen for detection and measurement of potential toxins in air emissions must be part of any plan. Expectations for timely reporting and correcting of incidents should be paramount in any plan. (Town of Pictou).	The need for, and location of, additional air monitoring testing and/or stations cannot be commented on before the air dispersion modelling is undertaken. NPNS will work with NSECC and local stakeholders to define monitoring programs after modelling is complete.

10.3.3	**Ambient Noise and Light**		
10.4.1	**Terrestrial Environment**	• The effects assessment shall further consider the effects on flora and fauna, including forests, trees, species at risk, migratory birds, and other protected species, and their respective habitats, due to spraying and harvesting forested lands by or for the proponent to obtain raw materials to supply and operate the mill. (EcoJustice)	Outside the scope of the project.
10.5	**Agriculture, Fisheries and Aquaculture and Forestry Resources**	• The EA Report must include a discussion on the potential effects on any forestry resources within the project area and in all areas from which wood products will be obtained to supply the mill for pulp production and power generation. (EcoJustice)	Additions outside the scope of the project.
10.5	**Agriculture, Fisheries and Aquaculture and Forestry Resources**	•Should expressly require that impacts on forests of Nova Scotia should be assessed as part of the EA. (ECELAW)	Outside the scope of the project.
10.6	**Human Health**	• Screen COPCs in project effluent discharge, leachate and other emissions according to guidance from Health Canada. Contaminant data used must be current and comprehensive, and must also take into account existing and historical contamination at the site. Incorporate findings from the receiving water study. Discuss the potential for interactive effects from similarly acting chemicals and for chemical compounds which may result from degradation or break down over time of other compounds. (EcoJustice)	Additions outside the scope of the project.
11.6	**Human Health**	• The HHRA should require identification and consideration of susceptible populations and their histories of exposure. Vulnerable or susceptible populations should be included in risk assessments, including women (and pregnant women) and children who may be more susceptible to exposures to toxic substances and subsequent health outcomes based on the timing of exposure and windows of susceptibility. Low dose, cumulative and synergistic effects must be considered as a result of exposure to complex mixtures of toxic substances, including endocrine disrupting chemicals. As well, sex- and gender-based analysis should be applied to any evaluation of health, risk and exposure to toxic substances. (EcoJustice)	NPNS's consultant will follow the well-defined guidelines of Health Canada in conducting the HHERA.

10.7	**Socio-Economic Conditions**	•Include an analysis of the cumulative effects of past operation of the mill and related infrastructure, including the Boat Harbour Treatment Facility and include an analysis of the intersection of sex and gender with other cultural and identity factors.(PLFN/EXP)	Outside the scope of the project.
10.8	**Existing and Planned Land Uses**	•Include Scallop Buffer Zone SFA 24 (CPAWS)	Agreed, NPNS added Scallop Buffer Zone SFA 24 to our ToR comments as an area that will be assessed.
10.9	**Archaeological Resources**		
11	**PROPOSED MITIGATION**	•add "including of the operation of the restarted mill". (PLFN/EXP)	Outside the scope of the project.
11	**PROPOSED MITIGATION**	•Definition of "normal operation" should be outlined in great detail and operational changes required during non-ideal conditions should be described clearly. Descriptions of redundancies in operational processes to protect against accidental acts of contamination should be required. (Town of Pictou)	Agreed, NPNS will be transparent in its operations and define normal operations and discuss redundancy equipment.
11.1	**Geophysical Environment**		
11.2	**Aquatic Environment**		
11.2.1	**Groundwater Quality and Quantity**		
11.2.2	**Surface Water Quality and Quantity**		
11.2.3	**Marine Water**		
11.2.4	**Wetland Resources**		
11.3	**Atmospheric Resources**		
11.3.1	**Climate**		
11.3.2	**Air Quality**	•include the operation of the restarted mill (PLFN/EXP)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.

11.3.3	**Ambient Noise and Light**		
11.4	**Wildlife, Wildlife Habitat and Species-at-Risk**	•Must conduct a very thorough and complete analysis of all species impacted in the spill basin area as well as Pictou Harbour. Missing species - Piping Plover. (individual)	The baseline studies will determine whether any bird species-at-risk, colonial nesting species, species particularly vulnerable to habitat fragmentation, occur or breed in or near the study area.
11.4.2	**Freshwater Aquatic and Marine Environment**		
11.5	**Agriculture, Aquaculture and Forestry Resources**		
11.6	**Human Health**		
11.6	**Socio-Economic Conditions**		
11.8	**Archaeological Resources**		
12	**RESIDUAL EFFECTS AND ENVIRONMENTAL EFFECTS**	•GHG reduction targets should be its own VEC (ECELAW)	Impacts of the project on climate change will be discussed thoroughly in the EA report.
12	**RESIDUAL EFFECTS AND ENVIRONMENTAL EFFECTS**	•carbon sequestering ecosystems and the social cost of carbon must be assessed (ECELAW)	Outside the scope of the project.
13	**EVALUATION OF THE ADVANTAGES AND DISADVANTAGES TO THE ENVIRONMENT**	•including operation and decommissioning of the mill (PLFN/EXP)	As per the Minister's decision letter (July 16,2021), the Project is a modification to an undertaking pursuant to the EA Regulations. The Project will require substantial changes to the existing mill in addition to building a new effluent treatment system.
14.1	**Geophysical Environment**		
14.2	**Water Resources**		

14.3	**Fish and Fish Habitat**		
14.4	**Atmospheric Resources**		
14.4	**Human Health**		
14.5	**Other Monitoring Plans**		
15	**CONSULTATION PROGRAM**	•Discharge location must be made public and have consultation on the location before EA filed (individual)	In recognition of public feedback received, NPNS will consult the stakeholders when a proposed outfall location has been identified prior to filing the final EA.
15.2	**Consultation with the Mi'kmaq of Nova Scotia**	•Potential for bias to take root in the ELC and not all opinions may be voiced. Clear lack of Indigenous representation on the ELC. ELC cannot be the primary form of public consultation or engagement. (NCNS)	The ELC will remain an important, independent advisory body to NPNS. NPNS agrees that the ELC cannot be the primary form of public consultation or engagement.
16	**ASSESSMENT SUMMARY AND CONCLUSION**		

3.0: REQUESTED CHANGES TO THE DRAFT TOR

See tracked changes and comments on the Draft ToR beginning on the next page.

Item 3

NPNS Comments on the Draft Terms of Reference
(February 25, 2022)

DRAFT TERMS OF REFERENCE FOR THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT REPORT

Mill Transformation and Effluent Treatment Facility Project
Proposed by Northern Pulp Nova Scotia Corporation

NOVA SCOTIA ENVIRONMENT AND CLIMATE CHANGE
December 21, 2021

Executive Summary

Background

Environmental Assessment

An Environmental Assessment is a planning tool that allows development to occur while protecting the environment. When a company registers its project for an environmental assessment, government's expectation is that the company provide a complete and comprehensive assessment of the project's potential risks and related mitigations.

NPNS Comment: The EA Branch is responsible for providing guidance about the environmental assessment process to assist proponents and interested persons in the preparation and review of the environmental assessment. Staff at the Branch will coordinate the review of the final environmental assessment to enable the review panel to complete its role and the Minister to make an informed decision about the project. The EA Branch will work with the proponent, NSECC staff and any administrators appointed to oversee the project to:

- Provide advice and guidance about the requirements of the Environment Act, and other ministry legislation or procedures;
- Facilitate coordination with other review processes, such as the federal environmental assessment process and other approvals required under the Environment Act, in order to minimize unnecessary duplication and inconsistency;
- Encourage and facilitate the resolution of outstanding issues during the process as necessary; and
- Consult with the proponent and other potential reviewers of the EA report (affected agencies and the public) to review and establish boundaries in respect of problems or opportunities to be addressed as part of the environmental assessment, the range of alternative responses to be examined, and other contextual factors (policies, plans, programs, standards, guidelines, etc.) that warrant special attention, and provide further clarity regarding the environmental assessment, including study design and implementation and the review of draft studies and environmental assessment reports.

The proponent has proposed using Canada's draft pulp and paper effluent regulations (PPER) and existing Canadian Ambient Air Quality Standards (CAAQS) as the guiding standards for treated effluent and air emissions for the Project, subject to the completion of required studies that confirm there are no adverse effects or significant environmental effects which cannot or will not be avoided or mitigated through the application of environmental control technology. The results of the receiving water study and human health and ecological report to be completed as part of the environmental assessment will be used to determine if further mitigation measures will be

required.

The proponent may apply for approvals to construct and operate the project during the environmental assessment. NSECC will use a one-window approach to achieve all required approvals under the Environment Act in a coordinated manner that balances environmental protection with the need for the project to proceed in a timely way.

Former Project

NPNS's former *Replacement Effluent Treatment Facility Project* was twice registered under the Class I EA process. A thorough environmental review concluded each time that NPNS did not provide enough information to determine if adverse effects or significant environmental effects would result from the project. Concerns were raised about incorrect and incomplete baseline information; assumptions and methodology used in the analysis; and the absence of mitigation measures related to the potential environmental effects.

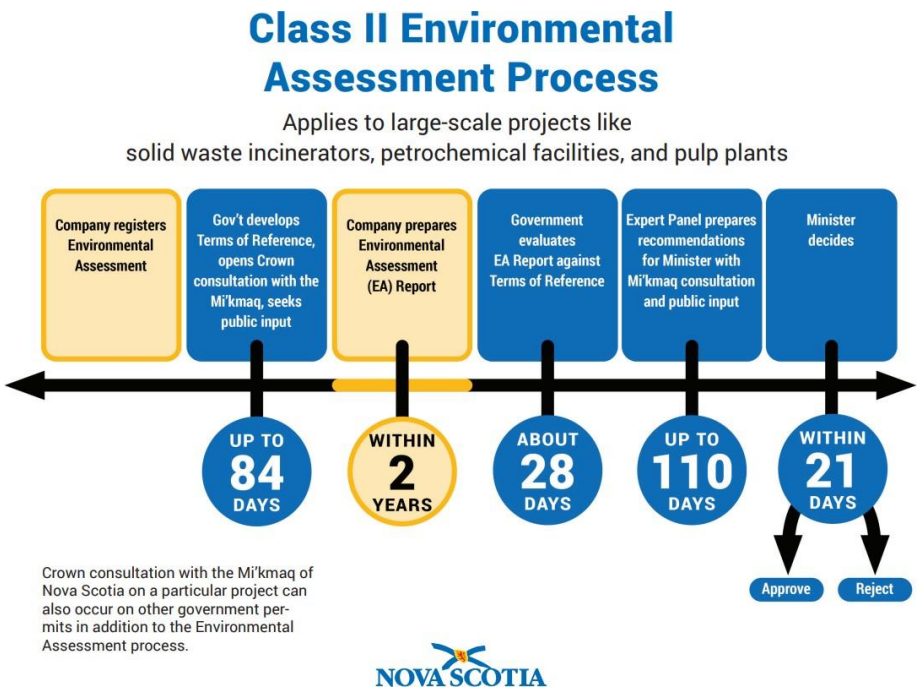
As a next step in the EA process, NPNS was required to submit an Environmental Assessment report on the *Replacement Effluent Treatment Facility Project* by April 2022 that met the expectations of the Terms or Reference provided to NPNS in December 2020. On March 5, 2021, NPNS formally withdrew this project.

New Project

On July 16, 2021, the Minister of Environment and Climate Change (Minister) determined that NPNS's proposed new project, the *Mill Transformation and Effluent Treatment Facility Project*

requires a Class II Environmental Assessment in accordance with the Environmental Assessment Regulations

On December 7, 2021, NPNS formally registered the *Mill Transformation and Effluent Treatment Facility* project for a Class II Environmental assessment. NPNS's registration document is available online at Mill Transformation and Effluent Treatment Facility Project | Environmental Assessment | Nova Scotia Environment.



Purpose of the Terms of Reference

This draft Terms of Reference has been developed based on a review of the proposed project described in NPNS's registration document. The purpose of the Terms of Reference is to guide the company in understanding the information required for inclusion in their Environmental Assessment report that will be evaluated through the Class II EA process.

Comments from the Mi'kmaq, interested stakeholders, and the public on this draft Terms of Reference will inform the development of these requirements.

Comments obtained through the review period are provided to the company which can provide input on the comments prior to the finalization of the Terms of Reference. Once the Terms of Reference is finalized and provided to the company, NPNS will have up to two years to submit their Environmental Assessment report. NPNS is expected to prepare an Environmental Assessment Report that fulfills the intent of the final Terms of Reference. ~~The Environmental Assessment Report must consider all the effects that are likely to arise from the project, including any not explicitly identified in the Terms of Reference.~~

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Under the Class II process, the Minister refers the report to the Environmental Assessment Panel (Panel), who conducts public review of the Environmental Assessment Report that can include public hearings. The Panel prepares a report and recommendation to the Minister based on review of the Environmental Assessment Report and input gathered through the public review and consultation with the Mi'kmaq. Following receipt of the Panel's recommendation, the Minister can choose to approve or reject the project.

Next Steps

This document presents the Draft Terms of Reference for public review and comment on their adequacy and any suggestions for their modification. **Only those comments related to specifics of the Terms of Reference will be used to inform the finalization of the Terms of Reference through this process. As required by the Environmental Assessment Regulations, the company must be advised of comments received through this process.**

Comments should be submitted in writing through the EA website at https://novascotia.ca/nse/ea/comments.asp, by email at EA@novascotia.ca or by mail to the following address on or before **January 31, 2022**, and addressed to:

Environmental Assessment Branch
Nova Scotia Environment and Climate Change
P.O. Box 442, Halifax, Nova Scotia B3J 2P8
EA@novascotia.ca

Table of Contents

INTRODUCTION

1.1 Background

The *Mill Transformation and Effluent Treatment Facility Project* (the project or undertaking) proposed by Northern Pulp Nova Scotia Corporation (NPNS or the Proponent) was registered for environmental assessment (EA) as a Class 2 undertaking pursuant to Part IV of the *Environment Act* on December 7, 2021

1.2 Purpose of the Terms of Reference

An Environmental Assessment is a planning tool that allows sustainable development to occur while protecting the environment. When a company registers its project for an environmental assessment, government's expectation is that the company provide a complete and comprehensive assessment of the project's potential risks and related mitigations.

