

Glendale Solar Project Modifications Document

Township of South Glengarry, Ontario

Submitted to:

Northland Power 30 St. Clair Avenue West, 12th Floor Toronto, Ontario M4V 3A1

Submitted by:

GEI Consultants Ltd. 75 Tiverton Court, Unit 100 Markham, Ontario L3R 4M8

December 5, 2023 Project 2302265

Issues and Revisions Registry

Identification	Date	Description of Issued and/or Revision
Submission to MNRF	July 28, 2023	
First Submission to MECP	September 18, 2023	Following consultation with MNRF Added MNRF consultation to modifications document
Final for Public Review	December 5, 2023	Issued for public review



Statement of Conditions

This Report / Study (the "Work") has been prepared at the request of, and for the exclusive use of the Owner / Client and its affiliates (the "Intended User"). No one other than the Intended User has the right to use and rely on the Work without first obtaining the written authorization of GEI Consultants Ltd. and its Owner. GEI Consultants Ltd. expressly excludes liability to any party except the Intended User for any use of, and/or reliance upon, the work.

Neither possession of the Work, nor a copy of it, carries the right of publication. All copyright in the Work is reserved to GEI Consultants Ltd. The Work shall not be disclosed, produced or reproduced, quoted from, or referred to, in whole or in part, or published in any manner, without the express written consent of GEI Consultants Ltd. or the Owner.



1.	Intro	duction	1
2.	Prop	osed Project Change	2
3.	Poter	ntial Negative Environmental Effects	3
4.	Sumi	mary of Revisions to REA Documents	6
	4.1	Design and Operations Report	6
	4.2	Natural Heritage Environmental Impact Study	11
	4.3	Project Description Report	16
	4.4	Waterbodies Environmental Impact Study	19
5.	MNRF Consultation		24
6.	. Conclusions		25

Appendices

A. Figures from Original REA Supporting DocumentsB. Confirmation Letters



1. Introduction

Northland Power Solar Power Glendale LP (Northland Power) has constructed and currently operates the Glendale Solar Project (the Project) in accordance with Renewable Energy Approval (REA) No. 1565-8ULQT7. The Project is located on an approximately 45 ha parcel of land in the Township of South Glengarry, within the United Counties of Stormont, Dundas and Glengarry, Ontario (refer to **Figure 1**, **Appendix A** for the Project Location). Classified as a 10 MW ground-mounted photovoltaic solar project, the Project received its REA on June 26, 2012, and began commercial operation in January 2014.

On behalf of Northland Power, GEI Consultants Ltd. (GEI) has prepared this Modifications Document to address a proposed change to the Glendale Solar Project; specifically, the limited and targeted use of herbicides to control noxious weeds on the Project Location. The proposed change necessitates an amendment to the REA as the original REA did not anticipate the need for control of noxious weeds through herbicide application. The limited and targeted use of herbicides on the site is required for health and safety purposes and, in part, prior to natural vegetation management through the use of sheep grazing. Application of herbicides is anticipated to commence in the spring of 2024 pending receipt of the REA Amendment.

The original REA application supporting documents for the Glendale Solar Project were reviewed to assess potential changes to the previously identified environmental effects or mitigation measures resulting from the proposed amendment. Minimal potential environmental effects and no new environmental effects are expected to occur beyond those that were previously identified, documented and consulted on through the REA process given that the herbicide will be applied by a licensed operator and standard mitigation measures for the use of herbicides will be implemented. Furthermore, the proposed change is not expected to require other provincial or federal permitting or approvals that may apply to the Project.

This report provides details on the proposed change to the Project and identifies the modifications that are required to each of the REA supporting documents submitted with the original application.



The purpose of this amendment is to permit the limited and targeted use of herbicides to control noxious weeds, such as wild parsnip (*Pastinaca sativa*) which is an invasive species harmful to humans and animals and is abundant throughout the Project site with an estimated coverage of approximately 50%. The presence of these plants puts the facility's workers health and safety at risk as physical contact with these plants can result in painful burn-like rashes on the skin. The wild parsnip originally migrated onto the Project site from the adjacent municipal roadway and the Township applied/applies herbicide to eradicate this noxious weed. Northland Power has attempted to use traditional mechanical grass cutting methods to control the spread of this weed; however, this has proven ineffective, and the weeds have spread on the Glendale Project site. Allowing the use of herbicides within the Project boundary will enable the safe and effective control of the growth of hazardous plants at the Project site.

Additionally, there are some areas along the perimeter fence where nuisance vegetation is causing damage to the fence, impacting the security of the site. Mechanical removal of this vegetation is not practicable, so it is necessary to apply herbicide to restore these areas and adequately secure the site.

Northland Power is proposing to use herbicides in a limited and targeted manner throughout the Project site to control weed growth. Any herbicide use and application will be done by licensed contractors, who will follow prescribed manufacturer's instructions and adhere to all regulations and apply best management practices with respect to herbicide application.



3. Potential Negative Environmental Effects

The REA reports for the Glendale Solar Project were reviewed to assess potential changes to the previously identified environmental effects or mitigation measures resulting from the proposed amendment. Minimal environmental effects and no new environmental effects are expected to occur beyond those that were previously identified, documented and consulted on through the REA process given that the herbicide will be applied by a licensed operator following the methods prescribed by the manufacturer along with standard mitigation measures. Furthermore, the proposed change is not expected to require other provincial or federal permitting or approvals that may apply to the Project.

The Natural Heritage Environmental Impact Study (Hatch, 2011a), identified several significant natural heritage features located on or within 120 meters of the Project Location (refer to **Appendix A** for the Project Location Figure) including:

- woodland located on and within 120 m of the Project Location;
- wetlands located within 120 m of the Project Location (assumed provincially significant);
- wildlife habitat located on and within 120 m of the Project Location, specifically:
 - all lands on and within 120 m of the Projects site are considered habitat for Milksnake (Lampropeltis Triangulum);
 - o woodlands supporting amphibian breeding habitat;
 - o forest providing a high diversity of habitats; and
 - highly diverse areas.

Note that the Milksnake was delisted from being a species at risk in Ontario in 2016 and therefore, its habitat is no longer considered to be a significant natural heritage feature.

Significant natural heritage features within the Project Location (i.e., woodlands and wildlife habitat) were removed to facilitate construction of the facility (in accordance with the REA). Significant natural heritage features originally identified within 120 m of the Project Location were not altered for construction or operation of the facility and are therefore expected to continue to be present.

The confirmation letter from the Ministry of Natural Resources and Forestry (MNRF) regarding the Natural Heritage Assessment for this Project is provided in **Appendix B**.

The Waterbodies Environmental Impact Study (Hatch, 2011b) noted the Project Location is between 30 and 120 m away from the average annual high-water mark of the tributary of the Raisin River and Watercourse A. These watercourses and their associated 30 m setback from the high-water mark were not altered for construction or operation of the facility. Refer to **Appendix A** for figures depicting the natural heritage and waterbody features within and adjacent to the Project Location.



According to the Natural Heritage Assessment for Renewable Energy Projects (MNRF, 2022), potential effects from the application of herbicides can include:

- Loss of sensitive vegetation, loss or fragmentation of wildlife habitat and loss of biodiversity;
- Wildlife mortality;
- Introduction of non-native species of plants and wildlife increasing predation and parasitism on native flora and fauna; and
- Pollution of groundwater and surface water by introduction of herbicides into the hydrologic system.

