

Submitted by:
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on behalf of Enterprise Solar LP
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Alberta Utilities Commission Application Enterprise Solar Power Project – Power Plant and Substation

FEBRUARY 2021

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Attachment C	Environmental Evaluation
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1 APPLICATION INTRODUCTION

Enterprise Solar GP Inc. on behalf of Enterprise Solar LP submits this application to the Commission, pursuant to Sections 11, 14 and 15 of the *Hydro Electrical Energy Act* for the construction and operations of a solar power facility with a 100 MWac nameplate capacity and construction and operation of the associated Enterprise 1070S substation. The Proponent is currently in discussions with the Alberta Electric System Operator (AESO) regarding a change in the supply transmission service (STS) contract capacity. The Proponent acknowledges that until such time, the approved system access for the Project remains at 90 MWac.

Where applicable PP and TS responses have been combined for efficiency and to reduce repetitiveness.

All questions and communications regarding this application should be directed to:

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Dated February 12, 2021

Signed by:



Rebecca Crump, PMP
Senior Project Manager
Renewable Energy Systems Canada Inc.

2 EXECUTIVE SUMMARY

Corporate Information

Enterprise Solar GP, Inc., is a wholly owned subsidiary of Renewable Energy Systems Canada Inc. (RES). RES is the world's largest independent renewable energy company, based out of the United Kingdom, with Canadian headquarters located in Montreal, Quebec. RES has a global portfolio exceeding 19 GW and has successfully developed and/or constructed over 400 MW in Alberta since 2012. RES was also responsible for construction of the Montana-Alberta Transmission line, a 345 km, 230 kV merchant electricity line with a capacity of 300 MW.

Project Overview

The Enterprise Solar Project is being proposed approximately 4 km southwest of the Town of Vulcan, in Vulcan County, Alberta. The facility is being proposed at 100 MWac (128 MWdc) and would occupy approximately 620 acres (250.9 ha) of privately owned, cultivated land. As the Project would connect to the Alberta Interconnected Electrical System (AIES) on the southern edge of the same property as the facility, a substation would be required to step up the power from 34.5 kV to 138 kV for injection into the AIES. This application is specifically for the Power Plant and the Substation. The interconnection Facility Application will soon follow, in a coordinated fashion with Altalink Management Limited's (Altalink) application the AESO Needs Identification Document (NID).

Project Location

The Project is being proposed on eight (8) contiguous, privately owned quarter sections, that are currently under cultivation.

Table E-1: Project Location

Quarter Section	Section	Township	Range	Meridian
NW	26	16	25	W4
NE	26	16	25	W4
SE	26	16	25	W4
SW	26	16	25	W4
NW	27	16	25	W4
NE	27	16	25	W4
SE	27	16	25	W4
SW * location of substation	27	16	25	W4

Project Schedule

The current anticipated schedule is outlined in Table E-2.

Table E-2: Project Schedule

Activity	Schedule
Stakeholder Consultation	2019-ongoing
AUC Application	Q1 2021
AUC Approval	Q3 2021
County Development Permits	Q3 2021
Construction Start	Q3 2021
Commercial Operations Date	Q4 2022

LIST OF ABBREVIATIONS

AC	Alternating Current
ACMSW	Alberta Culture Multiculturalism and the Status of Women
AEP	Alberta Environment and Parks
AEP - AC	Alberta Environment and Parks – Assessments and Continuations
AEP-FWS	Alberta Environment and Parks – Fish and Wildlife Management Stewardship
AESO	Alberta Electric System Operator
AIES	Alberta Interconnected Electric System
AT	Alberta Transportation
AUC	Alberta Utilities Commission
DC	Direct Current
GOA	Government of Alberta
HEEA	Hydro and Electric Energy Act
HRA	Historical Resources Act
HRIA	Historic Resources Impact Assessment
HV	High voltage
ISO	Independent System Operator
LSD	legal subdivision
MV	Medium voltage
NID	Needs identification document
NIA	Noise Impact Assessment
PERC	Passivated Emitter and Rear Cell
POI	Point of interconnection

PIP	Participant Involvement Program
PV	Photovoltaic
SLD	Single line diagram
SSRP	South Saskatchewan Regional Plan
STS	Supply Transmission Service
TC	Transport Canada
TFO	Transmission Facility Owner

LIST OF MEASUREMENT UNITS

"	Inches
'	Feet
GW	Gigawatt
ha	Hectare
kg	Kilograms
kg/MWh	Kilograms per megawatt-hour
km	Kilometre
kV	Kilovolt
kVA	Kilovolt-ampere
m	Metre
m ²	Square metres
mm	Millimetres
MVA	Megavolt-ampere
MW	Megawatt
MWac	Megawatt alternating current output capacity
MWdc	Megawatt direct current output capacity
MWh	Megawatt-hour
Vdc	Volt direct current
W	Watt

3 POWER PLANT APPLICATION

PP.1/TS.1 Hydro and Electric Energy Act

Identify the sections of the Hydro and Electric Energy Act under which the application is made.

Enterprise Solar G.P. Inc on behalf of Enterprise Solar LP. (the Proponent), hereby applies to the Alberta Utilities Commission (AUC) for approval to construct and operate the Enterprise Solar Project and the Enterprise 1070S Substation (the Project), pursuant to Section 11 (Approval of Power Plant) and Section 14 and 15 of the *Hydro and Electric Energy Act* (HEEA) (GOA 2018a). This application is made subject to all applicable provisions of HEEA and the *Alberta Utilities Commission Act* (GOA 2018b) as well as any regulations, orders, or Commission rules made pursuant to those acts.

This application has been prepared in accordance with *AUC Rule 007: Applications for Power Plants, Substations, Transmission Lines, Industrial System Designations and Hydro Developments* (AUC 2019a).

PP.2/TS.2 Other Acts

Identify any other acts (e.g., *Environmental Protection and Enhancement Act*, *Water Act* and *Wildlife Act*) that may affect the project.

Federal, provincial, and municipal Acts that require authorizations, approvals or permits for the Project are summarized below:

- *Alberta Utilities Commission Act*, S.A. 2007 c.A-37.2;
- *Alberta Land Stewardship Act*, S.A. 2009, c.A-26-88;
- *Electric Utilities Act*, S.A. 2003, c E-5.1;
- *Environmental Protection and Enhancement Act*, R.S.A. 2000, c.E-12;
- *Historical Resources Act*, R.S.A. 2000, c.H-9;
- *Migratory Birds Convention Act*, S.C. 1994, c.22;
- *Municipal Government Act*, R.S.A. 2000, c.M-26;
- *Occupational Health and Safety Act*, SA 2017 c.0-2.1
- *Public Highways Development Act*, R.S.A. 2000, c.P-38;
- *Radiocommunications Act*, R.S.C. 1985, c.R-2;
- *Safety Codes Act*, R.S.A. 2000, c.S-1;
- *Soils Conservation Act*, R.S.A. 2000, c. S-15;
- *Species at Risk Act*, S.C. 2002. c.29;
- *Wildlife Act*, R.S.A. 2000, c. W-10;
- *Water Act*, R.S.A. 2000, c.W-3; and
- *Weed Control Act*, S.A. 2008, c. W-5.1.

PP.3 Commission Approvals

State the approvals that are being applied for from the Commission and provide a draft of the approval being requested.

The Proponent is applying to the AUC pursuant to Sections 11, 14 and 15 of the HEEA for approval to construction and operate the Enterprise Solar Project and the Enterprise 1070S substation (the Project).

Attachment A provides a draft Power Plant Approval and Substation Permit and Licence.

PP.4 Existing Approvals

Provide a list of existing approvals for facilities directly affected by this project, if any.

Not applicable. The Project is not expected to directly affect any existing facilities.

PP.5/TS.5 Consultation with Local Jurisdictions

Provide details and outcome of consultation with local jurisdictions (e.g., municipal districts, counties).

The Proponent initiated formal consultation and engagement with Vulcan County (the County) in January 2020 during a Council delegation to introduce the Project to staff and Council. Several calls with the County Chief Administrative Officer (CAO), Planning, Economic Development and Public Works staff and the Twin Valley Regional Water Commission were held throughout 2020 and are on-going.

A summary of engagement with the County is provided in Section 5 of the Participant Involvement Program (PIP) summary (Attachment B).

In general, the County has been supportive of responsibly developed renewable energy project. There are no rezoning requirements for the Project, although the Proponent will apply for development permits later in 2021 once AUC approval is obtained. The Project has met and, in most cases, exceeded all County setbacks.

Further agreement on road use will be negotiated and formalized in a road use agreement to be executed in Q3 2021.

PP.6/TS.6 Parties, Feedback and Other Agreements

Provide a list of parties that may be affected by the project, confirm that these parties have no concerns regarding the application, and indicate which other agreements are necessary to carry out the project.

The Proponent engaged with local residents, occupants, municipal governments, local airports and aerodromes, governmental ministries and other special interest groups as summarized in the PIP summary included as Attachment B. The Proponent is not aware of any outstanding concerns that have not been resolved apart of the PIP process. There are still incoming questions and engagement is on-going, which could possibly raise additional concerns; although the Proponent is committed to responding.

The status of stakeholder concerns regarding the Project, including governmental entities, is also summarized in the PIP summary (Attachment B).

The Proponent will also require Crossing and/or Encroachment Agreements from the following:

- Sunshine Gas Co-op;
- Twin Valley Regional Water Commission;
- Crescent Point Energy;
- Orphan Wells Association;
- Fortis Alberta;
- Altalink Management Limited; and
- County of Vulcan.

All of the aforementioned entities have been notified and/or directly consulted on the requirements for the Project.

PP.7 Transport Canada Approvals

For wind power plants, provide a copy of approval from Transport Canada for any structures 20 metres or taller and an evaluation for NAV Canada.