The purpose of this document is to identify for Northern Pulp the information requirements for the preparation of an Environmental Assessment Report (EA Report) to be evaluated through the Class II EA process. Northern Pulp is expected to prepare an EA Report which fulfills the intent of the Terms of Reference.

NPNS Comment: The EA Branch is responsible for providing guidance about the environmental assessment process to assist proponents and interested persons in the preparation and review of the environmental assessment. Staff at the Branch will coordinate the review of the final environmental assessment to enable the review panel to complete its role and the Minister to make an informed decision about the project. The EA Branch will work with the proponent and any administrators appointed to oversee the project to:

- Provide advice and guidance about the requirements of the Environment Act, and other ministry legislation or procedures;
- Facilitate coordination with other review processes, such as the federal environmental assessment process and other approvals required under the Environment Act, in order to minimize unnecessary duplication and inconsistency;
- Encourage and facilitate the resolution of outstanding issues during the process as necessary; and
- Consult with the proponent and other potential reviewers of the EA report (affected agencies and the public) to review and establish boundaries in respect of problems or opportunities to be addressed as part of the environmental assessment, the range of alternative responses to be examined, and other contextual factors (policies, plans, programs, standards, guidelines, etc.) that warrant special attention, and provide further clarity regarding the environmental assessment, including study design and implementation and the review of draft studies and environmental assessment reports.

The Terms of Reference include Valued Ecosystem Components (VECs) which must be adequately addressed in the EA Report. While the Terms of Reference provides a framework for preparing a complete EA Report, it is the responsibility of NPNS to provide sufficient data and analysis on any potential environmental effects of the project presented in a clear format that can easily be reviewed and evaluated by the Minister, government reviewers, the Mi'kmaq of Nova Scotia and the public.

Once the Minister refers the EA Report to the Environmental Assessment Review Panel (Panel), the EA Report will serve as the cornerstone of the Panel's review and evaluation of the potential effects of the project and thus must be a stand-alone document. The EA Report will also allow government reviewers, the Mi'kmaq of Nova Scotia and members of the public to understand the project, the existing environment, and the potential environmental effects of the project. In addition, it will help with understanding of the potential impacts of the project to ~~potential~~ asserted or established Aboriginal or Treaty rights.

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The Panel is responsible to review the EA Report, conduct a public review of the EA Report, which can include public hearings, and prepare a report and recommendation to the Minister that includes input gathered through the public review and consultation with the M'kmaq.

The Minister then has the following decision options: If the Minister is of the opinion that any adverse effects or significant environmental effects related to the project can be mitigated, then

the project is able to proceed, with or without conditions. If such effects cannot be mitigated, a project may be rejected.

NPNS Comment (See section 1.2 of NPNS Submission Letter): The proponent may apply for approvals to construct and operate the project during the environmental assessment. NSECC will use a one-window approach to achieve all required approvals under the Environment Act in a coordinated manner that balances environmental protection with the need for the project to proceed in a timely way.

1.3 Proposed Project

This Section is based on the proposed project as described in the November 2021 Environmental Assessment Registration Document (EARD). The Northern Pulp Northern Bleached Softwood Kraft pulp mill is located at Abercrombie Point adjacent to Pictou Harbour in Pictou County, Nova Scotia (NS). The proposed project consists of the mill infrastructure and process components that will be changed or updated as well as the design and development of a new effluent (wastewater) treatment facility (ETF) constructed on Northern Pulp property, and a transmission pipeline that will carry treated effluent to the Pictou Harbour estuary and discharge via an engineered diffuser (marine outfall).

The mill transformation components of the project include upgrades to a number of the existing in-mill processes. Modifications or additions to the mill infrastructure or processes include:

- Upgrades to washing and screening components of the pulping process and collection of odour producing gases;
- Installation of a two-stage oxygen delignification process and on-site oxygen generator;
- Upgrades to the bleaching plant;
- Lignin separation;
- Upgrades to green and white liquor clarifiers;
- Calcium liquor cycle upgrades;
- Conversion to a low-odour recovery boiler;
- Replacement and decommissioning of emission stack scrubber equipment;
- Steam stripper system upgrades;
- Upgrades to mill's spill containment and cooking chemical recovery processes; and
- Installation of cooling towers and cooling water loops within the mill.

The project components are identified to have been designed to meet Best Available Technology standards for the pulp. They are intended to: improve overall air and effluent emissions from the mill, reduce visible plumes and odours during normal mill operations, improve the quality of effluent to the treatment facility, and reduce the mill's water usage.

In addition, the mill transformation work will also include the exterior of the existing mill building. Work will be undertaken to rejuvenate external areas of the mill, including cleaning of brick facades, cladding replacement, removal of obsolete equipment and tanks, repainting, and

general landscaping.

NPNS also proposes the design and development of a three-stage effluent treatment facility to be located on the mill property. Primary treatment is proposed to consist of a two-stage process including an automatic raked bar screen to remove large debris from the effluent stream and a concrete circular clarifier to remove wood fiber and lime by gravity. Secondary treatment at the ETF is proposed to employ the AnoxKaldnes BAS™ Biological Activated Sludge process purchased from Veolia Water Technologies, which combines Moving Bed Biofilm Reactor (MBBR) technology with conventional activated sludge. The tertiary treatment stage will consist of rotating disc filters (Veolia's Hydrotech Filters) to remove suspended solids and address effluent colour.

Once treated onsite at Northern Pulp's facility, effluent is proposed to be sent through a pipe (discharge point to be determined through completion of a receiving water study and engineering design process) and discharged via an engineered multi-port diffuser into the Pictou Harbour estuary from the mill property.

NPNS also proposes to construct a 35,000 m^3 spill basin between the mill and the ETF in the eventof major process upsets. The basin is proposed to be designed to be able to contain 20 hours of mill effluent and will be kept empty during normal mill operations.

1.4 Environmental Assessment Requirements

The project is a Class II Undertaking pursuant to Schedule A of the Environmental Assessment Regulations made under Section 49 of the *Environment Act*.

The Environmental Assessment Regulations require that the proposed Terms of Reference for the EA Report be prepared by the EA Administrator and made available for public review. Public comments on the Draft Terms of Reference will be accepted from December 21, 2021, to January 31, 2022.

All comments will be provided to Northern Pulp within 5 days of the end of the comment period. Northern Pulp will then have 21 days to respond in writing to the comments. Within 14 days from the final date for written response from Northern Pulp, the Final Terms of Reference for the EA Report shall be provided to Northern Pulp.

NPNS is required to submit the EA Report within two years of receipt of the Final Terms of Reference. If the EA Report does not meet the Terms of Reference, Northern Pulp will be required to include further information before the EA Report can be accepted. Upon acceptance of the EA Report, Nova Scotia Environment and Climate Change (ECC) has 14 days to publish a notice advising the public where the EA Report can be accessed for review and comment.

Once the EA Report has been accepted, the Minister is required by the EA Regulations to refer the EA Report to an EA Review Panel (Panel) for review. To assist in their review and preparation of a recommendation, the Panel may also choose to hold public hearings to receive submissions and comments from any interested party. At the conclusion of this process, the Minister has the

following decision options: a) the undertaking is approved with conditions; b) the undertaking is approved without conditions; or c) the undertaking is rejected.

1.5 Access to Information for the Environmental Assessment Process

Copies of the Draft Terms of Reference for the Preparation of the EA Report may be examined at the following locations:

- Pictou Library, 40 Water Street, Pictou, NS
- New Glasgow Library, 182 Dalhousie Street, New Glasgow NS
- EA website https://www.novascotia.ca/nse/ea/

All information pertaining to this portion of the EA review will be posted to the EA website as it becomes available.

PREPARATION AND PRESENTATION OF THE ENVIRONMENTAL ASSESSMENT REPORT

Pursuant to the Environmental Assessment Regulations, the EA Report must include, but not be limited to, the following information:

- a description of the proposed undertaking;
- the reason for the undertaking;
- other methods of carrying out the undertaking;
- a description of alternatives to the undertaking;
- a description of the environment that might reasonably be affected by the undertaking;
- the environmental effects of the undertaking, including identifying any effects on species at risk, species of conservation concern and their habitats;
- an evaluation of advantages and disadvantages to the environment of the undertaking;
- measures that may be taken to prevent, mitigate or remedy negative environmental effects and maximize the positive environmental effects on the environment;
- a discussion of adverse effects or significant environmental effects which cannot or will not be avoided or mitigated through the application of environmental control technology;
- a program to monitor environmental effects produced by the undertaking during its construction, operation and abandonment phases;
- a program of public information to explain the undertaking; and
- information obtained under subsection 19(2) which the Administrator considers relevant.

Also to be included are:

- the environmental effects of the undertaking on reserve lands, as well as suspected or known burial and archeological sites;

- a description of the potential impacts of the proposed undertaking to ~~potential~~ asserted orestablished Aboriginal or Treaty rights, in respect of the Crown's duty to consult, and where appropriate, accommodate Aboriginal peoples.

The EA Report shall be prepared taking into consideration comments from:

- the public;
- departments of Government*;
- the Government of Canada and its agencies;
- the forestry sector, including woodlot owners, service providers (contractors), suppliers and sawmills;
- municipalities in the vicinity of the undertaking or in which the undertaking is located;
- an affected aboriginal people or cultural community; and
- neighbouring jurisdictions to Nova Scotia in the vicinity of the undertaking.

** including departments, offices, and agencies*

In preparing the EA Report, as applicable, NPNS may refer to comments from the above-noted parties during the EA review of the previous Replacement Effluent Treatment Facility project, for both the EARD and the Focus Report previously submitted by NPNS, to identify and include the supplementary information required to provide a comprehensive and complete assessment of the potential effects of the project.

The EA Report must be a stand-alone document that presents a complete discussion and analysis of predicted effects (direct and indirect effects) that is qualitative and quantitative, evidence-based and supported by credible sources of information. This report shall build upon, where appropriate, the science and evidence outlined in the November 2021 EARD. Northern Pulp is expected to prepare an EA Report that fulfils the intent of the Terms of Reference ~~and considers all the effects that are likely to arise from the project, including those not explicitly identified in the Terms of Reference~~. The EA report should apply intuitive methods to depict data, models, analyses, and their relevance to the environment, processes, and/or assessments as applicable.

The order in which information is presented is at the discretion of NPNS; however, a concordance table will be required to indicate where the information can be found. When the Minister refers the EA Report to the EA Review Panel for review, NPNS may provide additional information to the EA Panel prior to the close of a public hearing.

Since the EA Report is intended for public review, the information should include an Executive Summary presented in non-technical language. NPNS will be required to submit an electronic copy of the EA Report in accordance with the EA Branch Bulletin on Requirements for Submitting Electronic Copies of Environmental Assessment (EA) Documents for publication on the Department's website.

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Commented [NPNS1]: This section should be amended, based on public comments received, to include the forestry sector, including woodlot owners, service providers (contractors), suppliers, and sawmills as another targeted audience as their businesses and property values are directly affected by the operation of a centrally located mill to process low grade wood.

Commented [NPNS2]: In recognition of public feedback received, NPNS will consult the stakeholders when a proposed outfall location has been identified prior to filing the final EA.

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The EA Report must include, ~~but not be limited to,~~ the following information, as identified under the corresponding sections.

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3.0 PROJECT DESCRIPTION

NPNS must provide information, as part of its comment on the draft Terms of Reference, about any anticipated changes to the proposed project relating to work required to return the mill to an operational state, including how these changes, if any, may affect the Terms of Reference.

Describe each component of the project, including site preparation, construction, commissioning, operation, maintenance, and decommissioning, as it is planned through its full life cycle. Components include:

- changes to existing mill infrastructure and in-mill improvements;
- mill water supply;
- effluent treatment facility (ETF);
- land-based sections of pipeline; and
- marine-based sections of pipeline and the diffuser.

Commented [NPNS3]: Expansion of the existing onsite landfill #3 will be undertaken as part of the mill restart process. Details of the landfill expansion design have previously been submitted to NSECC.

Where final decisions have not been made in regard to an element of project design, or several options exist for a particular component or activity, the assessment of effects of that element of the project on the environment should be conducted at the same level of detail for all available options.

3.1 The Proponent

Outline NPNS's corporate commitment to sustainable development and environmental protection goals and principles including pertinent corporate policies, programs, plans, strategies, protocols, guidelines, codes, and environmental management systems (EMS).

Provide summary information on the nature of the management structure and organizational accountability for designing, constructing, operating, and modifying the project; implementing environmental mitigation measures and environmental monitoring; managing potential adverse environmental effects, and mitigating potential adverse impacts to Aboriginal and Treaty rights.

Provide details on relevant corporate experience (NPNS and related companies) and experience in building and operating other similar facilities. Provide a record of the environmental performance and capability of NPNS in conducting this type of project.

3.2 Project Location

Provide a concise description of the geographical setting in which the project is to be constructed/operated. Describe how the project site was chosen, including a discussion of the specific environmental considerations used in site selection of all project components, and the advantages of the proposed site. Describe the project's compatibility with existing local and

regional land-use policies and plans, and opportunities to integrate project planning into regional scale development efforts. Clearly describe the location and distance from the proposed site(s) to all potential receptors (e.g., permanent, seasonal or temporary), taking into consideration the different land uses (e.g., residential, recreational, industrial, etc.), and all sensitive populations (e.g., schools, hospitals, retirement complexes, assisted care homes, etc.) Consider the types of residents and visitors, based on land uses, and include members of the public and/or members of specific population sub-groups (e.g., Indigenous peoples, campers, hunters, etc.). Discuss compatibility of the project location in relation to people and their community and traditional activities and land uses by the Mi'kmaq of Nova Scotia

Describe the ultimate boundaries of the project in a regional context including existing and proposed land uses and infrastructure such as road networks, railways, power lines, pipelines, proximity to permanent and seasonal residences, individual and community water supplies, wetlands, water bodies, streams, ecologically sensitive areas, and archaeological sites. Include mapping at an appropriate scale.