To mitigate for these potential effects to vegetation communities, wildlife habitat and wildlife communities and water quality, the following mitigation measures will be implemented, as per the Natural Heritage Assessment for Renewable Energy Projects (MNRF, 2022):

- apply herbicides only when wind speeds are low, and no significant precipitation is expected;
- apply only herbicides approved for use adjacent to water bodies within riparian buffer areas (i.e., within 30 m of a watercourse or drainage channel) if herbicide application is proposed in such areas;
- allow only hand spraying within areas adjacent to watercourses (if required) or drainage channels; and
- use a dye solution in herbicide mix to visually detect uniform coverage of spray area.

In addition to the mitigation measures listed above, the following mitigation measures will be implemented:

- Prevent and clean spills using the methods outlined in the Waterbodies Environmental Impact Study (Hatch, 2011b); specifically:
 - The licensed operator will be directed to prepare herbicides (if on-site preparation is required) at least 30m away from waterbodies, drainage ditches, channels or other wet areas;
 - o An emergency spill kit will be kept on site in case of accidental spills; and
 - Provide adequate spill clean-up materials/equipment (e.g., absorbents) on site. The contractor must have a spill clean-up procedure/emergency contingency plan in place prior to commencement of work at the site. All site staff should be trained in implementation of the procedure.

With the implementation of the above-noted mitigation measures, no new environmental effects on significant natural heritage features or waterbodies are anticipated as a result of herbicide application at the facility.

Lands within the Project Location were subject to Stage 1 and 2 archaeological assessments as part of the original REA submission (Hatch, 2011c). The confirmation letter from the Ministry of Tourism, Culture and Sport is included as **Appendix B**. This proposed amendment to facilitate the use of herbicides does not involve ground disturbance, nor does it increase the size of the Project Location. As such, no new impacts on archaeological resources will occur as a result of this amendment. Furthermore, following the completion of the Check Sheet



for Environmental Assessments: Screening for Impacts to Built Heritage and Cultural Heritage Landscapes, it was determined the Project would not result in impacts to Built Heritage and Cultural Heritage Landscape (Hatch, 2011d). Given that this proposed change will not result in impacts on archaeological or built heritage resources, reconfirmation of written comments regarding impacts to cultural heritage resources is not required.



4. Summary of Revisions to REA Documents

This section identifies the amendments required to each of the supporting documents submitted with the original REA application to incorporate and address the proposed Project change.

Minor revisions are required to the text of the following supporting documents:

- Design and Operations Report (Hatch 2011e);
- Natural Heritage Environmental Impact Study (Hatch 2011a);
- Project Description Report (Hatch 2011f); and
- Waterbodies Environmental Impact Study (Hatch 2011b).

No text revisions are necessary to the remainder of the REA supporting documents including the following:

- Water Body Site Investigation Report;
- Water Body Records Review Report;
- Stage 1-2 Archaeological Assessment Report;
- Stage 1-2 Archaeological Assessment Report Additional Lands;
- Noise Assessment Study Report;
- Natural Heritage Records Review Report;
- Natural Heritage Site Investigation Report;
- Natural Heritage Evaluation of Significance Report;
- Decommissioning Plan Report;
- Consultation Report; and
- Construction Plan Report.

The following sections identify the text revisions required to each REA supporting document where changes are necessary to address the proposed Project Change discussed in section 2. The revisions are presented in a tabular format with both the original text and amended or new text provided in a separate column. Where new text has been added or replaced in existing text, it is shown in red font in the tables in the following sections. This amended text supersedes the original supporting document text.

4.1 Design and Operations Report

Table 1 identifies the required revisions to the Design and Operations Report (Hatch, 2011e)

 to address the proposed Project Change identified in section 2.



Page	Section	Original Text	Amended Text
8	4.2 Maintenance	The vegetation coverage, drainage systems and trees will be monitored and maintained regularly. Suitable ground cover will be established under the modules and some form of vegetation abatement may be required several times throughout the summer months. No hazardous chemicals would be used for this vegetation control.	The vegetation coverage, drainage systems and trees will be monitored and maintained regularly. Suitable ground cover will be established under the modules and some form of vegetation abatement (e.g., mowing or other mechanical means) may be required several times throughout the summer months to prevent shading of the panels. No hazardous chemicals would be used for this vegetation control.
			In addition to mechanical vegetation control, limited and targeted use of herbicide is proposed where necessary. Application will be conducted by a licensed contractor, following prescribed manufacturer's instructions, and adhering to all regulations.
11	Table 5.1	<u>n/a</u>	New Row Added to Table:
	Summary of Potential Negative		Environmental Component
	Environmental Effects and Proposed		Vegetation Communities/Wildlife Habitat
	Mitigation Occurring during		Sources of Negative Effect
	Operations Phase		Limited and targeted herbicide use
			Potential Negative Effect
			Unintended impacts on off-site vegetation and wildlife habitat due to herbicide movement offsite (e.g., via air dispersal or surface water runoff pathways)
			Mitigation Measures
			Herbicides will be used in a limited and targeted manner; their application will follow all

Table 1. Design and Operations Report Revisions



Page	Section	Original Text	Amended Text
			protocols prescribed by the chemical supplier as well as other best management practices to ensure ongoing safety for the public and the environment.
			Residual Negative Effect
			None – With implementation of mitigation, no negative effects on vegetation and wildlife outside the Project Location are expected to occur.
			New Row Added to Table:
			Environmental Component
			Wildlife Communities
			Sources of Negative Effect
			Limited and targeted herbicide use
			Potential Negative Effect
			Unintended impacts to food sources, species lifecycle, increased capture through predation due to herbicide movement offsite.
			Mitigation Measures
			Herbicides will be used in a limited and targeted manner; their application will follow all protocols prescribed by the chemical supplier as well as other best management practices to ensure ongoing safety for the public and the environment.



	Residual Negative Effect
	None – With implementation of mitigation, no negative effects on wildlife outside the Project Location are expected to occur.
	New Row Added to Table:
	Environmental Component
	Groundwater
	Sources of Negative Effect
	Limited and targeted herbicide use
	Potential Negative Effect
	Unintended adverse impacts on groundwater quality due to herbicide infiltration into groundwater. This could potentially impact off-site vegetation and wildlife in areas receiving groundwater discharge.
	Mitigation Measures
	Herbicides will be used in a limited and targeted manner; their application will follow all protocols prescribed by the chemical supplier and other best management practices to ensure minimal amounts of chemicals are applied to plants to receive desired outcome while reducing the risk of residuals that could infiltrate into the ground water.
	Residual Negative Effect
	None – With implementation of mitigation, no negative effects on groundwater are expected to occur.