An approval was obtained from Transport Canada on February 12, 2021 due to the Project being approximately 3.4 km from the Vulcan Municipal Airport. Details are provided in the PIP summary (Attachment B).

PP.8 Environment Canada Assessment

For wind power plants, provide a copy of an assessment from Environment Canada regarding the potential for interference with weather radars. For assessments in which Environment Canada has identified the potential for significant interference with weather radar, also provide a copy of a mitigation agreement to be concluded with Environment Canada prior to operation of the wind power plant. No wind power plant will be permitted within a five-kilometre radius, or as otherwise agreed to by Environment Canada, of a federal weather radar station due to the significant interference to Environment Canada's ability to accurately forecast the weather.

Not applicable for a solar power plant.

PP.9 Alberta Transportation Approval

Provide a copy of the approval from Alberta Transportation if a wind power plant that is within 300 metres of a numbered highway is being applied for.

Not applicable for a solar power plant.

PP.10 Alberta Environment and Parks Approval

For all applications for thermal power plants greater than one megawatt, confirm that an Environmental Protection and Enhancement Act industrial approval application has been submitted to AEP and indicate the status of that approval. Additionally, list all other government departments and agencies from which an approval is required (e.g., AEP for a Water Act approval), and indicate the status of those approvals. A local AEP wildlife biologist should be consulted unless the project is located within an urban area with no nearby wildlife habitat.

For all solar and wind power plants, submit a signed renewable energy referral report from AEP Wildlife Management. Additionally, list all other government departments and agencies for which an approval is required (e.g., AEP for a Water Act approval), and indicate the status of those approvals.

Alternatively, if the applicant is unable to provide a renewable energy referral report for a solar or wind power project at time of application, the applicant must clearly identify the reason and provide details of its status to assist the Commission in deciding how to proceed with its consideration of the application.

A Wildlife Submission report, appended to the Environmental Evaluation Report (Attachment C; Appendix E) for the Project was submitted to Alberta Environment and Parks – Fish and Wildlife Stewardship (AEP-FWS) on August 14, 2020. On October 26, 2020, AEP-FWS responded with four questions of clarification for the Project. The Proponent was in the middle of redesigning the Project, based on new available transmission capacity information and new technology, therefore waited to respond to AEP-FWS until final information could be provided.

On January 22, 2021, the Proponent responded to AEP-FWS's four questions and submitted a Project update. A signed Renewable Energy Referral Report from AEP-FWS, dated January 29, 2021 is included in Attachment D.

Additionally, the Proponent will prepare submissions necessary to receive the required *Water Act* approvals prior to initiation of construction of the Project.

PP.11/TS.38 Historical Resources Act Approval

With respect to new facilities or alterations, that may have historical, archaeological or paleontological impacts, confirm that a *Historical Resources Act* approval has been obtained or is being applied for. If a historical impact assessment is required, briefly describe any historical, archaeological or paleontological sites close to the power plant site. Please ensure that any summary provided protects the confidential location of any historical, archaeological or paleontological resources.

A Historic Resources (HR) Application was prepared for the Project and submitted to Alberta Culture, Multiculturalism and Status of Women (ACMSW) on January 25, 2021. *Historical Resources Act* Approval number 4941-20-0010-003 was received from ACMSW on February 4, 2021 and is provided in Attachment E. A historic resource impact assessment (HRIA) was not requested. The Proponent will comply with the standard requirements under the *Historical Resources Act* for reporting the discovery of historic resources.

PP.12 Independent System Operator Asset Identification Code

Provide the ISO assigned asset identification code, if available.

The Proponent does not yet have an asset identification code.

PP.13 Power Plant Site Legal Description

Provide the legal description of the proposed power plant site (legal subdivision [LSD], Section, Township, Range, Meridian and/or Plan, Block, Lot, municipal address for urban parcels) and connection point, if applicable.

The legal description of the eight contiguous quarter sections hosting the Project footprint are summarized below in Table 1.13-1.

The centrepont of the proposed substation is: 50°22'07.75"N, 113°20'25.81"W and is located on the southeast quarter of Section 26, Township 16, Range 25, W4M (SE-26-16-25-W4M).

The connection point of the Project to the AES will be to the existing AltaLink 161L double circuit 138 kV line, approximately 10 m to the south of the substation fenced area and within the undeveloped County road allowance of Township Road 164. The point of interconnection is: 50°22'05.69"N, 113°20'25.64"W and is located on the southeast quarter of Section 26, Township 16, Range 25, W4M (SE-26-16-25-W4M).

Table 1.13-1: Legal land Description of the Enterprise Solar Project Footprint

	Quarter Section	Section	Township	Range	Meridian
1	NW	26	16	25	W4
2	NE	26	16	25	W4
3	SE	26	16	25	W4
4	SW	26	16	25	W4
5	NW	27	16	25	W4
6	NE	27	16	25	W4
7	SE	27	16	25	W4
8	SW	27	16	25	W4

PP.14 Supporting Structure Location

For wind power plant applications, provide the longitude and latitude coordinates for the centre of each structure supporting a wind-powered generator. If, after approval is granted, the location of any supporting structure has to be relocated more than 50 metres from the coordinates stated in the application, the power plant proponent must reapply to the Commission for approval to relocate the structure prior to construction. For movement of less than 50 metres, the applicant is not required to reapply unless there is an adverse impact on the permissible sound level or wildlife setback distances.

Not applicable for a solar power project.

PP.15 Generating Units and Capability

Describe the number of generating units and the total capability (kilovolt-ampere [kVA], or megavolt-ampere [MVA]) for the project.

The Project layout submitted as part of this Application and the Environmental Evaluation is based on an operational area of approximately 250 ha (where the solar panel array comprises approximately 218 ha) and a total installed nameplate capacity of up to 100 MWac (128 MWdc). The Project is sized at 100 MWac at the point of interconnection (POI) for delivery to the AES. However, it is possible that with Project design refinements the total nameplate capacity could be less. The Proponent is currently in discussions with the AESO regarding a change in the STS contract capacity. The Proponent acknowledges that until such time, the approved system access for the Project remains at 90 MWac. The Proponent has evaluated a 'worst-case' scenario of impact for the Environmental Evaluation, the noise model and other Project reports to assess the 100 MWac layout case.

As currently designed, the Proponent is proposing to utilize approximately 242,000 tier 1 high efficiency bifacial Passivated Emitter and Rear Cell (PERC) solar modules, in the 540 W and 545 W bin classes, with 33 inverters and 5 medium voltage (MV) circuits leading to the Project substation.

PP.16 Land Use

Describe the existing environmental and land use conditions in the local study area, and discuss potential siting and land use issues. Also, describe the regional setting of the development including regional land use plans in force (e.g., the Lower Athabasca Regional Plan). If applicable, include maps showing important environmental features and sensitive areas in the local study area.

Detailed descriptions of the regional setting and the existing environmental and land use conditions within the initial Project Study Areas are included in the Environmental Evaluation (Attachment C). Maps showing important environmental features and sensitive areas are included in Appendix E of the Environmental Evaluation (Attachment C).

The Project is located in Vulcan County, approximately 4 km southwest of the Town of Vulcan and is illustrated in Figure 1.16-1 below.

A Project Study Area was defined early on as the general areas within which the environmental studies and mapping took place and is expected to be large enough to describe the potential direct and indirect effects for most Valued Components that were assessed in the Environmental Evaluation (Attachment C). The Project Study Area boundary evolved over time and was naturally a refinement and subset of the Project Environmental Study Area as the Project site was de-risked and the Project design progressed. The current Project Study Area boundary includes all the Project infrastructure and represents the basis for the Consultation and Notification boundaries. Figure 1.16-1 provides a visual representation of the Project Study Area boundary.

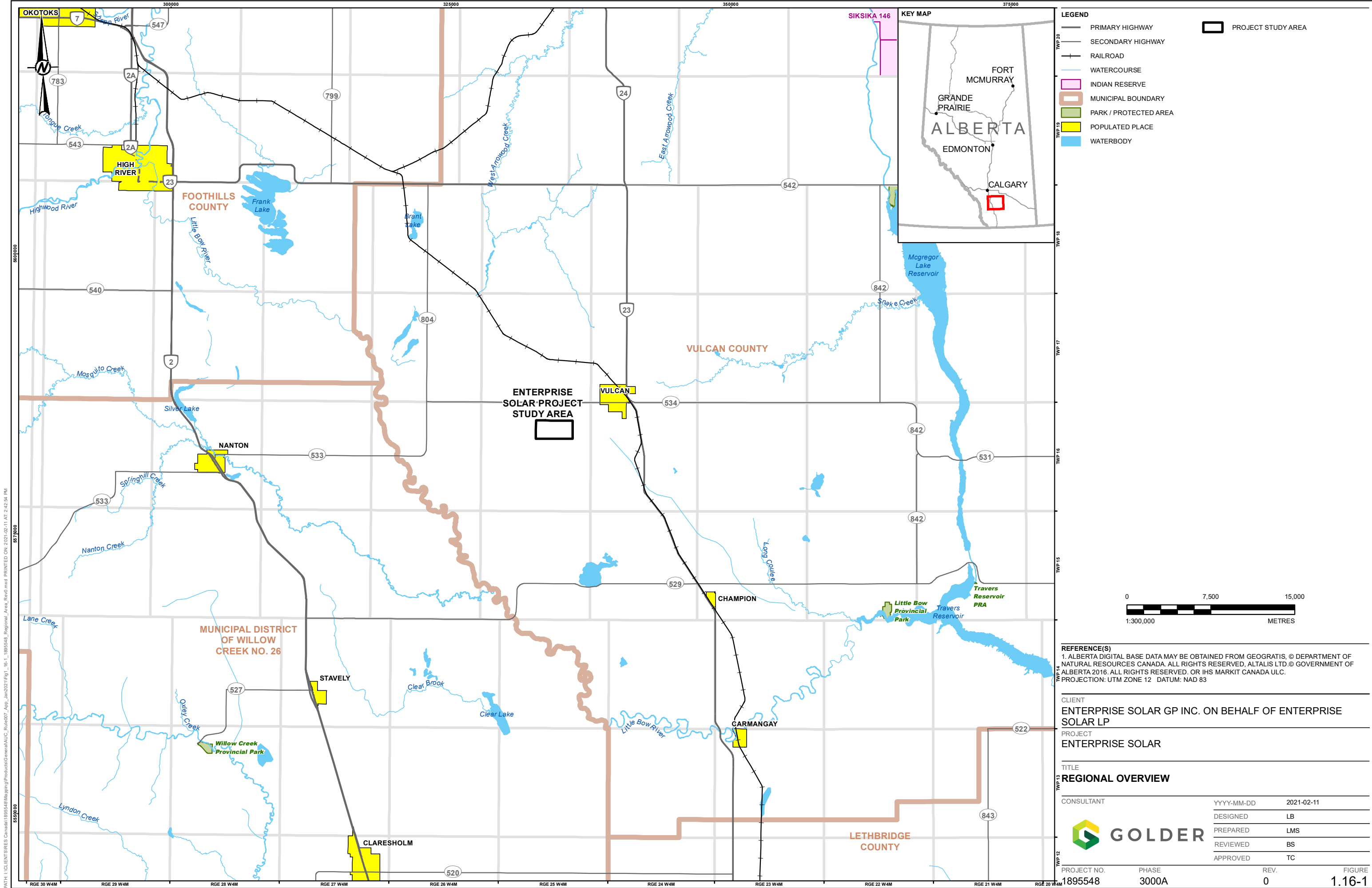
The Project is located in an area predominately used for agricultural activities. Oil and gas (i.e., wellsites and associated infrastructure such as pipelines) activities are in current decline, with many facilities sitting idle in queue for abandonment. Overall, the residential density surrounding the Project Study Area is low and consistent with an agricultural area in rural Alberta.