Provide details on ownership of property within the project footprint including lands owned by the company, the Crown, or private lands. Provide details of existing agreements to develop the project on lands not owned by NPNS. Provide detailed plans for the required acquisition or use of private lands and Crown Lands and discuss any contingencies should these lands not be available for project development.

Provide a list and map of communities in the region, including Mi'kmaq communities, potentially affected by the project and indicate the distance between those communities and the specific project components as appropriate. Identify proposed local shipping routes for importing and exporting products.

3.3 Project Design and Components

Describe the design plans and appropriate design standards for all project components, associated and ancillary works, and other characteristics that will assist in understanding the project, including: all planned changes to mill infrastructure and in-mill improvements, the ETF, land and marine based sections of effluent pipeline and the diffuser. All associated infrastructure and components must be detailed. In cases where existing equipment are proposed to be re-purposed, converted or modified to support the proposed project, provide detailed assessments and engineering re-design plans to address the suitability for the proposed purpose, condition of equipment and life expectancy, including the effect of gases and chemicals proposed to be collected on mill equipment and infrastructure. Also discuss environmental controls planned for the project and how environmental protection, conservation, best management practices (BMPs), and best available technology have been considered in the design.

Provide potential design variations and implications (including advantages or disadvantages to the environment) of those variations. Describe any assumptions which underlie the details of the

project design. Where specific codes of practice, guidelines and policies apply to items to be addressed, those documents shall be cited.

For the EA Report, all site-specific data must be collected using equipment installed, operated, maintained, and calibrated as specified by the manufacturer's instructions. All samples are to be collected, preserved, and analyzed, by qualified personnel, in accordance with recognized industry standards and procedures and at accredited laboratories. Data shall undergo quality assurance and quality control (QA/QC) processes.

In addition to the above, this section will include, but not be limited to information on the following project design components:

Planned Changes to Existing Mill Infrastructure and Processes

- Preliminary design, performance expectations, and/or other documentation to demonstrate how the proposed mill transformation/project components will achieve the stated performance objectives;
- Identification and characterization of the proposed water supply, including how the water will be conveyed to the site;
- Schedule of in-mill component construction/installation and other changes relative to the ETF construction schedule; and
- A waste dangerous goods management plan to accommodate for a reasonable worst case scenario within design of the proposed ETF, including accidental releases of black liquor, major equipment malfunctions, etc. It is important to note that the ETF is not proposed to treat waste dangerous goods based on the information provided in the EARD and in accordance withrequirements of ECC. Additional details relating to disposal of waste goods and construction materials may be required.

Effluent Treatment Facility (ETF)

- Footprint, location and preliminary designs for the ETF;
- Equipment description and specifications, including appropriate diagrams and flow charts for the proposed ETF and infrastructure components;
- Details (including characteristics and toxicities) and quantities of all products produced, stored, and imported to and exported from the facility (including by-products and chemical intermediaries);
- Details (including characteristics and toxicities) and quantities of all sludges, ashes, or other wastes generated from the biological activated sludge (BAS) treatment process and/or from the boilers. Characterization of sludges, ashes, or other wastes may require a combination of literature, analysis of data from comparable mill(s), and/or modelling associated with proposed in-mill processes;

Commented [NPNS4]: NPNS' consultants' preference would be to have "worst case" replaced with "reasonable worst case". Worst case scenario could differ for each discipline and different receptors may also have different worst cases. The term "reasonable worst-case scenario" has been used by Health Canada in their guidance document for evaluating Human Health Impacts in Environmental Assessment.

Commented [NPNS5]: Black liquor and the pulping chemicals on site are reused and recycled. Some black liquor (lignin) is intentionally left in the effluent flowing to the ETF as it keeps the bacteria functional by providing food.

Commented [NPNS6]: Similar wording suggested to that used for the characterization of the raw effluent below.

- Justification of spill basin size. Consider reasonable worst-case scenarios and requirements under the Dangerous Goods Management Regulations. Provide information on any proposed

  process or chemical changes that may impact the quality and quantity of materials that may be released and how leakage will be tracked and contained to ensure that incompatible materials do not come into contact and may be contained for collection and disposal without adverse reaction or dilution;

- Proposed design for the spill basin including ~~but not limited to~~, management and disposal of contaminated material that may be present at the site, liner details, secondary containment features, clean-out access and connection to the mill infrastructure and ETF. Demonstrate that its capacity will be sufficient for all intended use cases, including justification and clearly outlining assumptions used to support proposed basin sizing;

- Provide a complete physical and chemical characterization of NPNS's anticipated raw wastewater (influent to ETF), to support the assessment of the appropriateness of the proposed treatment technology. The complete characterization must adequately represent ETF influent for various operating conditions that may exist at the mill (e.g., seasonality, flow rates, changes in sources of fibre or production, start-up and shut-down cycles, etc.). Characterization of influent may require a combination of literature, analysis of data from comparable mill(s), and/or modelling associated with proposed in-mill processes. All analysis and discussion must identify laboratory reportable detection limits;

NPNS Comment: There are more than 20 stand-alone kraft mills in Canada that are regulated under the Federal Pulp and Paper regulations. These mills all successfully operate under the same regulations over a wide range of flow rates, wood species and production rates during all four seasons. NPNS would not be unique. Over all the years that NPNS tested raw effluent, there were not material differences in effluent quality related to seasonality and fibre sources. Effluent quality is affected by the percentages of hardwood and softwood used in the pulp production, however, the changes in hardwood and softwood percentages in the NPNS wood basket were not significant. Therefore, changes in fibre sources will have indistinguishable impact on influent quality. It is also true that changes in production rate, start-ups and shutdowns will not materially affect the raw effluent quality characterization COPCs, only the concentration of the constituents.

Consequently, in our opinion, additional characterization of normally occurring operating variations in raw effluent will not provide any further useful data.

- Influent and effluent characterization must identify contaminants of potential concern using a detailed quantitative approach to estimate discharge concentrations and loads from the treatment sources (e.g., literature review, background water quality, and similar facility effluent data). Must include, at a minimum, AOX, total nitrogen, total phosphorus, colour, chemical oxygen demand (COD), biological oxygen demand (BOD_5), total suspended solids (TSS), dissolved oxygen (DO), pH, temperature, total dissolved solids

Commented [NPNS7]: Clarification required to determine the definition of "worst-case" as this could be construed differently by the regulators and the Proponent.

Commented [NPNS8]: NPNS' consultants' preference would be to have "worst case" replaced with "reasonable worst case". Worst case scenario could differ for each discipline and different receptors may also have different worst cases.

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Commented [NPNS9]: The information that NSE is requesting (total dissolved solids (TDS), mercury, dioxins and furans (all applicable congeners), PAHs, PCCD/F, resin compounds, chlorophenolic compounds, non-chlorinated phenolic compounds, and chlorinated VOCs) is highly unusual and from our preliminary review is not readily available in literature or other similar facility data. There will be limited information presented from these sources.

(TDS), mercury, dioxins and furans (all applicable congeners), PAHs, PCCD/F, resin compounds, chlorophenolic compounds, non-chlorinated phenolic compounds, and chlorinated VOCs;

- Using the anticipated raw wastewater characterization, evaluate all contaminants of potential concern (COPCs) with respect to the effluent discharge quality following treatment using the proposed technology. Provide results of all expected COPCs influent and effluent concentration ranges. Include chemical oxygen demand (COD) fractionation (soluble and total) concentrations in the assessment;
- Comparison of the effluent characterization results from the above assessment ~~with appropriate regulations and/or guidelines, including, but not limited to,~~ the draft Pulp and Paper Effluent Regulations (PPER) daily and monthly average limits and the Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations. The ETF treatment process shall also be designed to account for contaminants of concern and their effect on the environment as determined by a receiving water study;
- Evaluate anticipated effluent flow rate (maximum), through modelling or assessment of other data sources, to support treatment capacity of flow of effluent per day;
- Evaluation of sludge and ash management options, inclusive of agronomic beneficial reuse and disposal, including the rationale for the preferred option. If the preferred option uses the biomass boiler, provide a secondary disposal option; and
- Provide details of the ETF commissioning process and impact of commissioning phase on performance of proposed treatment technology.

Land-Based Sections of Pipeline Route

- Plans for intrusive geotechnical surveys to support proposed pipeline construction methods
- The geotechnical survey plan must include collection of standard hydrogeological information on borehole, monitoring well and test pit records including:
    - estimated water levels
    - soil types, description, and depths
    - bedrock geology description of rock type, rock quality fracturing, and depths
    - monitoring well construction details (when applicable);
- Functional design drawings of anticipated land-based pipeline alignment
- Risk assessment of the land-based pipeline design, including:
    - Evaluation of the probability of a leak, spill or release, based on a literature review of comparable designs and installations, and considering future construction/maintenance activities that may be required or undertaken others

Commented [NPNS10]: To address comments submitted by others, NSE Tier 1 EQS for both marine and freshwater discharge limits should not apply for pulp and paper mill effluent discharges in Nova Scotia, as the PPER regulations would be obligatory (See section 1.1 of NPNS Submission Letter).

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Commented [NPNS11]: Propose adding *Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations* for comparison as suggested by public comment.

Commented [NPNS12]: Veolia Water Technologies, the ETF chosen vendor, had studied the effluent at NPNS and was comfortable in providing effluent quality guarantees based on information provided in past. Veolia supplies both municipal and industrial treatment facilities in every corner of the world, including systems all over Canada. Veolia does not require the extensive characterization required by NSECC of the influent for other projects. Instead, similar to other ETF vendors, Veolia relies on the typical influent characterization used worldwide – ie. BOD, TSS, AOX, pH, temperature and nutrient loading.

(e.g., installation of underground and/or overhead utilities or municipal services);

- Identification of points along the pipeline route that are most susceptible to failure;
- Details of a secondary containment system (e.g., double-walled pipeline) and/or other protective engineered measures and proposed locations, based on the risk assessment; and
- Leak detection technologies for the entire land-based pipeline, considering the private supply wells. Provide details on the sensitivity of detection technologies, staff training plans, maintenance and inspection frequencies, methodologies and response protocols.

- Maps, at an appropriate scale of the project location and pipeline route that show project components, boundaries with UTM coordinates, major existing infrastructure, ~~important~~ environmental features, and adjacent land uses that will intersect with the pipeline route

  (e.g., road networks, railways, power lines, pipelines, proximity to settled areas, individual and community water supplies, watercourses, wetlands, ecologically sensitive areas, priority flora and fauna and archaeological sites); and
- A list of all properties (i.e., Parcel Identification Numbers) that will intersect with the pipeline route.

Marine Based Sections of Pipeline Route

- Plans for intrusive geotechnical survey results to support proposed marine pipeline construction methods;
- Detailed assessment of interaction between the effluent discharge plume and the seabed and benthic environment;
- Leak detection technologies for the entire marine-based pipeline. Provide details on the sensitivity of detection technologies, staff training plans, maintenance and inspection frequencies, methodologies and response protocols, including during periods of ice coverage; and
- Maps, at an appropriate scale, detailing: the project location, the project components (e.g., confirmed locations of marine sections of the proposed pipeline including diffuser), boundaries of the proposed site with UTM coordinates, the major existing infrastructure, adjacent land uses that will intersect with the pipeline route, and ~~important~~ environmental features (e.g., spatial and temporal marine habitat distribution, marine refuges, etc.).

3.4 *Construction*

Describe the construction of all project components and supporting infrastructure. This will include but not be limited to:

Commented [NPNS13]: Suggest removing the word "important" as it is subjective

Commented [NPNS14]: Leak detection methodologies were presented in the Wood Canada Ltd. Construction Methodology and Design Report submitted under the Replacement ETF Focus Report and discussed with NSECC prior to the submission. NSECC was made aware that leak detection may not be possible in the marine portion of the pipeline and diffuser. NPNS will endeavor to evaluate available options for leak detection, but systems may not exist to detect leaks in that portion of the pipeline.

In addition, there is limited precedent for leak detection on treated effluent pipelines.

Commented [NPNS15]: Suggest removing the word "important" as it is subjective

Commented [NPNS16]: Some of the details requested in this section will not be known until bid packages are evaluated and contracts are awarded. Some items relate to future permitting after an approved EA, but with a one-window provincial approach all items would be approved in an EA. Modifications to this plan will be required.

- Proposed construction schedule for all project components (including those mentioned in Section 3.3 of the Terms of Reference), including days of the week, times of the day, seasonal schedules and anticipated commencement and completion dates;
- Identification of equipment staging areas and lighting requirements during night-time construction activities;
- All physical works and activities carried out during the construction phase are to be identified and described by location. This includes ~~but is not limited~~ to: clearing and grubbing; blasting; site access and roadways; marine construction methods; road construction methods; dangerous goods storage areas; disposal at sea; watercourse crossings or diversions; utilities; and description of equipment used for construction activities, both terrestrial and marine;
- Dredge management/disposal plans that characterize and quantify marine sediments to be dredged and disposed (or re-used) in accordance with Environment and Climate Change Canada (ECCC) standards and in consultation with relevant government departments. Identify areas where dredging activities will occur and identify the location, quantity and chemistry of any dredge materials that are expected to require land-based disposal;
- Storage areas for fuels (including all fuel dispensing locations including marine work), explosives and dangerous goods; and
- Waste disposal plans (types of waste, methods of disposal, quantity).

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Commented [NPNS17]: Suggest adding as per public comments received.

3.5 Operation

Describe the operation of all project components and supporting infrastructure to all components. The description of the operation shall include but not be limited to the following:

- Routine and maintenance operations for all project components;
- Environmental controls and BMPs, including leachate collection and pollution prevention techniques in addition to traditional treatment and disposal practices;
- A spill basin management plan that proactively addresses the management of different types of materials, including compatible and non-compatible waste dangerous goods, sequential spills/leaks/releases, clean-out and liquid/solid removal procedures for the different types of collected materials, and appropriate final disposal procedures that observe applicable provincial and federal regulations; and
- A plan to ensure adequate staffing and operation oversight of ETF by trained personnel at all times.