Page	Section	Original Text	Amended Text
			New Row Added to Table:
			Environmental Component
			Surface Water, Aquatic Habitat and Biota
			Sources of Negative Effect
			Run off of limited and targeted herbicide use
			Potential Negative Effect
			Adverse effects on water quality and aquatic habitat in receiving waterbodies due to herbicide movement offsite.
			Mitigation Measures
			Herbicides will be used in a limited and targeted manner; their application will follow all protocols prescribed by the chemical supplier to ensure ongoing safety for the public and the environment. Further dense vegetation within ditches is anticipated to catch any potential run off in the unlikely event that herbicides move outside the project area.
			Residual Negative Effect
			None – With implementation of mitigation, no negative effects on surface water, aquatic habitat and biota outside the Project Location are expected to occur.



Page	Section	Original Text	Amended Text
15	6.1.3 Spills	Spills are the unintended release/discharge of material to air, land or water. The most likely decommissioning spill scenarios include: the release of sediments to waterbodies, sewage from portable washrooms and hazardous materials (eg. compressed gases and petroleum hydrocarbons) from containers or vehicles.	Spills are the unintended release/discharge of material to air, land or water. The most likely decommissioning spill scenarios include: the release of sediments to waterbodies, sewage from portable washrooms, herbicides, and hazardous materials (eg. compressed gases and petroleum hydrocarbons) from containers or vehicles.
16	6.1.3 Spills	A spill kit will be available on-site during the decommissioning phase and will contain equipment necessary for spills response. This will include absorbent pads, absorbent boom, polyethylene bags, neoprene gloves, protective goggles, plastic bin or metal drum, and multi-purpose granular sorbents.	A spill kit will be available on-site during the decommissioning operations phase and will contain equipment necessary for spills response. This will include absorbent pads, absorbent boom, polyethylene bags, neoprene gloves, protective goggles, plastic bin or metal drum, and multi-purpose granular sorbents.

4.2 Natural Heritage Environmental Impact Study

Table 2 identifies the required revisions to the Natural Heritage Environmental Impact Study (Hatch 2011a) to address the proposed Project Change identified in Section 2.

Page	Section	Original Text	Amended Text
12	3.2 Operation	The expected commercial operation date (COD) is April 20, 2012. The facility will operate 365 d/yr when sufficient solar radiation exists to generate electricity. The facility will be remotely monitored with no regular on-site employees. Maintenance is anticipated to occur quarterly. Maintenance activities will involve checking the structures and interconnections and cleaning the photovoltaic panels, as necessary. All maintenance materials such as hydraulic fluids will be brought on site as required and no on-site storage will be made available. Rain and snowfall are	The expected commercial operation date (COD) is April 20, 2012. The facility will operate 365 d/yr when sufficient solar radiation exists to generate electricity. The facility will be remotely monitored with no regular on-site employees. Maintenance is anticipated to occur quarterly. Maintenance activities will involve checking the structures and interconnections and cleaning the photovoltaic panels, as necessary. Additional maintenance for vegetation management via mechanical means or limited and targeted herbicide use will occur as necessary. All maintenance

Table 2. Natural Heritage Environmental Impact Study Revisions



Page	Section	Original Text	Amended Text
		anticipated to be sufficient for the cleaning of the panels. Should extra water be required, it will be brought on site. The system does not produce waste of any type. All debris as a result of maintenance or cleaning will be removed from the site immediately by the contracted party. The Project will also be inspected whenever the power output is lower than anticipated as this would be indicative of a mechanical problem. The Project is expected to have a lifespan of 35 to 40 years.	materials such as hydraulic fluids and herbicides will be brought on site as required and no on-site storage will be made available. Rain and snowfall are anticipated to be sufficient for the cleaning of the panels. Should extra water be required, it will be brought on site. The system does not produce waste of any type. All debris as a result of maintenance or cleaning will be removed from the site immediately by the contracted party. The Project will also be inspected whenever the power output is lower than anticipated as this would be indicative of a mechanical problem. The Project is expected to have a lifespan of 35 to 40 years.
13	4.1 Vegetation Communities / Wildlife Habitat	 Vegetation communities/wildlife habitat can be impacted by a number of activities, including the following: Direct encroachment on the feature – The removal of vegetation from the significant natural feature would have an impact on the vegetation community as a whole and the wildlife habitat that is provided therein. Fugitive dust generation – Fugitive dust generation has the potential to impact vegetation communities within the significant natural features as heavy dust loads on the photosynthetic surfaces of plants can retard growth and ultimately result in loss of the individual. Changes in surface water runoff 	 Vegetation communities/wildlife habitat can be impacted by a number of activities, including the following: Direct encroachment on the feature – The removal of vegetation from the significant natural feature would have an impact on the vegetation community as a whole and the wildlife habitat that is provided therein. Fugitive dust generation – Fugitive dust generation has the potential to impact vegetation communities within the significant natural features as heavy dust loads on the photosynthetic surfaces of plants can retard growth and ultimately result in loss of the individual. Changes in surface water runoff
		altering the moisture regime of the feature – Alterations in surface water runoff may impact the moisture regime of the receiving significant natural feature. If the moisture regime of the receiving natural feature was altered significantly, the composition of this community may change as a result.	altering the moisture regime of the feature – Alterations in surface water runoff may impact the moisture regime of the receiving significant natural feature. If the moisture regime of the receiving natural feature was altered significantly, the composition of this community may change as a result.



Page	Section	Original Text	Amended Text
		The potential negative effects and proposed mitigation measures associated with these activities are discussed by Project phase in the following sections.	• Limited and targeted use of chemical herbicide sprays –If herbicides are transported off the Project Site and touch a non- targeted plant or run off into surface water impacts may be wider reaching than specific targeted species on the Project Site.
			The potential negative effects and proposed mitigation measures associated with these activities are discussed by Project phase in the following sections.
14	4.1.1.1.1 Woodland / Forest Providing a High Diversity of Habitats	The fenceline will be installed at the edge of the cleared area at 1 m from the dripline of the woodland. Periodic maintenance may be required along the fenceline to prevent woodland encroachment. This will consist of occasional (no more than once per year) tree removal to be conducted in the late fall to minimize impacts on wildlife populations.	The fenceline will be installed at the edge of the cleared area at 1 m from the dripline of the woodland. Periodic maintenance may be required along the fenceline to prevent woodland encroachment. This will consist of occasional (no more than once per year) tree removal to be conducted in the late fall to minimize impacts on wildlife populations. Limited and targeted use of herbicides will also be required to control vegetation along the fenceline to prevent damage to the fence and ensure site security.
17	4.1.2 Operations Phase	With the Project operating unmanned and regular maintenance only expected to occur periodically throughout the year, potential impacts on the significant natural feature are expected to be limited to changes in surface water runoff and presence of the Project within the significant wildlife habitat for Milksnake.	With the Project operating unmanned and regular maintenance only expected to occur periodically throughout the year, potential impacts on the significant natural feature are expected to be limited to changes in surface water runoff, limited and targeted use of herbicides on the Project Location and presence of the Project within the significant wildlife habitat for Milksnake.