The Project is located within the Oldman Watershed, within the South Saskatchewan River basin. There are no named or unnamed water courses within the Project Study Area.

The Project overlaps with the boundaries of the following regional land use plans:

The South Saskatchewan Regional Plan (SSRP) (GOA 2018c): The SSRP established a long-term vision for the region and identifies strategic directions for the region over a ten-year period. The Project is consistent with the following objectives under the SSRP Implementation Plan:

- **Economy:** the Renewable Energy objectives are to maintain opportunities for the responsible development of the region's renewable energy industry in support of Alberta's commitment to greener energy production and economic development.
- **Biodiversity and ecosystems:** the Project has been planned so that 90% of the footprint during operations (91% during construction) is on cultivated lands, and Crown lands are avoided, to minimize impacts to sensitive native land cover types that support biodiversity.
- **Efficient use of land:** the Project has been planned to minimize disturbance, while meeting avoidance and setbacks from sensitive features, to the extent practical, as described in the Environmental Evaluation (Attachment C).



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The Approved Water Management Plan for the South Saskatchewan River Basin (GOA 2006): The key objective of this plan is to provide a strategy for a publicly acceptable balance between water consumption and environmental protection in the South Saskatchewan River Basin. The Project will require no operational water inputs to support electrical generation and no discharges to surface water, so this Project is consistent with this Plan.

As the Project is located in Vulcan County, it must be developed and operated in adherence to the municipal bylaws present in the County:

- Vulcan County Land Use Bylaw 2020-028 (Vulcan County 2021): The Proponent has engaged with County representatives to verify municipal requirements under Schedule 5, Section 33: Renewable Energy, Commercial/Industrial. All setbacks required by the County have been met and/or exceeded, and the Proponent will comply with County requirements for the development of the Project.

PP.17/TS.39 Environmental Evaluation

For all types of power plants, at a level of detail commensurate with the size and type of potential effect(s) of the project, complete and submit an environmental evaluation of the project.

For all power plant applications that are not solar or wind power, provide a summary of feedback received to date from AEP addressing the environmental aspects of the project that AEP is satisfied with and any mitigation measures and monitoring activities recommended by AEP.

For all solar and wind power projects, submit a signed renewable energy referral report from AEP Wildlife Management as stated in PP10. Alternatively, if the applicant is unable to provide a renewable energy referral report at time of application, the applicant must clearly identify the reason and provide details of its status to assist the Commission in deciding how to proceed with its consideration of the application.

An environmental evaluation describes and predicts a project's effects on the environment before the project is actually carried out, and the measures to avoid or mitigate the project's predicted adverse environmental effects and any monitoring proposed to evaluate the efficacy of those measures. The purpose of an environmental evaluation is to ensure that enough information is provided by the applicant to inform the public and government agencies about the applicant's understanding of the consequences of its project, and to help the AUC determine if the project is in the public interest. The environmental evaluation should be conducted or overseen by an individual or individuals who possess appropriate environmental experience related to the type and scale of development. An environmental evaluation should:

- **describe the present (pre-project) environmental conditions in the local study area**
- **identify and describe the project activities and infrastructure that may adversely affect the environment**
- **identify what specific ecosystem components (i.e., terrain and soils, surface water bodies and hydrology, groundwater, wetlands, vegetation species and communities, wildlife species and habitat, aquatic species and habitat, air quality and environmentally sensitive areas) within the local study area may be adversely affected by the project**

- describe the potential adverse effects of the project on the ecosystem components during the life of the project
- describe the mitigation measures the applicant proposes to implement during the life of the project to reduce these potential adverse effects
- describe the predicted residual adverse effects of the project and their significance (after implementation of the proposed mitigation)
- describe any monitoring activities the applicant proposes to implement during the life of the project to verify the effectiveness of the proposed mitigation
- describe the methodology used to identify, evaluate and rate the adverse environmental effects and determine their significance, along with an explanation of the scientific rationale for choosing this methodology

If the power plant project requires preparation of a federal environmental assessment report or a provincial environmental impact assessment report, then that report should be submitted as an appendix to the application as required by PP38, and a separate environmental evaluation report satisfying the requirements of PP17 need not be prepared for the project. In such cases, the federal environmental assessment or the provincial environmental impact assessment report is sufficient to also satisfy the environmental requirements outlined in PP17.

The present environmental conditions in the Project Study Area, the potential environmental effects of the Project, proposed mitigation, residual effects, and proposed monitoring programs are described in the Environmental Evaluation included in Attachment C. The Environmental Evaluation report includes the AEP-FWS Renewable Energy Project Submission that was submitted to AEP-FWS, on August 14, 2020 and additional clarifications submitted to AEP-FWS on January 22, 2021 (Attachment C; Appendix E). A copy of the AEM-FWS Renewable Energy Referral Report that was issued on January 29, 2020, which identifies that the Project is ranked as low risk to wildlife and wildlife habitat (Attachment D). As required in the *Conservation and Reclamation Directive for Renewable Energy Operations* (GOA-AEP 2018), a Conceptual Conservation and Reclamation Plan for the Project is included in Attachment F.

PP.18/TS.40 Regional Land Use Plan

If the project site occurs within the plan boundaries of a regional land use plan in force:

- i. Confirm that the proposed project is being developed in accordance with the applicable regional land use plan.

The Project overlaps with the boundaries of the SSRP, which established a long-term vision for the region and identifies strategic directions for the region over a ten-year period. The Project is consistent with the Objectives of the SSRP Implementation Plan that are outlined in the response to PP.16.

- ii. **Confirm if the proposed project is in a conservation area or provincial recreation area established in the applicable regional land use plan. Provide submissions describing how the activity may be considered incidental to a previously approved activity.**

The Project is not within a conservation area or provincial recreation area established in the SSRP.

- iii. **Indicate what, if any, management frameworks in place under the applicable regional land use plan are applicable to the project, the reason why any management frameworks are not applicable to the project and summarize discussions held with AEP and any other government department required to be consulted under the management frameworks regarding the project and its impacts in terms of the management frameworks. Include details on any actions or mitigation measures recommended as a result of the discussions and describe how these actions or mitigation measures will be incorporated into the project.**

The Air Quality Management Framework (ESRD 2014a) under the SSRP is not applicable to the Project, as combustion emissions and fugitive dust generation from the Project are expected to be produced only intermittently during the construction and decommissioning phases, which are temporary in nature, and are considered to be of minimal importance, as identified in the Environmental Evaluation (Attachment C). Furthermore, mitigation measures will be implemented to minimize combustion emissions and fugitive dust at the Project. As a result, the Project is not expected to result in a substantial change to air quality, as further described within the Environmental Evaluation, included as Attachment C.

The Surface Water Quality Management Framework (ESRD 2014b) is not applicable to the Project, as no process water inputs or discharges to surface water are required, and the Project footprint has been planned to minimize overlap with waterbodies and wetlands. The predicted residual effects of the Project on surface water and aquatic species and habitat are not predicted to result in changes that will alter the sustainability beyond an acceptable level, as described in Attachment C.

PP.19/TS.11 Participant Involvement Program

Describe the participant involvement information. (See Appendix A1 – Participant involvement program requirements).

Pre-Participant Involvement Program (PIP) consultation activities occurred through 2019 and early 2020, with discussions with adjacent landowners to the proposed Project, a presentation to Vulcan County Council and a meeting with the Town of Vulcan. Once it was determined that there was general support for a solar power facility, the Proponent advanced the development of the Project and initiated the official PIP in July 2020.

PIP activities included three rounds of information mailings, each included a Project Specific Information Package (PSIP), a storefront was rented in the Town of Vulcan and open 2 days per week between July and November 2020 with information panels and a project team member knowledgeable about project specifics.

Furthermore, a Project website (www.enterprise-solar.com) was set up in July 2020 and provides regular updates on Project activities, and makes all Project updates and consultation documents available for download.