3.6 Decommissioning and Reclamation

Describe the proposed plans for decommissioning the project, including all infrastructure and

reclamation of any impacted site. The EA Report shall also discuss the post-decommissioning land use options of the property.

4.0 REGULATORY ENVIRONMENT

Describe the existing regulatory environment (Federal, Provincial and Municipal) including all permitting, licensing and regulatory requirements that apply to all phases of the project and associated infrastructure. Provide a schedule indicating anticipated dates for required regulatory approvals.

If the project as proposed is not a designated project, or has not been designated by the Minister of Environment and Climate Change Canada under the *Impact Assessment Act* (IAA), a clear description of any components of the project occurring on Federal Lands is required, before Federal Authorities can determine their Section 82 IAA obligations. Describe all applicable guidelines and standards that would apply to the project. Those applicable standards or guidelines shall also be referenced in the appropriate sections of the EA Report and linked to environmental protection objectives.

Commented [NPNS18]: Northern Pulp intends on early communication/meetings with appropriate federal departments to seek their input and expertise during the EA process (See section 1.1 of NPNS Submission Letter).

5.0 NEED FOR AND PURPOSE OF THE PROJECT

The need for and purpose of the project should be established from the perspective of NPNS. The project is being designed to meet specific objectives and these objectives should be discussed. If the objectives of the project are related to or contribute to a larger private or public sector policy, program or plan, this information should be included.

6.0 DESCRIPTION OF ALTERNATIVES TO THE PROJECT

Include an analysis of alternative means of carrying out the project; describing functionally different ways to meet the project need and achieve the project purpose.

Commented [NPNS19]: It is noted that several public comments refer to zero effluent technology. As per the study commissioned by the Department of Public Works in 2018, no bleached kraft mills in the world have a closed-loop system. Closed loop is not technically feasible for NPNS. The complete document has not been released to the public.

Should alternatives to the project include alternate water sources not identified in the EARD, then all influent and effluent characterization must also be conducted for this alternative scenario, accurately and adequately reflecting the alternative source water and its physical, chemical, and biological conditions. This alternative source water scenario and its potential for different water characterization should be carried through to all applicable modeling, baseline, compliance, and environmental effects monitoring activities and programs.

7.0 OTHER METHODS FOR CARRYING OUT THE PROJECT

Discuss other methods for meeting the need for the project~~, including but not limited to,~~ in mill processes and technologies, pipelines and treatment technologies. This section shall also discuss alternate locations for the project, including rational for siting of project components exterior to the mill required to support the project (e.g., access roads, spill basin, pipeline, etc.).

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The rationale for rejecting other described methods of carrying out the project must be provided,

including a discussion of how environmental sustainability and impact avoidance criteria were applied.

8.0 ASSESSMENT METHODOLOGY

Include the study strategy, methodology and boundaries used for preparing the EA Report. The following must be clearly defined:

- Temporal boundaries (i.e., duration of specific project activities and potential impacts) for construction and operation through to decommissioning and post-decommissioning;
- Study boundaries or project area and all space that will be potentially impacted, by the project as proposed, or subject to subsequent modifications, and the methodology used to identify the study boundaries;
- Valued Ecosystem Components (VECs) within the study boundaries and the methodology used to identify the VECs. The methodology used for VEC identification shall include input from members of the public, government departments and agencies, other experts, and other interested parties, as well as direct engagement with the Mi'kmaq of Nova Scotia;
- Where appropriate, identify environmental protection objectives (including those contained in applicable legislation or guidelines) associated with each VEC;
- Strategy for investigating the interactions between the project and each VEC and how that strategy was used to coordinate the individual studies undertaken; and
- Method for predicting and evaluating project impacts upon the environment; determining necessary avoidance, mitigation, remediation and/or compensation (in this order of consideration); and determining the significance of any residual impacts.

The EA Report is to be prepared using an accepted and proven EA methodology and a qualified person should predict and evaluate project impacts upon the environment. If there are no predicted effects to a specific VEC, provide reasons to support that claim. A complete discussion and analysis of predicted effects (direct and indirect effects) should be provided that is qualitative and quantitative, evidence-based and supported by credible sources of information. Provide a list of literature and sources used in the preparation of the EA Report.

The following sections outline specific concerns and requirements related to the existing environment, adverse effects and environmental effects assessment, proposed mitigation, residual environmental impacts, proposed compliance and effects monitoring, and the public information program that are to be addressed in the EA Report for the proposed project.

9.0 EXISTING ENVIRONMENT

Provide a baseline description of the environment in the vicinity of the project and all other areas that could be impacted by the project. This description must include the components of the existing environment and environmental processes, their interrelations and interactions, as well

as variability in these components, processes and interactions over time scales appropriate to the effects assessment. NPNS's description of the existing environment shall be in sufficient detail to permit the identification, assessment and evaluation of the significance of potentially adverse environmental effects that may be caused by the project.

The EA Report shall build upon, where appropriate, the science and evidence outlined in the EARD, and comments received during the previous *Replacement Effluent Treatment Facility* EA review processes. The EA Report shall be a stand-alone document that presents a complete discussion and analysis of predicted effects (direct and indirect effects) that is qualitative and quantitative, evidence-based and supported by credible sources of information. Supplementary information shall be included to provide a comprehensive and complete assessment of the potential effects and may provide additional information to assist the EA Panel in making their recommendation to the Minister in the case of a panel review and to assist the Minister in making the decision for the project.

The EA Report shall clearly indicate baseline data/information which is not available or where existing data cannot accurately represent environmental conditions in the project area. If the background data have been extrapolated or otherwise manipulated to depict environmental conditions in the project area, modelling methods and equations shall be described and shall include suitability, calculations of margins of error, and uncertainty.

For the EA Report, the spatial boundaries must include the project footprint and relevant receiving environments such as airsheds and watersheds. Temporal boundaries must address applicable guidelines, standards and regulatory requirements and include project construction, operation, decommissioning and post-decommissioning.

NPNS is encouraged to consult with relevant government departments when determining the need for updated baseline (field and desktop) information, the extent, methods, and timing of site-specific studies/surveys. Where technical reports are included or referenced, they must be finalized and signed by the qualified individual(s). Also provide the name and credentials of the person(s) conducting baseline studies/surveys. Mapping clearly indicating the extent of studies/surveys, sampling points, and illustrating key findings should also be included and presented logically within the EA Report in a location that allows for ease of review. Wherever possible, mapping should be presented at common scales and datum to allow for comparison and overlap of mapped features.

The components of the environment to be discussed shall include identified VECs and those indicated within Sections 9.1 – 9.8.

9.1 Geophysical Environment

9.1.1 Topography, Geomorphology and Geology

Topographical maps should be provided locating the project in both regional and local contexts. Describe the physical geography of the project study area including post-glaciated landforms,

coastal features, and marine features.

9.1.2 Geology

Include a description of bedrock geology, surficial geology and soils. The results of the geotechnical survey referenced in Section 3 of the Terms of Reference should be included. Geological properties of all project sites in the study area which may influence stability, occupational health and safety, rehabilitation programs, or the quality of discharge water leaving any area disturbed by the project should be described. The EA Report must consider the potential for Acid Rock Drainage/Metal Leaching (ARD/ML) where new bedrock may be exposed and/or excavated.

The marine component of the project should also include a discussion pertaining to surficial sediment characteristics and mobility under present and future environmental conditions. This section should also identify any mineral resources that may be impacted by the project.

Provide an ice scour and grounding baseline study. The ice scour and grounding survey should capture conditions immediately following spring break up. Results will need to be accounted for in the final pipeline and outfall design and associated impact assessment elements. The study shall also include and assess all existing data (from all relevant sources) on sea ice in the study area.

9.2 Aquatic Environment

Include a description of groundwater, surface water, marine water and wetland resources potentially affected by the project.

9.2.1 Groundwater

Provide a description of the regional and local hydrogeology of the study area. A discussion of groundwater uses in the study area, including both current and likely potential future uses must be provided. Provide a map showing all water supply wells locations and potentially affected watercourses within 500 metres of the project.

9.2.2 Surface Water

Provide a general hydrologic, hydraulic and water quality description of all surface water resources in the study area, including upstream and downstream to all project components. Existing uses, approved water withdrawals, and users of the watercourses shall be identified, including use by the Mi'kmaq of Nova Scotia. Provide a map of all watercourses located on the subject property. Provide detailed sampling results from all baseline groundwater and surface water quality monitoring networks, inclusive of the Mill Monitoring Network and the Industrial Landfill Monitoring Network. Account for the full list of potential contaminants of concern in the freshwater and marine systems within the project footprint.

9.2.3 Marine Water

Provide baseline studies that characterize environmental conditions representative of the full study area (e.g., multiple locations) for all four seasons and accounting for yearly variations, including~~, but not limited to~~: climate, water quantity (e.g., current profiles, water column stratification, wave height, tide levels), and water quality (e.g., temperature, salinity, chemical and physical water quality).

These studies shall include characterization of both normal and extreme and/or atypical environmental conditions (e.g., extreme high or low tides, water levels, localized and overall currents, flow, water and air temperature, wave heights, wind, storms, ice).

Develop calibrated and validated existing conditions scenarios for the computer models to be used for the receiving water study and the marine water effects assessment (see Section 10). Baseline climate and marine water quantity and quality data should be used for model setup, calibration and validation. Evaluate the adequacy of seasonal variation and the lengths of the datasets used in model setup and/or calibration/validation. A summary of model confidence in adequately representing the existing marine water environment in all seasons is to be included. Model selection, scenarios and setup must be discussed and agreed with Environment and Climate Change Canada and NSECC.

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Commented [NPNS20]: NPNS needs a coordinated and clear definition at the beginning of the individual studies of what is required to obtain agreement between Environment and Climate Change Canada and NSECC.

9.2.4 Wetlands

Identify the location, size and class(es) of any wetland (including eel grass beds) and/or wetland complexes within the predicted zone of influence including wetland delineations (US Army Corps of Engineering Wetland methodology) and conduct a wetland evaluation. Evaluation of the wetlands shall include wetland functional assessment (WESP-AC model), wildlife habitat potential (including rare and endangered species), wetland/species specific uses, groundwater recharge potential and importance of groundwater in maintaining wetland function, role of the wetland in surface water regulation (e.g., stormwater retention and flood control) and the role of the wetland in watershed health.

Based on the results of the evaluation, the EA Report must specifically identify wetlands that:

- Support a significant species or species assemblages;
- Support significant hydrologic functions or benefits;
- Provide high support functions to wildlife; and
- Have high social or cultural importance.

The wetland evaluation shall include assessment of adjacent wetland areas and the anticipated extent of impacts associated with construction activities. The wetland evaluation must include identification of assessment areas and catchment areas used in the evaluation and include any associated outputs or assessment scoring outputs. Any wetlands potentially impacted by project activities must also be evaluated for potential impacts to fish and fish habitat.

Baseline studies must describe and document pre-construction conditions, including~~, but not~~

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~~limited to,~~ wetland class distribution, vegetation community structure, soil characteristics, and hydrology indicators and trends.

Assess each wetland for potential to support fish and fish habitat directly and indirectly and the potential to impact downstream fish and fish habitat. Assessment must include multi season fish collection methods, such as electrofishing, as well as water quality data relevant to fish (pH, salinity profiles, total suspended solids, and dissolved oxygen).

9.3 Atmospheric Resources

Atmospheric resources will include ambient air quality, the acoustic environment, greenhouse gas emissions, and impacts on climate.

9.3.1 Climate

Include a discussion of regional climate conditions and meteorology in the vicinity of the project as well as expected changes over the next 50 years due to climate change. Specific climate conditions to consider include projected changes in temperature, precipitation, storm events, sea level rise, and oceanography. This section should include climate norms, extreme conditions, as well as trends in these conditions and climate change impacts, as well as the effect these changes may have on the project and plans to mitigate against those impacts.

In addition to historical and projected climate data, the climate sub-section of the existing environment should include a summary of greenhouse gas emission projections for the project, including plans to mitigate those emissions in both the design and operation.

Specifically, identify the activities associated directly with the construction and operation of the proposed project which will be sources of greenhouse gases and provide the greenhouse gas monitoring approach for the stages of the project.

Use accepted quantification techniques to estimate the quantity of greenhouse gases to be emitted during the construction of the project and what the expected annual greenhouse gas emissions would be during operation. Consult the Nova Scotia Quantification Reporting and Verification Standard for support on emission factors and methods of quantification.

Determine the overall impact of the greenhouse gas emissions from the project on the annual emissions profile of the province.

Please follow the EA guidance documents when completing this section:
https://novascotia.ca/nse/ea/docs/Development.Climate.Change.Guide.pdf.

9.3.2 Air Quality

For the study area, provide a review of baseline ambient air quality and meteorological data, including annual and seasonal climatic conditions for the region. Include scenarios for ambient air quality data for current conditions (e.g., without mill in operation) and one reflecting historical data from when the mill was in operation.

Commented [NPNS21]: NPNS will use the available information (if able to obtain) from all ambient air stations in the surrounding area.

Provide a description of existing ambient air quality conditions for the study area, for any potential contaminants of concern which must include nitrogen dioxide (NO_2), sulphur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), particulate matter (total suspended particulate (TSP), fine particulate matter (diameter less than 2.5 microns ($PM_{2.5}$)) and coarse particulate matter (diameter less than 10 microns (PM_{10})), total reduced sulphur (TRS), speciated VOCs, semivolatile VOCs, metals, polycyclic aromatic hydrocarbons (PAHs), dioxins and furans, aldehydes and ammonia concentrations. The report must include ambient and peak concentrations for contaminants of concern. Provide a description of existing odour conditions based on the measurement of odourous species and existing activities in the study area.