Page	Section	Original Text	Amended Text
18	4.1.2.3	N/A	Chemical Herbicides
	New		Chemical herbicides can alter the chemical composition of surface water runoff and alter plant communities in both aquatic and terrestrial landscapes if used in an uncontrolled manner. Non-targeted application could lead to unwanted plant death and thereby unintended consequences to the habitat adjacent to the project site.
			Mitigation measures will be in place to ensure that chemicals are used in a limited and targeted manner to reduce risk of herbicides entering the water system and unintended terrestrial plant affects. These mitigation measures will include application by a licensed applicator, use of approved and tested herbicides, following manufacturer's direction for herbicide application, ensuring the weather condition is appropriate for spray application, use of a dyed herbicide to ensure application remains targeted and to allow for ease of accidental spill clean ups.
20	4.2.2 Operations Phase	As regular maintenance is anticipated to occur infrequently throughout a year, this would be consistent with existing disturbances on the Project location from agricultural operations.	As regular maintenance is anticipated to occur infrequently throughout a year, this would be consistent with existing disturbances on the Project location from agricultural operations.
		Mowing of vegetation beneath and around the solar panels, if required, may also result in incidental take. Mowing will be scheduled to occur outside of the breeding bird period. If these activities are required during the breeding period, the site will be searched for breeding birds prior to undertaking mowing activities. If nesting locations are identified, mowing will not be conducted within 25 m of the proposed location, until such time as the nest is successful or abandoned. Known occurrences	Mowing of vegetation beneath and around the solar panels, if required, may also result in incidental take. Mowing will be scheduled to occur outside of the breeding bird period. If these activities are required during the breeding period, the site will be searched for breeding birds prior to undertaking mowing activities. If nesting locations are identified, mowing will not be conducted within 25 m of the proposed location, until such time as the nest is successful or abandoned. Known occurrences



Page	Section	Original Text	Amended Text
		of incidental take will be reported and the species impacted will be determined. If the species is determined to be a species of conservation concern, work within the area will be ceased immediately, and the MNR/EC will be contacted to make them aware of the occurrence. Work in the area will remain ceased until a survey is conducted by a trained biologist to ensure that there are no further species of conservation concern present in the area. Milksnake are habitat generalists and may be impacted by incidental take. Selective tree removal may be required along the fenceline to ensure that new growth of trees does not impact Project infrastructure. Tree removal in these areas will be completed by hand and will be conducted in the late fall (late October/November) to ensure that there is no impact to amphibian populations. As deadfall enhances wildlife habitat, any felled trees will be left along the edge of the Project location to provide increased wildlife habitat structure. Beyond the selective tree removal described above, there will be no vegetation management beyond the defined boundaries of the Project location as shown in Figure 1.1. As a result of the low level of disturbance associated with the Project (infrequent nature of site investigation, minimal noise produced by the Project equipment), operations are not expected to impact wildlife communities within the significant wildlife habitat features within 120 m of the Project location.	of incidental take will be reported and the species impacted will be determined. If the species is determined to be a species of conservation concern, work within the area will be ceased immediately, and the MNR/EC will be contacted to make them aware of the occurrence. Work in the area will remain ceased until a survey is conducted by a trained biologist to ensure that there are no further species of conservation concern present in the area. Milksnake are habitat generalists and may be impacted by incidental take. Selective tree removal may be required along the fenceline to ensure that new growth of trees does not impact Project infrastructure. Tree removal in these areas will be completed by hand and will be conducted in the late fall (late October/November) to ensure that there is no impact to amphibian populations. Limited and targeted use of herbicides may also be required to support vegetation maintenance along the fenceline. As deadfall enhances wildlife habitat, any felled trees will be left along the edge of the Project location to provide increased wildlife habitat structure. Beyond the selective tree removal described above, there will be no vegetation management beyond the defined boundaries of the Project location as shown in Figure 1.1. Vegetation management within the defined boundaries will include limited and targeted chemical herbicide application when necessary to supplement mechanical vegetation management wildlife habitat.



Page	Section	Original Text	Amended Text
			As a result of the low level of disturbance associated with the Project (infrequent nature of site investigation, minimal noise produced by the Project equipment, no expected offsite effects due to herbicide use), operations are not expected to impact wildlife communities within the significant wildlife habitat features within 120 m of the Project location.

4.3 Project Description Report

Table 3 identifies the required revisions to the Project Description Report (Hatch 2011f) to address the proposed Project Change identified in section 2.

Page	Section	Original Text	Amended Text
6	2.5.8 Maintenance and Inspection	The Project will typically be scheduled for maintenance every 2 to 3 months. Typically, maintenance includes checking the structures, interconnections and cleaning the photovoltaic panels. It is anticipated that the panels will be washed twice a year using on-site water with no cleaning solutions. All the required maintenance materials (e.g., hydraulic fluids) will be brought to the site as required so no on-site storage of this material will be necessary. The Project will also be inspected whenever the power output is lower than anticipated as this would be indicative of a mechanical problem.	The Project will typically be scheduled for maintenance every 2 to 3 months. Typically, maintenance includes checking the structures, interconnections and cleaning the photovoltaic panels. It is anticipated that the panels will be washed twice a year using on-site water with no cleaning solutions. Further, maintenance will include vegetation management through limited and targeted use of herbicides. All the required maintenance materials (e.g., hydraulic fluids, herbicides) will be brought to the site as required so no on-site storage of this material will be necessary. The Project will also be inspected whenever the power output is lower than anticipated as this would be indicative of a mechanical problem.

 Table 3. Project Description Report Revisions



Page	Section	Original Text	Amended Text
8	Table 2.1	Environmental Component	Environmental Component
	Potential Negative	Vegetation Communities	Vegetation Communities
	Environmental Effects	Potential Environmental Effect	Potential Environmental Effect
		Vegetation clearing on agricultural land as well as within natural vegetation communities will be required.	Vegetation clearing on agricultural land as well as within natural vegetation communities will be required. Ongoing maintenance and management of vegetation through
		Proposed Mitigation	limited and targeted chemical herbicide application during the
		Work areas will be flagged to limit clearing, so it will not extend into	operations phase to ensure ongoing health and safety at the project site.
		unutilized areas.	Proposed Mitigation
		Revegetation as required, will occur after decommissioning.	Work areas will be flagged to limit clearing, so it will not extend into
		Residual Effect	unutilized areas.
		l t [Loss of some vegetation on site. At least a 30m buffer for both the tributaries for the Glen Falloch Drain and the Raisin River will be retained.
			Revegetation as required, will occur after decommissioning.
			Residual Effect
			Loss of some vegetation on site. At least a 30m buffer for both the tributaries for the Glen Falloch Drain and the Raisin River will be retained.



Page	Section	Original Text	Amended Text
9	Table 2.3	Environmental Component	Environmental Component
	Potential Negative Environmental	Terrestrial Wildlife / Wildlife Habitat (including species at risk)	Terrestrial Wildlife / Wildlife Habitat (including species at risk)
	Effects	Potential Environmental Effect	Potential Environmental Effect
		Potential loss of wildlife habitat and potential wildlife avoidance of the Project area during construction and operation may occur as a result of disturbance.	Potential loss of wildlife habitat and potential wildlife avoidance of the Project area during construction and operation may occur as a result of disturbance.
		Proposed Mitigation Work areas will be clearly marked and will not infringe further than necessary. Mitigation measures will	Potential for reduction of non- targeted plant species population from accidental overspray of herbicide application on the project site.
		include no clearing in bird breeding season, if required. Area under panels will be seeded to support	Proposed Mitigation
		Residual Effect Reduced wildlife habitat during the life of the Project can be expected; however, re-establishment will occur after decommissioning.	Work areas will be clearly marked and will not infringe further than necessary. Mitigation measures will include no clearing in bird breeding season, if required. Area under panels will be seeded to support local wildlife communities.
			Further, chemical herbicide application will be conducted by a licensed applicator using approved and tested herbicides, manufacturer's direction for safe herbicide application will be followed, appropriate weather conditions will be assessed prior to spray application, dyed herbicide will be used to ensure targeted use, and to allow for ease of clean up of potential spills.
			Residual Effect
			Reduced wildlife habitat and localized plant populations during the life of the Project can be expected; however, re- establishment will occur after decommissioning.