Detailed follow up with all landowners, residents and occupants was conducted by phone or in person to receive feedback on the Project documents during the July 2020 – February 2021 time frame. In some cases, multiple one on one conversations happened with a stakeholder during this timeframe. These direct one on one consultations were undertaken for everyone on the notification list, right from the Project boundary to the 2000 m notification boundary to ensure the entire local community could provide feedback and input into Project design and execution.

General details of Project information that has been provided to the public is listed below in Table 1.19-1. Copies of all the information provided can be found in the Appendices of the PIP summary.

Table 1.19-1: Project Information Provided During the Participant Involvement Program

PIP Activity	Information provided
Initiation of Website (www.enterprise-solar.com) July 24, 2020- ongoing	<ul style="list-style-type: none">• General map of the Project Area with details on the solar panels, substation and interconnection• Information about the Proponent• Information on the studies being undertaken to support permitting the Project• Schedule and timelines updated to reflect the development of the Project
Project Office July, August, September, October and November 2020	<ul style="list-style-type: none">• Project Information panels on display including:<ul style="list-style-type: none">○ Project overview and details○ Maps of the Project Study Area and Project constraints○ Local community benefits○ Project planning and schedule○ Details of the Project permitting and approvals process○ Wildlife studies and environmental profile○ Noise and glare assessment results
Mailout Package July 24, 2020	<ul style="list-style-type: none">• Project Specific Information Package (PSIP)• Project Area map including consultation and notification radii• AUC brochure entitled Public Involvement in a Proposed Utility Development• Advertisement of the Project Office in Vulcan

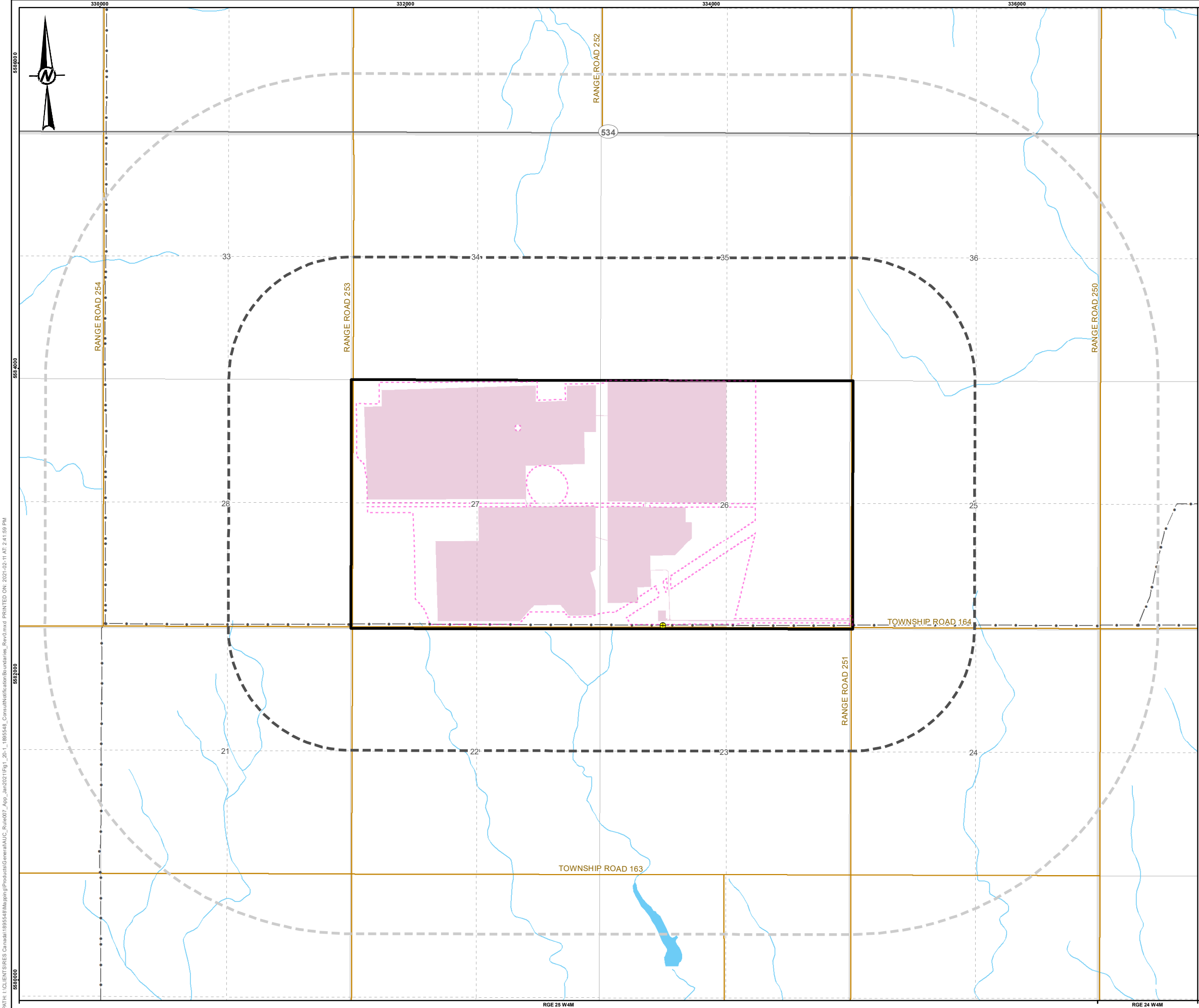
Table 1.19-1: Project Information Provided During the Participant Involvement Program

PIP Activity	Information provided
Mailout Package October 30, 2020	<ul style="list-style-type: none"> • Project Specific Information Package • Overview and details of environmental and wildlife studies, consultation, noise and glare assessments, permitting activities, Project schedule • Advertisement of the Project office hours • Project Area map including consultation and notification radii • AUC brochure entitled Public Involvement in a Proposed Utility Development
Mailout Package January 12, 2021	<ul style="list-style-type: none"> • Detailed information on the Project layout • Detailed site plan of the Project • Updated Project information based on consultation • AUC brochure entitled Public Involvement in a Proposed Utility Development
Personal one-on one consultation July 2020 - February 2021 and on-going	<ul style="list-style-type: none"> • Project representatives met with and/or discussed the Project with landowners, occupants and residents within the 2000 m notification and consultation boundaries. All issues that have been brought to the attention of the Proponent are resolved to the best of the Proponent's knowledge

PP.20/TS.12 Consultation List

List all occupants, residents and landowners on lands within the appropriate notification radius as determined using Appendix A1– Participant involvement program guidelines, as well as other interested persons that were consulted as part of the participant involvement program. If there are populated areas just outside the minimum notification distance, applicants should consider including those areas in the participant involvement program.

The consultation list was developed in accordance with the PIP guidelines outlined in Appendix A1 of Rule 007 and is provided as Appendix B of the PIP summary (Attachment B). The proponent opted to voluntarily conduct personal one on one consultations with all landowners, residents and occupants for the entire notification area to solicit feedback from all local stakeholders. The consultation and notification boundaries are illustrated in Figure 1.20-1 below.



LEGEND

SECONDARY HIGHWAY

LOCAL ROAD

TRANSMISSION LINE

WATERCOURSE

WATERBODY

INTERCONNECTION LOCATION

LIMIT OF DISTURBANCE

OPERATIONS AREA

PROJECT STUDY AREA

PERSONAL CONSULTATION (800 m BUFFER)

PUBLIC NOTIFICATION (2,000 m BUFFER)



REFERENCE(S)
1. PROJECT COMPONENTS OBTAINED FROM RES CANADA, REVISED BY GOLDER ASSOCIATES LTD., JANUARY 2021.
2. ALBERTA DIGITAL BASE DATA MAY BE OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED, OR ALTALIS LTD.© GOVERNMENT OF ALBERTA 2016. ALL RIGHTS RESERVED.
PROJECTION: UTM ZONE 12 DATUM: NAD 83

CLIENT
ENTERPRISE SOLAR GP INC. ON BEHALF OF ENTERPRISE SOLAR LP
PROJECT
ENTERPRISE SOLAR

TITLE		
PROJECT STUDY AREA BOUNDARY, CONSULTATION BOUNDARY AND NOTIFICATION BOUNDARY		
CONSULTANT	YYYY-MM-DD	2021-02-11
	DESIGNED	LB
	PREPARED	LMS
	REVIEWED	BS
	APPROVED	TC



PROJECT NO.	PHASE	REV.	FIGURE
1895548	3000A	0	1.20-1

PP.21/TS.13 Mailing List

Supply a list of mailing addresses, with corresponding land locations and two sets of printed mailing labels of those parties mentioned in PP20, above.

According to AUC Bulletin 2020-13 dated April 7, 2020, the Proponent will file an Excel spreadsheet of the mailing list on the e-file site at the time of submission.

PP.22/TS.14 Concerned Participants List

Identify any persons who expressed concerns about the project and the specifics of their concerns.

Concerns and how concerns were addressed, or are being addressed, are summarized in the PIP summary (Attachment B). Refer to Appendix D: Summary of Key Questions, Concerns and Responses.

PP.23/TS.15 Affected Persons Discussion Summary

Summarize discussions held with potentially directly and adversely affected persons.

Summaries of discussions held with potentially directly and adversely affected persons can be found throughout the PIP summary, (Attachment B). Refer to Appendix D: Summary of Key Questions, Concerns and Responses.

PP.24/TS.16 Concerns Resolution

If potentially directly and adversely affected persons raised any concerns, describe how these concerns were dealt with or are being dealt with.

A summary of the Proponent's response to the common concerns that were raised by potentially directly and adversely affected persons is summarized in the PIP summary (Attachment B). Details of concerns and resolution of concerns can be viewed in Appendix D: Summary of Key Questions, Concerns and Responses.