Discuss the influence of local and regional emission sources and the influence of climate and weather conditions. The data should be used for the development of an appropriate model(s) for the study area to be provided in the EA Report. Also describe any potentially sensitive receptors (e.g., hospitals, schools, day care facilities, long-term care facilities) and/or locations (e.g., locations of sensitive species, locations where country foods are collected).

9.3.3 Ambient Noise and Light Levels

Describe existing ambient light levels at the project site and at any other areas where project activities could have an environmental effect on light levels. Describe night-time illumination levels during different weather conditions and seasons.

Provide the spatial boundaries of existing noise and vibration levels, as well as locations of recording stations and length of record for any acoustic or vibration data presented. Consider the effects of different meteorological conditions on noise propagation. Provide information on any existing relevant standards, guidelines or objectives with respect to noise and vibration levels.

Describe existing ambient light levels at the project site and at any other areas where project activities could have an environmental effect on light levels. Describe night-time illumination levels during different weather conditions and seasons.

9.4 Wildlife, Wildlife Habitat and Species-at-Risk

Identify flora, fauna, and habitat types that will be intersected by all components of the project. Appropriate desktop surveys and field surveys discussed with Nova Scotia Natural Resources and Renewables (NRR) Energy– Wildlife Division and Environment Canada and Climate Change(ECCC), shall be conducted as part of the evaluation. Surveys should be described by results, methodology, and spatial and temporal boundaries.

9.4.1 Terrestrial Environment

This section must include, but not be limited to the following:

- Identification of species of fauna (including lichens, and invertebrate species), sensitive fauna, fauna species-at-risk, and potential habitat for fauna species-at-risk in the study

Commented [NPNS22]: Should provincially rare species (i.e., those ranked S1-S3 by the ACCDC) also be included here?

Commented [NPNS23]: Definitions should be provided in the TOR for clarity in the process.
Please define:
- Sensitive fauna
- Species-at-risk (e.g., all SAR listed on SARA and the NSESA? Or just those listed as Endangered or Threatened, under those acts?)

area. Current information shall be obtained from NSNRR – Wildlife Division; the Atlantic Canada Conservation Data Center (ACCDC); ECCC; Nova Scotia Communities, Culture, Heritage and Tourism (CCHT); the latest Committee on the Status of Endangered Wildlife in Canada (COSEWIC) list; the Atlas of Breeding Birds of the Maritime Provinces; citizen science sources such as iNaturalist and eBird; and local naturalists and relevant interest groups. Field surveys and investigations required to supplement the available data shall be completed by professional biologists in a manner that is acceptable to NSNRR – Wildlife Division and Canadian Wildlife Service;

- Measures taken to minimize the impacts of the project construction and operation on flora species. Include any landscaping plans for preservation of existing vegetation and remediation of areas (including the temporary facilities, laydown areas, and access roads);
- A clear description of all survey methodology (including, where appropriate, the type of survey, dates, timing windows, weather conditions, and qualifications of personnel involved in survey work) and results;
- Identification of any existing or planned wildlife management areas, ecological reserves or wilderness areas as well as managed wetlands, significant wildlife habitat, and federal critical habitat and provincial core habitat for species at risk; and
- When surveys are necessary to supplement the available data and adequately describe the use of the area by migratory birds during different times of the year (breeding season, migration, winter), emphasis will be placed on determining whether any bird species-at-risk, colonial nesting species, species particularly vulnerable to habitat fragmentation, occur or breed in or near the study area.

Commented [NPNS24]: A definition should be provided in the TOR for clarity in the process.
Please define:
- Significant wildlife habitat

9.4.2 Freshwater Aquatic and Marine Environment

Any baseline studies should be undertaken during appropriate spatial and temporal scales and identify and delineate sensitive or important habitats that may be impacted from the installation of the pipeline.

This section must include, but not be limited to the following:

- Description of sediment quality throughout the potential receiving water environment, including any reference data against which it may be compared. Justify the locations used for sediment data collection.
- Fish and fish habitat baseline surveys for the marine environment;
- Description of any freshwater fish or fish habitat that exists in any identified watercourse or any other receiving watercourse that may be impacted by the development. The description of these species and habitat should identify any species-at-risk and ecologically sensitive or critical habitat and migratory routes of fish;
- Description the relative distribution and abundance of valued fish resource components within the predicted zone of influence. Fish species, age, health, and diversity shall be

Commented [NPNS25]: NPNS recognizes the Scallop Buffer Zone SFA 24 as an important habitat, as per public comments received.

Commented [NPNS26]: Use of the phrase "critical habitat" should be clarified. Is this referring to federally identified Critical Habitat for Endangered and Threatened species?

described;

- Description of any seasonal variation in the location, abundance and activities of aquatic species should be included. Describe and identify key habitat features, such as spawning, rearing, nursery, feeding, migration and overwintering areas, as they occur within the project area. Also describe the criteria utilized for determining the zone of influence this project has on the fish habitat;
- Description of the marine habitat and species of fish, including pelagic and demersal finfish, shellfish, crustaceans, and marine mammals, likely to be present within the surrounding marine environment. The description of these species and habitats should identify any species-at-risk and ecologically sensitive or critical habitat and migratory routes of fish and marine mammals;
- ~~Baseline data for existing mercury concentrations in fish tissue that are adequate to be used for comparison purposes for impact monitoring programs. Provide data on total mercury in whole fillets accompanied by fish species and size data; and~~

  NPNS Comment: It is unclear to NPNS why this condition exists. As outlined in the Focus Report, NPNS untreated effluent was non-detect for mercury and is not used on the site. Mercury is not generated through a treatment facility if it is not present in the influent. Mercury pollution can be produced or released by natural sources, such as forest fires and by human activities such as waste incineration, coal-fired power generation, metal smelting, and cement clinker production.

  Recent studies have been completed by Nova Scotia universities for the NS Lands Boat Harbour Remediation Project that have assessed mercury and other contaminants in fish in the area of the Boat Harbour Effluent Treatment Facility (BHETF) outfall against the Canadian Food Inspection Agency (CFIA) guidelines. Mercury was found to be below regulatory guideline levels in both reports. These reports are:

  - Chaudhary, M. (December 2019). *Baseline Assessment of Contaminants in Sediments and Nova Scotia Environment Marine Biota of Northumberland Strait, Nova Scotia, Canada*; and
  - Maltby, E. (November 11, 2019). *American lobster (Homarus americanus) tissue sampling for trace metal(loid)s and organic contaminants: baseline report for Boat Harbour remediation project*.
- Baseline study for fish and shellfish tissue with chemical analysis that includes COPCs of representative key marine species important for commercial, recreational and Aboriginal fisheries (food, social and ceremonial) in the vicinity of the proposed effluent pipeline and diffuser location. The locations of samples must be clearly identified.

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9.5 Agriculture, Aquaculture and Forestry Resources

Identify and describe agricultural resources in the study area. Identify agricultural operations in the study area and describe crop types, growing seasons and growing methods.

Describe all commercial, recreational and Aboriginal fisheries (including food social ceremonial

(FSC) as well as commercial), aquaculture, seafood processing and seafood buying operations, and harvesting (e.g., marine plants, shellfish) in the study area. Describe the commercial and recreational species, caught, grown or harvested, and their economic importance. Identify fishing, aquaculture and harvesting locations, the amount caught, and methods used.

Identify and describe forestry activities in the study area.

9.6 Socio-Economic Conditions

Describe the current socio-economic conditions of the study area, including population demographics and economic conditions (including Aboriginal Peoples). Provide details of employment rates and trends at the municipal and regional level. The spatial boundaries of this analysis should include areas within which employees of the project are expected to reside. Identify key industries in the region (both land-based and marine-based) and describe their contribution to the local and regional economies. Provide details of residential and commercial property values. Describe any local and regional economic development goals and objectives identified through community consultation, or existing economic development plans and strategies. Long term effects of the project on forestry and marine fisheries, including socio-economic impactsmust be considered.

9.7 Existing and Planned Land Uses

Describe the patterns of current and planned land use and settlement in the study area including residential, commercial, industrial, agricultural, parks, and protected areas. Provide details of areas under existing mineral exploration licenses as well as areas licensed for pulpwood harvesting. Identify locations of abandoned mine workings, mine tailings and waste rock disposal areas, as well as contaminated sites. This section shall include map(s) to illustrate land uses and provide distances to significant settlements.

The EA Report must also identify lands and resources of special social, cultural or spiritual value to the Mi'kmaq of Nova Scotia, with particular emphasis on any current use of land for traditional purposes. A Mi'kmaq Ecological Knowledge Study (MEKS) should be used to identify land and resource use that have and/or continue to be pursued by the Mi'kmaq of Nova Scotia.

9.8 Archaeological Resources

Identify any areas containing features of historical, paleontological, cultural or archaeological importance in a manner acceptable to the Nova Scotia Communities, Culture, Tourism and Heritage (CCTH). Describe the nature of the features located in those areas. Particular attention shall be given to Mi'kmaq of Nova Scotia archaeological sites and burial sites. All heritage research permits acquired, and engagement with the Mi'kmaq of Nova Scotia during this analysis should be identified in the document. Results of the Archaeological Resource Impact Assessment reports related to Indigenous land use and known archaeological sites of interest to the Mi'kmaq, should be provided to the Office of Aboriginal Affairs and PLFN.

Commented [NPNS27]: As per NSECC's Proponent's Guide to EA there is no reference to property value assessment as a requirement, the wording states: *Addressing adverse effects will entail evaluating any effects that impairs or damages the environment, including an adverse effect respecting the health of humans or the reasonable enjoyment of life or property*.
Given the far reaching and significant impact of the global pandemic, it would be virtually impossible to isolate the impact of the project.

Commented [NPNS28]: Many public comments reflected the socio-economic importance of the forestry sector. The study boundaries in this section should be expanded to include the forestry industry. Studies need to assess both positive and negative impacts. (See section 2.3 of NPNS Submission Letter)

10.0 ADVERSE EFFECTS AND ENVIRONMENTAL EFFECTS ASSESSMENT

~~The EA process does not propose or identify specific effluent and emission limits. It is up to the proponent, based on a full identification and evaluation of the potential impacts of the project, the capacity of the environment to handle these impacts, and any mitigations that would reduce them, to determine the overall impact of the project and recommend specific limits that a particular receiving environment can support. If, through the EA review, proposed emission limits are identified to address the potential impacts of a project without causing significant environmental or adverse effects, the project can receive an EA approval. Specific limits (i.e., pertaining to effluent and emissions) are established through subsequent authorizations (i.e., industrial approval) once this planning phase and the environmental review is complete.~~

Describe the effects of the project on the environment during all phases of the project (e.g., site preparation, construction, commissioning, operation, maintenance, and decommissioning), including any environmental change on health, socio-economic conditions, archaeology, reserve lands and the current use of land for traditional purposes by the Mi'kmaq of Nova Scotia. The effects assessment shall also consider impacts of the environment (including weather and climate) on the project, including a discussion of how potential climate change will impact all components of the project.

The EA Report shall identify and describe the accidents and/or malfunctions that may occur during all phases of the project and assess the effects on VECs. Provide a detailed Contingency Plan that considers site-specific conditions and sensitivities, the lifespan of different components and includes~~, but is not limited to~~:

- Full hazard identification and qualitative risk assessment associated with project construction and operation, including those which have or may have an environmental impact (directly or indirectly) and/or potential adverse impacts on Aboriginal and Treaty rights;
- Prevention, mitigation and contingency measures to mitigate potential project impacts;
- Discussion of measures to mitigate potential impacts or damages on the environment, properties and human health (e.g., liability insurance, financial security, etc.);
- Emergency response procedures, including incidents involving wildlife (e.g., migratory birds, species at risk, etc.);
- Description and quantification of releases that could occur under both normal conditions and a reasonable 'worst-case scenario';
- Description the types, fate and distribution of contaminants within the study area under normal and reasonable worst-case scenarios during construction, operations and post-reclamation;
- Discussion of potential project impacts on emergency and health services in communities near the project area, and associated mitigation and contingency measures in the events of major project related accidents and malfunctions;

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Commented [NPNS29]: See sections 1.1, 1.2, 1.3, 2.1 and 2.2 of NPNS Submission Letter

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Commented [NPNS30]: NPNS' consultants' preference would be to have "worst case" replaced with "reasonable worst case" globally. We are fine defining a (reasonable) worst-case scenario based on the environmental conditions.

- Description of the cumulative effects of project activities; and
- The effects assessment shall also consider impacts of the environment (including weather and climate) on the project, including a discussion of how potential climate change will impact all components of the project.

Section 9.0 includes details regarding the requirements for use of models in representing existing environmental conditions. Those requirements in conjunction with consultation with relevant government departments also apply to models used to support effects assessment activities (Section 10.0). In addition, modelling of various scenarios should be conducted, representing multiple operating and/or discharge conditions, including reasonable worst-case scenarios. Furthermore, NPNS shall refer to any additional comments received from relevant government departments during preparation of the EA, and on this Terms of Reference prepared by ECC.

10.1 Geophysical Environment

Potential effects of the project on the geophysical environment must be discussed in the EA Report.

The EA Report must also discuss the potential effects of the project on the geophysical environment and the significance of these effects. This must include but not be limited to:

- Potential effects of geophysical impact related activities (e.g., blasting, bedrock removal, excavation and disposal) along the full pipeline route, referencing sedimentsampling and the results of geotechnical investigations; and
- Ice scour and grounding effects considering proposed pipeline burial depths.
- Consideration of any disposal or re-use of soils and/or sediments activities required for construction of the effluent pipeline.

