



Oral presentation

Exposé oral

Written submission from the Hiawatha First Nation

Mémoire de la Première Nation de Hiawatha

In the Matter of the

À l'égard d'

Ontario Power Generation Inc.

Ontario Power Generation Inc.

Applicability of the Darlington New Nuclear Project environmental assessment and plant parameter envelope to selected reactor technology

Applicabilité de l'évaluation environnementale et de l'enveloppe des paramètres de la centrale à la technologie de réacteur sélectionnée pour le projet de nouvelle centrale nucléaire de Darlington

Commission Public Hearing

Audience publique de la Commission

January 2024

Janvier 2024



HIAWATHA FIRST NATION

MISSISSAUGAS OF RICE LAKE

Commission Registry and Registrar
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November 20, 2023

(Submitted by Email)

RE: Hiawatha FN's comments on CNSC staff's review and assessment of whether the DNNP Environmental Assessment is applicable to OPG's selection of the General Electric Hitachi BWRX-300 Reactor (CMD:24-H2)

Dear Registrar,

On behalf of our Consultation Department at Hiawatha First Nation (FN), we are writing to submit to you Hiawatha FN's review and comments on the Canadian Nuclear Safety Commission (CNSC) staff's review and assessment of the applicability of the DNNP EIS and PPE to OPG's selection of the BWRX-300 Reactor. We wish to that CNSC for proactively providing Hiawatha FN the opportunity to review this Commission Member Document (CMD) along with Ontario Power Generation (OPG)'s submissions to the CNSC.

Hiawatha FN's Core Consultation and Land Resource Development office was established to address the Crown's (Federal and Provincial Governments) "Duty to Consult." This is in response to the Supreme Court of Canada decision relating to the Crown's "Duty to Consult" aboriginal communities regarding proposed land development when their treaty and traditional lands are impacted.

Our mandate is to engage with governments and private sector proponents on land and resource matters that may affect the Treaty and inherent rights of our First Nation. Hiawatha First Nation's traditional territory has been affected by numerous and various developments, which have impacted our traditional territory, way of life, and sustainability of Hiawatha. Our traditional ways are derived from the land. Hiawatha is not opposed to development. We would like to be reassured that wildlife, habitat, air, and water tributaries would be adequately protected from contamination for 7 generations without upsetting the balanced ecosystem/relationship we have with our Mother Shka-ki-mi-kwe (Mother Earth).

Our values grow from the culture from which we are born into and live with and our beliefs and attitudes emerge from our values. As Mississaugi people from the Mississauga Nation, we try to live a healthy way of life

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"We, the Mississaugi of Hiawatha First Nation, are a vibrant, proud, independent and health people balanced on the richness of our cultural and traditional ways of life." 1

“Mino Bimaadiziwin” through the teachings passed down from ancestors. These teachings include Seven Grandfathers teaching that was given to us by the Creator. This story has been passed down many generations. These foundational teachings include; wisdom, love, respect, bravery, honesty, humility, and truth.

All of the above combined create a balance of spiritual, emotional, physical and mental being. They are the cornerstones of our belief system and the formula for maintaining the delicate balance between Shka-ki-mi-kwe (Mother Earth) and all her inhabitants. We have a strong connection to Shka-ki-mi-kwe and only use what is necessary from her. We believe that all things are connected and are taught that if we look after our Mother she will look after us. With all decisions made we always consider the effects our choices will make on the next seven generations just as our ancestors have done for us. We often turn to our Elders who hold great knowledge of Shka-ki-mi-kwe that no one else possesses. Their knowledge is held in their hearts and minds to be passed by oral tradition for the next generations.

Hiawatha FN wishes to highlight and work with CNSC and OPG to address outstanding matters regarding the Darlington New Nuclear Project (DNNP) and the potential risks and impacts on the lands, waters, and rights of the Michi Saagiig Anishinaabeg. In keeping with our values, we wish to ensure that the project aligns with the highest standards of environmental protection as well as considers, respects, and protects the Inherent, Aboriginal, and Treaty Rights of the Michi Saagiig Anishinaabeg.

In particular Hiawatha FN remains concerned about the impacts of the DNNP on the natural features, environmental as well as the cultural and spiritual values of the Michi Saagiig Anishinaabeg. Hiawatha FN, along with Curve Lake First Nation, has continually raised concerns about impacts to the Inherent, Aboriginal and Treaty rights of the Michi Saagiig Anishinaabeg. These impacts include, but are not limited to:

- Impacts to fishing, hunting, and harvesting,
- Impacts to spiritual landscapes, and
- Impacts to species and places of cultural significance.

As it stands the current DNNP project is moving forward based on an outdated Environmental Assessment approval with lapsed data. Additionally, the full scope of the DNNP project has also changed significantly from what might have been envisioned in 2009. Hiawatha FN is concerned that there remain significant gaps in the ability for CNSC, OPG and Hiawatha FN to fully identify, understand and comprehensively address impacts to Inherent, Aboriginal and Treaty rights by the DNNP.

Based on the findings of the Report, and information and discussions held to date, Hiawatha FN remains concerned about the legislative, regulatory and engagement processes that have been relied upon to contemplate, evaluate, and develop the DNNP project. Inadequate legislative, regulatory and engagement processes are a violation of the Crown’s obligation to Consult with First Nation Rights-holders as well as to act in accordance with the Honour of the Crown. To date, CNSC and OPG have not provided details regarding how it has considered or complied with the Gunshot Treaty (1877-87), the Williams Treaties (1923) or the Williams Treaties Settlement (2018). As such, it remains unclear as to how CNSC and OPG have meaningfully considered, consulted, and accommodated impacts to Hiawatha FN’s rights. Hiawatha FN wonders why the review of this EIS did not take into consideration current criteria on the Duty to Consult and Accommodate or changes in legislation such as the *United Nations Declaration on the Rights of Indigenous Peoples Act* (2021) when evaluating the type and level of adverse effects expected for the DNNP and how these might translate to

impacts to Indigenous rights. Hiawatha FN notes that the 2019 Federal Impact Assessment Act (IAA) affords additional consideration of Indigenous rights, values, and knowledge. Additional standards of the IAA (2019) include a mandatory Follow-up Program inclusive of current IAA considerations (the current EMAMF is not inclusive of all IAA considerations), Gender-Based Plus Analysis (GBA+), decisions guided by Indigenous knowledge, and a comprehensive consideration of sustainability encompassing positive and negative impacts on the environment, economics, social aspects, and health.

Hiawatha FN recommends that CNSC and OPG undertake a detailed gap analysis which would consider discrepancies between the 1992 CEAA, which was relied upon for the 2009 DNNP approval, and the 2019 Impact Assessment Act (IAA). It is imperative that this gap analysis also consider how the DNNP, and its associated operations should be informed by the Williams Treaties Settlement Agreement of 2018. The Gap Analysis would serve to support a deeper understanding of the DNNP and its impacts to the baseline conditions of the environment, the ongoing impacts to the environment through operations and maintenance, as well as potential or real negative affects to Michi Saagiig rights.

Hiawatha FN appreciates that CNSC has recently shared information regarding a Rights Impact Assessment in relation to the Licence to Construct application received by OPG for DNNP. To date, DNNP has been driven by Western frameworks, regulations, and timelines (e.g., 2009 EA → 2012 EIS Approval → Licenses and Permits). During these processes, a comprehensive understanding of impacts to Hiawatha FN's Inherent, Aboriginal, and Treaty rights has not been undertaken. Hiawatha FN asserts that a Rights Impact Assessment is required to be able to fully identify, understand and comprehensively address impacts to Hiawatha FN's rights. An effective Rights Impact Assessment requires different sources of information to be gathered and analyzed through an Indigenous and Rights-based lens including, but not limited to:

- regional or territorial Indigenous Knowledge Studies.
- comprehensive cumulative impacts assessments.
- rights-informed approaches to mitigations, compensations and restorations, and.
- rights-based offsets, needs, requirements, and improvements.

Hiawatha FN requests that CNSC and OPG evaluate opportunities for Hiawatha FN be able to gather the requisite information for a complete understanding of the potential and real impacts to the inherent, Aboriginal and Treaty rights of Hiawatha FN. At a minimum, this could occur through the completion of a Rights Impact Assessment that is informed by a territorial Indigenous Knowledge Study, a comprehensive cumulative impact assessment, and rights-based requirements, needs and improvements, including rights-informed approaches to mitigations, compensations, and restorations. Such studies are conducted with the consent of Rights holders and all costs incurred throughout this process are the responsibility of the Proponent (Hiawatha First Nation, 2013, p. 10).

Hiawatha FN has reviewed and accepted recommendations and requests provided by 4 Directions of Conservation Consulting Services (4 Directions) for the CNSC assessment of the DNNP EIS and PPE applicability to the BWRX-300 technology, which can be found in detail at **Appendix A**. Hiawatha FN has also reviewed and accepted the recommendations and request provided by 4 Directions in relation to OPG's submissions to CNSC regarding the ROR, which will be provided to OPG directly. We trust that you will review these detailed comments and provide responses. We hope to discuss these comments with you further as part of the ongoing discussions and broader relationship building that is occurring between the CNSC and Hiawatha FN.

At this time, Hiawatha FN wishes to acknowledge the development and signing of the Terms of Reference with the CNSC in 2023. Representatives of Hiawatha FN look forward to meeting with CNSC representatives in December 2023 in community.

Sincerely,

Sean Davison
Lands & Resource Consultation
Consultation and Land Resource Development Office
Hiawatha First Nation

Francis Chua
Support to Hiawatha First Nation

cc:

Chief Laurie Carr, Hiawatha First Nation
Trisha Shearer, Director of Operations, Hiawatha First Nation
Tom Cowie, Lands & Resource Consultation, Hiawatha First Nation
Mandy McGonigle, Archaeology, Hiawatha First Nation
Gary Pritchard, CEO & Indigenous Conservation Ecologist, 4 Directions of Conservation Consulting Services

Appendix A:

4 Directions of Conservation Consulting Services Review of *CMD:24-H2 Determination for Ontario Power Generation (OPG), Inc. Darlington New Nuclear Project*



November 20, 2023

Attn: **Consultation Department**

Hiawatha First Nation

431 Hiawatha Line

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P: (705) 295-4421

RE: CMD: 24-H2 *Determination for Ontario Power Generation (OPG), Inc. Darlington New Nuclear Project*

4 Directions File No: 23-154

4 Directions of Conservation Consulting Services (4 Directions) is pleased to present our review and recommendations regarding the Canadian Nuclear Safety Commission (CNSC) staff's review and assessment of whether the Darlington New Nuclear Project (DNNP) Environmental Assessment is applicable to OPG's selection of the General Electric Hitachi BWRX-300 Reactor as well as the request for the Commission to determine whether the DNNP Environmental Assessment is applicable to the BWRX-300 Reactor. These documents were presented to Hiawatha First Nation (Hiawatha FN) from the CNSC under their Duty to Consult and Accommodate.

1.0 General Comments

4 Directions staff reviewed the CNSC's report entitled *Determination for Ontario Power Generation (OPG) Inc. Darlington New Nuclear Project* (the Report). In doing so, the below high-level concerns were identified.

1.1 Comments & Concerns Regarding Overall Impacts of DNNP to the Rights of Michi Saagiig Anishinaabeg

4 Directions staff remain concerned about the impacts of the DNNP on the natural features, environmental as well as the cultural and spiritual values of the Michi Saagiig Anishinaabeg. Hiawatha FN, along with Curve Lake First Nation, has continually raised concerns about impacts to the Inherent, Aboriginal and Treaty Rights of the Michi Saagiig Anishinaabeg. These impacts include, but are not limited to:

- Impacts to fishing, hunting, and harvesting,
- Impacts to spiritual landscapes, and
- Impacts to species and places of cultural significance.





4 Directions is concerned that there remain significant gaps in the ability for CNSC, OPG and Hiawatha FN to fully identify, understand and comprehensively address impacts to Inherent, Aboriginal and Treaty Rights by the DNNP.

1.1.2 Discussion

To date, DNNP has been driven by Western frameworks, regulations, and timelines (e.g., 2009 Environmental Assessment (EA) → 2012 Environmental Impact Statement (EIS) Approval → Licenses and Permits). During these processes, a comprehensive understanding of impacts to Hiawatha FN's Inherent, Aboriginal, and Treaty Rights has not been undertaken. 4 Directions notes that a Rights Impact Assessment is required to be able to fully identify, understand and comprehensively address impacts to Hiawatha FN's Rights. An effective Rights Impact Assessment requires different sources of information to be gathered and analyzed through an Indigenous and Rights-based lens including, but not limited to:

- regional or territorial Indigenous Knowledge Studies.
- comprehensive cumulative impacts assessments.
- Rights-informed approaches to mitigations, compensations and restorations, and.
- Rights-based offsets, needs, requirements, and improvements.

Interactions between OPG and Hiawatha FN have been focused primarily on discrete project components and downstream processes. As such, Hiawatha FN has not been able to fully review the project as a whole or accurately assess the full extent of impacts to Michi Saagiig Rights related to the totality of the project, including cumulative effects. Despite Hiawatha FN's repeated requests for additional information (including but not limited to a list of all studies and study data relevant to the DNNP site including a description of the methodology chosen, an Indigenous Knowledge Study, cumulative impact assessments etc.), to date OPG has not provided Hiawatha FN with a comprehensive view of all the information required to provide meaningful and thorough feedback on the project. This lack of comprehensive (versus piecemeal) information has also precluded Hiawatha FN from making an informed and comprehensive determination of potential and real impacts to its Rights.

1.1.3 Recommendation

4 Directions staff recommends that CNSC and OPG ensure that Hiawatha FN be able to gather the requisite information for a complete understanding of the potential and real impacts to the inherent, Aboriginal and Treaty Rights of Hiawatha FN. 4 Directions recommends that, at a minimum, this occur through the completion of a Rights Impact Assessment that is informed by a territorial Indigenous Knowledge Study, a comprehensive cumulative impact assessment, and Rights-based requirements, needs and improvements, including Rights-informed approaches to mitigations, compensations, and





restorations. Such studies are conducted with the consent of Rights holders and all costs incurred throughout this process are the responsibility of the Proponent (Hiawatha First Nation, 2017, p. 10).

1.2 Comments & Concerns Regarding Legislative, Regulatory and Engagement Processes

Based on the findings of the Report, and information and discussions held to date, 4 Directions remains concerned about the legislative, regulatory and engagement processes that have been relied upon to contemplate, evaluate, and develop the DNNP project. Inadequate legislative, regulatory and engagement processes are a violation of the Crown's obligation to Consult with First Nation Rights-holders as well as to act in accordance with the Honour of the Crown. To date, CNSC and OPG have not provided details regarding how it has considered or complied with the Gunshot Treaty (1877-87), the Williams Treaties (1923) or the Williams Treaties Settlement (2018). As such, it remains unclear as to how CNSC and OPG have meaningfully considered, consulted, and accommodated impacts to Hiawatha FN's Rights.

1.2.1 Discussion

The Joint Review Panel (JRP) Environment Assessment Report for the Darlington New Nuclear Power Plant Project (2011) states on page 40 that "OPG documented the asserted and established Aboriginal Rights, Aboriginal title, and treaty Rights through a description of the content and background of the Williams Treaties (1923), including extinguishment of Rights. [...] The initial findings of OPG did not suggest that the Project would affect Aboriginal Rights, Aboriginal title or treaty Rights within the areas comprising the site and local and regional study areas. [...] OPG also provided a detailed overview of its prediction of potential impacts of the Project on asserted or established Aboriginal Rights and/or title and stated that there would be no measurable change to the environment, specifically with regards to Aboriginal interests."

In addition to acknowledging the 1923 Williams Treaties, 4 Directions notes that the Williams Treaties claim was filed against Canada in 1982, and the subsequent lawsuit against the Crown was filed in 1992. Both claims are important when considering the 1923 Williams Treaties and the 2018 Williams Treaties settlement agreement. Given the importance of the 1982 claim, 1992 lawsuit, and 2018 settlement agreement, 4 Directions staff suggest that OPG and JRP conduct further research to understand their projects' positionality and impacts to Inherent, Aboriginal, and Treaty Rights. As it stands, the current statement (quoted above) is incomplete.

