# **Environmental Protection Plan Georgetown Solar Energy Project**



# Prepared for:

## Georgetown Solar Inc.

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## 1.0 INTRODUCTION

# 1.1 Scope and Purpose

The purpose of this Environmental Protection Plan (EPP) is to outline environmental protection measures that Georgetown Solar Inc. (Georgetown Solar) commits to undertaking during the construction and operation phases of the Georgetown Solar and Energy Storage Project (the Project) located within 8, 5, and 4-21-25 W4M (Figure 1). The EPP will act as a field-ready document to assist in the planning and execution of construction and operational activities.

Specifically, the EPP will accomplish the following:

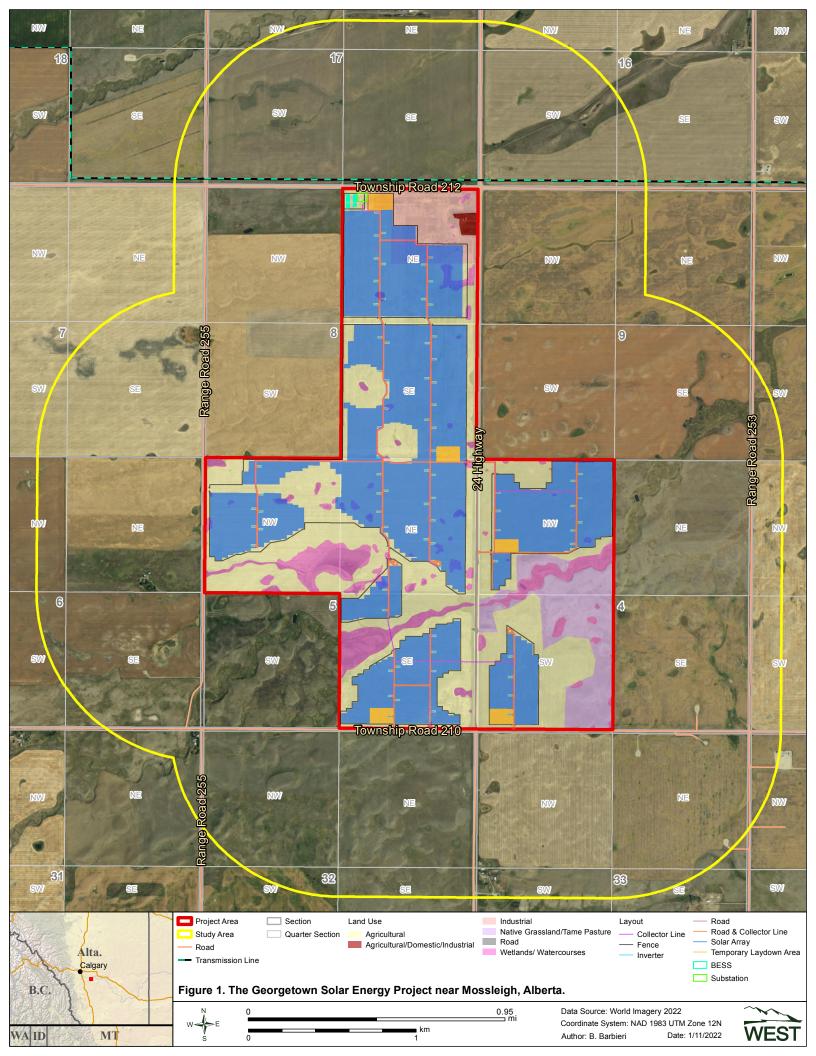
- Serve as a resource for all Georgetown Solar personnel, contractors, and subcontractors to be familiar with project-specific environmental protection measures and commitments.
- Provide concise and clear instructions to avoid or minimize potential environmental effects during the construction and operational phases of the Project.
- Serve as a resource to support on-the-ground decision making to ensure Georgetown Solar adheres to its environmental protection commitments.
- Ensure all parties are aware of relevant regulatory requirements and environmental guidelines.
- Ensure Environmental Monitors working on the Project are qualified and properly trained.
- Ensure all personnel on the Project are provided with basic environmental training to be able to identify wildlife features (e.g., nests, dens, leks), spills and leaks, erosion issues, weeds, and recognize species of management concern.
- Ensure environmental incidents will be properly investigated, documented, and reported.

The EPP will be reviewed and updated prior to construction and operation phases beginning and following all site specific mitigation measures that have been discussed during consultations with stakeholders and regulators. There are minimum standards to be followed within this EPP; however, if other more suitable or practical site-specific environmental solutions not provided in this report are identified, they may be implemented during construction if approved by stakeholders and the applicable regulatory agencies.

# 1.2 Project Details

The proposed Project, based on the preliminary design, is a 230 megawatt (MW), alternating current (AC) photovoltaic (PV) solar generation facility paired with a 100MW/200MWh battery energy storage system (BESS) located northwest of Mossleigh, Alberta. The proposed construction footprint for the Project will be 221.5 hectares (ha), and the proposed operational footprint will be 221.5 ha. (Figure 1).

Pending Alberta Utilities Commission (AUC) approval, Project construction is anticipated to begin in Q3 2022. The anticipated in-service date and commencement of commercial operation is in September 2023. Clean up and reclamation activities are planned to be completed Q2 – Q3 2023.



## 2.0 REGULATORY REQUIREMENTS

All relevant regulatory approvals for the Project will be obtained by Georgetown Solar prior to construction. All Georgetown Solar personnel, contractors, and subcontractors are responsible to know, understand, and comply with the following legislation (and associated regulations), guidelines, and project approvals.

# 2.1 Provincial and Federal legislation

The following provincial and federal acts will need to be reviewed and followed, as necessary:

- Wildlife Act (Government of Alberta 2020b)
- Water Act (Government of Alberta 2021c)
- Migratory Birds Convention Act (Government of Canada 2017)
- Species at Risk Act (Government of Canada 2021)
- Wetland Policy (Government of Alberta 2013)
- Weed Control Act (Government of Alberta 2017a)
- Dangerous Goods Transportation and Handling Act (Government of Alberta 2021a)
- Historical Resources Act (Government of Alberta 2021b)

## 2.2 Provincial Directives

Georgetown Solar is committed to adhering to the following renewable energy project guidelines:

- Wildlife Directive for Alberta Solar Energy Projects (Government of Alberta 2017b)
- Post-construction Survey Protocols for Wind and Solar Energy Projects (Government of Alberta 2020a)
- Conservation and Reclamation Directive for Renewable Energy Operations (Government of Alberta 2018)

## 2.3 Project Approvals

Georgetown Solar has received the following approvals:

- Alberta Culture Multiculturalism and the Status of Women (ACMSW) Historical Resources
   Act (Attachment I within the AUC approval; September 30, 2021)
- Alberta Environment and Parks (AEP) Renewable Energy Referral Report (Attachment E; April 14, 2021 within the AUC approval)
- AEP Water Act Approval (anticipated)
- Alberta Utilities Commission Decision Report (anticipated)

# 3.0 ROLES AND RESPONSIBILITY

The successful implementation of the EPP is the responsibility of all Georgetown Solar personnel, contractors, and subcontractors working on the Project. The roles and responsibilities applicable to the Project are outlined below (Table 1).