10.2 Aquatic Environment

In conducting the effects assessment on water resources, the EA Report must identify and evaluate:

- Changes in groundwater and surface water quality and quantity as a result of effluent discharges from the project site, considering ecosystem integrity and changes in hydrology to areas immediately adjacent to the project area;
- Potential effects on groundwater quality and quantity and associated impacts to users of groundwater;
- Potential cumulative and residual effects of the project on water resources and the significance of these effects including ecosystem integrity and changes in hydrology to areas immediately adjacent to the project area;
- Confirmation of the water source to be relied on for desired withdrawal volumes, including a summary of any agreements that are in place for this water and a

description of how it will be conveyed from the source to the site;

- Where wetland avoidance is not possible or where project activities occur immediately adjacent to wetlands, identify, and discuss how project activities will directly or indirectly impact wetland size, composition and functions.
- Appropriate guidelines including ~~but not limited to~~ the Canadian Council for Ministers of the Environment (CCME) Water Quality Guidelines for the protection of Aquatic Life and background water quality results shall be used in evaluating the significance of the predicted impacts on water quality and ensure the protection of relevant water uses (aquatic life, recreational use, agricultural use, and drinking water supply). Consideration should be inclusive of temperature effects.
- It is recommended Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment: Water Quality, be reviewed and applied in the evaluation where relevant.

Commented [NPNS31]: See section 1.3 of NPNS Submission Letter

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10.2.1 Groundwater

In conducting the effects assessment on groundwater, the EA Report must identify and evaluate potential risk to groundwater resources associated with the project.

10.2.2 Surface Water

In conducting the effects assessment on surface water resources, the EA Report must identify and evaluate:

- Potential effects to surface water quality and quantity on fish and fish habitat;
- Potential effects to community water supplies (protected and unprotected), and industrial/commercial, recreational and agricultural users; and
- Potential impacts to surface waters related to accidents or malfunctions (e.g., pipeline leaks/breaks).

10.2.3 Marine

Conduct a Receiving Water Study (RWS) designed to achieve the following objectives:

1) provide input to the engineering design of the effluent treatment facility, effluent treatment process requirements, and siting of the effluent treatment outlet (pipeline and diffuser), and
2) provide information on effluent dispersion, which will be applied in the human health and ecological risk assessment and environmental assessment of the project.

The study must clearly identify the scenarios included for consideration and justify the exclusion of reasonable alternative scenarios (e.g., the number of ports on the effluent diffuser, and the geographic extent of the modeling). The study must consider the tidal nature of the Pictou Harbour, its tributaries (the West River, Middle River and East River of Pictou), the Boat Harbour estuary, the presence of the Harvey A. Veniot Pictou Causeway, as well as potential for interaction with waste effluents from other industrial and municipal sources and salmonid migratory routes in close proximity.

In conducting the effects assessment on marine resources, the EA Report must identify and evaluate:

- Potential short-term and long-term effects on the receiving water environment based on a receiving water study that assesses fate and transport of all COPCs for a range of scenarios reflective of conditions possible in the study area. It must also account for conditions associated with seasonal changes and extreme weather events. This study shall be based on the results of the effluent characterization and other relevant studies, such as the Human Health and Ecological Risk Assessment (HHERA). Input datasets (e.g., water level and wave height data) to support model setup and results of the assessment are to be provided as digital submissions, including~~, but not limited to,~~ discharge plume dimensions and dilution ratios;

Commented [NPNS32]: Suggest adding the Boat Harbour tidal estuary in its future state (after remediation) in the study due to the importance noted in public comments received.

Commented [NPNS33]: In order for NPNS to study the potential interaction the RWS modellers will require the same input data (physical and chemical characterization of the effluent, discharge rate, locations, outfall details, etc.) from other industrial and municipal sources as required of NPNS. This information is required to evaluate the cumulative impacts that we have been asked to assess.

Suggest having this requirement not directly linked to the RWS but instead attached to the HHERA where it could be handled in a more qualitative way.

Commented [NPNS34]: Suggest addition based on public comment.

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- The adequacy of the receiving water study model in representing the receiving water environment for the calibration and validation periods using Goodness of Fit and other appropriate industry-standard statistical procedures including the adequacy of the seasonal variation and lengths of datasets used in model setup and calibration/validation for all scenarios simulated. Demonstrate the relevance and suitability of the outputs (parameters / data) from any one given model as inputs to any other given model (e.g., CORMIX (near-field) and Delft3D (Hydrodynamic / far-field). A summary of model confidence in adequate representation of plume dispersion and ~~multi-year~~ long-term effluent discharge transportation of COPCs and accretion/build-upwithin the receiving water environment is to be included;
- How the initial mixing and dispersal of the near-field plume are accounted for in model simulations of the far-field extent and effluent concentration;
- The receiving water study shall be used in design of the proposed ETF treatment process, facility, pipeline and diffuser to mitigate negative environmental effects that may be caused by COPCs in the effluent. The design of the ETF (and associated components) in combination with the receiving water study will be evaluated to ensure that they are inclusive of:
    - the effluent entering the ETF treatment process has been characterized, including all COPCs
    - environmental quality guidelines for the COPCs are determined based on the effluent characterization.
    - the near field dilution zone is modelled to determine application factors of dilution
    - Using the model results, discuss relevant effluent targets calculated for the effluent discharge based on achieving appropriate environmental quality for the receiving water body.
- ~~Nitrates and ferric oxides associated with pulp and paper effluent can cause negative impacts on the receiving marine sediment environment. Therefore, identify and justify mitigation measures to eliminate or reduce these impacts at the point of discharge and within the dilution zone.~~
- Whether colour is expected to be visible at the water surface above the diffuser site, based on the results of the receiving water study. Evaluate, including influence of in-water reactions (e.g., potential stratification of the water column) and any associated impacts on marine sediments and marine life;
- Potential effects of the build-up of COPCs (e.g., marine and shoreline accumulation), including the estimated dilution potential at various distances from the diffusers based on calibrated model results, as appropriate;

Commented [NPNS35]: NPNS' modellers suggest that "multi-year" be replaced with "long-term" or "dynamic equilibrium" or some similar wording that is tied more directly to the behavior of the modelling dynamic, not an arbitrary timeframe. It could well be that the model demonstrates the system comes into equilibrium within a shorter timeframe, for example weeks/months.

Commented [NPNS36]: NPNS treated effluent has historically had a Nitrate & Nitrite concentration of 0.14 mg/l on average (Replacement ETF Focus Report). The background marine water quality at Caribou River was measured to be 0.15 mg/l on average. Nitrates from NPNS effluent are orders of magnitude below the Short-Term Exposure CCME Marine Water Quality Guideline of 1500 mg/l (CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life – Nitrate ion) and in fact at background levels in the receiving water. In the absence of any appreciable amount of nitrates or nitrites in the NPNS effluent, any reduction of ferric compounds to ferric oxides in surface sediment are likely the result of natural microbial action present in the sediment.

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- Potential impacts of sediment transport within near-field and far-field areas using sediment transport modelling, accounting for various transportation scenarios that may be possible. The modelling shall consider chemical and physical characterization of the distributed solids, interaction with marine sediments and waters, and effects within the marine environment, particularly to marine organisms and including potential bioaccumulation/biomagnification;
- Potential risk of impacts to the marine environment, including shore-based seafood processors and commercial fisheries operations, resulting from leaks from marine based sections of pipeline; and
- Develop an environmental effects monitoring program.

Commented [NPNS37]: NPNS' modeller commented that the TOR is somewhat vague as to the purpose of the sediment transport modelling. Is it to characterize how the diffuser system may impact sediment transport, the sedimentation rate at the diffuser, how suspended solids released from the diffuser may settle and be reworked? Clarification and/or a more specific request would help scope this in a more targeted way.

10.2.4 Wetlands

In conducting the effects assessment on wetlands, the EA Report must identify and evaluate the potential impacts to wetlands/wetland complexes associated with the project. The assessment shall include ~~, but is not limited to,~~ a description of the impacts to wetland size and/or function based on likely activities required to support project activities. The assessment shall describe predicted impacts to wetland characteristics and functions provided by the wetland/wetland complex and should be based on the results of existing and/or any required supplemental field surveys and description of general construction activities required. The effects assessment must specifically address:

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- Potential direct and indirect impacts to wetlands and explanation of how project development will adhere to the Nova Scotia Wetland Conservation Policy;
- Where wetland avoidance is not possible, discuss wetland-specific construction activities including trenching, trench dewatering, surface water diversions and/ormaintenance of hydrologic connection of wetland complexes; and
- Impacts to priority wildlife and wildlife habitat as a result of wetland-specific construction activities.

10.3 Atmospheric Resources

10.3.1 Climate

For all project phases, (construction, operation and decommissioning), estimate the GHG emissions and provide an inventory of GHG emissions from all project components. This includes carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O) chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs), sulfur hexafluoride (SF6), nitrogen trifluoride (NF3) and conversion of these emissions to an equivalent amount of CO2. Also include an inventory of the precursors or tropospheric ozone (CO, NOx, and VOCs).

Where possible, include a comparison of the above information with estimates of total GHG contributions from NS, and from similar facilities in Canada. The EA Report must also include a discussion of measures that have been considered and/or are proposed to reduce air emissions and reduce or offset GHG emissions.

10.3.2 Air Quality

It is recommended that Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment: Air Quality be reviewed and applied in the evaluation where relevant.

Describe the sources, types and estimated quantities of air emissions from the project for all potential air contaminants of concern for all project phases (construction, operation and decommissioning) under routine conditions and in the case of malfunctions and accidental events on a seasonal and annual basis. Air contaminants to be evaluated should include, but not be limited to, impacts of CO, nitrogen oxides (expressed as nitrogen dioxide (NO_2)), SO_2, TSP, $PM_{2.5}$, PM_{10}, TRS, speciated VOCs, semivolatile VOCs, PAHs, dioxins and furans, ammonia, aldehydes, ~~odour~~, and metals.

Commented [NPNS38]: Suggest deletion as odour is not measurable but instead modeled through TRS.

Provide a full statistical analysis for the ambient air quality monitoring data obtained at the Pictou monitoring station for the mill pre- and post-hibernation periods. Describe how the proposed project emissions compare to the pre-hibernation emissions and the associated predicted changes in air quality.

Commented [NPNS39]: For clarification, does this refer to the ambient air monitoring station in the Town of Pictou that is managed by NSECC?

The effects on air quality of future projects and activities in proximity to the project that may interact in a cumulative fashion with the project emissions should be assessed. Cumulative effects of past and present projects or activities are to be captured with the inclusion of baseline concentration data in air quality predictions.

In addition, the EA Report must also include, but not be limited to the following items:

- Consideration of the effects of fumigation and coastal interaction through the use of a dispersion model that appropriately simulates these effects;
- Modelling of both the project construction and operation phases based on the scenario for each in which the highest concentration of an air contaminant occurs at ground level. The conditions that correspond to the maximum air contaminant concentration at ground level may occur when the facility is at the maximum construction/production level or running at a lower construction/production level or when the process is in transition. The report shall include a description of the construction and operating conditions that result in the maximum ground level concentrations of an air contaminant for each phase;

NPNS Comment: AERMOD is the model that has been approved by NSECC for all Northern Pulp's historical regulatory work and previous approved permits. The AERMOD model used in the EARD and Focus Report is currently designated as the preferred model by U.S. EPA.

A technical paper (*Performance Evaluation of AERMOD and CALPUFF Air Dispersion Models in Industrial Complex Area;* Air, Soil and Water Research, 8(1): (2020)) was published evaluating the performance of AERMOD and CALPUFF air dispersion models in predicting nitrogen dioxide (NO2) and sulfur dioxide (SO_2). Overall results revealed that AERMOD provided more accurate results than CALPUFF model for both NO_2 and SO_2 predictions. As for the highest value, results from robust highest concentration analysis indicated that AERMOD had better performance in predicting extreme high-end concentration than CALPUFF.

Some public comments called for a modelling change from AERMOD to CALPUFF. CALPUFF is an atmospheric source–receptor model recommended by the US EPA for use on a case-by-case basis in complex terrain and wind conditions. The description above ("Consideration of the effects of fumigation and coastal interaction") seems to suggest that NSECC is looking for a change to the CALPUFF model. NPNS will conduct the model using either program. **NSECC must specify which model they want the proponent to use**.

- The contaminants of interest to be included in the dispersion modelling assessment should align with ~~(but not limited to)~~ those defined in Section 10.3 as requiring emission estimates. If a species is deemed insignificant and screened from modelling, justification and description of the screening process must be provided;
- Identification of individual emission rates as measured or estimated and include the reference and justification for the values used;
- Comparison of the maximum predicted ground level concentrations, including baseline concentrations, of all contaminants of concern with relevant ambient air quality standards. NPNS shall use recognized standard, including those used by Federal or other Provincial jurisdictions. The *Environmental Goals and Climate Change Reduction Act* requires that the ambient air quality standards be updated by 2025. Should new standards be adopted, you may be required to meet the new standards;
- Contaminant deposition rates in aquatic and land environments over the zone of influence of the project;
- Risk assessment and mitigation plan for contaminants that demonstrate a predicted exceedance of a relevant ambient air quality standard;
- Inclusion of isopleth mapping and frequency analysis for all contaminants predicted to exceed relevant ambient air quality standards; and
- Identification of sensitive receptors on all isopleth mapping. Sensitive receptors include ~~(but are not limited to)~~ hospitals, schools, day-care facilities and long-term care facilities.

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Commented [NPNS40]: - It is NPNS's understanding that the applicable regulatory air quality criteria are provincial standards (i.e. Nova Scotia Air Quality Regulations [NS Reg. 510/2017]) and the federal standards (i.e. Canadian Ambient Air Quality Standards, CAAQS). (See section 1.1 and 2.1 of NPNS Submission Letter)
- In the absence of provincial regulations, Upper Risk Threshold (URT) criteria found in the Ontario Air Pollution – Local Air Quality Regulation (O. Reg, 419/05) will be used.
- Please confirm that use of the Ontario regulations is the appropriate standard that should be used for modeling.

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10.3.3 Ambient Noise and Light

It is recommended that Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise be reviewed and applied in the evaluation where relevant.

The EA Report must discuss the potential impacts of predicted increases in noise levels during all phases of the project. For noise, receptors include an adjacent dwelling including ~~, but not limited to,~~ a building or structure that contains one or more dwellings, educational facility, daycare/nursery, place of worship, hospital, seniors' residence and could also include a vacant lot where appropriate zoning or permits to build such dwellings have been approved, and aquatic, marine and terrestrial habitats. Should new guidance be adopted before an industrial approval is issued, you may be required to meet the new guidance.