Within the Report, CNSC (and the other Regulatory Authorities), the Government of Canada, and OPG have concluded that no significant adverse environmental impacts are anticipated as a result of the DNNP. 4 Directions notes that any impacts to the environment regardless of their Western-perceived





severity, represent potential and often real impacts to Inherent, Aboriginal and Treaty Rights. This in turn triggers the Duty to Consult and Accommodate.

Since 2019, CNSC and OPG have been sharing information with Hiawatha FN regarding the activities contemplated for the DNNP. It is important to note that this information sharing does not equate to consultation. It is 4 Directions staff understanding that to date, information sharing and engagement has occurred but meaningful consultation has not occurred.

According to Issac and Knox (2023), “‘consultation’ in its least technical definition is talking together for mutual understanding.” Within the context of consultation with First Nations, mutual understanding must be had regarding impacts on treaty Rights and possible accommodations. As demonstrated throughout this review, CNSC (and the other Regulatory Authorities), OPG and Hiawatha FN have yet to come to a mutual understanding regarding impacts on treaty Rights and possible accommodations.

4 Directions notes that according to our records, CNSC has not meaningfully consulted with Hiawatha FN regarding the very contents of this Report, including how it has made the specific determinations and assessment of the applicability of the EIS and Plant Parameter Envelope (PPE) to the BWRX-300 technology. Each determination that was made that could result in any potential negative impact to Hiawatha Rights carries with it the Duty to Consult.

To improve CNSC’s approach to consultation, 4 Directions staff suggest adhering to the United Nations principles of Free Prior and Informed Consent (FPIC). Hiawatha First Nation was not consulted by OPG or CNSC during early DNNP phases. To be in line with and better understand Hiawatha FN’s Rights, Hiawatha FN requires that proponents engage with Hiawatha FN from the onset. By not consulting with Hiawatha FN until this and other Reports are complete, CNSC staff are missing opportunities to meaningfully engage with Hiawatha FN and discuss other opportunities in addition to the Duty to Consult. Again, this approach is more closely characterized as information sharing rather than meaningful consultation.

1.2.2 Questions

How will CNSC (and the other Regulatory Authorities), and OPG address the exclusion of consultation with Hiawatha FN that has occurred throughout the history of the DNNP?

What consultation will CNSC undertake as part of making the assessment and determinations within the Report?





1.2.3 Recommendation

4 Directions recommends that CNSC (and the other Regulatory Authorities) and OPG demonstrate how Hiawatha FN will be meaningfully consulted throughout the DNNP and during processes where key decisions or determinations which may have resulted in potential negative impacts to Rights.

1.3 Comments & Concerns Regarding Temporal Accuracy of Report Findings

4 Directions staff raise concern that the current DNNP project is moving forward based on an outdated Environmental Assessment approval, which was based on incomplete and now outdated data. Additionally, the full scope of the DNNP project has also changed significantly from what was originally envisioned in 2009.

1.3.1 Discussion

The Williams Treaties Settlement Negotiation Framework developed by Canada, Ontario and the Williams Treaties First Nations included an acknowledgement that industry and governmental standards have a direct impact on the Rights of the Williams Treaties First Nations. To protect and minimize impacts to Hiawatha FN's Rights, the highest standards of environmental assessment and protections must be employed.

On page 3 of the Report, CNSC states *"In 2013, the Government of Ontario deferred construction of new reactors at the DNNP site. Following this announcement, OPG's efforts focused on maintaining the site and addressing JRP recommendations and subsequent commitments to confirm assumptions made in the EA."* After reviewing the remainder of the Report, it remains unclear how OPG has fulfilled the commitments to confirm assumptions made within the original EA. In line with this, 4 Directions staff are particularly concerned with the application (or lack thereof) of the most protective and relevant assessment standards.

According to Booth and Skelton (2012), *"The most commonly employed baseline assessment method, the traditional use study (TUS), does not deliver the data necessary to understand critical impacts of industrial development on First Nations' ability to pursue a Treaty and constitutionally protected lifestyle."* In fact, in 2017 the Government of Canada opined that "[t]here is a need for greater transparency around the science, data and evidence supporting decisions and to ensure Indigenous knowledge is sufficiently taken into account."

Regarding baseline assessment methods, it is essential to also consider the notion of shifting baseline syndrome (SDS). To estimate what an ecosystem looked like prior to impacts of colonialism, western scientists often construct baselines. Conservation practitioners aim to perpetuate these supposed reference points into the future. In the absence of diverse ways of knowing, these reference points shift





and are accepted as new norms. For example, Indigenous Cultural Landscapes (ICL) become illegible through the reinforcement of colonial narratives of land use and ecological baselines. To address this, and counteract colonial understandings of environments and peoples, CNSC staff must consult with Rights holders to understand the social-ecological context of the study area.

The 2019 Federal Impact Assessment Act (IAA) affords additional consideration of Indigenous Rights, values, and knowledge. Additional standards of the IAA (2019) include a mandatory Follow-up Program inclusive of current IAA considerations (the current Environmental Monitoring and Environmental Assessment Follow-up (EMEAF) is not inclusive of all IAA considerations), Gender-Based Plus Analysis (GBA+), decisions guided by Indigenous knowledge, and a comprehensive consideration of sustainability encompassing positive and negative impacts on the environment, economics, social aspects, and health.

1.3.2 Question

How will CNSC and OPG ensure that all assumptions made in the EA are evaluated through the most protective and relevant assessment standards?

1.3.3 Recommendations

4 Directions staff recommends that CNSC and OPG undertake a detailed gap analysis which would consider discrepancies between the 1992 CEAA, which was relied upon for the 2009 DNNP approval, and the 2019 Impact Assessment Act (IAA). It is imperative that this gap analysis also consider how the DNNP, and its associated operations should be informed by the Williams Treaties Settlement Agreement of 2018. A Gap Analysis would serve to support a deeper understanding of the DNNP and its impacts to the baseline conditions of the environment, the ongoing impacts to the environment through operations and maintenance, as well as potential or real negative affects to Michi Saagiig Rights.

4 Directions recommends that CNSC and OPG work with Hiawatha FN to determine an agreed upon scope of the Gap Analysis, ensuring that it is informed by the Williams Treaties Settlement Agreement (2018) and utilizes the 2019 IAA as a minimum standard, upon which to collectively build upon.

1.4 Comments & Concerns Regarding Evaluation of changes to Legislation, Regulations and Guidance Documents

Within the Report, CNSC has made efforts to document legislative landscapes and review changes to relevant Canadian and International legislation, regulations and guidance documents related to various aspects of DNNP that occurred during the period between the original EIS and subsequent EIS review. 4 Directions notes that the Chiefs of Ontario *Water Declaration* (2008), the Williams Treaties Settlement (2018), the Assembly of First Nations resolution on *First Nation Treaty and Inherent Rights to Water*





(2019), and the *United Nations Declaration of the Rights of Indigenous Peoples Act* (2021) were excluded.

1.4.1 Discussion

4 Directions staff note that this exclusion contributes to the devaluation of the Rights of Indigenous Peoples. 4 Directions finds this practice concerning as it is a clear example of omitting the presence of First Nations, Indigenous lands, Treaties, and Rights. Such omissions risk diminishing the role, responsibilities, and obligations of the Crown in relation to First Nation Rightsholders. Moreover, such omissions can serve to devalue and make illegible First Nations' Rights, cultures, histories, and continued presence from the land.

1.4.2 Question

How will CNSC (and the other Regulatory Authorities) consider the Chiefs of Ontario *Water Declaration* (2008), the Williams Treaties Settlement (2018), the Assembly of First Nations resolution on *First Nation Treaty and Inherent Rights to Water* (2019), and the *United Nations Declaration of the Rights of Indigenous Peoples Act* (2021) as it pertains to this project?

1.4.3 Recommendation

4 Directions recommends that CNSC critically reflect on how First Nations regulations, consultation protocols, the Canadian Constitution, the Williams Treaties Settlement of 2018, Canadian Legislation, and Supreme Court decisions are being centered and prioritized in identified areas such as:

- a. Crown Decision-Making;
- b. Report writing;
- c. Environmental procedures and assessments; and,
- d. Future project planning.

1.5 Comments & Concerns Regarding Cumulative Impacts

4 Directions, Hiawatha First Nation, and Curve Lake First Nation staff have continued to raise concerns regarding the cumulative effects of the DNNP, as well as legacy impacts of the existing Darlington Nuclear Power Generating Station. 4 Directions is concerned that there remain gaps in the cumulative impacts that have been assessed through the history of this project.

1.5.1 Discussion

A key gap in building a mutual understanding remains a disconnect in ways of thinking and assessing cumulative effects. According to the Alberta Civil Liberties Resource Centre, Environmental Assessments focus on the impact of a specific project on the physical environment, which is not consistent with





Indigenous Knowledge Systems which tend to be holistic, and inclusive of the cultural and spiritual impacts (2021).

Proponents, such as OPG, often operate within western frameworks that are focused on minimizing impacts to the environment within a project footprint, and often make these assessments on a component-by-component basis. First Nations, such as Hiawatha FN, often take a more holistic approach, conceptualizing cumulative impacts on a spiritual, cultural, and geographic (watershed and treaty territory) level. In *Brokenhead Ojibway v. Canada*, the federal court determined that “While the environmental footprint of any one project might appear quite modest, the eventual cumulative impact of development on the Rights and traditional interests of Aboriginal peoples can be quite profound.” (2009).

For example, this disconnect was identified during a meeting between Hiawatha FN and OPG on August 5, 2022, where representatives of Hiawatha FN stated that “OPG and First Nations don’t understand each other. OPG works in terms of minimizing impacts, the Nation looks at the bigger picture: at the end of the day, there is still an impact on Rights for all the generations to come.”

On July 27, 2023, representatives from Hiawatha FN and Curve Lake First Nation spoke about the importance of looking at components of the project in a more holistic way and understanding the legacy impacts of the existing Darlington Nuclear Power Generating Station and other developments that have occurred in the area. 4 Directions notes that the Guidance document provided by the JRP for the 2009 EIS for DNNP included “any cumulative environmental effects that are likely to result from the project in combination with other projects or activities that have been or will be carried out.”

1.5.2 Questions

How will CNSC (and the other Regulatory Authorities) and OPG consider the cumulative effects of the DNNP in combination with other projects or activities that have been or will be carried out?

How will CNSC and OPG consider the cumulative effects of DNNP in relation to the existing Darlington Nuclear Power Generating Station?

How will CNSC and OPG considered the cumulative effect of DNNP on Indigenous landscapes (cultural, spiritual, and geographic [watershed and treaty territory])?

1.5.3 Recommendations

4 Directions recommends that CNSC and OPG undertake comprehensive cumulative effects study, of which a mutually agreed upon scope is determined in collaboration with Hiawatha FN.





1.6 Comments & Concerns Regarding Carbon Impacts

Throughout the different steps of the EIS review, 4 Directions, on behalf of Hiawatha FN had inquired on the impacts that the project will have on carbon emissions. OPG states, in CMD 24-H1.2 , that nuclear power is a cleaner energy solution:

“While many analyses have been performed to identify the right technical solutions and in the right proportion, the evidence is clear as stated by experts like the International Energy Agency (IEA) [R-2] and the Intergovernmental Panel on Climate Change [R-3]. Nuclear power is essential in attaining Greenhouse Gas (GHG) emission reduction targets.”

1.6.1 Discussion

4 Directions staff note that it is vital to see an assessment of total GHG production for this project. The CNSC has an interim strategy for assessing the total GHG production of CNSC-led environmental assessments. However, there is no mention of carbon impact in neither CMD 24-H1 and H2.

To demonstrate that a project like the DNNP project will have a positive impact on attaining GHG emission reduction targets, OPG needs to demonstrate their plan. 4 Directions understands that OPG plans to assess carbon impact of the project and material used in the construction. This is something OPG has mentioned in 2022, but we still have not seen the details of this assessment.

1.6.2 Recommendation:

4 Directions recommends that OPG provide details on when this carbon impact assessment will be done, what CNSC staff are doing in this regard, and how Hiawatha FN will be able to participate to the process of this assessment. As noted in previous sections, the cost incurred for Hiawatha First Nation’s involvement in assessments related to the project are the responsibility of the proponent (Hiawatha First Nation, 2013).

1.7 Comments & Concerns Regarding Protection of Rights

Throughout the Report, CNSC makes no mention of ensuring protection for the Inherent, Aboriginal and Treaty Rights of the Michi Saagiig, or any other First Nation Rights-holder.

1.7.1 Discussion

As a Crown entity, CNSC should ensure that all of its activities, and the activities of its licensees are developed in accordance with relevant Treaties, and those Aboriginal Rights protected by Section 35 Canadian Constitution Act (1982). As a Crown Regulatory Oversight body, the protection of the Rights of Indigenous Peoples should be a clear part of CNSC’s mandate and objectives.





1.7.1 Recommendations

4 Directions staff recommends that CNSC work with First Nation Rights-holders, including Hiawatha FN to ensure that the protection of Rights becomes centred in CNSC and licensee activities. 4 Directions staff recommends CNSC ensure Best Management Practices, beyond what is regulated, occur wherever potential impacts to Inherent, Aboriginal and Treaty Rights may occur. CNSC must ensure the highest level of protection and monitoring where there are impacts to Michi Saagiig Rights identified.





2.0 Specific Feedback by Section

4 Directions staff have created the following table (**Table 1**) based on their review of the Report. For clarity, specific comments, concerns, requests, and recommendations are organized in correlation with the various sections of the Report to which they are relevant.

Table 1: Specific Feedback by Section		
Section	Comments & Concerns	Requests & Recommendations
Executive Summary	<p>At the beginning of this section, CNSC states, “<i>Canadian Nuclear Safety Commission (CNSC) staff would like to acknowledge that the Darlington New Nuclear Project (DNNP) is in the traditional territory of the Michi Saagiig Anishinaabe people. These lands are covered by the Williams Treaties between Canada and the Mississauga and Chippewa Nations.</i>”</p> <p>4 Directions staff appreciates that CNSC has included a land acknowledgement at the beginning of their executive summary, and it has moved beyond a generic statement.</p> <p>4 Directions staff notes, that while this is a positive step, there remain errors and omission within this statement; it is not an accurate depiction of the cultural lands, traditional territories or treaties that cover the DNNP site. It also does not include the waters, which will be utilized by the facility and are of great importance to the Michi Saagiig Anishinaabeg.</p>	<p>CNSC must continue to educate itself regarding the history of Indigenous Peoples, the history of treaty making to be able to reflect the lands and treaties more accurately without the use of harmful language within its written documents.</p> <p>CNSC should ensure that staff understand and communicate about treaty lands and traditional territories with the relevant context. CNSC should work with First Nation Rights-holders to collaboratively define the context around the use of the term “traditional” to avoid erroneously historicizing Indigenous presence, Indigenous Knowledge Systems, and the exercising of Indigenous Rights, and Indigenous cultural and spiritual activities.</p> <p>4 Directions proposes the land acknowledgement be refined to include correct conjugation i.e.) Anishinaabeg, include the traditional lands and waters, the Gunshot Treaty (1877-88), the Williams Treaties (1923), and the Williams Treaties Settlement (2018).</p>
Executive Summary	4 Directions staff is concerned that a high-level summary of engagement and	4 Directions staff recommend that CNSC ensure that engagement and