Table 1. Roles and Responsibilities for those working on the Georgetown Solar Energy Project

Project			
Role	Responsibilities		
Operations Manager/Owner's Representative	<ul> <li>Oversees the Georgetown Solar and Energy Storage Project (the Project)</li> <li>Ensures appropriate resources are available to support the successful implementation of the Environmental Protection Plan (EPP)</li> <li>Communicates EPP requirements to those responsible for Project construction and maintenance</li> <li>Approves the implementation of the EPP, and approves any changes needed to the EPP in conjunction with the Environmental Advisor</li> <li>Has final decision making authority and accountability for the implementation of the EPP</li> </ul>		
Environmental Advisor	<ul> <li>Implementation of the EPP</li> <li>Ensures Environmental Monitors are qualified and appropriately trained</li> <li>Ensures the EPP is conducted in accordance with jurisdictional requirements</li> <li>Updates the EPP when needed and ensures all personnel are updated</li> <li>Reports to the Operations Manager</li> <li>Could be a third party consultant</li> </ul>		
Vegetation Reclamation Manager (VRM)	<ul> <li>Oversees the reclamation process, including weed management</li> <li>Leads the development of the Conservation and Reclamation (C&amp;R) and Vegetation Management Plans</li> <li>Reports to the Operations Manager</li> <li>Usually a third party consultant</li> </ul>		
Construction Manager	<ul> <li>Manages construction of the Project</li> <li>Reviews and understands the EPP, and maintains a copy on-site</li> <li>Works together with the Operations Manager, Environmental Advisor, VRM, and Environmental Monitor to ensure the successful implementation of the EPP during the construction phase</li> <li>Reports to the Operations Manager</li> </ul>		
Environmental Monitor	<ul> <li>Monitors the Project for compliance with the EPP</li> <li>Works with construction personnel to review and implement environmental protection measures</li> <li>Identifies and reports non-compliance of environmental protection measures to the Environment Advisor</li> <li>Will be an experienced biologist per definition by Alberta Environment and Parks (Government of Alberta 2017b)</li> <li>Will be a third party consultant and report to the Environmental Advisor and Operations Manager</li> </ul>		

## 4.0 TRAINING

Georgetown Solar will ensure that all personnel and subcontractors have knowledge and awareness of this EPP, and environmental requirements and sensitivities related to the Project. Prior to commencing work, all personnel and subcontractors are required to participate in an environmental awareness training program. Key topics the training will include are the EPP, roles and responsibilities, how to recognize and respond to sensitive wildlife features (e.g., nests, dens, leks), spills and leaks, waste management, sediment and erosion control, weeds, and how to report and document environmental incidents and emergencies.

## 5.0 ENVIRONMENTAL SETTING

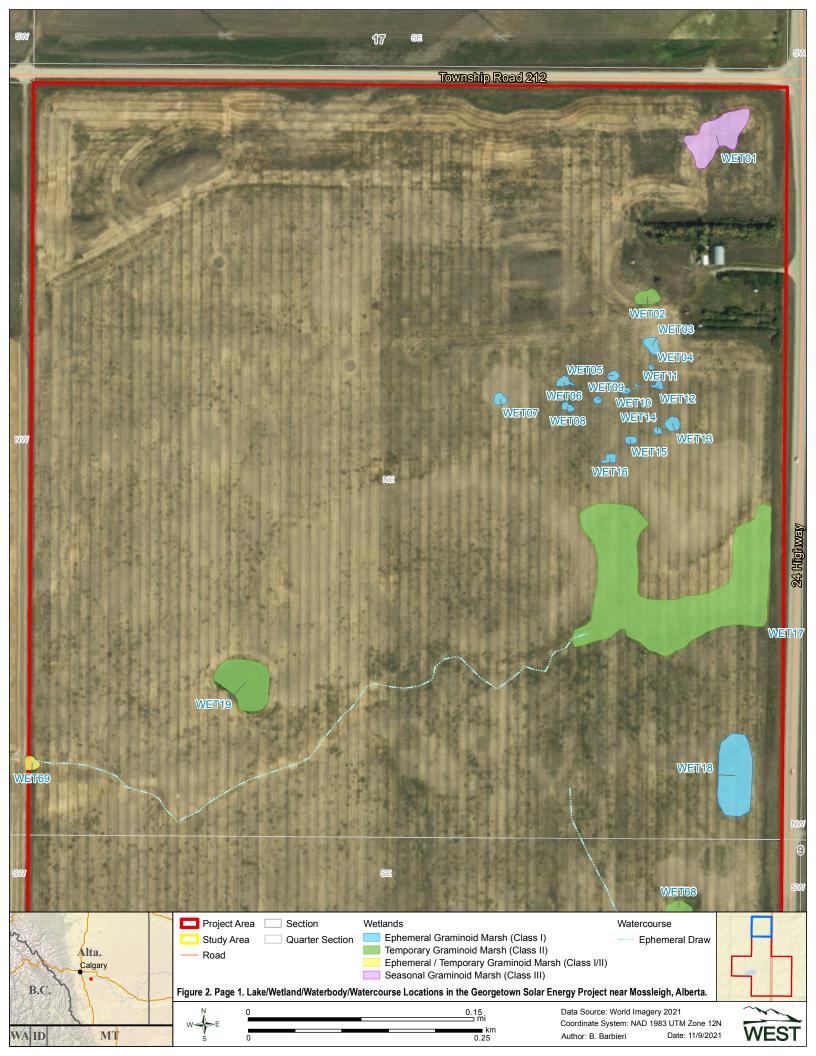
The Project is located in the Foothills Fescue and Mixedgrass Subregions of the Grassland Natural Region (Natural Regions Committee 2006). The Project footprint encompasses primarily agricultural cropland. The Project falls within or adjacent to the following environmental sensitivities:

- Sensitive raptor range
- Sharp-tailed grouse (*Tympanuchus phasianellus*) range
- Numerous small wetlands

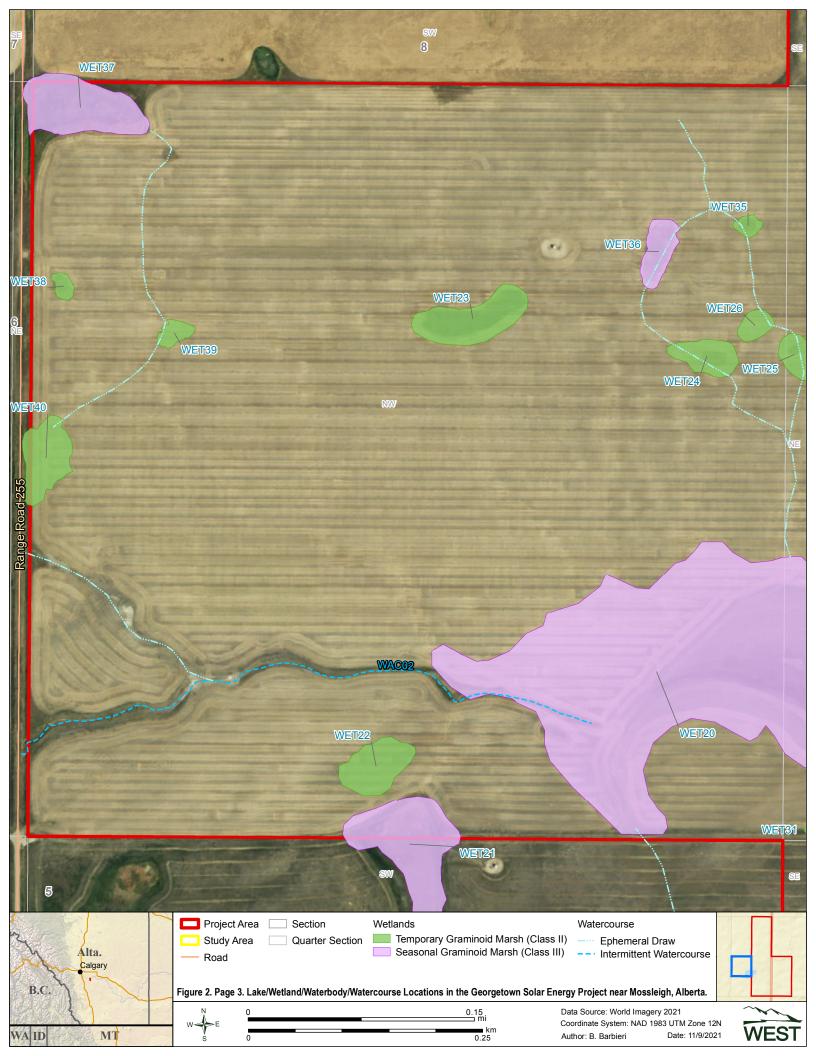
A detailed description of the environmental setting and pre-construction wildlife and vegetation surveys can be found in the AEP Referral Report (AEP 2021), and the important environmental features (e.g., seasonal wetlands [Figure 2]) identified during those surveys are listed below (Table 2).