PP.25/TS.17 Concerns Resolution Confirmation

For those potentially directly and adversely affected persons identified above, include a confirmation of resolution of the concerns, if applicable.

Please refer to the details provided in Appendix D: Summary of Key Questions, Concerns and Responses of the PIP (Attachment B) for a summary on how specific stakeholder concerns have been resolved. To the best of the Proponent's knowledge, all the concerns identified and raised by stakeholders have been resolved.

PP.26 Oil and Gas Conservation Rules

If the power plant is to be located within oil and gas facility, confirm the power plant will comply with the standards outlined in sections 8.090 of the *Oil and Gas Conservation Rules*.

Not applicable, the Project is not located within an oil and gas facility.

PP.27 Noise Impact Assessment

Provide a noise impact assessment, in accordance with the current AUC Rule 012.

A Noise Impact Assessment (NIA) was conducted to predict the potential noise impact of the Project under representative operating conditions for the full solar facility, including inverters and the substation. The NIA report is provided in Attachment G. Modeling was completed to industry best practice and using conservative assumptions described in the NIA (Attachment G). The results of these predictions are in compliance with the criteria defined by Rule 012: *Noise Control* (AUC 2020). The NIA is in compliance with AUC Rule 012.

In addition, a glare assessment has been conducted for the Project and is provided in Attachment H in accordance with AUC Bulletin 2019-09: *Interim information requirements for solar and wind energy power plant applications* (AUC 2019b). As with the NIA, conservatism was built into the glare assessment modeling methodology and is described in Attachment H, Section 2.0.

PP.28 Power Generating Equipment and Facilities

For an application where no changes to the major components of the power generating equipment are contemplated after filing the application, provide details of the power generating equipment and associated facilities, such as make, model and nominal capability.

The Project, as currently planned, has a nameplate capacity of 100 MWac (128 MWdc). The Project is well advanced in design with specific technology that will become available in the Canadian market in 2022. The major equipment currently contemplated for the solar project is outlined below.

Modules

The Project includes approximately 242,000 Longi LR5-72HBD polysilicon bi-facial solar modules, with a combination of both 540 W and 545 W modules. The dimension of each module is 2,256 mm x 1,133 mm x 35 mm and will have a 2.0 mm tempered glass coating added due to local climatic conditions and an anodized aluminum alloy frame. Each panel weighs 32.3 kg.

Raking System

The Proponent is currently planning on using ArchTech Skyline 1P (one in portrait) single axis tracker. The Project would utilize approximately 27 modules per string and just over 3,000 tracker rows. The tracking range is between +/-60° and is operated by a slew drive with 28 Vdc motors. Approximately 40,000 steel pile foundation would be required. The Proponent is working with a local Albertan private manufacturer and installer of piles. The pile design is currently in process. It is currently anticipated that up to five different pile designs throughout the site.

Inverters

The Project will utilize 33 Sungrow SG3600UD-MV string inverters with integrated transformer with a maximum photovoltaic (PV) input of 1,500 volts and a transformer rating of 3,600 kVA. The SG3600 is a bi-directional inverter, allowing for future energy storage facilities. The Project is currently being designed to be “storage-ready” (i.e., use of a bi-directional inverter and additional space around each inverter for the future placement of battery storage equipment).

Collection System

As designed, there are 5 MV collection loops, with a combination of above and underground collection. The total length of cabling would be 13,635 m. The Project would utilize a CAB cabling hanger system (or similar) for the above ground DC collection. All MV cabling in the east-west direction would be aboveground. All north-south MV cabling and all homeruns from the inverters to the Project substation would be underground.

Substation

The Project substation would have one 34.5 kV to 138 kV main power transformer and an A-frame. The Point of Interconnection is approximately 25 m south of the substation. The Project substation would be fenced in an area of approximately 3,400 m².

Access Roads

The main access road into the Project site would be off Range Road 251 to the east of the Project. This access road would be 1,200 m in length and lead to the temporary laydown area and substation. The Public Road to the west of the Project, Range Road 253 has a year around County road ban. In addition to the 1,200 m access road off of Range Road 251, there would be approximately 9,800 m of access roads throughout the site for construction, operations, and maintenance of the Project.

Fencing

The entire solar facility will be fenced in. The Proponent will abide by general requirements from AEP (6" of space at the bottom for small animal thoroughfare); at least 6' fence for safety and site security. The Proponent will consult with the County to ensure that any fencing meets County requirements. There will be approximately 13.7 km of fencing around the Project, in addition to the fence around the substation. There will also be a gate at the access point to the site. It was recommended by a local landowner and the commitment has been made for safety purposes for the community.

Temporary Laydown Areas

There would be two temporary laydown areas, one smaller 0.5 ha laydown on the NW 26-16-25-W4M. The 3.3 ha main laydown yard would be located adjacent to the Project substation on the SW 26-16-25-W4M.

PP.29 Power Plant Capability, Operating Parameters and Power Generation

For an application where vendors which are to supply the major components of the power generating equipment have not been selected, provide the nominal capability of the applied-for power plant and the design and maximum operating parameters, and characteristics specified for the power generating equipment and associated facilities.

Not applicable, see PP 28.

PP.30 Power Plant Heating and Cooling

Present the estimated power plant heat rates, efficiency of the power plant and details of the cooling system for the power plant.

Not applicable for a solar project.

PP.31 Power Plant Fuel Requirements

State the fuel requirements of the power plant, including type, source, method of handling, transportation, process storage and environmental effects.

Not applicable for a solar project.

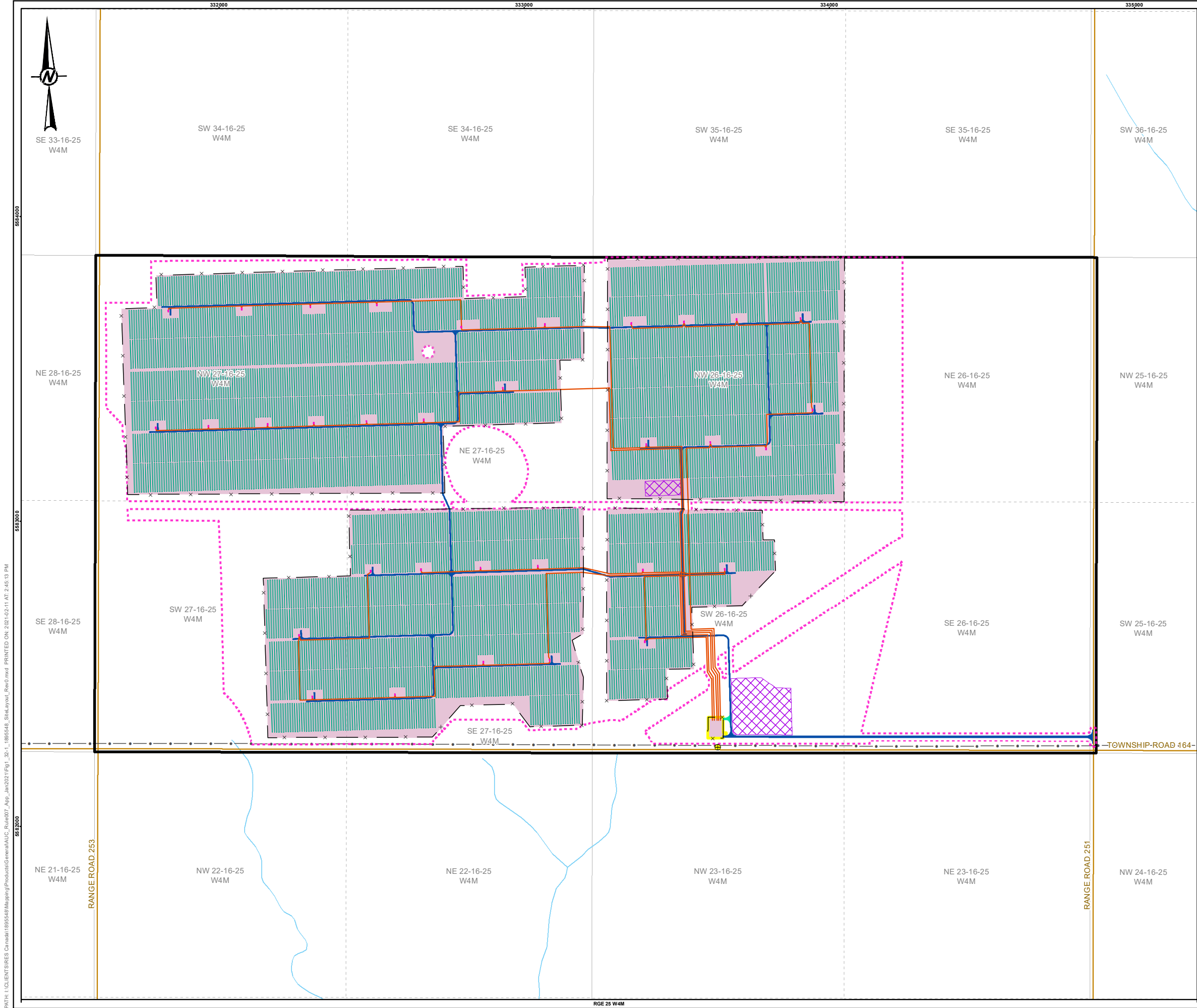
PP.32/TS.27 Plant Site

Provide a legible plant site drawing showing all major equipment components.

The proposed Project layout showing all major equipment components is included as Figure 1.32-1.

The location of the Project substation was chosen in consideration of the following:

- minimizing the length of the overland routing of overhead transmission line interconnection for the Project;
- minimizing the amount of new infrastructure required to connect the solar facility;
- minimizing noise contributions of the Project substation to adjacent receptors by placing it in a relatively remote location; and
- identifying a parcel of land that the landowner was willing to receive the Project substation on.