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Where screening indicates that there is cause for concern, noise emissions should be modelled using a recognized computer model, to ascertain impacts. NPNS must:

- identify all receptors within 2 km, including sensitive receptors (i.e., schools, campgrounds, care homes, etc.);
- use existing (background) noise levels and the expected levels of all potential noise sources associated with the construction and operation of the project, including traffic movements, to determine cumulative impacts;
- consider cumulative impacts with the addition of proposed activities; and
- discuss the predicted effects (with rationale), if any, the increased noise levels will have on wildlife and receptors near the project.

All results and assumptions should be included in the EA report.

The EA Report must discuss the potential impacts of predicted increases in light levels during all phases of the project.

10.4 Wildlife, Wildlife Habitat and Species at Risk

10.4.1 Terrestrial Environment

Identify and evaluate the potential effects on flora and fauna and avifauna species/communities during all phases of the project. Include a full account of impacts on species at risk or of concern, significant habitats, federal critical habitat and provincial core habitat and protected areas or areas of potential value to Nova Scotia's protected areas network that may be potentially disturbed, altered or removed. The effects assessment must also consider the potential for effects to flora and fauna associated with landscape fragmentation and sensory disturbances and effects to migratory birds (e.g., waterfowl and water birds) attracted to project components (e.g., spill basin, open ETF components, etc.).

In conjunction with the Receiving Water Study and siting of the marine project components, provide additional information on impacts to of effluent discharge on the Double-crested cormorant (*Phalacrocoras auratus*) colony located along the east side of Highway 106 Causeway.

10.4.2 Freshwater Aquatic and Marine Environment

Evaluate the potential effects on aquatic environments, including fish and fish habitat. While considering the effects that the project may have on freshwater and marine species, include a full account species at risk or of concern and significant habitats. This section must include activities that may affect avifauna in the aquatic environments. Consider potential effects to marine species from blasting, dredging and other marine construction, as well as vessel traffic and project operation.

To support the assessment of potential impact of biomagnification on migratory birds such as shorebirds, include marine benthic invertebrates (e.g., polychaete worms, mussel spat, small clams) in the bioaccumulation/biomagnification assessment of the discharge plume.

Include an assessment of COPCs in the baseline fish and shellfish populations and potential effects due to expected discharge quality. ~~Undertake a model based evaluation of the chronic effects of thermal cooling water discharge on fish and fish habitat in the receiving water~~. Include a summary of the potential effects on freshwater and marine species known to be important to the Mi'kmaq of Nova Scotia.

Commented [NPNS41]: The Project does not include any direct cooling water discharge from the facility to the environment. This requirement should be removed.

10.5 Agriculture, Fisheries and Aquaculture and Forestry Resources

Include an effects assessment of the project on existing and future agriculture activity within the study area.

Assess the impacts on commercial/recreational fishing, aquaculture or other marine harvesting which may be impacted by the proposed project. The effects assessment should considerchanges in commercial/recreational fishing, seafood buying and processing facilities, aquaculture or other marine harvesting species, including contamination of species consumed by people as a result of increased erosion, sedimentation and from effluent discharges from the project, displacement, mortality or loss and/or alteration of habitat. Also discuss navigation restrictions and loss of traditional fishing areas of the Mi'kmaq of Nova Scotia.

Commented [NPNS42]: Is there a missing word intended for here?

Commented [NPNS43]: The plan is to have only one effluent discharge.

Assess the potential effects of treated effluent on representative key marine fish species important for commercial, recreational, and Aboriginal fisheries. This must be based upon information, studies and an understanding of expected movement of contaminants according to the receiving water study. Include appropriate invertebrates and lower trophic level test organisms and assess the potential for bioaccumulation for all test animals. The selection of information sources, representative marine species and assessment methodology must first be agreed upon by relevant government departments.

The EA Report must include a discussion on the potential effects on any forestry resources within the project area.

10.6 Human Health

Provide the completed Human Health and Ecological Risk Assessment (HHERA) in accordance with Health Canada's Guidance for Evaluating Human Health Impacts in Environmental Assessments: Human Health Risk Assessment and other Guidance for Evaluating Human Health Impacts in Environmental Assessment documents for noise, air quality, drinking and recreational water terrestrial country foods (plants, berries, game animals, etc.), as applicable. Federal contaminated sites guidance documents such as the Detailed Quantitative Risk Assessment (DQRA) may be used to supplement the EA Guidance documents where appropriate. The risk assessment must consider human consumption of fish and other seafood, consumption of potentially contaminated drinking water, exposure to recreational water and sediment, outdoor air inhalation, and any other potential exposure pathways. The analysis must inform the identification of contaminants of concern and updating of the receiving water study.

The HHERA must consider baseline data and represent all species which are harvested and consumed in the area with respect to the marine component of the project and in all types of fisheries-commercial, food, social and ceremonial. In addition, information for these species should be included in the baseline studies for COPCs in marine organism tissues where possible. The HHERA must consider bioaccumulation and the potential for biomagnification in the food chain. The exposure route associated with consumption of seaweed and sea vegetables must also be included.

The HHERA is to include appropriate receiving water study and associated modelling activity results (e.g., contaminant fate and transport) as to accurately assess the potential risk to human health.

Include monitoring and mitigation measures all relevant COPCs and exposure pathways for both terrestrial and aquatic related inputs in the HHERA problem formulation.

Screen COPCs in project effluent discharge according to guidance from Health Canada. Incorporate findings from the receiving water study. Discuss the potential for interactive effects from similarly acting chemicals. Include an evaluation of the risk associated with exposure to chemical mixtures. Provide calculation of Hazard Quotients (HQ) and Incremental Lifetime Cancer Risk (ILCR) which account for additivity.

Ensure any screening values used from the EPA are adjusted to be consistent with the health protection endpoints prescribed by Health Canada and CCME.

Provide clarification on methodology applied to selection of COPCs for seafood ingestion in consultation with Health Canada.

10.7 Socio-Economic Conditions

Identify potential impacts of the project on economic conditions, populations and employment.

Identify potential impacts of the proposed project on residential property values and property demand during all phases of the project (including temporary accommodation required during construction).

Describe the effect of the proposed project on present and future commercial, residential, institutional, recreational and resource land uses within the study area, including impacts to areas under mineral exploration licenses or forestry licenses.

Identify the potential impact on recreational opportunities, including the effects on aesthetics from areas surrounding the project area. This analysis should be supported by visual impact assessments from both the land and water.

Identify the potential impact on the current use of land and resources for traditional purposes and any Aboriginal land claims within the study area.

While considering the effects on economic conditions and employment, include a discussion on expenditures and the anticipated direct and indirect employment positions that will be created during all phases of the project.

10.8 Existing and Planned Land Uses

The EA Report must consider the effects that may restrict the ability of people to use and enjoy adjacent lands and marine areas presently, and in the future. Describe the potential impacts from existing or planned land uses in the study area. This shall include a discussion of project interactions with any rural planning initiatives, parks, protected areas, contaminated sites, former mine workings, and mine disposal areas.

Identify and evaluate potential effects on traditional and current recreational and commercial use by the Mi'kmaq of Nova Scotia.

Discuss the anticipated changes in traffic density and patterns during all phases of the project including the effects on transportation.

While assessing the effects on navigation and navigable waters, consider navigation patterns of all waters that may be impacted by the project. Potential effects on traditional and current recreational and commercial use must be identified and evaluated.

10.9 Archaeological Resources

Evaluate the potential effects of any changes in the environment as a result of project activities on physical and cultural resources, structures and/or sites of historic, archaeological, or paleontological significance.

In conducting the effects assessment on archaeological resources, it is NPNS must consult with Nova Scotia Department of Communities, Culture, Heritage and Tourism (CCHT) and with the Archaeology Research Division of KMKNO.

11.0 PROPOSED MITIGATION

Describe all measures that have, or will be, taken to avoid or mitigate negative impacts, and maximize the positive environmental effects of the project (as described in Section 9.0 of the Terms of Reference). Mitigation includes the elimination, reduction or control of the potential

adverse impacts to Aboriginal and Treaty rights; and adverse effects or the significant environmental effects of the project and may include restitution for any damage to the environment caused by such effects through replacement, restoration, compensation or any other means.

Describe proposed compensation that will be provided when environmental damage is unavoidable or cannot be adequately mitigated by any other means.

In considering mitigation measures to be employed, the EA Report must describe any legislation, regulations, guidelines, policies, BMPs, and specifications that will be adhered to during construction and operation of the facility that will lead to mitigation of environmental impacts.

11.1 Geophysical Environment

If applicable, describe alternatives to disrupting net acid producing bedrock. When no practical alternative to exposing acid producing bedrock exists, mitigation plans shall be developed for minimizing the impacts on the aquatic environment. Discuss commitments to provide contingency and remediation plans for watercourses that have been degraded due to the disturbance of net acid producing bedrock or tills.

If contaminated soils are to be disturbed, discuss methods to minimize adverse impacts.

Provide applicable mitigation measures and preliminary agreements and plans that meet Provincial regulatory disposal and transportation requirements for potential dredge materials.

11.2 Aquatic Environment

11.2.1 Groundwater Quality and Quantity

Describe measures to avoid, minimize or otherwise mitigate effects on groundwater quality and quantity.

Provide a Groundwater Protection Plan based on the assessment of risks to local water supplies (municipal and private) and the environment. This plan should include management/contingency response actions and reference the groundwater monitoring plan (see Section 14.0).

Describe measures to be employed in the event of accidental contamination or dewatering of any water supply wells (municipal and private) as a result of the construction or operation of the project, including compensation for loss or degradation of water supplies. Describe mitigation measures planned to prevent and remediate contamination of groundwater from the accidental release of a hazardous substance.

Discuss commitments to provide contingency and remediation plans for any contamination of groundwater resources, including decrease of water quality.

11.2.2 Surface Water Quality and Quantity

Describe measures to avoid, minimize or otherwise mitigate effects on surface water resources, including ~~but not limited to~~ erosion and run-off control features and storm drainage

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management.

Discuss all mitigation measures planned to prevent the release of hazardous substances into local surface waters.

Discuss commitments to provide contingency and remediation plans for any impact to surface water resources, including decrease of water quality or quantity.

11.2.3 Marine Water

Describe measures to avoid, minimize or otherwise mitigate effects to marine water resources.

Discuss all mitigation measures planned to prevent the release of hazardous substances into marine waters.

Discuss commitments to provide contingency and remediation/compensation plans for any impact to marine water resources, including decrease of water quality or quantity and impacts to commercial fisheries, shore-based buyer and processing operations which may rely of marine or freshwater.

11.2.4 Wetland Resources

Describe measures to avoid, minimize or otherwise mitigate effects on wetland resources within the project area. Specifically, the EA Report must describe measures to maintain ecological and hydrological integrity of any wetlands in the area. Where avoidance is not possible, provide wetland specific mitigations proposed to lessen impacts of the project at all stages and describe commitments to monitoring and compensation for any loss of wetland habitat. Also provide discussion and commitment regarding remediation/rehabilitation of aquatic habitat as a result of incidental releases of treated effluent in wetlands.

11.3 Atmospheric Resources

11.3.1 Climate

Provide a plan for the mitigation of unnecessary greenhouse gas emissions during construction and potential methods for the reduction of greenhouse gas emissions during operation.

11.3.2 Air Quality

Describe measures to avoid, minimize or otherwise mitigate effects on biological receptors during all phases of the project (vegetation, fish, wildlife, country foods and human health).

Specifically, describe measures that will be taken to control emissions including ~~, but not limited to,~~ CO, nitrogen oxides expressed as NO_2 SO_2, TSP, $PM_{2.5}$, PM_{10}, TRS, speciated VOCs, semivolatile VOCs, PAHs, dioxins and furans, ammonia, aldehydes, odour, metals, and diesel particulate matter (DPM), if applicable. The best available control technology economically achievable should be implemented on major emission sources and justification of the selected method(s) should be provided.

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After mitigation measures have been selected, the following steps should be taken:

- The model shall be rerun, incorporating the mitigation options to address any predicted exceedances of relevant ambient air quality standards to demonstrate no predicted exceedances. Justification must be provided for the selection of the proposed mitigation method(s); and
- An implementation schedule for potential mitigation options must be provided.

All modelled scenarios must demonstrate compliance with the new ambient air quality standards and associated policy.

11.3.3 Ambient Noise and Light

The EA report must contain a description of all measures that will be taken to mitigate any potential increase in noise levels during construction and operation. Where elevated noise levels are identified, the model must be re-run, with mitigation, to demonstrate compliance. This must include:

- a description of the extent to which these noise emissions can be reduced and contained to minimize effects upon the wider locality and receptors, including potential future development; and
- a discussion of the methods to be used to mitigate noise levels throughout the life of the development should noise modelling be inaccurate or noise levels be greater than 40 dBA.

The EA report should illustrate the mitigation options that were considered and a justification for the selected choice(s) must be provided. The report must also include a discussion of the methods to be used to monitor noise levels throughout the life of the development.

Describe all measures that will be taken to mitigate any potential increase in light levels during construction and operation.

11.4 Wildlife, Wildlife Habitat and Species at Risk

11.4.1 Terrestrial Environment

Discuss measures that will be taken to minimize the impacts of the project construction and operation on flora species. Include any landscaping plans for preservation of existing vegetation.

Describe the measures that will be taken to minimize the impacts of the project at all stages on terrestrial fauna and avifauna. Include any plans for preservation of existing habitat and compensation for loss or degradation of terrestrial habitat (i.e., habitat rehabilitation/replacement). Measures to comply with wildlife legislation (e.g., *Migratory Birds Convention Act* and regulations) should also be provided.

Describe measures to address invasive species management and prevention of the spread of invasives both on and off site.

Discuss commitments to provide contingency and remediation plans for impacts to terrestrial habitat as a result of accidental events.