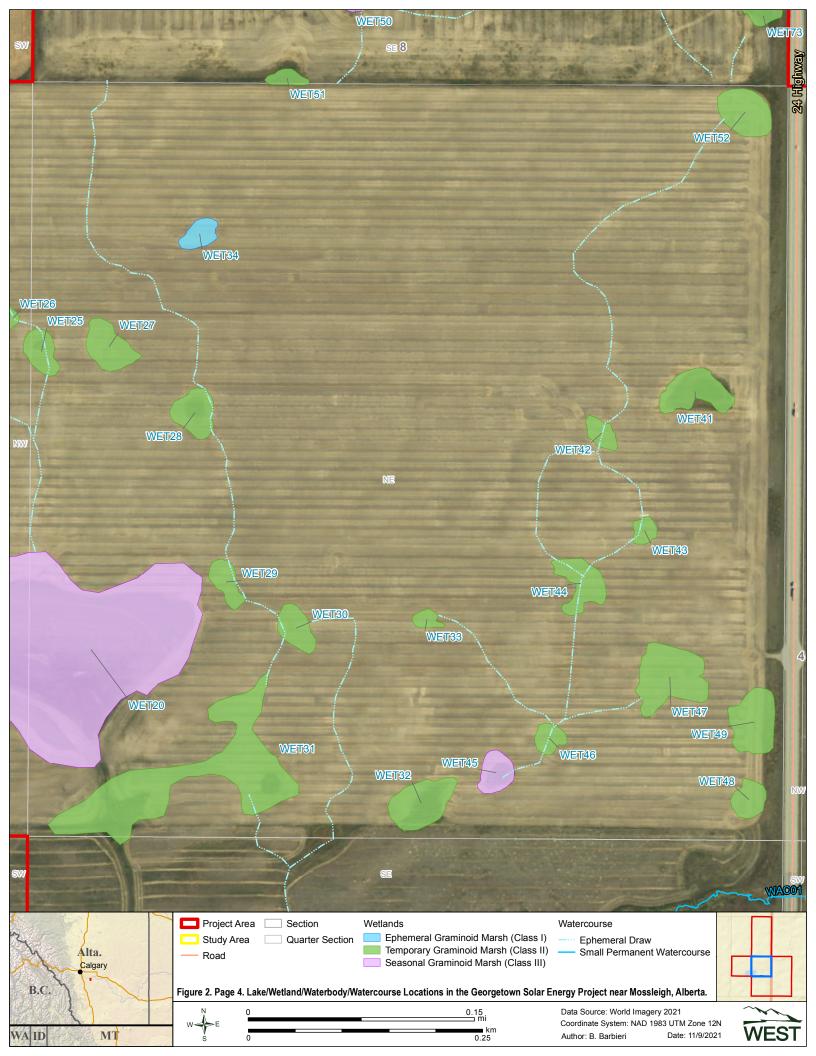
Table 2. Important environmental features identified within the Project Area

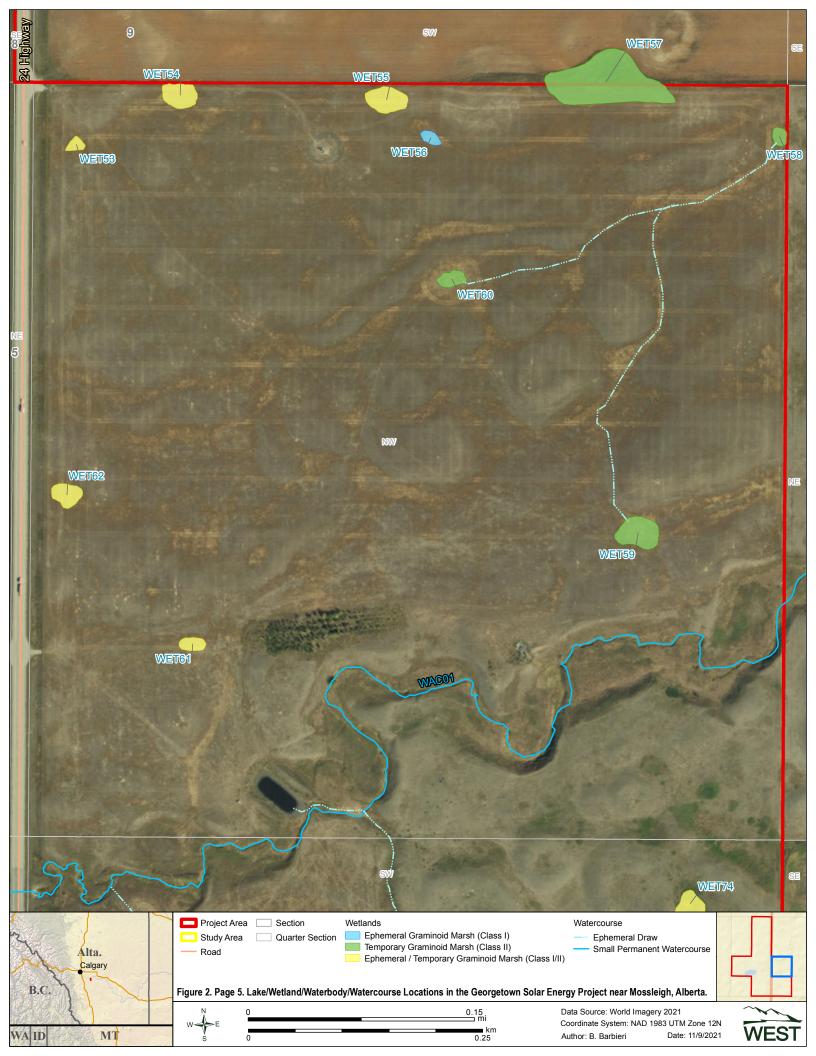
Feature ID	Feature Type	Required Setback (metres)
GEWET01	Seasonal Graminoid Marsh	100
GEWET20	Seasonal Graminoid Marsh	100
GEWET21	Seasonal Graminoid Marsh	100
GEWET36	Seasonal Graminoid Marsh	100
GEWET37	Seasonal Graminoid Marsh	100
GEWET45	Seasonal Graminoid Marsh	100
GEWET50	Seasonal Graminoid Marsh	100
GEWET63	Seasonal Graminoid Marsh	100
GEWET67	Seasonal Graminoid Marsh	100
GEWET70	Seasonal Graminoid Marsh	Fence is on the quarter line
GEWEITU	Seasonal Granninoid Marsh	(94 m from edge of wetland)
GEWET75	Seasonal Graminoid Marsh	100
GEWET76	Seasonal Graminoid Marsh	100
GEWET77	Seasonal Graminoid Marsh	100
GEWET81	Seasonal Graminoid Marsh	100
GEWET82	Seasonal Graminoid Marsh	100
GEWET83	Seasonal Graminoid Marsh	100