LEGEND

PROJECT STUDY AREA

LOCAL ROAD

TRANSMISSION LINE

WATERCOURSE

INTERCONNECTION LOCATION

LIMIT OF DISTURBANCE

OPERATIONS AREA

PROJECT LAYOUT COMPONENTS

TEMPORARY CONSTRUCTION DISTURBANCE

ELECTRICAL COLLECTION LINE

LAYDOWN AREA

TEMPORARY ROAD

PERMANENT OPERATIONS FOOTPRINT

FENCELINE

INVERTER

ROAD

SOLAR PANEL LAYOUT

SUBSTATION

REFERENCE(S)
1. PROJECT COMPONENTS OBTAINED FROM RES CANADA, REVISED BY GOLDER ASSOCIATES LTD., JANUARY 2021.
2. ALBERTA DIGITAL BASE DATA MAY BE OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED, OR ALTALIS LTD. © GOVERNMENT OF ALBERTA 2016. ALL RIGHTS RESERVED.
PROJECTION: UTM ZONE 12 DATUM: NAD 83

CLIENT
ENTERPRISE SOLAR GP INC. ON BEHALF OF ENTERPRISE SOLAR LP
PROJECT
ENTERPRISE SOLAR

TITLE
PROJECT LAYOUT

CONSULTANT	YYYY-MM-DD	2021-02-11
	DESIGNED	LB
	PREPARED	LMS
	REVIEWED	BS
	APPROVED	TC

PROJECT NO.	PHASE	REV.	FIGURE
1895548	3000A	0	1.32-1

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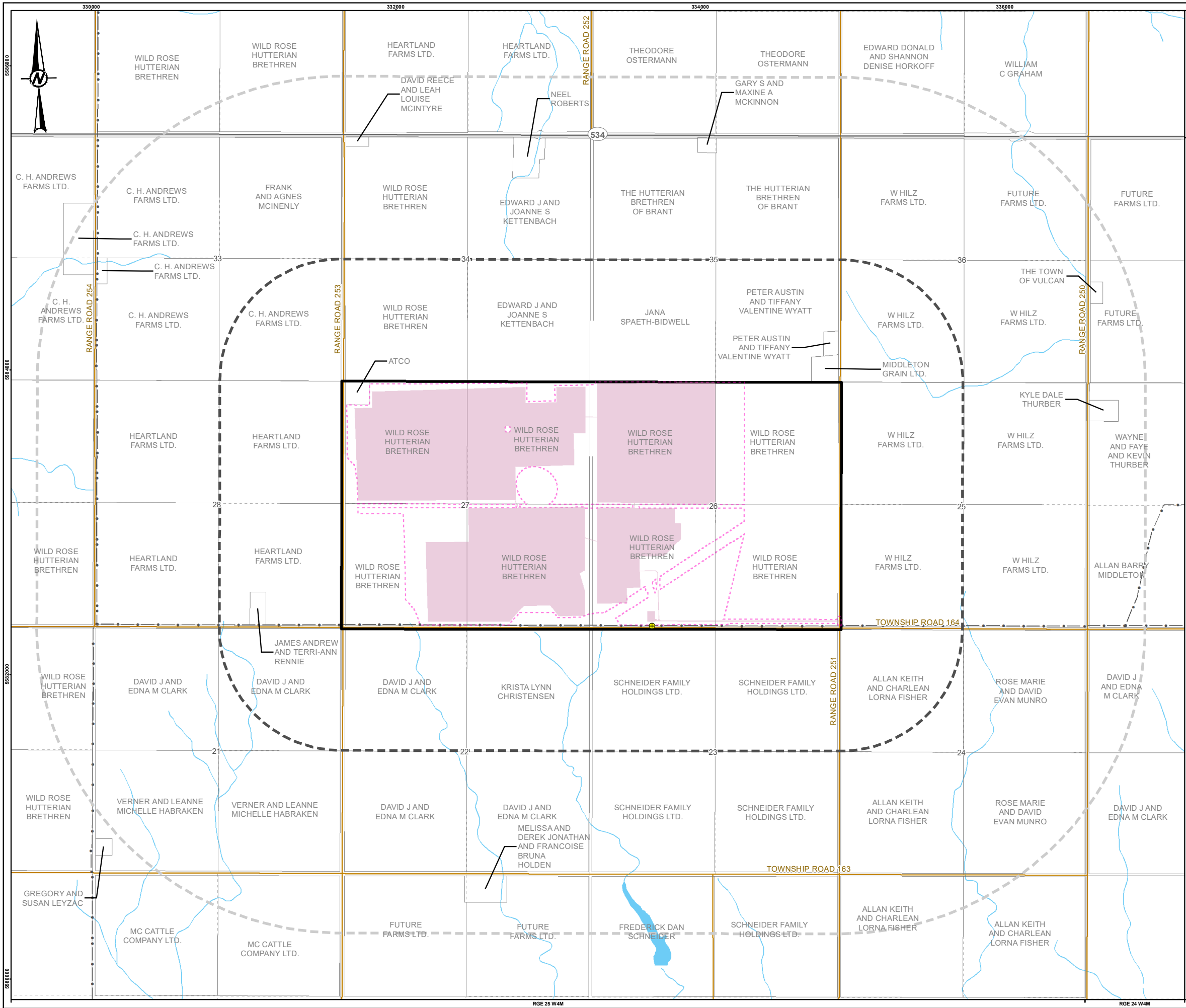
PP.33 Power Plant Site Boundaries and Land Ownership

Provide a legible map showing the power plant site boundaries and land ownership, including any residences and dwellings within the appropriate notification radius as determined using Appendix A1– Participant involvement program guidelines, as well as any additional energy-related facilities within the project area.

The proposed Project layout showing the solar facility site boundaries (i.e., operations area) and land ownership, including any residences and dwellings within the appropriate notification radius is included as Figure 1.33-1.

Energy-related facilities within the Project area are presented in Figure 1.33-2. An existing inactive wellsite and discontinued pipeline segments present on the Project site are planned to be decommissioned by the facility owners regardless of whether the Project proceeds. The Proponent has been actively consulting with these facility owners to coordinate the decommissioning of these facilities prior to the planned construction of the Project, as described in Section 7 of the PIP summary (Attachment B).

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LEGEND

SECONDARY HIGHWAY

LOCAL ROAD

TRANSMISSION LINE

WATERCOURSE

WATERBODY

INTERCONNECTION LOCATION

LIMIT OF DISTURBANCE

OPERATIONS AREA

PROJECT STUDY AREA

PERSONAL CONSULTATION (800 m BUFFER)

PUBLIC NOTIFICATION (2,000 m BUFFER)

LAND PARCEL

REFERENCE(S)
1. PROJECT COMPONENTS OBTAINED FROM RES CANADA, REVISED BY GOLDER ASSOCIATES LTD., JANUARY 2021.
2. ALBERTA DIGITAL BASE DATA MAY BE OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED, OR ALTALIS LTD. © GOVERNMENT OF ALBERTA 2016. ALL RIGHTS RESERVED.
PROJECTION: UTM ZONE 12 DATUM: NAD 83