	<p>consultation activities with First Nations and Indigenous communities are not included within the Executive summary.</p> <p>4 Directions staff note that this exclusion contributes to the devaluation of the Rights of Indigenous Peoples as well as the diminishment of the role, responsibilities, and obligations of the Crown to First Nation Rights-holders.</p>	<p>consultation with First Nations and Indigenous communities is highlighted as an item of importance which deserves inclusion within the executive summary.</p>
1. Overview	<p>4 Directions appreciated the Overview section, which was well described and helped staff to understand the history of the project, the goal of the Report, what was included and under which laws and regulatory frameworks the EIS review was conducted.</p> <p>Legislation and its associated regulations are only possible because of Treaty. Treaties are separate from and supersede settler regulations and must be acknowledged as such.</p> <p>4 Directions staff notes that there was no mention of Indigenous Nations, especially in subsection 1.5.2 CNSC staff Methodology for Assessing OPG's PPE and EIS Review.</p>	<p>4 Directions staff recommends CNSC include language that reflects the role, responsibilities, and obligations that CNSC has under First Nation and Canadian legislation, Treaty, regulations, and policies to meaningfully consult and engage with First Nation Rights-holders. CNSC must be accountable by being specific about what these responsibilities and obligations are, and how they will be fulfilled.</p>
1.1 Site Description	<p>In this section, CNSC provides a description of Darlington Nuclear Site as follows: <i>"The Darlington Nuclear site is located on the north shore of Lake Ontario and is in the traditional territory of the Michi Saagiig Anishinaabe people. These lands are covered by the Williams Treaties between Canada and the Mississauga and Chippewa Nations."</i></p> <p>4 Directions staff find this statement erroneous because it is not an accurate</p>	<p>4 Directions staff recommends CNSC refine this description to include an accurate description of the lands, waters, and treaties.</p> <p>To that end, 4 Directions staff recommend as follows: "The DNNP is situated on Michi Saagiig Anishinaabeg lands and waters. The lands are covered by the Gunshot Treaty (1787-88), the Williams</p>





	<p>depiction of the cultural lands, territories or treaties that cover the DNNP site. It also does not include the waters, which are utilized by the facility and are of great importance to the Michi Saagiig Anishinaabeg.</p>	<p>Treaties (1923), and the Williams Treaties Settlement (2018)."</p>
<p>1.2</p>	<p>Within this section CNSC states, <i>"The mandate of the JRP was to assess the environmental effects of the DNNP and to determine whether it is likely to cause significant adverse environmental effects considering the implementation of appropriate mitigation measures. The JRP process included:</i></p> <ul style="list-style-type: none"> • <i>A public review and comment period on the Environmental Impact Statement (EIS) guidelines, OPG's EIS, and OPG's licence application</i> • <i>Requests to OPG for additional information deemed necessary by the JRP.</i> • <i>Three open-house information sessions at public venues in the DNNP area, and</i> • <i>Submissions from federal, provincial, and municipal governments, Indigenous Nations and communities, and other interested parties"</i> <p>4 Directions staff note that it is not clear from this section what, if any, submissions were received from Hiawatha FN? How were submissions from First Nation Rights-holders considered?</p>	<p>4 Directions staff request that CNSC provide Hiawatha FN with an overview of what submissions were received from the Nation. 4 Directions staff request that CNSC demonstrate how submissions from First Nation Rights-holder were considered.</p>
<p>1.3.1 Activities from 2013 to September 2023</p>	<p>Within this section CNSC states, <i>"As required by the EA Follow-Up Program (see subsection 1.3.2 – Status of the Environmental Assessment Follow-Up Program and Appendix C of this CMD),</i></p>	<p>4 Directions staff request that CNSC demonstrate to Hiawatha First Nation how it has considered the identified and unassessed impacts to the Nations Rights.</p>





	<p><i>upon selecting the BWRX-300 reactor technology, OPG was required to fulfill DNNP Commitment D-P-12.1(a), which states: "Once the specific technology is selected and design information is available, OPG will comprehensively review the EIS to ensure that the results of the EIS remain valid. If this review indicates either a gap or a condition not bounded by the EIS, OPG will initiate corrective actions as necessary. This may include mitigation options."</i></p> <p><i>This commitment is also specified in condition 4.1 of PRSL 18.00/2031 and the DNNP Licence Conditions Handbook [6], which required OPG to submit documentation to: "[D]emonstrate that the selected nuclear reactor technology and updated site parameters have been taken into account in an assessment that demonstrates the effects predicted in the EA and the 2009 application are met. OPG's demonstration is to be in accord with the requirements and guidance of REGDOC-1.1.1."</i></p> <p><i>4 Directions staff note that during the comprehensive review of the EIS gaps regarding impacts to Inherent, Aboriginal and Treaty Rights were identified. For example, 4 Directions provided feedback on OPG's EIS Review in its submissions on behalf of Curve Lake First Nation in August 2022, noting "It is essential to note that all aquatic, terrestrial, visual, landscape and socio-economic components of the environment directly impact the Michi Saagiig Inherent and Treaty Rights; This analysis regarding effects on Michi Saagiig Inherent and</i></p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment</p>
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	<p><i>Treaty Rights is lacking throughout the review (notably in section 4.6 (page 63), discussing the projects' cumulative effects)."</i> In the same review, 4 Directions also identified specific impacts of the project on species that are of cultural significance to the Michi Saagiig Anishinaabeg, including Hiawatha FN.</p> <p>Upon reviewing this report, it is not clear how CNSC has considered the identified impacts to Rights, or the gaps that were noted in the ability to comprehensively identify, understand, assess, and address impacts to Rights.</p>	
<p>1.3.2 Status of the Environmental Assessment Follow-Up Program</p>	<p><i>Within this section "CNSC staff note that EAs are planning and decision-making tools. They provide opportunities for Indigenous Nations and communities, the public, and interested stakeholders to participate early on and inform a proponent's planning and project design. If the EA for a project is approved, an EA follow-up program is developed to verify the accuracy of the environmental assessment, and to determine the effectiveness of any mitigation measures. Follow-up programs are updated and revised based on the results of environmental monitoring, updated codes and standards, the identification of new species at risk, and when directed by a Responsible Authority (RA)."</i></p> <p>Upon reviewing this Report, it is not clear how Hiawatha FN was provided a meaningful opportunity to participate in the original EA.</p>	<p>4 Directions staff request that CNSC demonstrate how Hiawatha FN meaningfully participated in the original EA for the DNNP.</p>
<p>1.3.2 Status of the Environmental</p>	<p>Within this section CNSC states "<i>As required by CEAA 1992, the CNSC, with the Fisheries and Oceans Canada (DFO)</i></p>	<p>4 Directions staff recommends CNSC consult with Hiawatha FN on the EMEAF.</p>





<p>Assessment Follow-Up Program</p>	<p><i>and Transport Canada (TC) acting as Responsible Authorities (RA), required that OPG establish and implement an EA follow-up program. This is captured in DNNP Commitment D-P-12.1 “Environmental Monitoring and Environmental Assessment Follow-up,” (EMEAF) [10] which is intended to:</i></p> <ul style="list-style-type: none"> - <i>Verify the predictions of environmental effects that were identified and assessed in the environmental assessment, and</i> - <i>Determine the effectiveness of mitigation measures to modify existing measures, or implement new measures, where required.</i> <p><i>[..] Licence condition 15.2 of site preparation licence PRSL 18.00/2031 [3] requires that OPG implement and maintain the EA Follow-Up Program in accordance with federal guidelines and in consultation with federal RAs and Indigenous Nations and communities.”</i></p> <p>4 Directions staff wishes to inquire about how the commitments and conditions listed above carry over to each licencing phase for the remainder of the DNNP lifecycle.</p> <p>4 Directions notes that Hiawatha FN requests to be consulted regarding the EMEAF.</p>	<p>4 Directions staff recommends that the EA follow-up program be maintained as a licence condition throughout all phases of the DNNP.</p>
<p>1.4 Current Regulatory Landscape</p>	<p>As outlined in the General Comments 1.4 above, 4 Directions staff notes that within this section, First Nation regulations, <i>UNDRIP</i> and Treaties are omitted by CNSC staff.</p>	<p>4 Directions staff recommends that CNSC ensure OPG undertakes a Gap Analysis in collaboration with Hiawatha FN.</p> <p>4 Directions recommends that CNSC and OPG work collaboratively with</p>





	<p>4 Directions staff note that this exclusion contributes to the devaluation of the Rights of Indigenous Peoples as well as the diminishment of the role, responsibilities, and obligations of the Crown to First Nation Rights-holders.</p> <p>This section states that according to Subsection 2(3) of the IAA Physical Activities Regulations <i>“The IAA does not apply to the DNNP as a completed EA is in place with a determination made by the JRP pursuant to subsection 37(1) of CEAA (1992), which does not have an expiry date. Nevertheless, the Commission is required to consider JRP Recommendation #1.”</i></p> <p>As this statement is currently written it is not clear how this determination made in consultation with First Nation Rights-holders, such as Hiawatha First Nation.</p> <p>Treaties are the foundation of all legislation, and therefore any legislative determinations, evaluations, or exclusions should be informed by Treaty Rights. The Canadian Constitution protects Aboriginal and Treaty Rights, and therefore all legislation should be inclusive of the protection of Aboriginal and treaty Rights.</p> <p>As mentioned within the General Comments section of this review, Hiawatha FN has requested that OPG undertake a Gap Analysis of the original EIS and PPE to ensure that it understood through a Rights-based analysis including being informed by the Williams Treaties Settlement of 2018. Hiawatha FN has</p>	<p>Hiawatha FN to undertake an Indigenous Knowledge Study, cumulative impacts assessment, and Rights-based and informed approaches to mitigations, compensations, improvement, requirements, and needs be understood. Combined, these components would form the basis of a comprehensive Rights Impact Assessment which could help all parties develop a mutual understanding of the comprehensive impacts to Rights and determine together how they might be addressed.</p>
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	<p>additionally requested that CNSC and OPG ensure that the Nation is able to undertake an Indigenous Knowledge Study, that a comprehensive cumulative impact assessment be conducted (with a mutually agreed upon scope), and that Rights-based and informed approaches to mitigations, compensations, improvement, requirements, and needs be understood. Combined, these components would form the basis of a comprehensive Rights Impact Assessment.</p>	
<p>2.1.1 Overview of the Plant Parameter Envelope</p>	<p>Within this section, CNSC states <i>“In addition to identifying parameters outside the EA bounding scenario, OPG’s EIS Review undertook an evaluation of on-site and near-site existing baseline environmental conditions, as well as identifying changes from the EIS to the present day in the assessments underpinning the conclusions of the EA.”</i></p> <p>4 Directions staff notes that Hiawatha FN has requested additional details and information regarding these studies from OPG that is not yet received. This information is foundational for identifying, understanding, and addressed potential impacts to Rights.</p>	<p>4 Directions staff recommends that CNSC ensure that Hiawatha FN receives the additional information that has been requested from OPG.</p>
<p>2.1.2.1 Fire Protection System and Water Supply Requirements</p>	<p><i>“In its submission, OPG explained that for the four-unit BWRX-300 station, the maximum short-term withdrawal rate from Lake Ontario for fire protection purposes would be greater than the flowrate evaluated in the EA, and that the total quantity of water stored for fire protection purposes in the water supply system (e.g., tanks, basins, or similar) would be greater than that specified in the EA.”</i></p>	<p>4 Directions staff requests that CNSC provide clarity regarding how the determination that even though the fire protection system and raw water system fell outside the PPE, the overall impact was less and fell within the bounding EA was arrived at. Additionally, 4 Directions requests CNSC demonstrate how First Nation Rights-holders were or will be consulted regarding this decision.</p>





	<p>This includes:</p> <ul style="list-style-type: none"> - an increase in the maximum short-term withdrawal rate from 158 L/s as assessed in the original EA to 508 L/s for the BWRX-300. - an increase in the total water stored from 2.93E+06 L as assessed in the original EA to 4.0E+06 L for the BWRX-300. <p>CNSC states <i>“OPG states that while the maximum withdrawal rate and volume of water stored for fire protection purposes would exceed the values stated in the EA, the overall combined draw of water from the municipal supply—for the potable water, sanitary waste, demineralized water supply, and fire protection systems—would be lower than that considered in the PPE. Correspondingly, there would be a lower amount of wastewater discharged back into the municipal system, and OPG has determined that the overall effect is less than assessed in the EA. CNSC staff reviewed OPG’s submission as it relates to the firewater system and raw water supply parameters, and concluded that although these parameters are outside the PPE, the overall effect of water usage and discharge into the municipal supply is less and does not impact the conclusion of the EA.”</i></p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including water intake</p>	<p>4 Directions requests that Hiawatha First Nation be consulted on all Permits to Take Water (e.g., for the whole cooling water system, fire protection etc.).</p> <p>4 Directions recommends that CNSC and OPG ensure that the cumulative impacts to all interactions with water (lake water, ground water, water courses, wetlands) be evaluated and shared with Hiawatha FN for comment, feedback, and to support a fully understanding of the impact to the Nation’s Rights.</p>
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	<p>and discharge, must be addressed in consultation with Rights holders.</p> <p>As this section is currently written, it is not clear how this determination was made by CNSC or how Hiawatha FN was consulted as part of this determination.</p> <p>4 Directions staff note that there are differences in the environmental value between municipal supply and lake water.</p> <p>How did this determination assess and consider such differences? Has the municipality had an upgrade to the drinking water system to accommodate these water rates?</p> <p>How did CNSC consider climate change and lake water changes when making this determination?</p> <p>At this juncture, not enough information has been made available for 4 Direction to make recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including copies of the supporting technical documents, which OPG has yet to provide.</p>	
<p>2.1.2.2 Depth of BWRX-300</p>	<p>Within this section, CNSC states <i>“The EA established foundation embedments of 18.04 metres, 13.5 metres, or 20.2 metres below the finished grade for the PWR, PHWR and BWR designs respectively. OPG’s submission states that the BWRX-300 foundation embedment is 38.0 meters below grade and therefore deeper than those assessed in the EA. In the EIS Review, OPG assessed potential environmental effects</i></p>	<p>4 Directions staff requests that CNSC provide clarity regarding how the determination that the different effects on ground water flow due to the depth of excavation would be appropriately mitigated by the mitigation measures considered in the EA was arrived at.</p> <p>4 Directions requests CNSC demonstrate how First Nation Rights-</p>





	<p><i>from the excavation and grading activities. In its submission, OPG conducted a study of the effect of the deeper foundation embedment on groundwater flow, and this study confirmed the effect of constructing up to four BWRX-300 reactors would have a temporary impact on groundwater flow. Further, OPG states that the long-term effect on groundwater flow from this deeper foundation following the cessation of construction activities and associated dewatering, would be negligible. CNSC staff have reviewed OPG's submission and supporting groundwater modelling against the predicted effects of a deeper foundation embedment. CNSC staff note that although there is a difference in the groundwater flow effects due to dewatering to a deeper foundation depth than assessed in the EA, these effects are appropriately mitigated by the mitigation measures from the EA, and therefore the conclusion remains valid."</i></p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including ground water flow, must be addressed in consultation with Rights holders.</p> <p>As this section is currently written, it is not clear how this determination was made by CNSC or how Hiawatha FN was consulted as part of this determination.</p>	<p>holders were or will be consulted as part of this determination.</p> <p>4 Directions requests CNSC provide additional information and details regarding the identified potential gaps in analysis listed.</p> <p>4 Directions recommends CNSC ensure that Hiawatha FN receives the information and data that has been requested from OPG in relation to this topic.</p>
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	<p>4 Directions staff note that after reviewing this section there remain potential gaps in the analysis including:</p> <ul style="list-style-type: none"> • If and how drinking water treatment (ground water, surface water, private wells) was considered. • If and how transport pathways for contamination were considered. • If and how any proposed mitigations were informed by the <i>Clean Water Act</i>. • If and how private wells were considered, including aquifer use for livestock and irrigation. <p>4 Directions staff note that additional information about ground water modelling has been requested by Hiawatha FN, which OPG has yet to provide.</p>	
<p>2.1.2.3</p>	<p>4 Directions staff appreciates the graphs provided in section 2.1.2.3. These graphs helped put results from tables into perspective. Even though some of the estimated airborne releases for radionuclides from the BWRX-300 reactor were a little higher than the initial EIS results, on a graph it was clear that these results were still within the bounding dose to a member of the public assessed in the EA, thus not raising concerns.</p>	
<p>2.2.1 General Overview of the EIS</p>	<p>Within this section, CNSC states “<i>The existing environment surrounding the Darlington Nuclear site was studied in three areas: the site study area consisting of the DNNP project lands, the local study area consisting of the Darlington Nuclear site and the area of Clarington closest to the site, and the regional study area consisting of the site study, local study</i></p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p><i>areas, and other lands, communities, and portions of Lake Ontario relevant to assessment of effects of the DNNP.”</i></p> <p>As mentioned in General Comment 1.5 in this review, to build a mutual understanding regarding potential impacts to Rights, the Darlington Nuclear site must be studied through a treaty and Rights-based approach, which includes understanding impacts at a cultural, spiritual, ecosystem, and geographic (watershed, territory) level.</p> <p>4 Directions staff notes that Hiawatha FN, along with Curve Lake First Nation has requested a Gap Analysis be conducted to ascertain how the DNNP will meet the standards set by the 2019 IAA and be informed by the Williams Treaties Settlement of 2018. Hiawatha FN and Curve Lake First Nation have already identified to CNSC and OPG that an Indigenous Knowledge Study, Cumulative Effects study and other information gathering is required to develop a mutual understanding of potential and real impacts to Michi Saagiig Rights, and how these impacts might be appropriately addressed.</p>	
<p>2.2.1 General Overview of the EIS</p>	<p>Within this section, CNSC states <i>“The identification of the environmental components also included the identification of representative valued ecosystem components (VEC), which are features of each component selected to be the focus of the study because of their value to the community and their potential vulnerability to effects of the DNNP.”</i></p>	<p>4 Directions staff requests that CNSC provide additional information to Hiawatha FN regarding how VECs were identified and selected, including how VECs are inclusive of species of cultural significance, protective of hunting, harvesting, and fishing Rights. 4 Directions staff requests CNSC provide clarity regarding the definition of ‘community’ utilized in this analysis</p>