4.4 Waterbodies Environmental Impact Study

Table 4 identifies the required revisions to the Waterbodies Environmental Impact Study (Hatch 2011b) to address the proposed Project Change identified in section 2.

Page	Section	Original Text	Amended Text
11	3.2 Operation	The expected commercial operation date (COD) is April 20, 2012. The facility will operate 365 d/yr when sufficient solar radiation exists to generate electricity. The facility will be remotely monitored with no regular on-site employees. Maintenance is anticipated to occur quarterly. Maintenance activities will involve checking the structures, interconnections and cleaning the photovoltaic panels, as necessary. All maintenance materials such as hydraulic fluids, will be brought on site as required and there will be no on-site storage for such materials. Rain and snowfall are anticipated to be sufficient for the cleaning of the panels. Should extra water be required for cleaning purposes, it will be brought on site from an off- site source. The Project will also be inspected whenever the power output is lower than anticipated as this would be indicative of a mechanical problem. The Project is expected to have a lifespan of 35 to 40 years.	The expected commercial operation date (COD) is April 20, 2012. The facility will operate 365 d/yr when sufficient solar radiation exists to generate electricity. The facility will be remotely monitored with no regular on-site employees. Maintenance is anticipated to occur quarterly. Maintenance activities will involve checking the structures, interconnections, and cleaning the photovoltaic panels, and vegetation management (via mechanical means and limited and targeted herbicide use) as necessary. All maintenance materials such as hydraulic fluids, and chemical herbicides, will be brought on site as required and there will be no on- site storage for such materials. Rain and snowfall are anticipated to be sufficient for the cleaning of the panels. Should extra water be required for cleaning purposes, it will be brought on site from an off- site source. The Project will also be inspected whenever the power output is lower than anticipated as this would be indicative of a mechanical problem. The Project is expected to have a lifespan of 35 to 40 years.
16	4.1.2.3 Changes in Vegetation	As noted in Section 4.1.1.3, existing vegetation within the proposed Project footprint area consists of hay fields and wooded area. Trees in the wooded area may be removed and the ground surface will be vegetated with a low growing, ground cover of various non-invasive grasses and forbs. This same vegetation mix will be planted in disturbed areas following construction and will comprise the long-term vegetation	As noted in Section 4.1.1.3, existing vegetation within the proposed Project footprint area consists of hay fields and wooded area. Trees in the wooded area may be removed and the ground surface will be vegetated with a low growing, ground cover of various non-invasive grasses and forbs. This same vegetation mix will be planted in disturbed areas following construction and will comprise the long-term vegetation community on

Table 4. Waterbodies Environmental Impact Study Revisions



Page	Section	Original Text	Amended Text
		community on the site. Given that the long-term ground cover will be dense vegetation mix with similar stormwater management functions as the existing hay fields, so no significant changes in surface water runoff due to any change in vegetation community on the site are anticipated to occur.	the site. Given that the long-term ground cover will be dense vegetation mix with similar stormwater management functions as the existing hay fields, so no significant changes in surface water runoff due to any change in vegetation community on the site are anticipated to occur.
			The vegetation community that has developed through the Project's progress is such that there are health and safety concerns for employees managing the property and the PV system (e.g., due to noxious weed growth). As such, limited and targeted application of chemical herbicides is proposed to ensure ongoing health and safety at this location. There may be localized short-term changes in runoff within specific areas where vegetation has been removed by herbicides. However, due to the limited and targeted application of herbicides, no substantial changes in overall runoff from the facility are expected. Further, it is anticipated that herbicide application will encourage the return of the vegetation community back to that which was planned for this Project site at the outset and therefore, there is no anticipated long-term change to the surface water runoff regime.



Page	Section	Original Text	Amended Text
22	4.2.2 Operations Phase	Long-term site alterations associated with the operations phase that would have the potential to affect surface water quality in nearby watercourses include: • Erosion and sedimentation from the Project area • Maintenance activities such as panel cleaning • Accidental spills. The potential negative effects and mitigation measures associated	 Long-term site alterations associated with the operations phase that would have the potential to affect surface water quality in nearby watercourses include: Erosion and sedimentation from the Project area Maintenance activities such as panel cleaning or herbicide use Accidental spills. The potential negative effects and mitigation measures associated
		with these activities are discussed in the following sections.	with these activities are discussed in the following sections.
22	4.2.2.2	N/A	New Paragraph Added:
	Maintenance Activities		Limited and targeted application of chemical herbicides is proposed to manage vegetation on the project location. Herbicides can potentially alter the chemical composition of surface water runoff and alter plant communities in both aquatic and terrestrial landscapes if used in an uncontrolled manner. Non-targeted application could lead to unintended effects to surface water quality adjacent to the project site.
			to ensure that chemicals are used in a limited and targeted manner to reduce risk of herbicides entering the water system. These mitigation measures will include application by a licensed applicator, use of approved and tested herbicides, following manufacturer's direction for herbicide application, ensuring the weather condition is appropriate for spray application, use of a dyed herbicide to ensure application remains targeted and to allow for ease of accidental spill clean ups.



Page	Section	Original Text	Amended Text
22	4.2.2.3 Accidental Spills	Use of fuels, lubricants and other potentially hazardous materials during the operations phase will be limited to those materials brought on site during periodic maintenance activities. This would include fuel and other lubricants in maintenance vehicles that are used to maintain the solar facilities. All maintenance vehicles will be equipped with a spill kit and a spill contingency and response plan will be in place for the duration of the operational period. Given this mitigation, and the limited quantity of material on site and the limited frequency and duration that it will be on site, no adverse effects due to accidental spills are anticipated to occur.	Use of fuels, lubricants, herbicides, and other potentially hazardous materials during the operations phase will be limited to those materials brought on site during periodic maintenance activities. This would include fuel and other lubricants in maintenance vehicles that are used to maintain the solar facilities. All maintenance vehicles will be equipped with a spill kit and a spill contingency and response plan will be in place for the duration of the operational period. Given this mitigation, and the limited quantity of material on site and the limited frequency and duration that it will be on site, no adverse effects due to accidental spills are anticipated to occur.
		small volume of transformer oil, that could potentially be transferred to waterbodies in the event of a leak. In order to mitigate this potential, a containment structure will be installed around the transformer. Therefore, in the event of a leak, spilled fluid will be contained within the concrete pad surrounding the transformer. It would then be removed and disposed of in accordance with regulatory requirements. More details on the proposed containment system are provided in the Design and operations Report (Hatch Ltd., 2011c). No adverse effects on surface water are anticipated to occur due to presence of transformer oils on site.	small volume of transformer oil, that could potentially be transferred to waterbodies in the event of a leak. In order to mitigate this potential, a containment structure will be installed around the transformer. Therefore, in the event of a leak, spilled fluid will be contained within the concrete pad surrounding the transformer. It would then be removed and disposed of in accordance with regulatory requirements. More details on the proposed containment system are provided in the Design and operations Report (Hatch Ltd., 2011c). No adverse effects on surface water are anticipated to occur due to presence of transformer oils on site.