CLIENT
ENTERPRISE SOLAR GP INC. ON BEHALF OF ENTERPRISE SOLAR LP

PROJECT
ENTERPRISE SOLAR

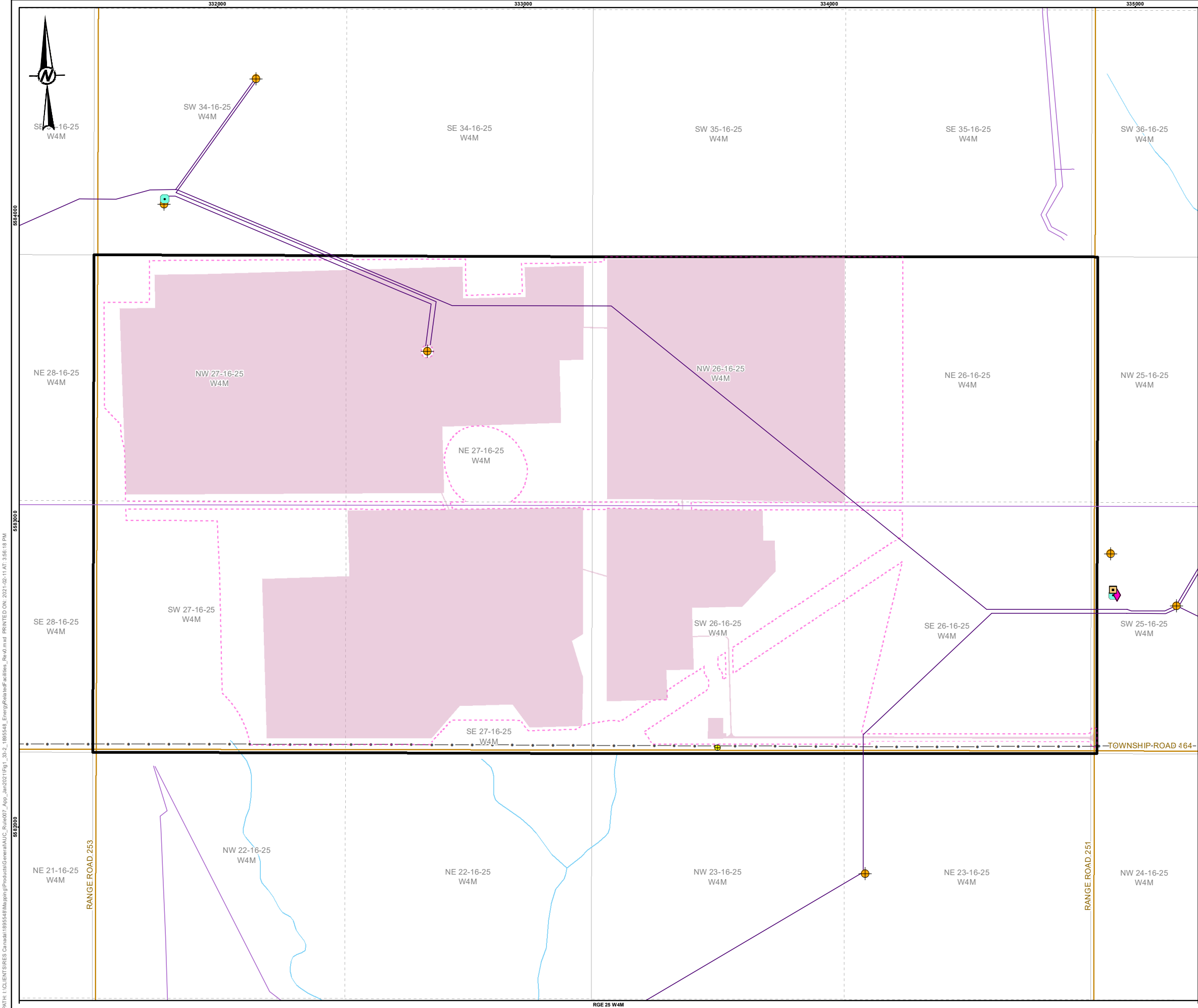
TITLE
PROJECT LAYOUT AND LAND OWNERSHIP

CONSULTANT	YYYY-MM-DD	2021-02-12
	DESIGNED	LB
	PREPARED	LMS
	REVIEWED	BS
	APPROVED	TC

PROJECT NO.	PHASE	REV.	FIGURE
1895548	3000A	0	1.33-1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

25mm



LEGEND

● INTERCONNECTION LOCATION

--- LIMIT OF DISTURBANCE

■ OPERATIONS AREA

▭ PROJECT STUDY AREA

— LOCAL ROAD

— WATERCOURSE

■ BATTERY

● COMPRESSOR STATION

◆ GAS GATHERING SYSTEM

● OIL AND GAS WELL

— LOW PRESSURE PIPELINE

— HIGH PRESSURE PIPELINE

● TRANSMISSION LINE

0 250 500

1:12,500 METRES

REFERENCE(S)

1. PROJECT COMPONENTS OBTAINED FROM RES CANADA, REVISED BY GOLDER ASSOCIATES LTD., JANUARY 2021.

2. OIL AND GAS DATA MAY BE OBTAINED FROM IHS MARKIT CANADA ULC., AER (ALBERTA ENERGY REGULATOR), OR ALBERTA RURAL UTILITIES/GAS CO-OPS (VIAABADATA).

3. OTHER ALBERTA DIGITAL BASE DATA MAY BE OBTAINED FROM GEOGRATIS, © DEPARTMENT OF NATURAL RESOURCES CANADA. ALL RIGHTS RESERVED, OR ALTALIS LTD. © GOVERNMENT OF ALBERTA 2016. ALL RIGHTS RESERVED.

PROJECTION: UTM ZONE 12 DATUM: NAD 83

CLIENT

ENTERPRISE SOLAR GP INC. ON BEHALF OF ENTERPRISE SOLAR LP


PROJECT

ENTERPRISE SOLAR

TITLE

ENERGY RELATED FACILITIES

CONSULTANT	YYYY-MM-DD	2021-02-11
	DESIGNED	LB
	PREPARED	LMS
	REVIEWED	BS
	APPROVED	TC

 **GOLDER**

PROJECT NO.	PHASE	REV.	FIGURE
1895548	3000A	0	1.33-2

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25mm

PP.34/TS.30 Project Area for Public Notice

Provide a legible map of the project area suitable for use in a public notice.

A legible map of the proposed solar facility and substation is provided in Attachment I.

PP.35/TS.9 Project Schedule

Supply the expected in-service dates and describe ramifications if the approval date cannot be met.

The expected in-service date (ISD) is currently August 31, 2021 as per the latest Functional Specification. The Proponent is currently in consultation with the AESO with respect to a revised ISD in Q3 2022 to better align with the current schedule. Delays in AUC approval could affect the construction schedule as well as construction pricing. If the ISD is delayed beyond the revised date the Proponent could face commercial penalties through a delay in energy production and associated renewable energy credit generation.

PP.36 Emission Rates

Indicate the plant's emission rates, in kilograms per megawatt-hour (kg/MWh) of nitrogen oxides (NO_x), sulphur dioxide (SO₂), and primary particulate matter, and state whether the emissions will comply with the current Alberta Air Emission Standards for Electricity Generation and any other emission standards or guidelines that are applicable to the proposed project.

Not applicable. The Project is a solar power development.

PP.37 Alberta Ambient Air Quality Objectives and Guidelines Compliance

State whether the proposed plant will comply with the Alberta *Ambient Air Quality Objectives and Guidelines* and any other standards or guidelines that are applicable to the proposed project for ground-level concentrations of pollutants.

Not applicable. The Project is a solar power development.

PP.38 Environmental Assessment

Provide the federal environmental assessment or provincial environmental impact assessment as an appendix to the application, if one was required by a federal or provincial authority.

The provincial environmental assessment process begins when the Environmental Assessment Director is made aware of a new project. The Director determines if the project requires an Environmental Impact Assessment report to be prepared based on the *Environmental Assessment (Mandatory and Exempted Activities) Regulation*. The regulation lists specific activities that are either mandatory and will require an Environmental Impact Assessment report, or are exempted and do not require such a report. Activities that are not on either list are considered discretionary and the Director decides whether further consideration under the environmental assessment process is required.

Under the Alberta *Environmental Protection and Enhancement Act* an environmental impact assessment is mandatory for thermal power plant facilities that use non-gaseous fuel and are greater than 100 megawatts in total capability.

An environmental assessment is not a designated activity under the Physical Activities Regulations of the federal *Impact Assessment Act*, or a mandatory activity under the Environmental Assessment (Mandatory and Exempted Activities) Regulation of the provincial *Environmental Protection and Enhancement Act* for land-based solar power projects. The Proponent contacted the Impact Assessment Agency of Canada (IAAC) and Alberta Environment and Parks – Assessments and Continuities (AEP-AC) on February 4, 2021 to request confirmation that no additional federal or provincial environmental assessment requirements are needed for the Project. The result of IAAC's review is provided in Attachment J, indicating that no federal impact assessment is required. The results of AEP-AC's review will be provided to the AUC once received.

A Renewable Energy Project Submission Report (Attachment C; Appendix E) for the Project was submitted to AEP-FWS and a Referral Report was received for the Project on January 29, 2021 (Attachment D).

PP.39 Transmission

If the power plant is to be connected to the transmission system of the Alberta Interconnected Electric System, irrespective of voltage level, provide the following information:

- **An electrical single-line diagram obtained from the ISO or sanctioned by the ISO showing the transmission development plan for the interconnection.**
- **A map with one or more conceptual layouts showing possible routes and general land locations for facilities that would be used to interconnect the power plant to the Alberta Interconnected Electric System.**

The medium voltage (MV) and high voltage (HV) single line diagrams (SLD) showing collection and transmission are provided in Attachment K, and the location of the conceptual preferred route for the interconnection is shown on Figure 1.32-1 above.

PP.40 Distribution

If the power plant is to be connected at distribution voltage level to the Alberta Interconnected Electric System (generally less than 69 kV), the applicant must provide a statement from the distribution facility owner indicating that it is willing to connect the generating facilities.

Not applicable, the Project will be connected at transmission voltage level to the AIES.

PP.41 Electric Utilities Act Compliance

For a municipality or a subsidiary of a municipality to hold an interest in a generating unit, documentation confirming compliance with Section 95 of the *Electric Utilities Act* is required.

Not applicable. No municipality will hold an interest in the Project.

PP.42 Power Line Route

For a wind power plant application, provide legible maps and/or air photo mosaics upon which the proposed collector power line route or routes have been imposed and showing the residences, landowner names, and major land use and resource features (e.g., vegetation, topography, soil type, existing land use, existing rights-of-way, and superficial and mineable resources).

Not applicable. The Project is a solar power development.

4 SUBSTATION APPLICATION

TS.4 Existing orders

Where existing facilities are being altered, discontinued, dismantled or removed state the existing order/authority (e.g., approvals, permits and licenses) for each facility.

Altalink line 161L will be altered by tapping the line at pole 398. The Market Participant Choice 138 kV transmission line will be named 161AL and the name of Altalink's existing 138 kV transmission line will remain unchanged.

TS.7 Project Description

Provide a description of the proposed project.

The Project substation will be located in the southwest quarter section of Section 26, Township 16, Range 25, W4M and will occupy an area of approximately 50 m by 70 m (0.34 ha). The Project substation will mainly consist of electrical equipment, including a main power transformer, high and medium voltage circuit breakers and disconnect switches. A control building will be located inside the Project substation area. The Project substation area will be fenced to prevent unauthorized access. The Project substation location has been sited directly adjacent to the existing AltaLink line 161L double circuit 138 kV line running adjacent to the Project site, immediately to the south of the substation, to minimize the overall disturbance in the area. The application for the transmission line and interconnection for the Project, will be submitted by the Proponent as Market participant, concurrently with the AESO's NID and the transmission facility owners (TFO's) submission.

The electric SLD and the substation general arrangement are provided in Attachment K.

TS.8 Independent System Operator Direct Assignment Letter

Provide a copy of the ISO direct assignment letter pursuant to the *Electric Utilities Act*. Alternatively, if a needs identification document was not required, provide a copy of the ISO approval letter pursuant to the abbreviated needs approval process, or a statement that the project was exempt pursuant to Section 1.4.1(a) of this rule.

Not applicable to this application.

TS.10 Transmission Line Routing Alternatives

Describe any transmission line routing alternatives to the proposal and compare the relative effects (environmental, social and economic) of these alternatives with the proposal.

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

TS.18 Transmission Line Design and Voltage

Describe the design and operating voltage of the transmission line and/or substations.