	<p>After reviewing this section, it is not evident how VECs were identified and selected. How are the current VECs inclusive of species of cultural significance or importance? How do they consider and protect hunting, harvesting, and fishing Rights? How as the 'community' defined? Was it inclusive of First Nation voices?</p> <p>4 Directions staff notes that at meeting with OPG in September 2022 it was raised that species of cultural significance should be included as VECs. Feedback from First Nations at this meeting included:</p> <ul style="list-style-type: none"> • OPG needs to maintain the ecosystem as it is. • OPG needs to work with harvesters to maintain the ecosystem. • It was proposed to create a table to discuss IK and IK systems. <p>Under the 2019 IAA, valued components encompass environmental, health, social, economic, and other elements of the natural and human environment. Potential gaps in the analysis of VECs could be addressed through the Gap Analysis that has been requested by Hiawatha FN.</p>	<p>and whether it was inclusive of First Nation voices.</p> <p>4 Directions recommends that VECs be considered as part of the Gap Analysis that has been requested by Hiawatha FN. VECs could also be further refined based on the information gathered as part of the Indigenous Knowledge Study which would include mapping cultural and spiritual values.</p>
<p>2.2.1 General Overview of the EIS</p>	<p>Within this section, CNSC states <i>"As part of OPG's EA, effects identified in the supporting environmental studies were assessed for whether that effect will impact a VEC within the environmental component. In the case where an effect is likely to impact a VEC, the EA identified strategies to mitigate the effect of the project on that environmental component. In the event where an adverse environmental effect remains,</i></p>	<p>4 Directions staff requests additional details be provided to Hiawatha FN regarding how the evaluation of adverse environmental affects considered impacts to the Nation's Rights, additional details regarding the 'accepted' criteria, and demonstrate how Hiawatha FN was consulted on the accepted criteria and the broader determinations made by CNSC.</p>





	<p><i>after consideration of mitigation measures, the effect was considered a “residual adverse environmental effect” of the project on the environment. These residual effects were subsequently assessed for their significance following accepted criteria.”</i></p> <p>After reviewing this section, 4 Directions staff note that it is not clear how adverse environmental effects considered impacts to the Rights of Michi Saagiig Anishinaabeg. What was the accepted criteria? How was it derived? Who accepted it? What consultation with Hiawatha FN occurred on these criteria? How did these criteria consider impacts to Hiawatha FN Rights?</p> <p>As is noted in General Comment 1.2, any impacts to the environment regardless of their perceived severity (which are determined through Western frameworks), represent potential and often real impacts to Inherent, Aboriginal and Treaty Rights.</p>	
<p>2.2.2.1.1 Effect on Air Quality</p>	<p><i>Within the subsection Summarised Results from the EA, CNSC states. “Air concentrations due to DNNP for most contaminants of potential concern (COPC) were expected to infrequently exceed Canadian Ambient Air Quality Standards (CAAQS) at the residential receptors nearest the site during site preparation activities, and to a lesser extent during construction and operations activities. The predicted maximum 24-hour concentrations [16] of suspended particulate matter (SPM) and 10-micron particulate matter (PM10) were below the CAAQS, with some</i></p>	<p>4 Directions staff requests CNSC provide clarity on how impacts to the food web by any air concentrations of COPC.</p> <p>4 Directions staff recommends CNSC work with Hiawatha FN to determine how any exceedances should be monitored and communicated to ensure that community members who may be fishing, harvesting, or hunting are notified of potential risks when they are present.</p>





	<p><i>exceedances noted at four receptors. Nitrogen dioxide (NO₂) concentrations were also predicted to be below the 1-hour CAAQS at most receptors, except for two locations, which were determined to be very infrequent. The predicted exceedances of these contaminants were attributed to site preparation activities (e.g., excavation and grading, workforce traffic) as well as background traffic from local roads and Highway 401, for a two-year period. [...]</i></p> <p><i>The modelled exceedances of SPM, PM₁₀, and PM_{2.5} at these selected locations during the site preparation and construction phases of DNNP were identified using conservative bounding assessment criteria in the EA. In consideration of the mitigation measures and the results of the studies, the EA determined that changes in air quality were not considered to represent an adverse effect in the atmospheric environment."</i></p> <p>While CNSC has considered human health interface, after reviewing this section it is not clear how food web interface was considered. 4 Directions staff raise concerns regarding how medicinal plants that are being used in the area by local First Nations may be impacted. Feedback from Hiawatha FN staff includes ensuring that the wellbeing of all our relations is considered.</p> <p>4 Directions staff inquires as to how exceedances will be monitored and communicated to Hiawatha FN?</p>	<p>4 Directions recommends that all Best Management Practices be followed, and mitigation efforts made.</p>
<p>2.2.2.1.1 Effect on Air Quality</p>	<p>Within the subsection <i>CNSC Staff Review of OPG's EIS Review</i>, CNSC describes</p>	<p>4 Directions staff requests CNSC provide clarity on how the</p>





	<p>increases in the number of receptors that would be exposed to</p> <ul style="list-style-type: none"> • PM2.5 in a slightly higher frequency of predicted exceedances at the two most affected residential receptors identified in the EA. • the maximum 1hour NO2 average concentrations to remain slightly above criteria at the two residential receptors, as predicted in the EIS during site preparation activities. These exceedances are predicted to remain infrequent. • an increase in the number of receptors exposed to short-term concentration exceedances during site preparation, with modelled receptors expected to exceed both the 2020 and 2025 1-hour NO2 CAAQS. • annual NO2 concentrations are predicted to remain below the 2020 criteria at all but one receptor locations, and all receptor locations are predicted to exceed the 2025 criteria. <p>Yet, CNSC concluded that these exceedances do not impact the conclusions of the EA.</p> <p>Later in section 2.2.2.1.3 <i>Summary and Conclusions – Atmospheric Environment</i>, CNSC states “CNSC staff have reviewed the EA, OPG’s EIS Review and supporting documentation and conclude that no new air quality-related project-environment interactions are expected.”</p> <p>After reviewing this section, 4 Directions staff note that it is not clear how this was</p>	<p>determination that ‘no new air quality-related project-environment interactions are expected.</p> <p>4 Directions requests that CNSC provide clarity on how impacts to the food web by any air concentrations of COPC.</p> <p>4 Directions staff recommends CNSC work with Hiawatha FN to determine how any exceedances should be monitored and communicated to ensure that community members who may be fishing, harvesting, or hunting are notified of potential risks when they are present.</p> <p>4 Directions recommends that all Best Management Practices be followed, and mitigation efforts made.</p> <p>Within this section CNSC describes reviewing OPG’s Dust Management Plan, which was accepted. 4 Directions requests that Hiawatha FN be provided a copy of this Plan.</p>
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	<p>determined was made. Specifically, 4 Directions inquires how this determination relates to the technology chosen?</p> <p>While CNSC has considered human health interface, after reviewing this section it is not clear how food web interface was considered. 4 Directions staff raise concerns regarding how medicinal plants that are being used in the area by local First Nations may be impacted. Feedback from Hiawatha FN staff includes ensuring that the wellbeing of all our relations are considered.</p> <p>4 Directions staff inquires as to how exceedances will be monitored and communicated to Hiawatha FN?</p>	
<p>2.2.2.1.2 Noise</p>	<p>Within the subsection <i>Summarised Results from the EA</i>, CNSC states “<i>The minimum daytime background noise level was measured to be 51.7 aweighted decibels (dBA), and the maximum 1-hour daytime sound level during site preparation activities was predicted to be 9.5 dB higher than the background level. The average daytime sound level was predicted to increase to 61.4 dB, an increase of 8.1 dB over background.</i>”</p> <p>After reviewing this section, 4 Directions staff note that the evaluation seems to be focused on residential disturbances rather than potential impacts to the broader environment. Hiawatha FN staff have provided feedback that the wellbeing of all our relations must be considered. How does the assessed increase in noise potential impact the food web? How have cumulative</p>	<p>4 Directions staff request CNSC provide clarity on how effects of noise increase on the broader environment, and food web were considered.</p> <p>4 Directions staff recommends that the cumulative effects of noise increases be evaluated to comprehensively identify, understand, and address impacts to Michi Saagiig Rights.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p>increases in noise in the broader area been considered?</p>	
<p>2.2.2.2.1 Aquatic Habitat</p>	<p>Within this section, CNSC states that <i>“the EIS predicted excavation of approximately 12.4 million cubic metres of earth; whereas the deployment of the BWRX-300 reactors require excavation of an estimated 3.3 million cubic metres of earth [17]. [...] The EA also states that, though the upper reaches of an intermittent Lake Ontario tributary are outside of the proposed footprint for soil placement into the Northwest Landfill area, it was possible that the watercourse could be affected by soil placement activities. The BWRX-300 reactors no longer require placement of soil in the Northwest Landfill area, and therefore this predicted effect would not occur.”</i></p> <p>4 Directions staff notes that during meetings in 2023, OPG indicated that there were some oversights regarding anticipated excess soils. In July 2023, OPG presented figures that indicated that a minimum of 3.8M m³ were anticipated. This estimate did not include contingency to consider any changes based on revised 4-unit layout (which is not yet confirmed), as found conditions, or rammed Aggregate Piers spoils.</p> <p>As a result, OPG anticipated a larger than originally planned spoils pile. It was communicated to Hiawatha FN that the additional spoils would impact the soil placement footprint at the DNNP site, potentially including areas which were previously thought to be retained and</p>	<p>4 Directions requests that CNSC and OPG consult with Hiawatha FN regarding impacts of the soil spoils, including any potential impacts to watercourses.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p>utilized for beneficial actions as identified through the ESA permit.</p> <p>It now remains unclear what impacts to watercourses may occur due to the larger estimates of excess soils.</p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including potential impacts to watercourses by soil spoils, must be addressed in consultation with Rights holders.</p>	
<p>2.2.2.2.1 Aquatic Habitat</p>	<p>Within this section, CNSC states <i>“OPG performed surface water hydrology assessments to support the BWRX-300 deployment, where OPG has estimated monthly water balances for the ponds and tributaries [21]. CNSC staff’s review noted that the changes described were relatively minor; however, significant increases in monthly flows during the summer months can be expected for water features south of the CN Rail line (i.e., the Southeast Wetland and the Darlington Creek Tributary ‘E’). OPG has confirmed that these features are generally ‘flow-through,’ and would not be significantly affected by an increase in summer flows. Adverse effects to these tributaries were not anticipated and mitigation measures are not required.”</i></p> <p>4 Directions staff note that after reviewing this section there remain potential gaps in the analysis including:</p> <ul style="list-style-type: none"> • What is meant by flow-through. 	<p>4 Directions staff request that CNSC and OPG provide additional details and information to Hiawatha FN to address the identified gaps in information and analysis.</p> <p>4 Directions staff recommends that CNSC and OPG consult Hiawatha FN on potential impacts to surface water features which could have a potential impact on Michi Saagiig Rights.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<ul style="list-style-type: none"> • What the current mean velocity in this area is, and how that compares to the anticipated increase. • What substrate is present in the areas anticipated to be impacted by increased summer flows? <p>4 Directions staff notes that velocity changes have the potential to change the aquatic ecosystem. This would represent an impact to Hiawatha FN Rights.</p> <p>Additional information regarding the tributaries is required, including whether the channel is constructed enough to be able to handle the high flows in terms of managing erosion, which has a big impact on fish. This could be a potential impact to harvesting and fishing Rights.</p> <p>At this juncture, not enough information has been made available for 4 Directions to make recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including copies of the supporting technical documents, which OPG has yet to provide. This information is foundational for identifying, understanding, and addressed potential impacts to Rights.</p>	
<p>2.2.2.2.1 Aquatic Habitat</p>	<p>Within this section, CNSC staff state, <i>“The BWRX-300 units 2, 3 and 4 would require OPG to conduct in-water activities to stabilise the shoreline, which would require OPG to implement a monitoring plan for potential effects on aquatic habitats when conducting shoreline protection activities. The effect of shoreline stabilisation activities on the habitat and nesting grounds of bird</i></p>	<p>4 Directions staff recommends CNSC and OPG ensure that the requisite information is provided to Hiawatha FN.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi</p>





	<p><i>species, including species at risk, is described further in subsection 2.2.2.6.3 – Bird Communities and Species of this CMD.”</i></p> <p>4 Directions staff raise concerns regarding shoreline protection activities, including impacts on species of cultural significance and biodiversity. Impacts to the shoreline that affect aquatic habitats, birds, fish, and other species of cultural significance represent an impact to Hiawatha FN’s Rights, regardless of mitigation measures.</p> <p>Assessments of impacts of shoreline protection must assess impacts to the environment beyond aquatic habitats and bird species; mink, fish and invertebrates use the shoreline.</p> <p>A holistic approach, which includes an assessment of the interstitial spaces where algae and insects live. It is important to also account for the cumulative impacts of other shoreline stabilization projects occurring within the same area of shore.</p> <p>Feedback from Hiawatha FN staff includes ensuring that the wellbeing of all our relations are considered.</p> <p>At this juncture, not enough information has been made available for 4 Directions to make comprehensive recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including a summary of studies</p>	<p>Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions recommends that CNSC and OPG explore landscape, or ecosystem-based solutions rather than an engineering approach for shoreline protection.</p>
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	completed, which OPG has yet to provide.	
2.2.2.2.1 Aquatic Habitat	<p>Within this section, CNSC states <i>“To protect aquatic habitat, the EA identified mitigation measures associated with the intake and discharge structures, including development and implementation of an appropriate Fish Habitat Compensation Plan to satisfy the requirements of subsection 35(2) of the Fisheries Act. In addition, the location of the cooling water intake and discharge structures should be in less-sensitive habitats, removed from productive nearshore habitats and spawning areas.”</i></p> <p>4 Directions staff notes that in August 2022, feedback was provided to OPG that regardless of placement, fish protection designs would need to be in place to reduce fish impingement and entrainment. Fish Protection studies would need to be designed in consultation with Hiawatha FN and Curve Lake First Nation, as the current parameters to protect for round whitefish spawn, is not relevant for Michi Saagiig Nations and should be designed to protect against species of cultural significance.</p> <p>Impacts to fish species of cultural significance represents an impact to Michi Saagiig Rights, regardless of mitigation measures.</p>	<p>4 Directions staff requests that Hiawatha FN be consulted regarding habitat compensation and fish protections to ensure that populations of culturally significant species are protected and enhanced.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>
2.2.2.2.2 Aquatic Biota	<p>Within this section, CNSC states <i>“Since the completion of the EA, OPG has conducted baseline studies for aquatic biota, including benthic invertebrates, fish impingement and entrainment, fish community and population, fish habitat,</i></p>	<p>4 Directions staff requests that CNSC and OPG provide clarity regarding the inclusion of plankton into the assessment of aquatic biota.</p>