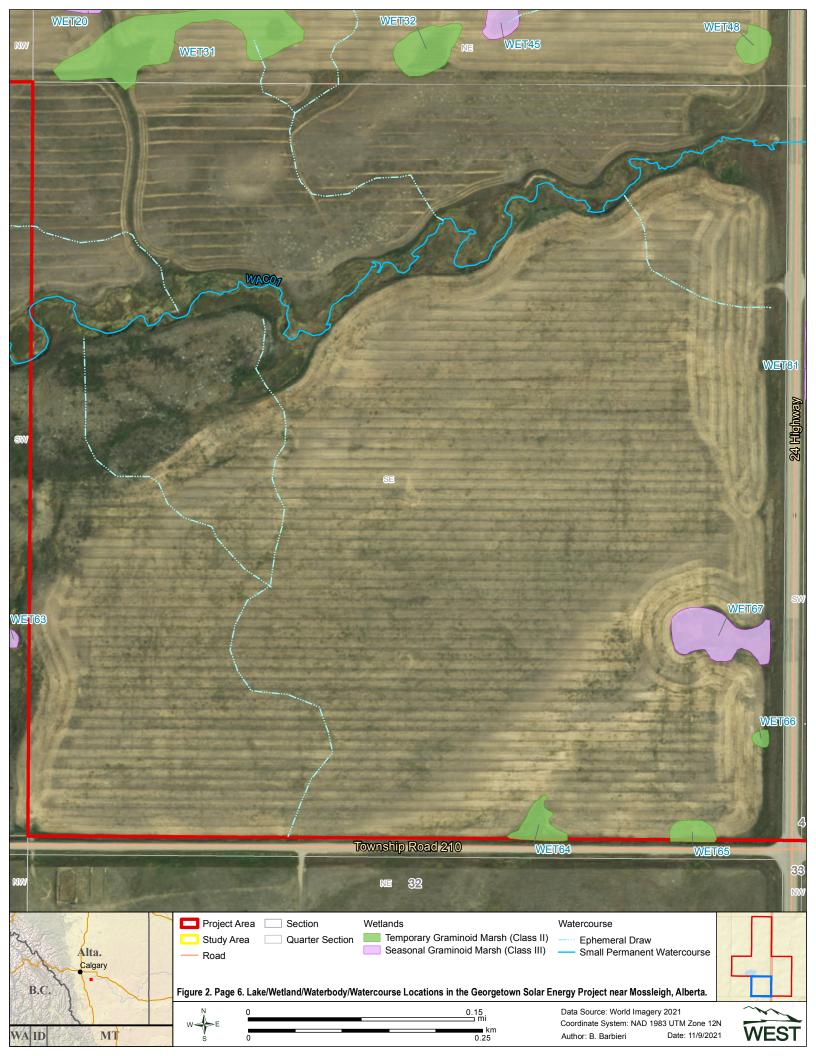


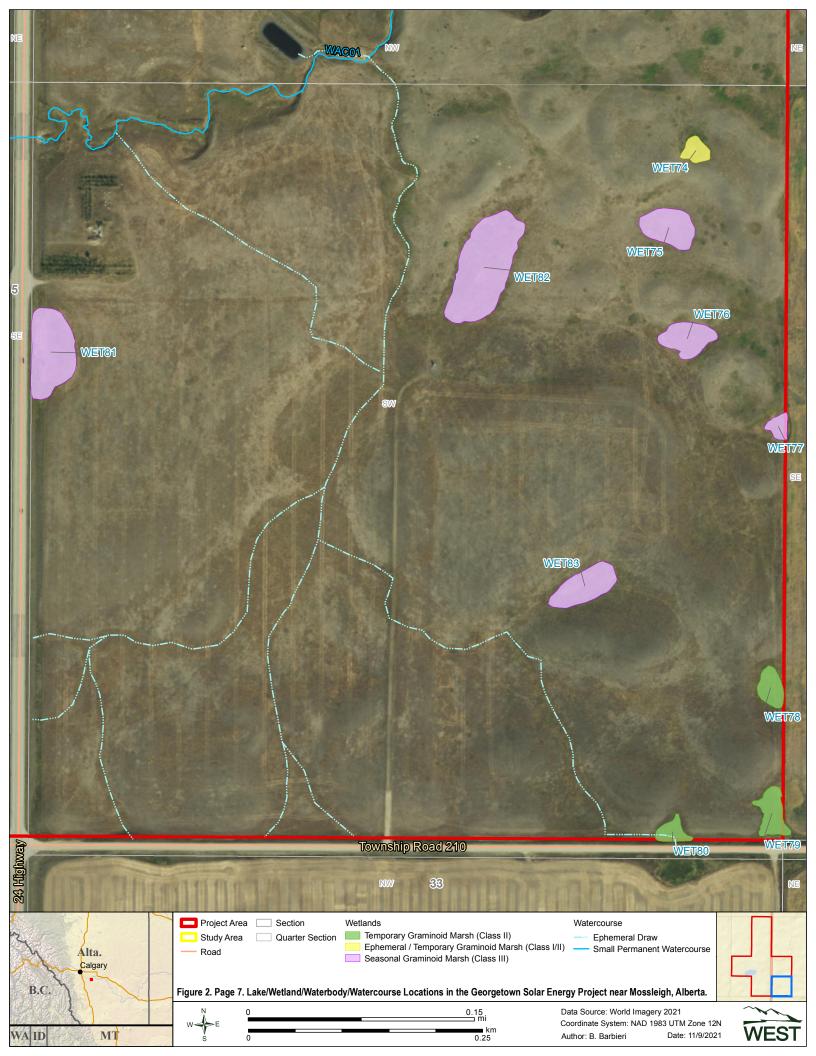












## 6.0 ENVIRONMENTAL PROTECTION MEASURES

Georgetown Solar is committed to preventing and mitigating any potential environmental effects of the Project through informed planning, assessment, mitigation, and reclamation. This section outlines potential Project environmental impacts, mitigations, environmental monitoring, and control commitments by Georgetown Solar and its contractors in Project Construction (Table 3) and Operation phases (Table 4). These measures allow for efficient response to unforeseen and environmental emergency events and ensure all environmental guidelines and regulations are met.

## 6.1 Environmental Monitoring and Inspections

A qualified Environmental Monitor will conduct environmental inspections to ensure that the construction of the Project meets the environmental commitments outlined in this EPP.

Post-construction wildlife monitoring will be conducted for a minimum of three years as outlined in the *Post-construction Survey Protocols for Wind and Solar Energy Projects* (Government of Alberta 2020). An experienced wildlife biologist will conduct post-construction monitoring surveys and will document wildlife mortality within the Project, carcass removal rate, searcher efficiency rate, and monitor impacts of the Project on species at risk and sensitive species (Government of Alberta 2020).

As per the Conservation and Reclamation Directive for Renewable Energy Operations (Government of Alberta 2018), a qualified environmental professional will complete interim monitoring site assessments following construction, during operation at key milestones (e.g., retrofitting) and when any temporary reclamation activities occur. In addition, vegetation monitoring will be conducted for a minimum of three growing seasons after construction of the Project.

Table 3. Potential impacts and mitigation measures for the construction phase.