Page	Section	Original Text	Amended Text
24	4.3.2 Operations Phase	During the operations phase, the only potential effect on groundwater would be due to accidental spills associated with maintenance activities and the presence of transformer oil.	During the operations phase, potential effects on groundwater would be due to accidental spills associated with maintenance activities and the presence of transformer oil. The use of herbicides on the Project Site could also potentially impact on groundwater quality if herbicides were to infiltrate into the groundwater layer.
25	4.3.2.2 NEW	N/A	Chemical Herbicide Use Chemical herbicides can alter the
			chemical composition of groundwater if herbicides infiltrate into the groundwater layer. This could potentially result in unintended effects in off-site areas where groundwater discharges to the surface.
			Mitigation measures will be in place to ensure that herbicides are used in a limited and targeted manner to reduce risk of chemicals entering the groundwater system. These mitigation measures will include application by a licensed applicator, use of approved and tested herbicides, following
			manufacturer's direction for herbicide application, ensuring the weather condition is appropriate for spray application, use of a dyed herbicide to ensure application remains targeted and to allow for ease of accidental spill clean ups.
			With this mitigation in place, no negative effects on groundwater quality are expected to occur due to proposed herbicide use.



5. MNRF Consultation

During the project initiation discussion, MECP indicated that MNRF would need to review the proposed change and confirm their agreement with the Natural Heritage Assessment component of it.

To address this requirement, GEI met with two representatives from the MNRF on July 27, 2023, including Lisa Solomon (Acting Regional Ecologist) and Melinda Thompson (Regional Planning Ecologist). The purpose of the meeting was to discuss the proposed project change, obtain preliminary input on the proposed limited and targeted use of herbicides, determine what information MNRF would require and discuss MNRF's review process.

Following the meeting, GEI provided the MNRF with the Modifications Document for review on July 28. The MNRF provided the project team with an email indicating their support for the amendment on August 15, 2023. GEI requested clarification for the supportive email provided by the Regional Planning Ecologist on August 15 and the MNRF provided clarification on August 18, 2023, stating that:

Based on the information you have provided; we agree with your assessment that the proposed change to the Glendale Solar project involving the application of herbicides to control vegetation (including but not limited to Wild Parsnip) at the site will result in no changes to natural features affected by the project.

Upon review of the modifications, MNRF is satisfied that the Natural Heritage Assessment requirements of Ontario Regulation 359/09 have been met.



6. Conclusions

Northland Power Solar Glendale LP is seeking to amend the REA to permit the targeted and limited application of herbicides as part of site management activities. The proposed change will not alter the size of the Project Location and with the implementation of mitigation measures, is unlikely to result in adverse environmental effects beyond those previously identified, documented and consulted on through the REA process.

Prepared By:

Reviewed By:

GEI Consultants

Panela Teddy

Pamela Teddy Project Manager 647-383-7268 <u>pteddy@geiconsultants.com</u>

MBander

Noel Boucher Project Director 289-929-6951 <u>nboucher@geiconsultants.com</u>



REFERENCES AND BACKGROUND MATERIALS

Hatch 2011a. Natural Heritage Environmental Impact Study. Available online: https://www.northlandpower.com/en/assets-and-infrastructure/documentlisting.aspx#Glendale

Hatch 2011b. Waterbodies Environmental Impact Study. Available online: https://www.northlandpower.com/en/assets-and-infrastructure/documentlisting.aspx#Glendale

Hatch 2011c. Stage 1-2 Archaeological Assessment Report. Available online: https://www.northlandpower.com/en/assets-and-infrastructure/document-listing.aspx#Glendale

Hatch 2011d. Check Sheet for Environmental Assessments: Screening for Impacts to Built Heritage and Cultural Heritage Landscapes.

Hatch 2011e. Design and Operations Report. Available online: https://www.northlandpower.com/en/resourcesGeneral/ProjectDocuments/Glendale/Designa ndOperationsReport.pdf

Hatch 2011f. Project Description Report. Available online: https://www.northlandpower.com/en/resourcesGeneral/ProjectDocuments/Glendale/Project DescriptionReport.pdf

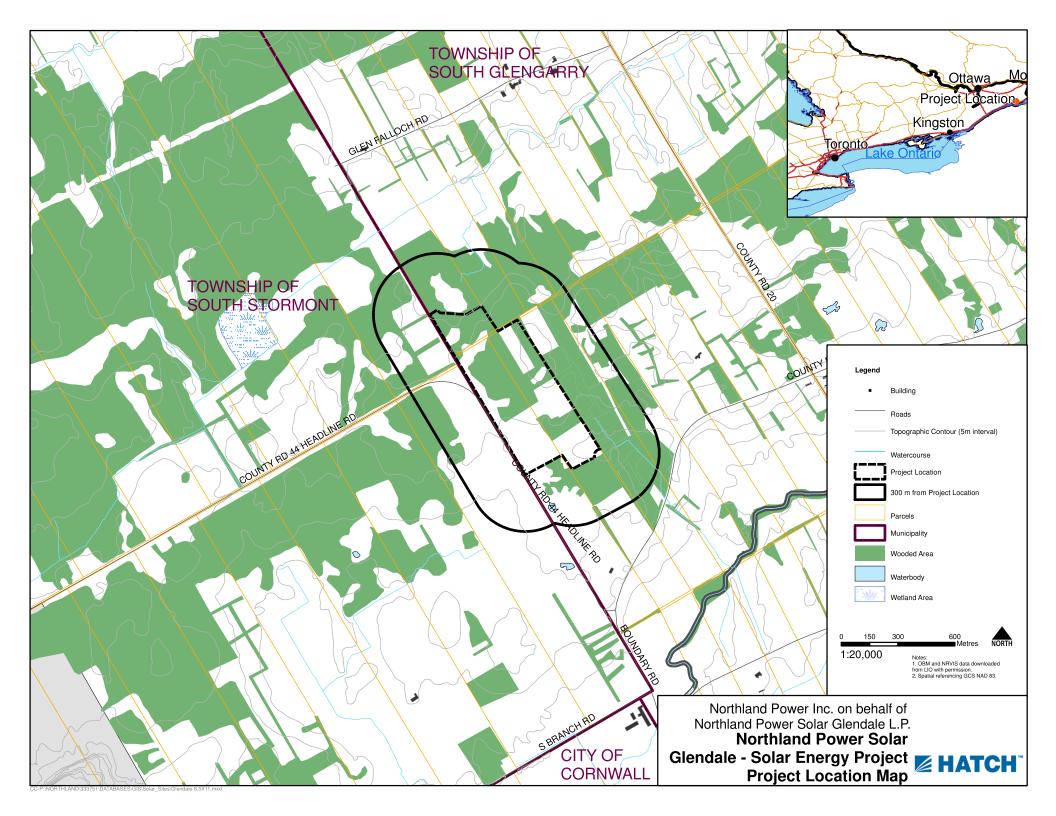
Ministry of Environment, Conservation and Parks (MECP) 2023. Technical Guide to Renewable Energy Approvals. Available online: https://www.ontario.ca/document/technical-guide-renewable-energy-approvals-0