	<p><i>and the thermal plume [23]. OPG concluded that these follow-up studies demonstrated similar findings to those identified in the EA. CNSC staff reviewed these studies and concurred with OPG's conclusions."</i></p> <p>After reviewing this section, it is not clear that phytoplankton and zooplankton were included in this analysis.</p> <p>At this juncture, not enough information has been made available for 4 Directions to make comprehensive recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including a summary of studies completed, which OPG has yet to provide.</p> <p>Impacts to the food web, including impacts to species of cultural significance represents an impact to Michi Saagiig Rights, regardless of mitigation measures.</p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>
<p>2.2.2.2.2 Aquatic Biota</p>	<p>Within this section, CNSC states "<i>BWRX-300 deployment would also require some limited underwater blasting during construction of the intake and discharge structures, and therefore this effect is similar to that assessed in the EA. OPG would be required to conduct blasting activities in a manner that it limits incidental mortality of aquatic species, consistent with the mitigation measures identified in the EA.</i>"</p> <p>4 Directions staff notes that the need for underwater blasting has not been a focused discussion between CNSC, OPG</p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>Hiawatha FN consultation staff request that CNSC and OPG ensure that an opportunity to conduct ceremony prior to any potential loss of habitat or life is provided to Hiawatha FN.</p>





	<p>and Hiawatha FN. Fish mortality, even if incidental, represents a direct impact on Michi Saagiig Rights, regardless of mitigation measures. Hiawatha FN must be consulted on this activity.</p> <p>At this juncture, not enough information has been made available for 4 Directions to make comprehensive recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including a summary of studies completed, which OPG has yet to provide.</p>	
<p>2.2.2.2 Aquatic Biota</p>	<p>Within this section, CNSC notes that <i>“Although the EA identified Deepwater Sculpin as a fish species of conservation concern, and entrainment of Sculpin has been identified at the existing DNGS, subsequent monitoring studies performed by OPG, and reviewed and accepted by CNSC staff, have not detected significant interactions with the DNGS intake structures. This conclusion is expected to remain applicable to the intake and discharge structures for the DNNP. OPG would be required to implement fish protection or adapt mitigation measures to continue to ensure that DNNP activities do not introduce significant environmental effects to aquatic biota.”</i></p> <p>4 Directions raises concerns about these statements. Upon review, these statements lead the reader to conclude that real interactions with Deepwater Sculpin have occurred but are discounted by subsequent monitoring. This type of approach can lead to further impacts to fish species which go undetected. As a</p>	<p>4 Directions staff recommends CNSC and OPG evaluate possible opportunities of improvement as a result of the data.</p> <p>4 Directions staff recommends that CNSC ensure Best Management Practices, beyond what is regulated, occur. CNSC should be ensuring the highest level of protection and monitoring where there are impacts to Michi Saagiig Rights identified.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p>result, such methods amount to a devaluation of the Rights of Indigenous Peoples.</p>	
<p>2.2.2.2.2 Aquatic Biota</p>	<p>Within this section CNSC staff note that <i>“two fish species have been listed under the Province of Ontario’s Endangered Species Act [24], the Lake Sturgeon and the American Eel, since the completion of the EA. OPG would be required to obtain permits from the OMECP prior to commencing in-water work. For species that are listed as Endangered or Threatened under Schedule 1 of the federal Species at Risk Act [25], OPG is required to obtain permits from DFO prior to commencing any work and would be required to comply with direction from those regulatory authorities. CNSC staff concluded that the identification of the above fish species for conservation concern remains within the determination of the significance of residual adverse effects documented in the EA.”</i></p> <p>4 Directions staff note that while the original EA contemplated species that were or have been designated as at risk or endangered through Western legislation, the EA did not contemplate species through the lens of cultural significance, which is protected under the Section 35 of the Canadian Constitution, and specifically protected by Treaty.</p> <p>This highlights the importance of including Indigenous Knowledge Systems within environmental assessments with the goal of reducing impacts to valued components of the environment as well</p>	<p>4 Directions staff request that Hiawatha FN be consulted as part of any permits related to in-water works.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p>as protecting Inherent, Aboriginal and Treaty Rights.</p> <p>Impacts to fish species represent an impact to Michi Saagiig Rights, regardless of mitigation measures. Hiawatha FN must be consulted on any permits.</p>	
<p>2.2.2.3.2 Groundwater Quality</p>	<p>Within this section, CNSC states <i>“The EA predicted no residual adverse effects on groundwater quality because of the DNNP. The consequences of anticipated climate change effects were estimated as likely to impact groundwater quantity through lowering of the groundwater table due to reduced precipitation and runoff rates. The EA concluded that mitigation measures would be effective in addressing lower groundwater tables, and that climate change effects are unlikely to exacerbate the environmental effects of DNNP on groundwater quality. [...] The likely effects of the BWRX-300 on groundwater quality will be primarily due to the management of stormwater, as well as the active ventilation systems during the operations phase. [...] Impacts associated with the management of stormwater are independent of reactor technology, and the EA predicted no consequential adverse effects for groundwater quality, provided that the mitigation measure (i.e., standard industry stormwater management practices) is implemented. [...] The EIS Review considered deposition of tritium onto soil and transfer into groundwater, and conservatively estimated this would result in a maximum of 12% increase in tritium concentrations in on-site groundwater and a < 2% increase in</i></p>	<p>4 Directions staff requests that CNSC and OPG provide clarity regarding the assessment of ground water quality.</p> <p>4 Directions staff recommends CNSC and OPG ensure that the requisite information is provided to Hiawatha FN.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions recommend that a low impact development approach is taken for storm management to reduce impacts to the environment.</p>





	<p><i>nearby off-site wells from the estimates in the EA.”</i></p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including ground water quality, must be addressed in consultation with Rights holders.</p> <p>As this section is currently written, it is not clear how this determination was made by CNSC or how Hiawatha FN was consulted as part of this determination.</p> <p>4 Directions staff note that after reviewing this section there remain potential gaps in the analysis including:</p> <ul style="list-style-type: none">• If and how risks to contaminating aquifers were assessed.• If and how transport pathways for contamination were considered.• If and how any proposed mitigations were informed by the <i>Clean Water Act</i>.• If and how infiltration methods were assessed.• If and how private wells were considered, including aquifer use for livestock and irrigation. <p>4 Directions staff note that the climate change values utilized by the original EA are dated. Climate norms are calculated on 30 years data. The data that was used for the original EA would have been from the last climate norm. Further clarity</p>	
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	<p>regarding how climate norms informed these assessments are required.</p> <p>4 Directions staff note that additional information regarding ground water quality, including summaries of the studies and methodologies utilized, has been requested by Hiawatha FN, which OPG has yet to provide.</p>	
<p>2.2.2.3.3 Groundwater Flow</p>	<p>Within this section CNSC notes that <i>“OPG completed a groundwater modelling study as part of the EIS Review [28], which considered the impact of infrastructure on infiltration rates associated with BWRX-300 deployment. This study found no significant impacts on groundwater quantity or flow upon the cessation of dewatering activities following the construction phase. No adverse effects on groundwater quantity are expected from site mobilisation and preparatory works.”</i></p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including ground water flow, must be addressed in consultation with Rights holders.</p> <p>As this section is currently written, it is not clear how this determination was made by CNSC or how Hiawatha FN was consulted as part of this determination.</p> <p>4 Directions notes that Hiawatha FN would like to understand ground water shed similar to the watershed approach outlined within this review.</p>	<p>4 Directions staff requests that CNSC and OPG provide clarity regarding the assessment of ground water flow.</p> <p>4 Directions staff recommends CNSC and OPG ensure that the requisite information is provided to Hiawatha FN.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p>At this juncture, not enough information has been made available for 4 Directions to make comprehensive recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including a summary of studies completed and their methodology, which OPG has yet to provide.</p>	
<p>2.2.2.3.3 Groundwater Flow</p>	<p>Within the <i>subsection Excavation and Grading (Marine and Shoreline Works)</i>, CNSC notes that “<i>Given that the deployment of the BWRX-300 reactors does not require lake infill, and that the amount of excavated material no longer requires the placement of additional soil in the Northwest Landfill Area, effects on groundwater flow from these activities are no longer applicable.</i>”</p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including ground water flow, must be addressed in consultation with Rights holders.</p> <p>As this section is currently written, it is not clear how this determination was made by CNSC or how Hiawatha FN was consulted as part of this determination.</p> <p>4 Directions staff notes that during meetings in 2023, OPG indicated that there were some oversights regarding anticipated excess soils. In July 2023, OPG presented figures that indicated that a minimum of 3.8M m3 were anticipated. This estimate did not include contingency to consider any changes</p>	<p>4 Directions requests that CNSC and OPG provide clarity and consult with Hiawatha FN regarding impacts of the soil spoils, including any potential impacts to watercourses.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p>based on revised 4-unit layout (which is not yet confirmed), as found conditions, or rammed Aggregate Piers spoils.</p> <p>As a result, OPG anticipated a larger than originally planned spoils pile. It was communicated to Hiawatha FN that the additional spoils would impact the soil placement footprint at the DNNP site, potentially including areas which were previously thought to be retained and utilized for beneficial actions as identified through the ESA permit.</p> <p>It now remains unclear what impacts to ground water flow may occur due to the larger estimates of excess soils.</p>	
<p>2.2.2.5.1 Lake Circulation</p>	<p>Within this section, CNSC states “<i>A deflection of onshore currents from the operation of the existing DNGS intake and diffuser has been previously established, studied, and documented in 2008.</i>”</p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including lake circulation, must be addressed in consultation with Rights holders.</p> <p>As this section is currently written, it is not clear how this determination was made by CNSC or how Hiawatha FN was consulted as part of this determination.</p> <p>4 Directions wish to inquire as to any changes that have occurred since the time of study due to upwelling, climate change and wind patterns. Have these been considered as part of the EIS review?</p>	<p>4 Directions requests that CNSC and OPG demonstrate how Hiawatha FN was or will be consulted on the currently deflection of onshore currents from the existing DNGS intake and diffuser.</p> <p>4 Directions requests that CNSC and OPG provide clarity on what updates to the study of the current deflection of onshore currents from the existing DNGS intake and diffuser have occurred.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





		<p>4 Directions staff request that CNSC provide Hiawatha FN with a copy of the 2008 study on DNGS.</p>
<p>2.2.2.5.2 Lake Water Temperature</p>	<p>Within this section CNSC staff state they have <i>“reviewed the original Aquatic Environment Assessment Technical Support Document [29] and noted the thermal effect of the once through cooling option, with a discharge temperature of 9 oC above ambient, had a negligible residual effect. However, this was contingent on the assumption that a discharge diffuser was installed to enhance mixing of thermal discharge with lake water and limit the development of the overall thermal plume. This was assumed to prevent the dispersion of heated water greater than 2 degrees above ambient beyond the mixing zone along the diffuser. [...] CNSC staff note that in 2014 the CANDU Owner’s Group (COG) determined that a net increase of 2.9-3.4 oC above ambient temperatures beyond the mixing zone was protective of the aquatic environment. OPG has concluded that the deployment of the BWRX-300 would be able to meet this criteria, and the effects on lake water temperature are expected to be consistent with those assessed in the EA.”</i></p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including lake water temperature, must be addressed in consultation with Rights holders.</p>	<p>4 Directions requests that CNSC and OPG demonstrate how Hiawatha FN was or will be consulted as part of this determination.</p> <p>4 Directions requests that CNSC and OPG provide more details to Hiawatha FN on how they will ensure that the deployment of the BWRX-300 will not go above 2.9-3.4 °C of ambient temperature.</p> <p>4 Directions recommends CNSC ensure that Hiawatha FN receives the information and data that has been requested from OPG in relation to this topic.</p> <p>4 Directions recommends that CNSC and OPG look to the Canadian Council of Ministers of Environment guidance with respect to evaluating effects of lake water temperature increases.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p>As this statement is currently written it is not clear how this determination made in consultation with First Nation Rights-holders, such as Hiawatha First Nation.</p> <p>Neither OPG nor CNSC staff explain how OPG will ensure that the deployment of BWRX-300 will not go above 2.9-3.4 °C of the ambient temperature. CNSC staff only states that <i>“OPG has concluded that the deployment of the BWRX-300 would be able to meet this criterion, and the effects on lake water temperature are expected to be consistent with those assessed in the EA.”</i></p> <p>4 Directions staff disagree with this assessment. A variation in temperature to this degree will affect the aquatic environment.</p> <p>4 Directions staff note that concerns regarding these increases to lake water temperature and their impacts on the environment and the Rights of the Michi Saagiig Anishinaabeg were brought forward as early as 2022. 4 Directions notes that Hiawatha FN has requested additional information, including summaries of the relevant studies and their methodology, which OPG has yet to provide.</p>	
<p>2.2.2.5.3 Site Drainage and Water Quality</p>	<p>Within this section, CNSC states <i>“The EA predicted three likely effects in the Site Drainage and Water Quality environmental sub-component. One of these effects is on the quality of water ultimately discharged into Lake Ontario, from chemicals added to cooling tower process water to meet performance expectations. As the BWRX-300 uses a</i></p>	<p>4 Directions requests that CNSC and OPG demonstrate how the chemicals added to cooling tower process water were considered as part of its review.</p> <p>4 Directions requests that CNSC demonstrate how Hiawatha FN was</p>





	<p><i>once-through cooling system, the extent of this effect is limited. Nevertheless, the once-through cooling system would require addition of chemicals (e.g., anti-scaling, corrosion inhibitors) to maintain the performance of the system. These chemicals were considered in CNSC staff's review."</i></p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including the quality of water that is discharged back into Lake Ontario, must be addressed in consultation with Rights holders.</p> <p>4 Directions staff notes that discharges to the lake have the potential to change the aquatic ecosystem. This would represent an impact to Hiawatha FN Rights.</p> <p>4 Directions staff notes that the BWRX-300 deployment is intended to be a zero-liquid-discharge plant.</p> <p>Discharges to the receiving waterbody are not expected to be continuous but would only be from infrequent operational events. Even so, the maximum discharge of liquid potentially radioactive effluent streams into the receiving water body is expected to be less for both the single unit and four-unit scenarios.</p> <p>4 Directions staff inquires as to what mitigation measures are in place for the addition of these chemicals? What is an appropriate level of radioactive effluent?</p>	<p>or will be consulted as part of the review of such chemicals.</p> <p>4 Directions requests that CNSC and OPG provide more details to Hiawatha FN on how they will ensure that the deployment of the BWRX-300 will not go above 2.9-3.4 °C of ambient temperature.</p> <p>4 Directions recommends CNSC ensure that Hiawatha FN receives the information and data that has been requested from OPG in relation to this topic.</p> <p>4 Directions recommends that CNSC and OPG look to the Canadian Council of Ministers of Environment guidance with respect to evaluating effects of lake water temperature increases.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>
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	<p>How does this impact the (not yet) identified aquatic biota?</p> <p>At this juncture, not enough information has been made available for 4 Directions to make recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including summaries of studies and their methodology, which OPG has yet to provide. This information is foundational for identifying, understanding, and addressed potential impacts to Rights.</p>	
<p>2.2.2.5.3 Site Drainage and Water Quality</p>	<p>Within this section CNSC notes that <i>“The EA also predicted effects on water quality due to other activities such as lake infilling creating localised conditions favouring formation of algae blooms, the suspension of sediment due to construction of the intake and discharge structures, as well as effluent discharges from other plant processes (i.e., chemicals added for chemistry control of the reactor cooling water). The likely effects from the construction of the intake and discharge structures would be applicable for BWRX-300 deployment, as the design of these structures would be consistent with that assessed in the EA. In addition, the effect from discharge of any effluents also remain applicable for the BWRX-300. To address these project-environment interactions, the EA proposed in-design mitigation measures, such as dust and sediment control measures and treatment of wastewaters to meet applicable regulatory requirements. With the implementation of these mitigation measures, the EA concluded there were no adverse effects</i></p>	<p>4 Directions staff requests that CNSC provide clarity regarding how the determination that impacts on water quality would be sufficiently mitigated by the mitigation measures considered in the EA was arrived at.</p> <p>4 Directions requests CNSC demonstrate how Hiawatha FN was or will be consulted as part of this determination.</p> <p>4 Directions requests CNSC provide additional information and details regarding the identified potential gaps in analysis listed.</p> <p>4 Directions recommends CNSC and OPG ensure any analysis or measures taken with respect to Phosphorus balance are informed by the Great Lakes Quality Agreement.</p> <p>4 Directions recommends CNSC ensure that Hiawatha FN receives the information and data that has been requested from OPG in relation to this topic.</p>