Construction Activity	Environmental Component	Project Impact or Concern	Mitigation Measures	Reference
-	Wildlife	Wildlife encounters and disturbance	All personnel, contractors, and subcontractors will be provided with relevant and effective training to	Wildlife Directive for Alberta Solar Energy Projects
		Mortality - Vehicle collisions	September during construction and 50 km/hour for the remainder of the year, to reduce potential for collision with wildlife.  • All vehicles and construction equipment on the Project will yield to wildlife.	Speed limits
		Habitat avoidance	in order to reduce disturbance to wildlife.	BMP 200.4.1 of the Wildlife Directive for Alberta Solar Energy Projects
General (continued)	Wildlife (continued)	Noise and light disturbance	<ul> <li>All construction equipment will be fitted with standard noise abatement equipment (e.g., mufflers).</li> <li>Idling of vehicles will not be allowed, unless required for construction. All construction equipment will be regularly inspected and maintained to ensure it is in good working order.</li> <li>All infrastructure lighting will be minimized, down-shielded, and controlled by sensors, wherever</li> </ul>	BMP 200.4.3 of the Wildlife Directive for Alberta Solar Energy Projects  Rule 012 - Noise Control (Alberta Utilities Commission 2021)

Table 3. Potential impacts and mitigation measures for the construction phase.

Construction	Environmental	Project Impact		
Activity	Component	or Concern		Reference
Access	General	Trespassing	<ul> <li>Gates will be placed at the entrance of the construction footprint to prevent unauthorized public access onto the Project.</li> <li>Gates will remain closed and locked at all times.</li> <li>Gates will be designed to ensure that passage of a 4x4 on-highway vehicle is restricted.</li> <li>Gates will be installed in such a manner that a safety hazard is not created.</li> <li>Use of combination locks is required.</li> </ul>	Appendix E of the Wildlife Directive for Alberta Solar Energy Projects
		Access roads	<ul> <li>Access roads within the Project footprint will be constructed to follow the Road Class Specification outlined in Appendix D of the Wildlife Directive for Alberta Solar Energy Projects.</li> <li>Access roads along municipal road allowances will be improved in consultation with, and to the specifications required by Vulcan County.</li> <li>Minimize disturbed area by maximizing use of existing roads.</li> <li>Where new access roads are required, minimize the number, length, and area.</li> </ul>	Appendix D of the Wildlife Directive for Alberta Solar Energy Projects  BMPs in section 6.1 of the Conservation and Reclamation Directive for Renewable Energy Operations
Clearing	Vegetation	Weed infestation and introduction of invasive species	<ul> <li>Environmental Monitor(s) should inspect equipment as it arrives to site. Any equipment failing inspection will need to be cleaned and re-inspected before allowed on site.</li> <li>Herbicides will be used in consultation with the Construction Manager and the Vegetation Reclamation Manager (VRM) and excluding within 30 m of an open water body.</li> <li>Refer to the Conservation and Reclamation (C&amp;R) and Vegetation Management Plans for details of weed management.</li> </ul>	Mitigation Measures in section 6.1 of the Conservation and Reclamation Directive for Renewable Energy Operations Weed Control Act C&R and Vegetation Management Plans
		Accidental vegetation removal and loss of native species	<ul> <li>Construction areas will be clearly marked before clearing to avoid accidental vegetation removal.</li> <li>Areas where vegetation has been accidentally removed or damaged will be re-planted with similar native species.</li> </ul>	BMP 200.4.4 of the Wildlife Directive for Alberta Solar Energy Projects  5.2.1.1. Siting - Conservation and Reclamation Directive for Renewable Energy Operations

Table 3. Potential impacts and mitigation measures for the construction phase.

nvironmental	Project Impact		
omponent	or Concern	Mitigation Measures	Reference
'ildlife	Disturbance to wildlife habitat (e.g., nests, dens,	The preliminary construction schedule has been planned to account for timing restrictions associated with wildlife features.	Appendix C of the Wildlife Directive for Alberta Solar Energy Projects  Qualified Wildlife Biologist to conduct pre-disturbance wildlife surveys  Standards 100.3.3 and 100.3.19 of the Wildlife Directive for Alberta Solar Energy Projects  Nesting Periods  Migratory Birds Convention Act
0	mponent Idlife	mponent or Concern  Idlife Disturbance to wildlife habitat	Disturbance to wildlife habitat (e.g., nests, dens, leks)   The preliminary construction schedule has been planned to account for timing restrictions associated with wildlife features.

Table 3. Potential impacts and mitigation measures for the construction phase.

Construction Activity	Environmental Component	Project Impact or Concern	Mitigation Measures	Reference
Clearing (continued)	Wildlife (continued)	Disturbance to amphibians	<ul> <li>The preliminary construction schedule has been planned to account for timing restrictions associated with wildlife features.</li> <li>There will be no construction activities during sensitive amphibian periods from April 1 – August 31 when work is needed within 100 m of a seasonal or semi-permanent wetland.</li> <li>Low tire pressure equipment, tracked equipment, or rig matting will be used to reduce the potential for adverse effects to soil quality and amphibians when working within 100 m of a seasonal or semi-permanent wetland.</li> <li>Pre-construction amphibian surveys will be repeated at all seasonal and semi-permanent wetlands prior to construction.</li> <li>Silt fencing will be erected around all wetlands between the wetland and construction activities, to avoid amphibians moving into the construction area.</li> <li>An Environmental Monitor will be onsite during construction to monitor for amphibian presence and relocate amphibians, as required.</li> </ul>	Directive for Alberta Solar
	Wetlands	Disturbance to wetlands	<ul> <li>Water Act approval will be obtained prior to any impacts to wetlands.</li> <li>Wetland setbacks will be marked in advance of construction activities.</li> <li>All construction will occur outside of the wetland setbacks between April and September.</li> <li>Construction within the wetland setbacks to only occur between October and March and low tire pressure equipment, tracked equipment, or rig matting will be used.</li> <li>Low tire pressure equipment, tracked equipment, or rig matting will be used to reduce the potential for adverse effects to soil quality and amphibians when working within 100 m of a seasonal wetland.</li> </ul>	Water Act Approval
	Soil	Compaction	<ul> <li>increased, unless low tire pressure equipment, tracked equipment, or rig matting will be used.</li> <li>Compacted areas will be paratilled, or harrowed, and rutted areas will be bladed smooth.</li> <li>Construction will be conducted under dry or frozen ground conditions to limit the potential for soil disturbance and compaction.</li> </ul>	Erosion and Sediment Control  C&R Plan
		Erosion and sediment control	<ul> <li>Erosion and sediment control measures will be implemented where necessary (e.g., straw bales, silt fencing).</li> <li>Revegetation will occur as soon as practicable.</li> </ul>	
Clearing (continued)	Historical Resources	Loss or destruction of historical resources	<ul> <li>A Historical Resources Act clearance has been obtained</li> <li>Notify the Environmental Monitor upon the discovery of any historical resources. Cease work in the vicinity until appropriate mitigation measures can be implemented.</li> </ul>	Historical Resources Act

Table 3. Potential impacts and mitigation measures for the construction phase.