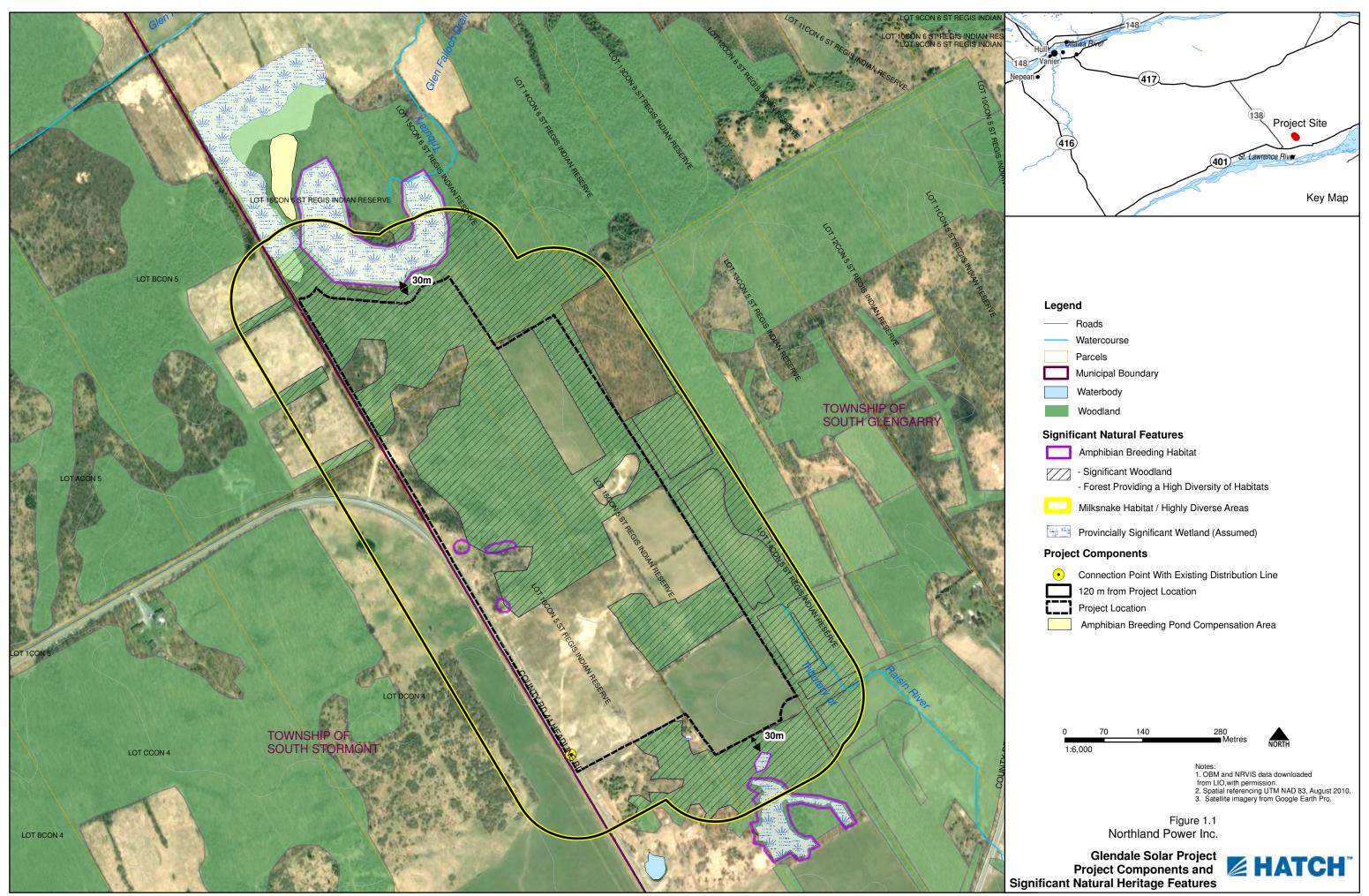
Ministry of Natural Resources and Forestry (MNRF) 2022. Natural Heritage Assessment for Renewable Energy Projects. Available online: https://www.ontario.ca/page/natural-heritage-assessment-renewable-energy-projects



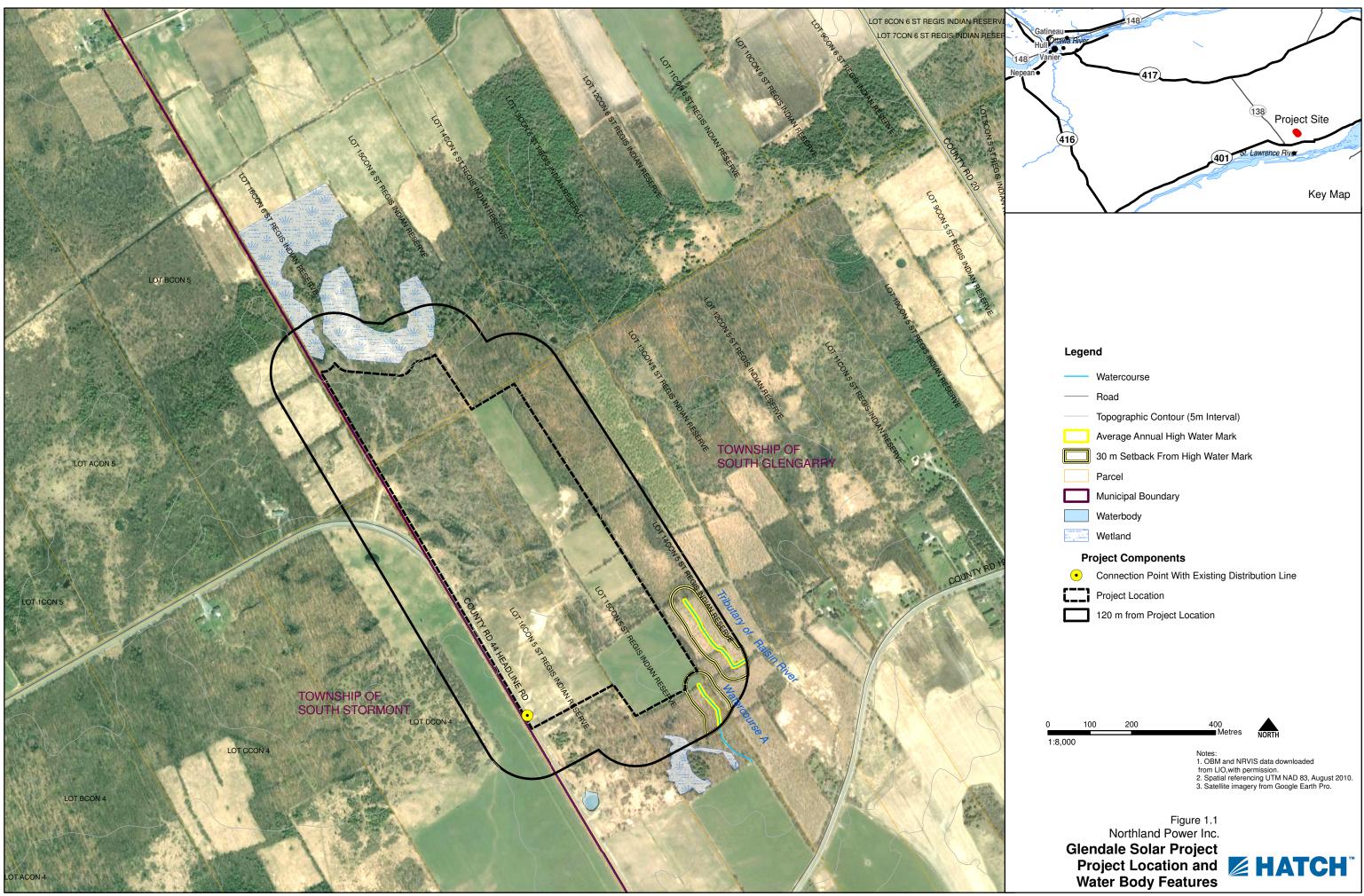
Figures from Original REA Supporting Documents