	<p><i>predicted for water quality.”</i></p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including water quality, must be addressed in consultation with Rights holders.</p> <p>As this section is currently written, it is not clear how this determination was made by CNSC or how Hiawatha FN was consulted as part of this determination. Impacts to water quality represents an impact to Michi Saagiig Rights, regardless of mitigation measures.</p> <p>4 Directions staff note that after reviewing this section there remain potential gaps in the analysis including how Phosphorus outputs to the lake were assessed. 4 Directions note that Phosphorus balance is essential to protect and uphold Michi Saagiig Inherent, Aboriginal and Treaty Rights. As such, the cumulative impacts of Phosphorus outputs by the DNNP and broader watershed and treaty territory should be understood.</p> <p>4 Directions staff note that additional information about Phosphorus outputs has been requested by Hiawatha FN, which OPG has yet to provide.</p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions recommends CNSC and OPG ensure any analysis or measures taken with respect to Phosphorus balance are informed by the Great Lakes Quality Agreement.</p>
<p>2.2.2.5.4 Shoreline Processes</p>	<p>Within this section, CNSC states <i>“The proposed site layout for up to four BWRX-300 reactors would require shoreline stabilisation and protection measures, although to a lesser extent than assessed</i></p>	<p>4 Directions staff request that CNSC and OPG consult Hiawatha FN on impacts to shoreline, including shoreline protection activities and</p>





	<p><i>in the EA. Construction of more than one BWRX-300 reactor would require implementation of stabilisation measures, resulting in the bluffs becoming unsuitable for Bank Swallows to inhabit."</i></p> <p>4 Directions staff raise concerns regarding shoreline protection activities, including impacts on species of cultural significance and biodiversity. Impacts to the shoreline that affect aquatic habitats, birds, fish, and other species of cultural significance represent an impact to Hiawatha FN's Rights, regardless of mitigation measures.</p> <p>Assessments of impacts of shoreline protection must assess impacts to the environment beyond aquatic habitats and bird species; mink, fish and invertebrates use the shoreline.</p> <p>A holistic approach, which includes an assessment of the interstitial spaces where algae and insects live. It is important to also account for the cumulative impacts of other shoreline stabilization projects occurring within the same area of shore.</p> <p>Feedback from Hiawatha FN staff includes ensuring that the wellbeing of all our relations are considered.</p> <p>At this juncture, not enough information has been made available for 4 Directions to make comprehensive recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including a summary of studies</p>	<p>impacts to species of cultural significance including Bank Swallows.</p> <p>4 Directions staff recommends CNSC and OPG ensure that the requisite information is provided to Hiawatha FN.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions recommends that CNSC and OPG explore landscape, or ecosystem-based solutions rather than an engineering approach for shoreline protection.</p>
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	<p>completed, which OPG has yet to provide.</p> <p>Impacts to shorelines and species of cultural significance represents an impact to Michi Saagiig Rights, regardless of mitigation measures.</p>	
<p>2.2.2.6 Terrestrial Environment</p>	<p>Within this section, CNSC states <i>“Overall, baseline terrestrial environment characteristics remain similar to those described in the EA, with the exception of several changes to species at risk (SAR) under the federal Species at Risk Act [25] or the province of Ontario’s Endangered Species Act [24]. OPG has collected additional terrestrial baseline data [30] to document several changes, including:</i></p> <ul style="list-style-type: none"> - <i>Updates to vegetation, pond biodiversity, soil, breeding birds, insects, amphibians and reptiles, mammals, landscape connectivity, and species at risk.</i> - <i>Specific to SAR, baseline updates included the Eastern Meadowlark, Bobolink, Barn Swallow, Bank Swallow, Least Bittern, and Bats.</i> - <i>Six breeding bird species with habitats in the DNNP site became listed under the Species at Risk Act: the Bank Swallow, Barn Swallow, Eastern Wood Pewee, Wood Thrush, Bobolink, and Eastern Meadowlark.</i> - <i>Six migrant bird species also became listed under the Species at Risk Act: the Olive-sided flycatcher, Common Nighthawk, Eastern Whip-Poor-Will, Canada Warbler, Rusty Blackbird, and the Least Bittern.</i> 	<p>4 Directions staff recommends CNSC and OPG ensure that the requisite information is provided to Hiawatha FN.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<ul style="list-style-type: none">- One species of breeding turtle with a habitat in the DNNP site became listed as a SAR.- Eight bat species use the DNNP site for foraging or roosting habitats, four of which became listed as SAR since the EA: Little Brown Myotis, Northern Myotis, Eastern Small-footed Myotis, and the Tri-coloured Bat.- A new retainable Butternut tree sapling was found in 2018, whereas the EA identified the existing Butternut tree as non-retainable due to being affected by the Butternut Canker disease. <p><i>Because several species of bats were identified as SAR, bats were added to the list of VECs and assessed for potential environmental impacts, whereas other SAR species were assessed using surrogate species."</i></p> <p>4 Directions staff note that the BWRX-300 deployment for one or four units results in Terrestrial Environment habitat features and functions (i.e., habitat for breeding birds and bats, three constructed ponds (Treefrog, Dragonfly and Polliwog), woodlands etc.) remaining on the site that were to be removed through the bounding scenario used in the EIS Report.</p> <p>These habitat features represent new receptors that were not considered in the EIS. Additional studies are likely needed.</p> <p>At this juncture, not enough information has been made available for 4 Directions</p>	
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	<p>to make comprehensive recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including a summary of studies completed and their methodology, which OPG has yet to provide.</p> <p>Impacts to species of cultural significance represents an impact to Michi Saagiig Rights, regardless of mitigation measures.</p>	
<p>2.2.2.6 Terrestrial Environment</p>	<p>Within this section CNSC states that <i>“Given the reduction in the extent of earthworks and volume of material excavated, as well as work required to stabilise the shoreline, there is the potential to conserve some vegetation communities such as the meadow and thicket as well as the species and associated ecosystem functions. The smaller footprint also enables potential opportunities to retain other terrestrial features including on-site wetlands and woodlands that were predicted to be removed in the EA. CNSC staff also note that OPG’s updated terrestrial baseline studies have identified an 11 hectare (0.11 km²) increase in the wetland area in the DNNP site.”</i></p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including ponds, tributaries, and wetlands, must be addressed in consultation with Rights</p>	<p>4 Directions requests that CNSC and OPG provide clarity and consult with Hiawatha FN regarding impacts of the soil spoils, including on any waterbodies or water courses as well as the ability to retain environmental features.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p>holders. Wetlands are to be afforded a 120m buffer, as protected by Treaty.</p> <p>4 Directions staff notes that during meetings in 2023, OPG indicated that there were some oversights regarding anticipated excess soils. In July 2023, OPG presented figures that indicated that a minimum of 3.8M m3 were anticipated. This estimate did not include contingency to consider any changes based on revised 4-unit layout (which is not yet confirmed), as found conditions, or rammed Aggregate Piers spoils.</p> <p>As a result, OPG anticipated a larger than originally planned spoils pile. It was communicated to Hiawatha FN that the additional spoils would impact the soil placement footprint at the DNNP site, potentially including areas which were previously thought to be retained and utilized for beneficial actions as identified through the ESA permit.</p> <p>It now remains unclear what impacts to the potential to conserve some vegetation communities such as the meadow and thicket as well as the species and associated ecosystem functions or potential opportunities to retain other terrestrial features including on-site wetlands and woodlands that were predicted to be removed in the EA exist.</p>	
<p>2.2.2.6.1 Vegetation Communities and Species</p>	<p>Within this section, CNSC states that <i>“The EA noted that although these mitigation measures would be effective in addressing most likely effects of the DNNP on vegetation communities, the direct loss of the 0.40 to 0.50 km2 of the</i></p>	<p>4 Directions requests that CNSC and OPG provide clarity and consult with Hiawatha FN regarding impacts of the soil spoils, including on any waterbodies or water courses as well</p>





	<p><i>Cultural Meadow Ecosystem was considered to be a residual adverse effect. Specific mitigation measures were identified in the EA to reduce the likely impact of Site Preparation and Construction activities on vegetation species, including: The replanting of 0.40 to 0.50 km² of Cultural Meadow including native forb seeds in the seed mixture, and between 0.15 to 0.20 km² of Cultural Thicket with native shrubs, and Sugar Maple. The deployment of the BWRX-300 reactors would result in the removal of some vegetation communities, but less than was assessed in the bounding scenario of the EA. Given the smaller physical footprint of the BWRX-300, sensitive vegetation communities are likely to be retained, including wetlands and woodlands, which under the EA were assumed to be removed.”</i></p> <p>4 Directions staff note that Rights to access, steward, and make decisions regarding water is a Right maintained by Indigenous Peoples in Canada (COO, 2008; AFN, 2019). As such, any decisions regarding water, including ponds, tributaries, and wetlands, must be addressed in consultation with Rights holders. Wetlands are to be afforded a 120m buffer, as protected by Treaty.</p> <p>As is noted in General Comment 1.2, any impacts to the environment regardless of their perceived severity (which are determined through Western frameworks), represent potential and often real impacts to Inherent, Aboriginal and Treaty Rights. In this case the direct</p>	<p>as the ability to retain environmental features.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>
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	<p>loss of cultural meadow habitat represents an impact to Michi Saagiig Rights.</p> <p>4 Directions staff notes that during meetings in 2023, OPG indicated that there were some oversights regarding anticipated excess soils. In July 2023, OPG presented figures that indicated that a minimum of 3.8M m³ were anticipated. This estimate did not include contingency to consider any changes based on revised 4-unit layout (which is not yet confirmed), as found conditions, or rammed Aggregate Piers spoils.</p> <p>As a result, OPG anticipated a larger than originally planned spoils pile. It was communicated to Hiawatha FN that the additional spoils would impact the soil placement footprint at the DNNP site, potentially including areas which were previously thought to be retained and utilized for beneficial actions as identified through the ESA permit.</p> <p>It now remains unclear what if any sensitive vegetation communities will be retained.</p>	
<p>2.2.2.6.1 Vegetation Communities and Species</p>	<p>Within the subsection <i>Dust</i>, CNSC states “OPG’s modelling predicted a daily incremental deposition rate at terrestrial receptors between 0.1 to 0.4 g/m²/day, with concentrations above the 24-hour SPM criteria at three on-site ponds northeast of the DNNP site. These receptor locations are the only predicted dust deposition exceedances above the criteria. The results of OPG’s modelling are consistent with the conclusions of the EA, in that due to the short deposition</p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions requests CNSC provide additional information and details</p>





	<p><i>period and the concentrations of dust deposited, measurable effects on vegetation communities are not likely to occur. CNSC staff reviewed OPG's modelling and concur with the assessment."</i></p> <p>As this section is currently written, it is not clear how this determination was made by CNSC or how Hiawatha FN was consulted as part of this determination.</p> <p>4 Directions staff note that after reviewing this section there remain potential gaps in the analysis including how dust concentrations may impact species of cultural significance. Feedback from Hiawatha FN staff includes ensuring that the wellbeing of all our relations are considered as part of any assessment.</p> <p>4 Directions staff note that additional information about dust modelling has been requested by Hiawatha FN, including summaries of studies and methodology, which OPG has yet to provide.</p>	<p>regarding the identified potential gaps in analysis listed.</p> <p>4 Directions recommends CNSC ensure that Hiawatha FN receives the information and data that has been requested from OPG in relation to this topic.</p>
<p>2.2.2.6.2 Insects</p>	<p>Within this section, CNSC notes that <i>"The EA determined that site preparation and construction activities would result in the loss of Treefrog Pond, an adverse effect as the pond is only known location of a rare Dragonfly species habitat on the Darlington Nuclear site. Additionally, the clearing of the DNNP lands would result in the direct loss of an estimated 0.74 km² of Butterfly habitat, including those of the Monarch Butterfly. [...] As the physical footprint of the BWRX-300 is smaller than for the bounding reactor</i></p>	<p>4 Directions requests CNSC demonstrate how Hiawatha FN was or will be consulted with respect to the impact to the Nations Rights through the removal of butterfly habitat.</p> <p>4 Directions requests CNSC provide additional information and details regarding the identified potential gaps in analysis listed.</p>





	<p><i>scenario under the EA, it is expected to result in a lesser loss of habitat for insect species than described in the EA including those assessed as the most sensitive receptor species. Furthermore, the three on-site ponds (i.e., the Treefrog Pond, Polliwog Pond, and the Dragonfly Pond) would be retained. OPG has also completed modelling of dust deposition in these ponds [32], as well as assessing the impact on insect fauna, and concluded that potential effects from dust deposition in these ponds are anticipated to be minor. CNSC staff reviewed OPG's submissions and concur with OPG's conclusion."</i></p> <p>4 Directions staff notes that the direct loss of butterfly habitat represents an impact to Michi Saagiig Rights, regardless of mitigation measures.</p> <p>As mentioned in 4 Directions EAMFP review, dated February 27th, 2023, Section 4.4.1, Monarch butterflies are listed as endangered by the Committee on the Status of Endangered Wildlife in Canada as of 2021. There is also no mention of milkweed (<i>Asclepias</i> spp.), a species critical in the monarch lifecycle, as a species of interest in the Vegetation Communities and Species component of this review.</p> <p>4 Directions inquires if milkweed abundance and distribution being considered as a species to monitor after project completion and habitat remediation?</p> <p>Given the lack of clarity regarding the true impact of the soil spoils piles due to</p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions staff recommends that given the endangered listing of monarch butterflies and their reliance on milkweed as habitat, milkweed should be considered as a target species within the vegetation monitoring component of the monitoring plan. Comparing baseline and post-remediation milkweed abundance would provide supporting data to accompany butterfly surveys.</p>
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	<p>an increase in the anticipated volume, it is not clear to 4 Directions how much or which environments are going to be impacted or retained, or what the quality of whatever is retained will be.</p>	
<p>2.2.2.6.3 Bird Communities and Species</p>	<p>4 Directions staff notes that ECCC guidance on noise disturbances to nesting birds indicates that loud noise emissions “[...] exceeding 10 dB above ambient in natural areas [, or noise] greater than about 50 dB have a higher risk of disturbing nesting birds.”</p> <p>OPG’s noise model identified the primary sources of ambient noise to be the existing DNGS, the CN railway, St Mary’s Cement, and Highway 401, with an ambient sound level of 54.2 dBA.</p> <p>Because the OPG DNGS site is an industrial area and not a natural area, 4 Directions staff supposes that the ECCC guidance that would be applied is the 50dB limit. This means that with an ambient sound level of 54.2 dBA, the site already increases risk of disturbing nesting birds.</p> <p>4 Directions staff would like to better understand what mitigation measures are already conducted at the DNGS to ensure that adverse effects on nesting birds are diminished.</p> <p>All locations assessed in OPG’s noise modelling study showed incremental increases above ambient of less than 10 dBA, except for a single on-site location directly adjacent to the excavation footprint for a single-unit BWRX-300 deployment.</p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions requests CNSC provide additional information and details regarding the identified potential gaps in analysis listed.</p>