Construction Activity	Environmental Component	Project Impact or Concern	Mitigation Measures	Reference
	Vegetation	Weed infestation and introduction of invasive species	<ul> <li>Construction equipment and employee vehicles should arrive to the construction site clean and free of soil or plant debris.</li> <li>Environmental Monitor(s) should inspect equipment as it arrives to site. Any equipment failing inspection will need to be cleaned and re-inspected before being allowed onto site.</li> <li>Herbicides will be used in consultation with the Construction Manager and the VRM and, if used, not used within 30 m of an open waterbody.</li> <li>Refer to the C&amp;R and Vegetation Management Plans for details of weed management.</li> <li>Minimize soil disturbance, soil salvage and soil handling to reduce germination and spread of weed seeds in the seedbank.</li> </ul>	BMP 200.4.4 of the Wildlife Directive for Alberta Solar Energy Projects  5.2.1.1. Siting - Conservation and Reclamation Directive for Renewable Energy Operations  Mitigation Measures in section 6.1 of the Conservation and Reclamation Directive for Renewable Energy Operations  Weed Control Act  C&R and Vegetation Management Plans
		Accidental vegetation removal and loss of native species	<ul> <li>Construction areas will be clearly marked before clearing to avoid accidental vegetation removal.</li> <li>Areas where vegetation has been accidentally removed or damaged will be re-planted with similar native species.</li> </ul>	BMP 200.4.4 of the Wildlife Directive for Alberta Solar Energy Projects  5.2.1.1. Siting - Conservation and Reclamation Directive for Renewable Energy Operations
	Soil	Erosion and sediment control	<ul> <li>Erosion and sediment control measures will be implemented where necessary (e.g., straw bales, silt fencing).</li> <li>Revegetation will occur as soon as practicable.</li> <li>Silt fencing will be erected around all wetlands between the wetland and construction activities.</li> <li>Silt fencing will protect seasonal wetlands within 100 m of the Project Footprint from temporary soil placement and construction site surface water flow from bare and eroding soils (all bare soil is planned to be stabilized with cover crop).</li> </ul>	Erosion and Sediment Control  BMPs in section 6.1 of the Conservation and Reclamation Directive for Renewable Energy Operations

Table 3. Potential impacts and mitigation measures for the construction phase.

Construction Activity	Environmental Component	Project Impact or Concern	Mitigation Measures	Reference
Earthworks (continued)	Soil (continued)	Contamination of soils	cause contamination of soils.  • Emergency spill kits will be kept onsite.	C&R Plan Spill Management and Prevention Plan
		Compaction and rutting	<ul> <li>Construction will be conducted under dry or frozen ground conditions to limit the potential for soil disturbance and compaction.</li> <li>The Environmental Monitor will inspect the construction area regularly for excessive rutting and compaction.</li> <li>Compacted areas will be paratilled, or harrowed, and rutted areas will be bladed smooth.</li> <li>Construction will not occur during or after high rainfall events when soil is wet and risk of compaction is increased, unless low tire pressure equipment, tracked equipment, or rig matting will be used.</li> </ul>	
Earthworks (continued)	Soil (continued)	Surface Disturbance	<ul> <li>Minimal surface disturbance techniques such as matting, reduced soil stripping, frozen construction, minimized fencing and reduced road grades will be implemented and followed</li> <li>Topsoil stripping is not required except for the substation location, inverter stations, and trenched areas required for the collector system.</li> <li>The collector system will be ploughed in to further minimize soil handling.</li> <li>For short areas of collector line, tie-in areas at inverter stations and the collector substation, each extremity of underground bores, and other small areas that may require excavation, trenching installation will be required using a small (12-18 inch wide) bucket on a small rubber-tired backhoe. Soils will be salvaged from these areas prior to trenching/excavation.</li> <li>Topsoil will be salvaged from trenched areas of collector lines, inverter stations and substation and stored separately from subsoils.</li> <li>Subsoil and topsoil will be replaced following backfill of the excavated areas.</li> <li>At the substation, topsoil will be salvaged and stockpiled in a location determined by the Construction Manager and VRM.</li> <li>If topsoil needs to be sourced, it will be sourced locally.</li> </ul>	
	Hydrology	Stormwater Management	Georgetown Solar will develop and implement a stormwater management plan prior to the start of construction.	Stormwater Management Plan
		Erosion and sediment control	fencing)	Erosion and Sediment Control  C&R Plan

Table 3. Potential impacts and mitigation measures for the construction phase.

Construction Activity	Environmental Component	Project Impact or Concern	Mitigation Measures	Reference
Earthworks (continued)	Hydrology (continued)	Contamination of groundwater	A spills and leaks protocol will be followed to prevent, minimize and clean up any spills or leaks that may	Spill Management and Prevention Plan
		Snow Management	<ul> <li>Snow will be removed from construction areas, where necessary, to provide safe working conditions and/or to expose soils for grading and excavation.</li> <li>Snow removal equipment must remain within the Project Footprint and access roads.</li> <li>Snow removal will not occur within setbacks of waterbodies or wetlands.</li> <li>Snow will not be placed within waterbodies during removal.</li> </ul>	
	Air	Fugitive Dust Management	<ul> <li>All vehicles will abide by posted speed limits.</li> <li>Dust suppressants will be applied as deemed necessary by the Environmental Monitor and Construction Manager.</li> <li>Material stockpiles will be sheltered from wind, or dust suppressants (e.g., sprayed with water) will be used to minimize dust.</li> <li>Areas will be revegetated as soon as practicable after construction activities are complete.</li> </ul>	C&R Plan
Material handling and storage	General	Spills and leaks	<ul> <li>treatment procedures.</li> <li>A spills and leaks protocol will be followed to prevent, minimize and clean up any spills or leaks that may cause contamination of soils.</li> <li>Emergency spill kits will be kept onsite.</li> <li>Hazardous materials will be stored in appropriate locations and disposed of by authorized means.</li> </ul>	Georgetown Solar and Energy Storage Project ERP  Spill Management and Prevention Plan  Dangerous Goods Transportation and Handling Act

Table 3. Potential impacts and mitigation measures for the construction phase.

 _	Project Impact or Concern	Mitigation Measures	Reference
	Waste Disposal	<ul> <li>All garbage, construction materials, debris and hazard waste will be contained and disposed of by authorized and approved off-site vendors.</li> </ul>	C&R Plan

Georgetown Solar Energy Project = the Project, BMP = best management practices; m = metres.

Table 4. Potential impacts and mitigation measures during the operation phase

Operation Activity	Environmental Component	Project Impact or Concern	Mitigation measures	Reference
Access	General	Trespassing	<ul> <li>Gates will be placed at all access points for the Project to prevent unauthorized public access.</li> <li>Gates will remain closed and locked at all times.</li> <li>A perimeter fence will encompass the entirety of the Project.</li> <li>Gates will be designed to ensure that passage of a 4x4 on-highway vehicle is restricted.</li> <li>Gates will be installed in such a manner that a safety hazard is not created.</li> <li>Use of combination locks is required.</li> </ul>	Appendix E of the Wildlife Directive for Alberta Solar Energy Projects
BESS	General	Spills and releases	<ul> <li>The Project's site-specific Emergency Response Plan (ERP) details initial spill response and spill treatment procedures.</li> <li>The proposed Sungrow S2752UX BESS employs a liquid-cooled system with a three-layered seal proof design.</li> <li>The BESS system also employs a leak detection function whereby the system immediately shuts down and alerts the operator of any leaking.</li> </ul>	
		Fire	<ul> <li>The Project's site-specific Emergency Response Plan (ERP) details initial fire response, emergency shut down procedures, and firefighter safety considerations.</li> <li>The BESS yard site will be a gravel pad, free of vegetation with a fire berm constructed around the perimeter.</li> <li>The BESS is equipped with a water-based fire extinguishing system enabling fire fighters to effectively manage a battery fire and prevent the modules from re-ignition.</li> <li>The battery system has a multi-compartment design with each compartment having a one hour fire rating.</li> </ul>	Georgetown Solar and Energy Storage Project ERP
General	Wildlife	Mortality Risk- collisions with infrastructure	<ul> <li>Georgetown Solar will follow the Post-construction Survey Protocols for Wind and Solar Energy Projects and requirements set forth in the Alberta Environment and Parks (AEP) Referral Report.</li> <li>Post-construction monitoring wildlife surveys (PCM surveys) will be conducted annually, by an experienced qualified biologist, for a minimum of three years after the Project is operational.</li> <li>PCM surveys will accomplish the following:         <ul> <li>Document wildlife mortalities</li> <li>Determine carcass removal rate</li> <li>Determine searcher efficiency in detecting available wildlife carcasses</li> <li>Monitor impacts of the Project on wildlife</li> </ul> </li> </ul>	AEP Referral Report  Post-construction Survey  Protocols for Wind and Solar  Energy Projects.
		Fencing and minimizing wildlife interference	<ul> <li>Use of wildlife friendly fencing to allow the passage of small and medium sized wildlife while preventing larger wildlife (e.g., deer) from entering the Project and potentially being trapped or hurt by, or damaging the Project infrastructure.</li> <li>Fence line will be monitored during operation. If wildlife mortalities are observed then mitigation measures will be developed in consultation with AEP.</li> </ul>	Standard 100.2.7 of the Wildlife Directive for Alberta Renewable Energy Projects