The EA Report must also include, but not be limited to the following additional items:

- Mitigation plan developed in consultation with NSLAF and ECCC that includes additional details to protect wildlife and wildlife habitat, including birds, mammals, herptiles, raptors, and species and risk. The plan must include but not be limited to the following:
    - Mitigations to address encounters for the following species which were observed during field programs: Barn swallow (Hirundo rustica, SARA Threatened, NSESA Endangered), Eastern wood-pewee (Contopus virens, SARA Special Concern, NSESA Vulnerable), and Common nighthawk (Chordeiles minor, SARA Threatened, NSESA Threatened);
    - Mitigations to address potential impacts to coastal waterfowl and their habitat as it relates to effluent discharge, with a focus on Barrow's goldeneye (Bucephala islandica, SARA Special Concern, NSESA Not listed);
    - Measures to prevent the accidental creation of habitat which could become ecological sinks, such as for turtle species or Common nighthawk;
    - Measures to deter migratory birds from coming into contact with harmful substances;
    - Mitigations to address accidental spill or effluent discharge on wildlife and wildlife habitat, including a plan for remediation in the event of such an occurrence;
    - General wildlife mitigations relating to dust, noise, and light pollution.
    - Measures should birds be found stranded on-site (e.g., Leach's Storm Petrel) due to light attraction and/or strong winds blowing birds inland from the coast or ocean.
    - Training of personnel on wildlife identification and appropriate measures to take in the event of wildlife encounters;
    - Communication and reporting plan for wildlife issues, with attention to species at risk.

11.4.2 Freshwater Aquatic and Marine Environment

Discuss measures to avoid, minimize or otherwise mitigate effects on marine and freshwater aquatic species, avifauna and their habitats. Include any plans for preservation of existing habitat and compensation for loss or degradation of aquatic habitat.

Where impacts to fish habitat cannot be avoided or mitigated, discuss compensation measures to ensure impacts are offset. In the case of fish habitat, offsetting measures are related to a physical activity as outlined in the Fish and Fish Habitat Protection Policy Statement, August 2019. If offsetting is planned to be applied to the project as a mitigation measure, NPNS must provide a preliminary offsetting plan, developed in consultation with relevant government

departments.

Based on the results of the evaluation of effluent temperature effects on fish, include appropriate mitigation measures. Describe the measures that will be taken to minimize the introduction of non-native species to the area.

Discuss commitments to provide contingency and remediation plans for impacts to aquatic habitat as a result of accidental events.

11.5 Agriculture, Aquaculture and Forestry Resources

Discuss measures that will be taken to ~~minimize~~ assess the impacts of the project on agriculture, fishing,aquaculture, marine harvesting, and forestry.

Commented [NPNS44]: Based on public comments, the impacts could be positive or negative.

11.6 Human Health

Provide suitable avoidance and/or mitigation measures to prevent and minimize potentialproject impacts on human health.

11.6 Socio-Economic Conditions

Describe actions that will be taken to mitigate adverse impacts on private and commercial property, existing industry and businesses, planned land use, recreation and other human activities, including traditional activities and land uses by the Mi'kmaq of Nova Scotia.

Provide a dispute resolution policy for addressing project related complaints and concerns that may be received throughout construction, operation, decommissioning and reclamation, and post-decommissioning.

11.7 Existing and Planned Land Uses

Describe the measures planned to ~~minimize~~ assess the potential impacts of the project on existing andplanned land uses.

Commented [NPNS45]: Based on public comments, the impacts could be positive or negative.

Discuss the mitigation measures planned to address anticipated impacts from any predicted changes in traffic speed, traffic routes, marine navigation, exclusion zones and density in adjacent residential and commercial areas.

11.8 Archaeological Resources

Describe mitigation measures to preserve, protect, or recover any resources of cultural or archaeological value that are identified in the study area.

12.0 RESIDUAL EFFECTS AND ENVIRONMENTAL EFFECTS

This section of EA Report shall list and contain a detailed discussion and evaluation of the residual impacts for each VEC, including the criteria for determining significance. Residual impacts are those adverse effects or significant environmental effects which cannot or will not be avoided or

mitigated through the application of environmental control technologies or other acceptable means. When assessing significance of human health effects, significance criteria should be applied to specific human health effect being predicted in addition to the environmental conditions causing the effect. Those impacts that can be mitigated or avoided shall be clearly distinguished from those impacts that will not be mitigated or avoided.

These impacts become important in the evaluation of a proposed project as they represent the environmental cost of the project.

13.0 EVALUATION OF THE ADVANTAGES AND DISADVANTAGES TO THE ENVIRONMENT

Present an overall evaluation of the advantages and disadvantages to the environment, including the VECs, during the construction, operation and decommissioning phases of the project. The evaluation of the disadvantages shall include an examination and justification of each disadvantage.

14.0 PROPOSED COMPLIANCE AND EFFECTS MONITORING PROGRAMS

Include a framework upon which compliance and effects monitoring will be based throughout the life of the proposed project, including decommissioning and post-decommissioning activities. Monitoring programs must be designed to determine the effectiveness of the implemented mitigation measures. The EA Report shall describe the compliance reporting methods to be used, including reporting frequency, duration, methods, parameters, comparison standards or guidelines, format, and receiving agencies. Mapping clearly illustrating baseline and proposed monitoring locations should also be included.

Recognizing that the effectiveness of compliance and effects monitoring depends on a workforce that can identify and address potential impacts during construction and operation of the project, the framework shall include procedures for providing training and orientation to on site employees during construction and operation of the project.

The description of the compliance and effects monitoring program shall also include any procedures/plans for addressing potential exceedances of environmental protection standards, guidelines or approvals.

The discussion of compliance monitoring shall include, but not be limited to Sections 14.1 – 14.4.

14.1 Geophysical Environment

Describe plans and procedures for assessing ARD potential and associated monitoring in the event of disturbance or exposure.

Describe plans and procedures to ensure adequate pipeline cover depth and/or protection measures for ice scour and grounding effects.

Describe plans, if applicable, for monitoring contaminated soils and/or sediments that may be disturbed or require management for all phases of the project.

Develop a sediment sampling program to confirm predicted effects of the discharge plume in support of the Environmental Effects Monitoring program.

14.2 Water Resources

Submit a groundwater quality and level monitoring plan for all phases of the project, including the mill location and the location of monitoring wells, monitoring sampling frequency and monitoring parameters.

Discuss plans for a survey of structures if blasting is planned, to include wells, building foundations, etc., which may experience damage or impact due to seismic vibrations or air concussion.

Discuss any surface water monitoring plans for all phases of the project, including both water quality and quantity aspects.

Develop a marine discharge plume delineation monitoring program to confirm plume dimensions, and effluent concentrations and characteristics in support of the Environmental Effects Monitoring program.

Submit detailed information regarding the installation of the marine section of the pipeline, as follows:

- Detailed benthic habitat information in the pipeline route
- Mitigation measures associated with each potential installation method
- Information at the pre-construction (baseline), and post-construction monitoring phases of the project, as well as during construction (e.g., information on turbidity monitoring, and how it will be conducted (divers, ROV, sampling program, etc.)

Submit a wetland specific post-construction monitoring plan. The plan must consider collection of pre-construction baseline condition and identify post- construction wetland performance indicators to address impacts. The plan must detail proposed methodologies that will be used to complete the monitoring program and must detail the proposed frequency of data collection, location of proposed monitoring points and indicate how wetland integrity will be monitored for wetland areas extending beyond the project footprint and present adaptive management options to address post- construction management, including repairs and/or maintenance, vegetation management, drainage and land contour management. The plan should also propose compensation measures required to address loss of wetland habitat and function.

14.3 Fish and Fish Habitat

Submit an Environmental Effects Monitoring program that includes water quality, sediment and tissue sampling and is based on the results of various relevant baseline studies and receiving water study. The program should at a minimum be designed based on applicable regulatory requirements.

The program must include a complete selection of species, contaminants of concern, and study and reference sampling locations; these elements should remain consistent over time. It should include testing for mercury, methyl mercury, dioxins and furans. Monitoring locations for marine biota should be established in near-field, mid-field, and far-field locations. It shall discuss and provide supporting documentation, if applicable, the adequacy of sampling density for the pipeline length and proposed discharge area. All environmental effects monitoring reports should provide full georeferenced and contaminant data, and they should, ideally, use consistent if not identical analytical techniques.

Commented [NPNS46]: - The federal Pulp and Paper Effluent Regulations (SOR/92-269) states that a mill shall conduct environmental effects monitoring studies of the potential effects of effluent on the fish population, on fish tissue and on the benthic invertebrate community.
- Environment and Climate Change Canada develops Technical Guidance for Environmental Effects Monitoring (EEM) to which mills must study to fulfill the regulatory requirements for EEM. The guidance includes methodologies on how to carry out EEM studies. Are the requirements noted in the draft Terms of Reference in addition to the federal requirements for an EEM program?

14.4 Atmospheric Resources

Complete an ambient air quality monitoring plan based on the results of the air dispersion modelling. This plan must include but not be limited to sampling locations, parameters, monitoring methods, protocols and frequency. The plan shall ensure adequate monitoring coverage of areas where predicted levels of air contaminants are elevated.

Describe plans for GHG monitoring, reduction targets and reduction plans.

Discuss the plans for monitoring baseline, construction and operational noise levels at the site, and at any residential or commercial areas near the project.

14.4 Human Health

Provide suitable monitoring measures to confirm impact predictions. Where monitoring is proposed, include a plan for reporting/communicating reporting exceedances of relevant guidelines/thresholds.

14.5 Other Monitoring Plans

Include any other monitoring plan which may include an Environmental Protection Plan or other guidelines, polices or plans, proposed for the construction, operation and decommissioning of the project.

15.0 CONSULTATION PROGRAM

A Notice regarding the Draft Terms of Reference for Preparation of an Environmental Assessment Report pursuant to the Nova Scotia *Environment Act* was published in the Chronicle Herald and posted of the ECC website (https://www.novascotia.ca/nse/ea/) on December 21, 2021 and the Pictou Advocate and Royal Gazette on December 22, 2021. Additional publications inviting

opportunities to comment of the Draft Terms of Reference will published in the New Glasgow News as well as on-line via the Pictou Advocate and New Glasgow News and Facebook. Information pertaining to this EA will be available on this site.

The Class II EA process for the project includes the following opportunities to participate (specifically government departments/agencies, the Mi'kmaq of Nova Scotia and the general public will be invited to provide comments):

- the Draft Terms of Reference; and
- the Environmental Assessment (EA) Report (when available). Consultation is most valuable if initiated as early as possible before final decisions are made. Consultation is most effective when there is transparency throughout the process based on open lines of communication and the provision of timely, accurate, clear and objective information by NPNS. Sharing information with the Mi'kmaq of Nova Scotia and the general public throughout the process, before and after the EA Report is submitted, is very important to ensure adequate time for interested parties to review the information and for these parties to share feedback with NPNS and identify their concerns.

15.1 Public Consultation

For any consultation undertaken with the general public, the EA Report must describe existing, ongoing and proposed consultation and information sessions.

Describe all steps taken by NPNS to identify the concerns of the public about the adverse effects or environmental effects of the project. It shall provide a summary of all concerns expressed by the public and all steps taken by NPNS to address these concerns. Moreover, the EA Report must describe any outstanding concerns.

The EA Report will also provide details of efforts made to distribute project information and provide a description of the information and materials distributed to inform the general public.

15.2 Consultation with the Mi'kmaq of Nova Scotia

The proponent is expected to demonstrate efforts to engage and report on results related to such engagement with potential affected Mi'kmaq of Nova Scotia starting as early as possible in the project planning in order to assist the Crown in fulfilling the Crown's constitutional obligation to consult with potentially impacted Mi'kmaq of Nova Scotia groups on potential impacts to ~~potential~~ asserted or established Aboriginal or Treaty rights. The Proponent is encouraged to refer to andfollow the Nova Scotia Office of L'nu Affairs' *Proponent's Guide: The Role of Proponents in CrownConsultation with the Mi'kmaq of Nova Scotia* (2011). For the group expected to be most affectedby the project, Pictou Landing First Nation (PLFN), the proponent is expected to strive towards developing a productive and constructive relationship based on on-going dialogue in order to support information gathering and the effects and impact assessment.

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For Mi'kmaq of Nova Scotia groups that may also be affected by the project, but to a lesser degree, the proponent will, at a minimum, ensure these groups are notified about key steps in the EA Report development process and of opportunities to provide comments on key EA documents and/or information to be provided regarding their community. These groups include:

- Groups represented by the Kwilmu'kw Maw-klusuagn Negotiations Office:
  - Acadia First Nation
  - Annapolis Valley First Nation
  - Bear River First Nation
  - Eskasoni First Nation
  - Glooscap First Nation
  - Membertou First Nation
  - Paq'tnkek First Nation
  - Potlotek First Nation
  - Wadmatcook First Nation
  - We'kowma'q First Nation
  - Millbrook First Nation
  - Sipekne'katik First Nation

~~The Crown reserves the right to alter the list of groups that the proponent will engage as additional information is gathered during the EA.~~ To enable NPNS to begin consultations quickly, NPNS requests NSECC to provide a complete list of Mi'kmaq groups for engagement.

The proponent must seek to directly engage and describe and report on the results of such engagement, with potentially affected Mi'kmaq of Nova Scotia groups to establish an engagement approach. The proponent will make reasonable efforts to integrate Mi'kmaq of Nova Scotia knowledge into the assessment of environmental effects.

In parallel to NPNS engagement with the Mi'kmaq of Nova Scotia, the Government of Nova Scotia will undertake continued consultation directly with the Mi'kmaq of Nova Scotia pursuant to the Mi'kmaq-Nova Scotia-Canada Consultation Process (2010).

16.0 ASSESSMENT SUMMARY AND CONCLUSION

This section of the EA Report shall summarize the overall findings of the EA with emphasis on the main environmental issues identified and predict the significance of adverse environmental effects of the project.

Commented [NPNS47]: Consultation with Mi'kmaq of Nova Scotia groups is the responsibility of the Province of Nova Scotia through the Office of L'nu Affairs. We are happy to work with the province and First Nations groups to meet our obligations related to the proposed environmental improvements at the mill.