	<p>4 Directions staff would like to better understand what mitigation measures will be conducted during construction/excavation to ensure that adverse effects on nesting birds are diminished, knowing that ambient sound level could be more than 64,2 dBA adjacent to the excavation footprint.</p> <p>For a multi-unit deployment of four BWRX-300 reactors, the habitat at this location is assumed to be removed and is not included in the noise model. OPG concludes that noise modelling indicates the bird communities are subjected to the existing elevated ambient noise level, and additional incremental noise for the deployment of the BWRX-300 reactors would not result in a measurable effect to bird communities and species. CNSC staff have reviewed OPG's noise and dust modelling studies and concur with OPG's conclusion.</p> <p>4 Directions staff would like to better understand how cumulative effects were taken into consideration to reach this conclusion, knowing that the risks of disturbing nesting birds are already high.</p>	
<p>2.2.2.6.3 Bird Communities and Species</p>	<p>Within this section, CNSC notes that <i>"The EA determined that the clearing of the site would reduce habitat and have an impact on the breeding population of two indicator species: the Yellow Warbler and the Red-eyed Vireo. The EA determined that the decrease in the population of these breeding birds at the DNNP site is a residual adverse effect that would remain despite implementation of mitigation</i></p>	<p>4 Directions requests CNSC provide clarity regarding how cumulative effects were considered as part of the analysis of impacts to breeding birds.</p> <p>4 Directions requests that CNSC and OPG consult with Hiawatha FN regarding impacts of the soil spoils, including providing clarity regarding what environmental features would</p>





	<p><i>measures. Deployment of the BWRX-300 reactors would allow for some breeding bird habitat to be retained that was considered removed in the EA.”</i></p> <p>After reviewing this section, it is not evident how CNSC or OPG considered cumulative impacts of dust and noise in addition to removal of habitat when evaluating impacts for breeding birds. This would also include impacts of noise and dust on insects and other species that would form part of the food web utilized by the breeding birds.</p> <p>Given the lack of clarity regarding the true impact of the soil spoils piles due to an increase in the anticipated volume, it is not clear to 4 Directions how much or which environments are going to be impacted or retained, or what the quality of whatever is retained will be.</p>	<p>be retained and what their quality would be.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>
<p>2.2.2.6.3 Bird Communities and Species</p>	<p>Within the subsection <i>Waterfowl Staging Areas</i>, CNSC states <i>“The EA determined that project related works in Lake Ontario have the potential to disrupt this staging area, as waterfowl use this area throughout the year; however, this effect was determined to be transitory, with a likelihood that waterfowl will return to this area once project-related activities cease.”</i></p> <p>After reviewing this section, 4 Directions staff note that it is not clear how long the activities that have the potential to disrupt the staging area will impact waterfowl.</p>	<p>4 Directions requests CNSC provide clarity regarding how cumulative effects were considered as part of the analysis of impacts to breeding birds.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





	<p>4 Directions staff would like to inquire as to which waterfowl species are anticipated to be impacted.</p> <p>4 Directions staff note that additional information regarding relevant studies, including a summary of all studies and their methodology, has been requested by Hiawatha FN, which OPG has yet to provide.</p>	
<p>2.2.2.6.3 Bird Communities and Species</p>	<p>Within the subsection <i>Migrant Songbirds and their Habitat</i>, CNSC states “As identified in the EA, the DNNP will result in a loss of 0.74 km² of woody vegetation, which provides for a habitat for migrant songbirds. The smaller physical footprint of the BWRX-300 provides an opportunity to retain a portion of this woody vegetation and habitat, and consequently reduce the impact to migrant songbirds. CNSC staff note the EA did not consider the potential effects on these species from dust and noise, which has the potential to impact foraging due to dust covering the vegetation, as well as sensory disturbances to these birds cause by noise. However, OPG’s recent air quality and noise modelling [32] assessed the effects experienced by migrant birds and determined the effects to be minor. CNSC staff have reviewed OPG’s noise and dust modelling studies and concur with OPG’s conclusion.”</p> <p>After reviewing this section, it remains unclear how CNSC and OPG considered impacts to culturally significant species within this assessment. It remains unclear how CNSC consulted with Hiawatha FN regarding its determination</p>	<p>4 Directions requests that CNSC demonstrate how it will consult with Hiawatha FN regarding the removal of woodlands and in making the determination that impacts to breeding birds were minor.</p> <p>4 Directions requests that CNSC and OPG demonstrates how they will consider impacts to species of cultural significance as part of this assessment.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions requests CNSC provide additional information and details regarding the identified potential gaps in analysis listed.</p> <p>4 Directions requests that CNSC and OPG consult with Hiawatha FN regarding impacts of the soil spoils,</p>





	<p>that the effects to migrant birds will be minor.</p> <p>4 Directions staff notes that the loss in woodlands and subsequent impacts to species of cultural significance represents an impact to Hiawatha FN Rights, regardless of mitigation measures.</p> <p>4 Directions staff notes that during meetings in 2023, OPG indicated that there were some oversights regarding anticipated excess soils. In July 2023, OPG presented figures that indicated that a minimum of 3.8M m³ were anticipated. This estimate did not include contingency to consider any changes based on revised 4-unit layout (which is not yet confirmed), as found conditions, or rammed Aggregate Piers spoils.</p> <p>As a result, OPG anticipated a larger than originally planned spoils pile. It was communicated to Hiawatha FN that the additional spoils would impact the soil placement footprint at the DNNP site, potentially including areas which were previously thought to be retained and utilized for beneficial actions as identified through the ESA permit.</p> <p>Given the lack of clarity regarding the true impact of the soil spoils piles due to an increase in the anticipated volume, it is not clear to 4 Directions how much or which environments are going to be impacted or retained, or what the quality of whatever is retained will be.</p>	<p>including providing clarity regarding what environmental features would be retained and what their quality would be.</p>
<p>2.2.2.6.3 Bird Communities and Species</p>	<p>Within this section, CNSC staff concludes that adverse effects on Bank Swallows, <i>“given the identified mitigation measures and with continuous monitoring, remain</i></p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi</p>





	<p><i>within the conclusions of the EA.” CNSC also states that “the Bank Swallow population and its habitat was not considered in the EA as a receptor for interaction with DNNP, as the entirety of the habitat was anticipated to be removed”.</i></p> <p>4 Directions staff notes that these statements raise concern as it suggests that CNSC conclusions would remain the same, no matter what OPG does to avoid potential impacts on Bank Swallows. Even though OPG has implemented mitigation measures and monitoring, there is a certain confusion about what OPG is expected to achieve to reduce the impacts of the project on Bank Swallows.</p> <p>4 Directions staff notes that impacts to the environment, regardless of their perceived severity, always have the potential to impact Inherent, Aboriginal and Treaty Rights. In this case, impacts to Bank Swallow represent an impact to Hiawatha FN’s Rights. Hiawatha FN must be consulted.</p>	<p>Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions requests CNSC provide additional information and details to provide clarity regarding its expectations of OPG with respect to reducing impacts of the project on Bank Swallows.</p> <p>4 Directions requests that CNSC and OPG consult with Hiawatha FN regarding any impacts of the project on Bank Swallows.</p>
<p>2.2.2.6.3 Bird Communities and Species</p>	<p>Within the subsection <i>Winter Raptor Feeding and Roosting Areas</i>, CNSC notes that <i>“The EA identified two primary winter raptor feeding and roosting areas on the DNNP site, primarily related to Cultural Meadow, and related to historical owl roosts used as winter foraging habitats. One of the primary owl roosts is located on the DNNP site near the area where Site Preparation and Construction activities would occur, with the other primary roost remaining alongside the Waterfront Trail east of the Northwest Landfill Area. The loss of one</i></p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions requests CNSC and OPG provide additional information and details demonstrating how they will consider impacts to Hiawatha FN</p>





	<p><i>of the primary roost and approximately 50% of the suitable winter foraging habitat was considered as an adverse effect in the EA. The smaller physical footprint of the BWRX-300 deployment provides an opportunity to retain the vegetation, and a portion of the foraging habitat, that was considered removed under the bounding scenario described in the EA.”</i></p> <p>After reviewing this section, it remains unclear how CNSC and OPG considered impacts to culturally significant species within this assessment. It remains unclear how CNSC consulted with Hiawatha FN regarding the loss of a primary roost and suitable winter foraging habitat.</p> <p>4 Directions staff notes that impacts to the environment, regardless of their perceived severity, always have the potential to impact Inherent, Aboriginal and Treaty Rights. In this case, impacts to Winter Raptors represent an impact to Hiawatha FN’s Rights. Hiawatha FN must be consulted.</p> <p>4 Directions staff notes that the loss in woodlands and subsequent impacts to species of cultural significance represents an impact to Hiawatha FN Rights, regardless of mitigation measures.</p> <p>4 Directions staff inquire as to what protection measures can be offered to the remaining roost? What habitat alternatives could be considered?</p> <p>4 Directions staff notes that during meetings in 2023, OPG indicated that</p>	<p>Rights, including cultural keystone species.</p> <p>4 Directions recommend CNSC and OPG work collaboratively with Hiawatha FN to develop protections for and alternatives for impacts to roosts and habitat.</p> <p>4 Directions requests that CNSC and OPG consult with Hiawatha FN regarding any impacts of the project on Bank Swallows.</p> <p>4 Directions requests that CNSC and OPG provide clarity on OPG’s plan to ‘retain the vegetation, and a portion of the foraging habitat’.</p> <p>4 Directions would also like to understand the impacts that the deployment of the BWRX-300 will have on the loss of the suitable winter foraging habitat.</p>
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	<p>there were some oversights regarding anticipated excess soils. In July 2023, OPG presented figures that indicated that a minimum of 3.8M m3 were anticipated. This estimate did not include contingency to consider any changes based on revised 4-unit layout (which is not yet confirmed), as found conditions, or rammed Aggregate Piers spoils.</p> <p>As a result, OPG anticipated a larger than originally planned spoils pile. It was communicated to Hiawatha FN that the additional spoils would impact the soil placement footprint at the DNNP site, potentially including areas which were previously thought to be retained and utilized for beneficial actions as identified through the ESA permit.</p> <p>Given the lack of clarity regarding the true impact of the soil spoils piles due to an increase in the anticipated volume, it is not clear to 4 Directions how much or which environments are going to be impacted or retained, or what the quality of whatever is retained will be.</p>	
<p>2.2.2.6.4 Amphibians and Reptiles</p>	<p>After reviewing this section, it was not evident as to how anticipated soil stockpiles may impact amphibians and reptiles.</p> <p>Impacts to amphibians and reptiles, and specifically culturally significant species, represents an impact to the Rights of Hiawatha FN.</p> <p>OPG’s EIS review noted that the works’ effects on breeding amphibian habitats were not assessed in the EA report and that further assessment is required to understand these impacts.</p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions requests CNSC and OPG provide additional information and details demonstrating how they will consider impacts to Hiawatha FN</p>





	<p>The original EA stated that <i>“Amphibian breeding occurs on the DN site at all four of the constructed ponds (Coot’s, Treefrog, Dragonfly and Polliwog ponds). Key summer habitat for the species breeds at Coot’s Pond (Green Frog, American Toad, Northern Leopard Frog and Midland Painted Turtle) may be disrupted moderately for one or two seasons. [...] Given proposed changes in amphibian breeding ponds and the relatively low diversity of amphibians (and reptiles), it is unlikely that the Project, including road mortality, will have a measurable ecological effect on key summer habitats for amphibians and reptiles. [...] Loss of amphibian breeding habitat is considered a likely effect of the Project.”</i></p> <p>Given the lack of clarity regarding the true impact of the soil spoils piles due to an increase in the anticipated volume, it is not clear to 4 Directions how much or which environments are going to be impacted or retained, or what the quality of whatever is retained will be.</p> <p>4 Directions agrees that further studies need to be conducted to understand the potential impact on breeding Amphibian habitats.</p>	<p>Rights, including cultural keystone species.</p> <p>4 Directions staff recommends CNSC and OPG work collaboratively with Hiawatha FN to develop species-specific mitigation measures for impacted amphibians.</p> <p>4 Directions requests that CNSC and OPG consult with Hiawatha FN regarding any impacts of the project on amphibians.</p> <p>4 Directions requests that CNSC and OPG provide clarity on OPG’s plan to ‘retain the vegetation’, including how the higher anticipated volume of soil spoils may impact opportunities to retain amphibian habitats.</p>
<p>2.2.2.6.5 Mammal Communities and Species</p>	<p>Within this section CNSC states, <i>“The reduced physical footprint of the BWRX-300 provides the opportunity to retain mammalian habitat within the construction area assumed to be completely removed by the EA.</i></p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous</p>





	<p><i>Additionally, OPG’s air quality and noise modelling [32] assessed whether there would be any disturbance or other effect on the mammalian population and their habitat and found that any effects would be minor. CNSC staff have reviewed OPG’s noise and dust modelling studies and concur with OPG’s conclusion.”</i></p> <p>4 Directions staff note that any impact to mammalian population and their habitat, especially as it relates to culturally significant species, represents an impact to the Rights of Hiawatha FN, regardless of mitigation measures.</p> <p>Given the lack of clarity regarding the true impact of the soil spoils piles due to an increase in the anticipated volume, it is not clear to 4 Directions how much or which environments are going to be impacted or retained, or what the quality of whatever is retained will be.</p> <p>At this juncture, not enough information has been made available for 4 Directions to make recommendations to Hiawatha FN. 4 Directions notes that Hiawatha FN has requested additional information, including copies of the supporting technical documents, which OPG has yet to provide. This information is foundational for identifying, understanding, and addressed potential impacts to Rights.</p>	<p>Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions requests CNSC and OPG provide additional information and details demonstrating how they will consider impacts to Hiawatha FN Rights, including cultural keystone species.</p> <p>4 Directions staff recommends CNSC and OPG work collaboratively with Hiawatha FN to develop species-specific mitigation measures for any impacted mammalian species.</p> <p>4 Directions requests that CNSC and OPG consult with Hiawatha FN regarding any impacts of the project on mammalian species.</p> <p>4 Directions requests that CNSC and OPG provide clarity on OPG’s plan to ‘retain habitat’, including how the higher anticipated volume of soil spoils may impact opportunities to retain amphibian habitats.</p>
<p>2.2.2.6.5 Mammal Communities and Species</p>	<p>Within the subsection <i>Bats</i>, CNSC states <i>“Potential impacts or disturbances on the bat population from interaction pathways related to dust and noise, changes in hydrogeology, and on-site illumination (e.g., security lighting) have</i></p>	<p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous</p>





	<p><i>been assessed by OPG, and effects were concluded as likely to be minor."</i></p> <p>4 Directions staff note that any impact to bat populations and their habitats, especially as it relates to culturally significant species, represents an impact to the Rights of Hiawatha FN, regardless of mitigation measures. Hiawatha FN should be consulted on any such impacts.</p> <p>4 Directions staff raises concerns about potential impacts to bats and bat habitats and would like to put emphasis on the noise related impacts, because mitigation measures identified to limit the potential effects on bats and bat habitats include avoiding lighting on key habitat features, implementing dark buffer zones and limits on illumination surrounding habitats, implementing lighting specifications that minimise impact on bats (e.g., no ultraviolet and reduced blue-light components), but do not include avoiding noise. In table 8, it is stated that potential effect related to noise are earthworks and grading activities during site preparation.</p>	<p>Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p> <p>4 Directions requests CNSC and OPG provide additional information and details demonstrating how they will consider impacts to Hiawatha FN Rights, including cultural keystone species.</p> <p>4 Directions requests that CNSC and OPG consult with Hiawatha FN regarding any impacts of the project on bat species.</p> <p>4 Directions staff requests OPG to demonstrate that earthworks and grading activities during daylight hours would not impact bat activities, which has not been demonstrated. And that 62,4 dBA does not impact bats.</p> <p>4 Directions recommends OPG to put in place mitigation measures to avoid potential impacts of noise on bats and bat habitats, and that these mitigation measures are developed collaboratively with Hiawatha FN.</p>
<p>2.2.2.6.6 Landscape Connectivity</p>	<p>Within this section CNSC noted that <i>"There are no regional connective pathways with the Darlington Nuclear site, and the local shoreline corridor is not continuous as it is interrupted due to the presence of the DNGS and St Mary's Cement. The EA concluded that there will be some disruption to the east-west wildlife corridor during the Site Preparation and Construction phases, although movement of wildlife during</i></p>	<p>4 Directions staff recommends that CNSC ensure that Hiawatha FN receives additional information regarding OPG's biodiversity monitoring and how it relates to the DNNP project, and ongoing assessments of potential impacts to the Inherent, Aboriginal and Treaty Rights of Hiawatha FN.</p>