Table 4. Potential impacts and mitigation measures during the operation phase

Operation Activity	Environmental Component	Project Impact or Concern	Mitigation measures	Reference
			<ul> <li>Richardson's ground squirrel populations will be monitored within the Project fence line and control measures implemented as deemed necessary to prevent facility damage or the local population is shown to be expanding to neighbouring lands.</li> <li>Should the onsite Richardson's ground squirrel population increase to a point where an active colony is dispersing to neighboring lands, as indicated by burrowing and colony activity extending from within and beyond the Project fence line, pest control will be implemented in consultation with local landowners.</li> </ul>	Post-construction Survey Protocols for Wind and Solar Energy Projects.
	Soil	Spills and leaks	<ul> <li>The Project's site-specific Emergency Response Plan (ERP) details initial spill response and spill treatment procedures.</li> <li>A spills and leaks protocol will be followed to prevent, minimize and clean up any spills or leaks that may cause contamination of soils.</li> <li>Emergency spill kits will be kept onsite.</li> <li>Hazardous materials will be stored in appropriate locations and disposed of by authorized means.</li> <li>If a spill occurs, work will cease in the spill area and the appropriate authorities notified. Efforts will be made to control the spill. The Construction Manager and Environmental Advisor will be notified immediately.</li> <li>Hazardous materials will be appropriately labelled in accordance with applicable regulations and stored in designated areas with appropriate safety measures as outlined in the spill management and prevention plan</li> <li>All fuel storage and equipment servicing areas will be located at least 100 m away from any wetland and/or waterbody.</li> <li>Hazardous materials will be transported in accordance with the <i>Dangerous Goods Transportation and Handling Act</i>.</li> </ul>	Georgetown Solar and Energy Storage Project ERP  Spill Management and Prevention Plan  Dangerous Goods Transportation and Handling Act
General (continued)	Hydrology	Erosion and Sediment control	<ul> <li>Erosion and sediment control measures will be inspected annually and repaired or implemented where necessary (e.g., straw bales, silt fencing).</li> <li>Revegetation will occur as soon as practicable.</li> </ul>	Erosion and Sediment Control
Maintenance	Wildlife	Mortality Risk – collision with vehicles	<ul> <li>Speed restrictions (i.e., 30 kilometres (km)/hour) will be implemented on all Project roads from April to September during construction and operations, and 50 km/hour for the remainder of the year, to reduce potential for collision with wildlife.</li> <li>All vehicles and construction equipment on the Project will yield to wildlife.</li> </ul>	Speed limits
		Disturbance to wildlife species	<ul> <li>Appropriate buffers will be established around known wildlife features in accordance with the Directive.</li> <li>If maintenance must occur within the wildlife setbacks, then an Environmental Monitor may be required to monitor wildlife behavior during maintenance as determined in consultation with the Environmental</li> </ul>	Appendix C of the Wildlife Directive for Alberta Solar Energy Projects

Table 4. Potential impacts and mitigation measures during the operation phase

Operation Activity	Environmental Component	Project Impact or Concern	Mitigation measures	Reference
			<ul> <li>Advisor and Operations Manager. Additional mitigation may be required in consultation with the Environmental Advisor, Operations Manager, and/or AEP.</li> <li>All vegetation clearing should be scheduled to occur outside of the migratory bird-nesting period for Zone B3/B4 (April 15 – August 31); however, nesting may occur earlier in some species or later. The Environmental Advisor will be contacted prior to clearing.</li> <li>If clearing must occur during the nesting period, nest surveys will be completed by Environmental Monitor in such a way as to cover the area of disturbance as well as a species-appropriate buffer.</li> <li>Nest surveys will be conducted no more than 7 days prior to clearing or construction activity commencing. If construction activities have not commenced within 3-7 days (depending on species present, time of year, and habitat) after a nest survey has been conducted, another nest survey will be required.</li> <li>If an active nest is found, construction works will cease and a species appropriate buffer (minimum 100 m) will be applied until the nest is no longer active (i.e., young have left the nest).</li> <li>AEP recommends that all personnel working on the Project consult with the Canadian Wildlife Service to ensure compliance with the <i>Migratory Birds Convention Act</i>.</li> <li>Maintenance employees must report the discovery of any new wildlife features (e.g., nests, hibernacula, dens, burrows, leks) to the Environmental Monitor immediately, and stop work in that area until the Environmental Advisor and Construction Manager can determine the appropriate course of action (e.g., implementing mitigation measures).</li> </ul>	Standards 100.3.3 and
		Noise and light disturbance	<ul> <li>Maintenance activities will be conducted in daylight hours to the extent practicable to minimize disturbance to wildlife.</li> <li>Idling of vehicles will not be allowed, unless required for maintenance activities.</li> <li>All infrastructure lighting will be minimized, down-shielded, and controlled by sensors wherever possible.</li> </ul>	Rule 012 - Noise Control  BMP 200.4.3 of the Wildlife Directive for Alberta Solar Energy Projects
Maintenance (continued)	Vegetation	Mowing	<ul> <li>If required, mowing should occur outside the breeding bird and migratory bird Restricted Activity Periods (RAPs) to reduce impacts on nesting birds.</li> <li>If mowing is required within the breeding bird and/or migratory bird RAPs then pre-disturbance nest surveys may be required in consultation with the Environmental Advisor and the Operations Manager.</li> </ul>	Standards 100.3.3 and 100.3.19 of the <i>Wildlife</i> Directive for Alberta Solar Energy Projects

Table 4. Potential impacts and mitigation measures during the operation phase

Operation Environm Activity Compon	1	Mitigation measures	Reference
	Weed management	<ul> <li>Construction equipment and employee vehicles should arrive to the construction site clean and free of soil or plant debris.</li> <li>Environmental Monitor(s) should inspect equipment as it arrives to site. Any equipment failing inspection will need to be cleaned and re-inspected before being allowed onto site.</li> <li>Herbicides will be used in consultation with the Construction Manager and the Vegetation Reclamation Manager and if used not used within 30 m of an open water body.</li> <li>Refer to the C&amp;R and Vegetation Management Plans for details of weed management.</li> </ul>	BMP 200.4.4 of the Wildlife Directive for Alberta Solar Energy Projects  5.2.1.1. Siting - Conservation and Reclamation Directive for Renewable Energy Operations  Mitigation Measures in section 6.1 of the Conservation and Reclamation Directive for Renewable Energy Operations  Weed Control Act  C&R and Vegetation Management Plans

Georgetown Solar Energy Project = the Project, BMP = best management practices; m = metres

## 6.2 Non-compliances and Resolution

All incidents that are in non-compliance with the environmental commitments made by Georgetown Solar in this EPP will be reported to the Environmental Advisor and Owner's Representative or Operations Manager. Appropriate steps will be taken to rectify the situation through the implementation of appropriate mitigation measures, and properly document the incident. The Environmental Advisor will report the incident to the appropriate regulators if necessary.