P:\\NiaDATA2\Projects\NORTHLAND\333751\DATABASES\334844\GIS\Glendale_landinvestigationEIS.mxd Last updated Wednesday, July 06, 2011



P:\\NiaDATA2\Projects\NORTHLAND\333751\DATABASES\334844\GIS\Glendale_Glendale_waterinvestigation1.mxd Last updated Thursday, September 15, 2011

Leyei	lu l
	Watercourse
	Road
	Topographic Contour (5m Interval)
	Average Annual High Water Mark
	30 m Setback From High Water Mark
	Parcel
	Municipal Boundary
	Waterbody
	Wetland
Pr	oject Components
•	Connection Point With Existing Distribution Line
[]]	Project Location
	120 m from Project Location

Confirmation Letters



Ministry of Natural Resources

Kemptville District

10 Campus Drive Postal Bag 2002 Kemptville, ON K0G 1J0 Tel: 613-258-8204 Fax: 613-258-3920 Ministère des Richesses naturelles

District de Kemptville



10 Dr. Campus Sac Postal, 2002 Kemptville, ON K0G 1J0 Tél.: 613-258-8204 Téléc.: 613-258-3920

July 8, 2011

Sean Male Hatch Environmental Assessment & Management Niagara Falls, Ontario

To Mr. Male:

In accordance with the Ministry of the Environment's (MOE's) Renewable Energy Approvals (REA) Regulation (O.Reg.359/09), the Ministry of Natural Resources (MNR) has reviewed the natural heritage assessment and environmental impact study for Glendale Solar Project in the township of South Glengarry submitted by Northland Power.

In accordance with Section 28(2) and 38(2)(b) of the REA regulation, MNR provides the following confirmations following review of the natural heritage assessment:

- 1. The MNR confirms that the determination of the existence of natural features and the boundaries of natural features was made using applicable evaluation criteria or procedures established or accepted by MNR.
- The MNR confirms that the site investigation and records review were conducted using applicable evaluation criteria or procedures established or accepted by MNR, if no natural features were identified.
- 3. The MNR confirms that the evaluation of the significance or provincial significance of the natural features was conducted using applicable evaluation criteria or procedures established or accepted by MNR (if required).
- 4. The MNR confirms that the project location is not in a provincial park or conservation reserve.
- 5. The MNR confirms that the environmental impact assessment report has been prepared in accordance with procedures established by the MNR.

This confirmation letter is valid for the project as proposed in the natural heritage assessment and environmental impact study, including those sections describing the Environmental Effects Monitoring Plan and Construction Plan Report. Should any

changes be made to the proposed project that would alter the NHA, MNR may need to undertake additional review of the NHA.

Where specific commitments have been made by the applicant in the NHA with respect to project design, construction, rehabilitation, operation, mitigation, or monitoring, MNR expects that these commitments will be considered in MOE's Renewable Energy Approval decision and, if approved, be implemented by the applicant.

In accordance with S.12 (1) of the Renewable Energy Approvals Regulation, this letter must be included as part of your application submitted to the MOE for a Renewable Energy Approval.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resources' *Approvals and Permitting Requirements Document*. These approvals are required prior to the construction of your renewable energy facility.

Please be aware that your project may be subject to additional legislative approvals as outlined in the Ministry of Natural Resources' *Approvals and Permitting Requirements Document*. These approvals are required prior to the construction of your renewable energy facility.

If you wish to discuss any part of this confirmation or additional comments provided, please contact Heather Zurbrigg, Renewable Energy Planning Ecologist at 613-258-8366 or at <u>heather.zurbrigg@ontario.ca</u>

Sincerely,

Jim Fraser for Ken Durst District Manager Kemptville District MNR

cc. Jim Beal, Renewable Energy Provincial Field Program Coordinator, Regional Operations Division, MNR

cc. Andrea Fleischhauer, A/Southern Region Renewable Energy Coordinator, MNR cc. Narren Santos, Environmental Assessment and Approvals Branch, MOE

Ministry of Tourism and Culture

Culture Programs Unit Programs and Services Branch 400 University Avenue, 4th floor Toronto, ON, M7A 2R9 Telephone: 416/314-7132 Facsimile: 416/314-7175 Email : Jim.Sherratt@ontario.ca Ministère du Tourisme et de la Culture

Unité des programmes culturels Direction des programmes et des services 400, avenue University, 4^e étage Toronto, ON, M7A 2R9 Téléphone: 416/314-7132 Télécopieur: 416/314-7175 Email : Jim.Sherratt@ontario.ca



September 9, 2010

Mr. Paul Racher Archaeological Research Associates 97 Gatewood Road Kitchener, Ontario N2M 4E3 pracher@arch-research.com

RE: Review and Acceptance into the Provincial Register of Reports: Archaeological Assessment Report Entitled, ''Stage 1 and 2 Archaeological Assessment Glendale Solar Project, Township of South Glengarry, United Counties of Stormont, Dundas and Glengarry, Ontario," Report Dated August 2010, Report Received August 24, 2010. Revised Report received September 3, 2010. MCL Project Information Form Number P007-245-2010, MCL RIMS Number HD00503. FIT-FAH1BFV.

Dear Mr. Racher:

This office has reviewed the above-mentioned report, which has been submitted to this Ministry as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c 0.18. This review is to ensure that the licensed professional consultant archaeologist has met the terms and conditions of their archaeological licence, that archaeological sites have been identified and documented according to the 1993 technical guidelines set by the Ministry and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario.

As the result of our review, this Ministry accepts the above titled report into the Provincial register of archaeological reports. The report indicates that 4 archaeological sites, Findspots 1 to 4, were found on the subject property and it is recommended that they be considered significant enough to warrant Stage 3 investigations. This Ministry concurs with this recommendation.

Should you require any further information regarding this matter, please feel free to contact me.

Sincerely,

Jim Sherratt Archaeology Review Officer Eastern Region

c. Archaeology Licensing Office Tom Hockins, Northland Power Kimberley Arnold, Hatch Limited