	<p><i>this period is expected to be minimal. However, the interruption of wildlife travel along the east-west corridor across the Darlington Nuclear site was considered an adverse effect of the DNNP, and the EA identified incorporating, to the extent practicable, design measures to maintain access for wildlife travel on the east-west wildlife corridor during construction activities, and to enhance the function of the corridor for the long term as a mitigation measure. OPG has conducted annual biodiversity monitoring on the Darlington Nuclear site [31], including monitoring of wildlife traffic along the east-west corridor, and has noted the presence of wildlife despite roads and other major disturbances on the site. The mitigation measures identified in the EA would continue to address adverse effects on landscape connectivity and would apply to the deployment of the BWRX-300 reactors.”</i></p> <p>4 Directions staff notes that Hiawatha FN has not been provided enough information regarding the biodiversity monitoring and how it relates to the DNNP. Interactions with OPG are primarily focused on the DNNP project and downstream processes which do not afford opportunities to discuss ongoing operational activities which are relevant to Hiawatha FN.</p>	
<p>2.2.2.9.2 Mental Well-Being</p>	<p>Within the subsection <i>Feelings of Personal Health and Safety</i>, CNSC describes public attitudes regarding the Darlington Nuclear Site.</p>	<p>4 Directions staff requests that CNSC provides additional clarity regarding how First Nation attitudes, values and determinates of wellbeing were considered as part of this assessment.</p>





	<p>Upon reviewing this section, it is not clear how CNSC and OPG considered First Nation attitudes. It is not clear if 'well-being' were inclusive of First Nation values and determinates of well-being. Has OPG and CNSC considered that the DNNP may have potential impacts on the well-being of HFN by increasing avoidance behaviours and fear towards the area?</p>	<p>4 Directions staff recommends CNSC and OPG work collaboratively with Hiawatha FN to ensure that the definition of "well-being" is inclusive of Hiawatha FN's attitudes, values and understanding of well-being.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>
<p>2.2.2.9.3 Social Well-Being</p>	<p>Within this section, CNSC discusses positive influences of the DNNP on employment and income level and negative influence on community recreation due to the loss of soccer fields and a portion of the existing Waterfront Trail. CNSC discusses a negligible influence on the level of community cohesiveness.</p> <p>Upon reviewing this section, it was not clear how CNSC's evaluation was inclusive of First Nation social well-being including impacts to accessing cultural and spiritual landscapes, or cultural activities such as fishing, harvesting, and hunting.</p>	<p>4 Directions staff requests that CNSC provides additional clarity regarding how First Nation determinants of social-well being were considered as part of this assessment.</p> <p>4 Directions staff recommends CNSC and OPG work collaboratively with Hiawatha FN to ensure that the definition of "Social well-being" is inclusive of Hiawatha FN's values and understanding.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>





<p>2.2.2.10 Health of Non-Human Biota</p>	<p>Within this section, CNSC note that the highest does to the identified critical receptor has increased from 4.7E-03 mGy/day (as assessed in the EA) to 6.16E-05 mGy/day with the BWRX-300. CNSC states <i>“CNSC staff have reviewed the EA, OPG’s EIS Review, as well as its supporting documentation, and conclude that no new project-environment interactions in the health of non-human biota are expected. CNSC staff also conclude that changes to supporting assessments related to the health of non-human biota have been adequately assessed, documented, and therefore the conclusions of the EA remain valid.”</i></p> <p>4 Directions staff note that after reviewing this section there remain potential gaps in the analysis including:</p> <ul style="list-style-type: none"> • How CNSC factored the larger estimated dose into its findings. • How medicines and smaller fish that are harvested by local First Nations might be impacted. <p>Feedback from Hiawatha FN staff includes ensuring that the wellbeing of all our relations are considered.</p>	<p>4 Directions staff requests that CNSC provide additional details to Hiawatha FN regarding how the anticipated larger dose was factored into CNSC’s findings.</p> <p>4 Directions staff recommends CNSC and OPG work collaboratively with Hiawatha FN to identify impacts to medicines and smaller fish that may be harvested by local members of the community.</p> <p>4 Directions staff recommends CNSC and OPG work with Hiawatha FN to identify, understand, and address potential and real impacts to Michi Saagiig Rights through (but not limited to) a Gap Analysis, Indigenous Knowledge Study, Cumulative Effects Study, and Rights Impact Assessment.</p>
<p>3 INDIGENOUS AND PUBLIC ENGAGEMENT</p>	<p>4 Directions staff raise concern with the practice of conflating engagement and consultation with First Nation Rights-holders with public engagement. Such practices lack distinguishment between First Nation Rights-holders and the public, as well as between Indigenous engagement and consultation activities, public engagement, and how engagement and consultation activities vary between each group, respectfully. This approach risks creating a false</p>	<p>4 Directions staff recommend that CNSC ensure that staff are educated on the distinctions between First Nations Rights-holder and non-Rights-holders, as well as between Indigenous engagement and consultation activities and public engagement.</p> <p>4 Directions staff recommends CNSC ensure that consultation and</p>





	<p>equivalency between non-Rights and Rights-holding communities.</p> <p>4 Directions staff note the lack of distinction between First Nation Rights-holder and non-Rights holders is problematic as it demonstrates a lack of understanding and contributes to the devaluation of the Rights of Indigenous Peoples as well as the diminishment of the role, responsibilities, and obligations of the Crown to First Nation Rights-holders.</p> <p>Further, this homogenization creates a false equivalency between members of the public and First Nation Rights-holders. This also contributes to the devaluation of the Rights of Indigenous Peoples as well as the diminishment of the role, responsibilities, and obligations of the Crown to First Nation Rights-holders</p>	<p>engagement with First Nations and Indigenous communities it its own section and ensure that it expounds on the obligations that CNSC must meaningfully consult and engage with First Nation Rights-holders, and its commitment and intent to meaningfully engage with Indigenous Interest-holders.</p>
<p>3.1 Indigenous Consultation and Engagement</p>	<p>Within this section, CNSC states <i>“The common-law duty to consult with Indigenous Nations and communities applies when the Crown contemplates actions that may adversely affect potential or established Indigenous and/or treaty Rights. The CNSC, as an agent of the Crown, ensures that all licence decisions under the NSCA and decisions under other applicable legislation, uphold the honour of the Crown and consider Indigenous peoples’ potential or established Indigenous and/or treaty Rights, pursuant to section 35 of the Constitution Act, 1982.”</i></p> <p>4 Directions staff appreciates the addition of an acknowledgement of the</p>	<p>4 Directions staff recommends that CNSC expand upon its description of its roles and responsibilities to include an acknowledgment of the principles of Honour of the Crown and Accommodation.</p>





	<p>CNSC's roles and responsibilities towards First Nation Rights-holders as the Crown.</p> <p>4 Directions staff notes that this explanation could be further expanded upon to include a demonstrated understanding of the principle of the Honour of the Crown, as well as ensure that the Duty to Consult includes Accommodation.</p> <p>While it is a positive step to include a description of CNSC's roles and responsibilities, 4 Directions staff notes that CNSC has not provided a description of the actions it has undertaken to fulfil any duties.</p>	
<p>3.1 Indigenous Consultation and Engagement</p>	<p>Within this section, CNSC states "<i>CNSC staff remain committed to building long-term relationships with Indigenous Nations and communities who have interest in CNSC-regulated facilities within their traditional and/or treaty territories. The CNSC's Indigenous engagement practices include sharing information, discussing topics of interest, seeking feedback and input on CNSC processes, and providing opportunities to participate in environmental monitoring programs. The CNSC also provides funding support, through its Participant Funding Program, for Indigenous peoples to meaningfully participate in Commission proceedings and ongoing regulatory activities.</i>"</p> <p>4 Directions raises concerns with these statements. CNSC utilizes problematic terminology and literary styles which, purposefully or not, diminish and</p>	<p>4 Directions staff recommends CNSC include language that reflects not only a mere interest by First Nations and Indigenous communities in CNSC regulated facilities, but rather expounds on the obligations that CNSC, and by extension each facility, must meaningfully consult and engage with First Nation Rights-holders, and its commitment and intent to meaningfully engage with Indigenous Interest-holders.</p> <p>4 Directions staff recommend that CNSC ensure that lands, waters, and treaties are appropriately acknowledged so as to ensure that treaty lands and traditional territories are communicated and expressed with the relevant context.</p> <p>4 Directions staff recommend that CNSC be clear about its obligations</p>





	<p>obscure the distinct Rights of Indigenous Peoples and the responsibilities of the Crown, as well as historicize the presence of First Nations. The information provided in the Report also demonstrates a lack of understanding regarding Indigenous Rights, and CNSC’s obligations, which could be viewed as disrespectful.</p> <p>Examples include:</p> <ul style="list-style-type: none"> • A lack of demonstrated understanding regarding the distinctions between: <ul style="list-style-type: none"> ○ Territories or lands and treaties. ○ Rights vs. interests ○ First Nation Rights-holders and Indigenous Interest-holders. • Problematic terms, misspellings and literary devices utilized, such as: <ul style="list-style-type: none"> ○ “and/or”. <p>4 Directions staff note that a limitation by CNSC of First Nations having only an “interest” in CNSC or the DNNP is problematic as it demonstrates a lack of understanding and contributes to the devaluation of the Rights of Indigenous Peoples as well as the diminishment of the role, responsibilities, and obligations of the Crown to First Nation Rights-holders.</p> <p>4 Directions notes that a description of providing participant funding to First Nations and Indigenous communities is</p>	<p>and responsibilities as the Crown to provided funding to First Nation Rights-holder to ensure a balanced approach to consultation in keeping with the Duty to Consult and Honour of the Crown.</p>
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	<p>provided here without the relevant context.</p> <p>As determined by caselaw, appropriate funding is to be provided consistent with the Honour of the Crown, to ensure a fair and balanced consultation process. Thus, while CNSC chooses to utilize the PFP as a mechanism of providing funding, it is as a result of CNSC's obligations to support a balanced approach to supporting participation of First Nation Rightsholders' in consultation and engagement processes rather than a voluntary gesture. Describing it without relevant context may perpetuate negative stereotype of First Nations to being incapable or as receiving 'handouts.</p>	
<p>3.1.1 Background on Indigenous Consultation during the 2009 Environmental Assessment</p>	<p>Within this section CNSC staff acknowledge that "consultation and engagement requirements and expectations have evolved since the EA was conducted, including the Government of Canada's commitment to reconciliation. In 2018 the Williams Treaties Settlement Agreement was signed, which recognised the pre-existing Treaty harvesting Rights and included an apology from the Honourable Carolyn Bennet, then Minister of Crown-Indigenous Relations, on behalf of the Government of Canada for the negative impacts of the 1923 Williams Treaties on the Williams Treaties First Nations. The CNSC has ensured that the consultation and engagement process, as described in this CMD for the applicability of the EA, as well as the larger licence to construct application, has taken into consideration the recent changes and the evolution of</p>	<p>4 Directions requests that CNSC provide clarity and demonstrate to Hiawatha FN how it has taken the legislative, regulatory, and best practices discussed within this section, as well as within General Comment 1.x into consideration</p>





	<p>best practices. The CNSC remains committed to continuous improvement of its consultation and engagement processes.”</p> <p>4 Directions staff appreciates this acknowledgement and would like to recognize that this is very positive step forward for CNSC. However, upon reviewing this Report, it was not made evident how CNSC had ensured that the consultation and engagement process had taken into consideration the recent changes that are cited, such as the Williams Treaties Settlement of 2018, or best practices, such as the <i>United Nations Declarations of the Rights of Indigenous Peoples Act (2021)</i>.</p>	
<p>3.1.2 Consultation and Engagement Activities in Relation to the Applicability of the BWRX-300 Reactor to the DNNP Environmental Assessment</p>	<p>4 Directions notes that within this section, despite its title, no consultation activities are described.</p> <p><i>Within Table 12: Key Correspondence with Indigenous Nations and communities</i> some of the Williams Treaties First Nations are spelt out and others are represented by their acronym.</p> <p><i>Within Table 13: Key meetings, workshops, and webinars with Indigenous Nations and communities,</i> CNSC references that PFPs were awarded to various First Nations.</p> <p>4 Directions staff finds this concerning for several reasons. Stating that First Nations and Indigenous communities are ‘awarded’ funding is an example of harmful language which devalues the Rights of Indigenous Peoples and diminishes the role, obligations, and</p>	<p>For the purposes of a formal report, 4 Directions recommends CNSC ensure that the full names of First Nations are utilized to demonstrate appropriate respect.</p> <p>4 Directions staff recommend that CNSC be clear about its obligations and responsibilities as the Crown to provided funding to First Nation Rights-holder to ensure a balanced approach to consultation in keeping with the Duty to Consult and Honour of the Crown.</p> <p>4 Directions staff recommend that CNSC ensure that public and stakeholder engagement are not conflated with Indigenous consultation and engagement activities.</p>





	<p>responsibility of the CNSC to meaningfully consult with First Nation Rights-holders.</p> <p>As determined by caselaw, appropriate funding is to be provided consistent with the Honour of the Crown, to ensure a fair and balanced consultation process. Thus, while CNSC chooses to utilize the PFP as a mechanism of providing funding, it is as a result of CNSC's obligations to support a balanced approach to supporting participation of First Nation Rightsholders' in consultation and engagement processes rather than an 'award' which connotes a voluntary gesture. Describing it as a 'award' may perpetuate negative stereotype of First Nations to being incapable or as receiving 'handouts.</p> <p>The distinct Rights of Indigenous Peoples and the obligations and responsibilities of the CNSC as the Crown are further obscured by the inclusion of the public and other stakeholders within this Table.</p> <p>4 Directions staff notes that this homogenization is problematic as it demonstrates a lack of understanding of the Rights of Indigenous Peoples and creates a false equivalency between members of the public and First Nation Rights-holders. This contributes to the devaluation of the Rights of Indigenous Peoples as well as the diminishment of the role, responsibilities, and obligations of the Crown to First Nation Rightsholders.</p>	
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<p>3.1.4 CNSC Staff Response to Issues, Items of Concern, and Summary of Comments Received from Indigenous Nations and communities Related to the Applicability of the BWRX-300 Reactor Technology to the DNNP PPE and EA</p>	<p>Within this section, CNSC staff mention that their position on some of the key concerns raised from Indigenous communities are outlined and discussed in a few sections. For instance, transportation and storage of fuel, which is a concern to Hiawatha FN, is said to be discussed in Subsection 2.1.2.4 – Solid Radioactive Waste Volumetric Activity. However, the section does not respond to the main issues that Hiawatha FN has with regards to waste, which are about waste production, waste storage, and waste transport.</p> <p>In relation to these concerns, 4 Directions would like to understand:</p> <ul style="list-style-type: none"> • How much waste will be produced by one and 4 BWRX-300 reactors? • How much waste does one and 4 BWRX-300 reactors represent when added to the overall Darlington Nuclear Generating Station production of waste? • What does the construction of up to 4 BWRX-300 reactors mean for waste storage, especially with the construction of two additional Used Fuel Dry Storage Building (UFDSBs). • In other words, what does it change for OPG in terms of waste storage and waste transport? • Can we expect an increase in transport of waste material due to the construction of up to 4 BWRX-300 reactors and by how much? 	<p>4 Directions staff request that CNSC provides clarity and additional information to Hiawatha FN regarding the transportation and storage of fuel.</p>
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3.0 Closing Remarks

4 Directions wishes to reiterate its concern over the lack of consultation which is exemplified by the lack





mutual understanding when it comes to identifying, assessing, understanding and addressing potential and real impacts to Hiawatha FN's Rights. We strongly encourage Hiawatha FN to work with CNSC and OPG to establish a collaborative way to build a mutual understanding with the ultimate goal of protecting and preserving Michi Saagig Rights, values, culture and spirituality for the next seven generations.

We trust that this information aids in your engagement process and the next steps forward. If you have any questions, please do not hesitate to contact us.

Miigwetch,

Jaimi O'Hara

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