If the situation arises where consensus on the appropriate mitigation measures, or on the success of implemented mitigation cannot be reached, then the Environmental Advisor and Operations Manager/Owner's Representative will be notified and consulted. The Environmental Advisor, in consultation with Georgetown Solar, will determine the proper course of action to ensure that all environmental commitments outlined in the EPP and appropriate legislation have been appropriately met, and reported as necessary.

## 6.3 Unforeseen Environmental Impacts

Unforeseen environmental impacts may arise during the construction and operation of the Project that are not covered in this EPP and there may be need to revise, refine, modify, and/or create new procedures to address and mitigate unanticipated environmental impacts. If this were to occur, the issue will be resolved in consultation with the Environmental Monitor, Environmental Advisor, Construction or Operations Manager, Georgetown Solar, and AEP, as needed.

The general procedure to follow in the event modification is required to the EPP is outlined below:

- Environmental Monitor identifies an environmental impact that falls outside of the scope of this EPP. If the issue is identified by other personnel on the Project they will report it to the Environmental Monitor as soon as possible.
- Construction work will be halted in the area of the new issue, taking into account safe work practices and work area securement, until an appropriate mitigation has been determined
- Environmental Monitor reports the environmental issue to the Environmental Advisor and Construction or Operations Manager and, together, with Georgetown Solar, develop appropriate mitigation and modification to the EPP to address the new environmental impact. AEP will be consulted at this stage if needed.
- Environmental Monitor oversees and assists with the implementation of new mitigation measures.

## 7.0 REPORTING

The Environmental Monitor and Environmental Advisor, with support from Georgetown Solar, will ensure that all necessary reports are completed in a timely manner and submitted to the relevant regulators if needed.

Examples of reports required for the Project include:

- Annual Environment reports
- Post-construction monitoring reports
- Environmental monitoring reports
- Spill reports
- Environmental incidents
  - o Injured, stranded, or dead wildlife encounters
  - All other wildlife encounters
  - o Discovery of wildlife features (e.g., nests, dens, leks)

## 8.0 REFERENCES

- Alberta Utilities Commission. 2021. Rule 012- Noise Control. Effective March 5, 2021. 74 pp. Accessed November 2021. Available online: <a href="https://www.auc.ab.ca/Shared%20Documents/Rules/Rule012.pdf">https://www.auc.ab.ca/Shared%20Documents/Rules/Rule012.pdf</a>
- Government of Alberta. 2013. Alberta Wetland Policy. Edmonton, Alberta. September 1, 2013. 26 pp. Accessed November 2021. Available online: <a href="https://open.alberta.ca/publications/9781460112878">https://open.alberta.ca/publications/9781460112878</a>
- Government of Alberta. 2017a. Weed Control Act. Statutes of Alberta 2008, Chapter W-5.

  Alberta Queen's Printer. Edmonton, Alberta. Current as of December 15, 2017. 20 pp.

  Accessed November 2021. Available online:

  <a href="https://www.qp.alberta.ca/1266.cfm?page=W05P1.cfm&leg\_type=Acts&isbncln=9780779760602">https://www.qp.alberta.ca/1266.cfm?page=W05P1.cfm&leg\_type=Acts&isbncln=9780779760602</a>
- Government of Alberta. 2017b. Wildlife Directive for Alberta Solar Energy Projects. Effective October 4, 2017. 38 pp. Accessed November 2021. Available online: <a href="https://open.alberta.ca/dataset/6a71e752-8d72-4126-a347-e9f328279904/resource/527c6a99-4004-440c-8033-07872cb8adb0/download/wildlifedirective-albertasolarenergyprojects-oct4-2017.pdf">https://open.alberta.ca/dataset/6a71e752-8d72-4126-a347-e9f328279904/resource/527c6a99-4004-440c-8033-07872cb8adb0/download/wildlifedirective-albertasolarenergyprojects-oct4-2017.pdf</a>
- Government of Alberta Alberta Environment and Parks (GOA: AEP). 2018. Conservation and Reclamation Directive for Renewable Energy Operations. Edmonton, Alberta. Current as of September 14, 2018. 66 pp. Accessed November 2021. Available online: <a href="https://open.alberta.ca/publications/9781460141359">https://open.alberta.ca/publications/9781460141359</a>
- Government of Alberta. 2020a. Post-construction Survey Protocols for Wind and Solar Energy Projects. Current as of January 31, 2020. 40 pp. Accessed November 2021. Available online: <a href="https://open.alberta.ca/publications/post-construction-survey-protocols-for-wind-and-solar-energy-projects">https://open.alberta.ca/publications/post-construction-survey-protocols-for-wind-and-solar-energy-projects</a> Government of Alberta. 2020b. Wildlife Act. Revised Statutes of Alberta 2000, Chapter W-10. Alberta Queen's Printer. Edmonton, Alberta. Current as of August 25, 2020. 72 pp. Accessed November 2021. Available online: <a href="http://www.gp.alberta.ca/documents/acts/w10.pdf">http://www.gp.alberta.ca/documents/acts/w10.pdf</a>
- Government of Alberta. 2021a. Dangerous Goods Transportation and Handling Act. Revised Statutes of Alberta 2000, Chapter D-4. Alberta Queen's Printer. Edmonton, Alberta. Current as of July 30, 2021. 28 pp. Accessed November 2021. Available online: <a href="https://www.qp.alberta.ca/documents/acts/d04.pdf">https://www.qp.alberta.ca/documents/acts/d04.pdf</a>
- Government of Alberta. 2021b. Historical Resources Act. Revised Statutes of Alberta 2000, Chapter H-9. Alberta Queen's Printer. Edmonton, Alberta. Current as of June 2, 2021. 28 pp. Accessed November 2021. Available online:

  <a href="https://www.qp.alberta.ca/documents/Acts/h09.pdf">https://www.qp.alberta.ca/documents/Acts/h09.pdf</a>
- Government of Alberta. 2021c. Water Act. Revised Statutes of Alberta 2000, Chapter W-3. Alberta Queen's Printer. Edmonton, Alberta. Current as of June 2, 2021. 140 pp. Accessed November 2021. Available online: https://www.qp.alberta.ca/documents/Acts/w03.pdf

- Government of Canada 2017. Migratory Birds Convention Act, 1994. S.C. 1994, c. 22. Published by the Minister of Justice. Last amended on December 12, 2017. 64 pp. Accessed November 2021. Available online: https://laws.justice.gc.ca/PDF/M-7.01.pdf
- Government of Canada. 2018. Nesting Periods. Modified on October 30, 2018. Accessed November 2021. Available online: https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html#ZoneB
- Government of Canada. 2021. Species at Risk Act. S.C. 2002, c.29. Published by the Minister of Justice. Last amended on August 12, 2021. 114 pp. Accessed November 2021. Available online: <a href="https://laws-lois.justice.gc.ca/PDF/S-15.3.pdf">https://laws-lois.justice.gc.ca/PDF/S-15.3.pdf</a>
- Natural Regions Committee. 2006. Natural Regions and Subregions of Alberta. Compiled by D.J. Downing and W.W. Pettapiece, Government of Alberta. Publication No. T/852. Edmonton, Alberta, Canada.
- Western EcoSystems Technology, ULC. (WEST). 2022. Conservation & Reclamation Plan, Georgetwon Solar Energy Project, Mossleigh, Alberta. Prepared for Georgetown Solar Inc., Calgary, Alberta. Prepared by Western EcoSystems Technology, ULC. Calgary, Alberta. February 15, 2022.