The substation was designed to a nominal voltage of 138 kV. The operating voltage will fall within the range of the Emergency Minimum Voltage 124 kV and the Emergency Maximum Voltage of 150 kV as per the current Functional Specification (Attachment L).

TS.19 Transmission Line Ratings

Provide the continuous and maximum ratings of the transmission line for the various operating conditions as stipulated by the ISO and the expected transmission line losses. Describe changes, if any, proposed by the TFO or market participant.

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

TS.20 Conductor Selection

If the ISO requires the TFO or market participant, who has been directly assigned for the proposed project, to determine the choice of conductors, describe conductor size and arrangement selected and the basis for conductor selection.

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

TS.21 Transmission Line Structure

Describe the proposed transmission line structure type, including height and spacing; if more than one type of structure is proposed, state where each type will be used.

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

TS.22 Right-of-way

State the right-of-way width and the basis for determining the width.

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

TS.23 Substation Equipment

Describe all major substation equipment being applied for and list the final major equipment in the substation.

Major Equipment for the Project substation includes:

- One (1) 138 kV step-up power transformer with a maximum rating of 150 MVA;
 - One (1) circuit breaker with associated disconnect switch;
 - One (1) 138 kV motorized disconnect switch; and
 - One (1) control building.
-

All of the above listed equipment will be contained within the substation grounds and will be safely secured and surrounded by an appropriate fence to ensure no public access is possible to the site. The general arrangement diagram for the substation can be found in Attachment K.

TS.24 Transmission Switching and Protection

Describe the switching and protection features of the proposed transmission facilities.

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

TS.25 Electrical Interaction

Describe the electrical interaction of proposed lines with other facilities, such as pipelines, telephone, radio and television transmission facilities, and other surface structures.

The proposed 5 MV circuits from the inverters to the proposed Enterprise 2010S substation would have to cross the Twin Valley Regional Water Commission's two water lines (one metal raw water line and one PVC drinking water line). Twin Valley is aware of the Project and has granted the Proponent's representatives crossing for geological studies. Discussions are on-going with Twin Valley with respect to crossings for permanent electrical crossing and access road crossing.

There is potential for electrical interaction, although, the MV cables are being designed to cross at 90 degrees to the pipelines and underneath them to a depth that eliminates any negative effects.

TS.26 Existing Facilities Changes

Describe the changes to existing facilities that would be required to accommodate the proposed facilities.

No changes to any existing facilities would be required to accommodate the Project substation.

TS.28 Facilities

Provide legible maps and drawings of the proposed facilities showing:

- the preferred transmission line route and any alternative routes;
- right-of-way widths;
- location of the transmission line on the right-of-way;
- location of the transmission line relative to property lines; and
- mile (kilometer) points along each transmission line route.

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

TS.29 Transmission Line Route

Provide legible maps and/or air photo mosaics upon which the proposed transmission line route or routes have been imposed and showing the residences, landowner names, and major land use and resource features (e.g., agricultural crops or pasture, topography, soil type, existing land use, existing rights-of-way, existing or potential historical, archaeological or paleontological sites, and superficial and mineable resources).

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

TS.31 Electric Diagram

Provide an electric single-line diagram or switching map showing new facilities in place in the system. In the case of a substation, provide an electric single-line diagram and a substation layout, including major items of equipment and the fenced boundaries of the station.

The electric SLD and the general arrangement diagram of the Project substation are provided in Attachment K.

TS.32 Construction and Maintenance

Discuss the construction schedule, equipment and method of construction, and method of eventual right-of-way maintenance.

The Project substation consists primarily of electrical equipment including a main power transformer, high and medium voltage circuit breakers, disconnect switches, and a control building. The Project substation will occupy an area of up to approximately 50 m by 70 m (0.3 ha) within SW 26-16-25-W4M. The general arrangement of the Project substation is shown in Attachment K.

The Project substation site will be excavated to allow for the installation of a ground grid and concrete foundations. The final grade of the Project substation will consist of gravel or rock that provides an insulating barrier to electric shock during an electrical fault. The Project substation equipment will be mounted on concrete and/or pile foundations and all metal components of the Project substation will be connected to the ground grid. This area will be fenced to prevent unauthorized access. The transmission line will be installed using insulated bucket trucks and other standard pull line equipment. The conductor will be installed using engineered sag calculations. Phasing of the existing line will be identified and verified prior to final connections.

Construction works would commence as soon as AUC approval and Development Permits are obtained by the County of Vulcan in Q3 2021. Depending upon local conditions at the time that construction starts, it is anticipated to take four (4) months to construct the Project substation.

From an operational standpoint, there will be a gravel road to access the substation yard from the east. From a maintenance perspective, the Proponent will use weed mitigation and vegetation control within the right-of-way.

TS.33 Specifications

Provide the most up-to-date functional specifications when the application is filed and the final functional specification before construction of the project begins.

The current Functional Specification, dated November 23, 2020 is provided in Attachment L. The Proponent confirms that they will file the revised Functional Specification with the AUC prior to construction start, if applicable.

TS.34 Noise Impact Assessment

Provide a noise impact assessment in accordance with the current Rule 012 for new substations and transformer additions within an existing substation, clearly indicating the impact of the new substation and/or transformer addition.

The Project substation was included as part of the NIA report completed for the Project. The NIA report is provided in Attachment G.

4.1 Environmental and Land Use Information

TS.35 Reclamation Plan

Describe the clean-up and reclamation plan that will be carried out following commissioning, including any temporary workspace areas and temporary access roads.

Garbage and debris will be collected and disposed of at an approved location. All construction equipment and vehicles will be removed from the construction area following the completion of construction.

Compacted soils will be de-compacted and stripped soils will be conserved and replaced and re-contoured at the temporary workspaces. Disturbed areas will be re-seeded as appropriate or left in a condition specified by the landowner.

Site clean-up and reclamation for the Project, including the Project substation will be conducted concurrently with construction, as appropriate. Reclamation will be conducted to meet the requirements of the *Conservation and Reclamation Directive for Renewable Energy Operations* (GOA-AEP 2018) and other applicable regulations and bylaws. A Conceptual Conservation and Reclamation Plan for the Project is included in Attachment F.

TS.36 Visual Aesthetics and Screening

Visual aesthetics and screening – indicate those areas that have been identified as significant viewpoints, describe how the project is predicted to adversely affect those viewpoints, and describe the measures proposed to minimize the visual effects of towers and the right-of-way within the viewpoint areas including the identification of project components and locations that require screening and the screening measures (e.g., fences, earth berms, painting, landscaping) to be used.

Visual simulations from three local vantage points can be found in Attachment M. These were provided to adjacent landowners during discussions of visual impact. The visual simulations were also posted on the project website in December 2020. Based on discussions with an adjacent resident, the Proponent has redesigned the Project to increase setbacks in order to reduce visual impacts from a residence. There is some open discussion with an adjacent resident regarding some visual screening (i.e., trees), the conversation is on-going, and the

Proponent has committed to screening after construction, if the visual impact is significant. The conversation is documented in more detail in the PIP summary (Attachment B; Appendix D: Summary of Key Questions, Concerns and Responses).

TS.37 Tower Location

Tower location – indicate the flexibility available in locating towers to reduce the inconvenience to residents and their day-to-day activities.

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

TS.41 Contaminants Release

If the project is to be constructed within an area of a substation for which approval is being sought where, upon appropriate assessment, the proponent is aware of or ought to be aware that a substance that may cause, is causing or has caused an adverse effect to the environment has been released, indicate the nature of the reportable release, how the release was administered and reported, and how any resultant or ongoing effects will be administered or contained with regard to the proposed project.

Not applicable. The Proponent retained Golder Associates Ltd. in late 2020 to undertake a Phase 1 Environmental Site Assessment and based on the findings, the Project substation is planned to be constructed in an area with no known or reported release of a substance that may cause, is causing or has caused an adverse effect to the environment.

TS.42 Transmission Line Removal

For applications to discontinue service, dismantle or remove a transmission line provide information on: the salvage, remediation and reclamation work to be performed; assessment of contamination; legislative requirements or other published guidelines that will be adhered to or considered.

Not applicable. This Project does not involve discontinuing service, dismantling, or removing a transmission line.

4.2 Economic assessment

TS.43 Alternatives Cost

Provide a detailed cost breakdown of all alternatives on a common basis with an accuracy tolerance within a range of plus 10 to plus 30 per cent and minus 10 to minus 20 per cent. This cost breakdown must be provided in the format shown in Appendix B2, which reflects the summary page of the cost template used in the ISO cost estimating framework (ISO Rule 504.5 and AACE International Recommended Practice No.18R-97). Where identifiable, include costs to be borne by persons other than the applicant and the applicant's customer(s) in the comparison. This information requirement may not be applicable to market participant choice and merchant line applications.

The proposed Enterprise 1070S substation will be a private facility and the Proponent has chosen not to disclose the cost of the substation.

4.3 Market Participant Choice

TS.44 Market Participant

If the applicant is a market participant, the applicant must (i) provide confirmation that all required agreements are in place with the TFO including the asset transfer agreement, the written agreement with the TFO for the temporary operation of the transmission facility, if available, and confirmation of ISO approval of the connection proposal; and (ii) specify the temporary period for which the market participant expects to hold the operating licence, which period may not exceed the term specified in the written agreement with the TFO for the temporary operation of the transmission facility. If the written agreement with the TFO for the temporary operation of the transmission facility is not available at the time of filing the application, the market participant must provide confirmation that the agreement is in place prior to energization.

For the subsequent transfer of the operating licence from a market participant to a TFO please refer to Section 10 of this rule.

Not applicable to this application. The short transmission line required to connect the Enterprise 1070S substation to 161L via t-tap will be covered under separate application.

5 REFERENCES

- AUC (Alberta Utilities Commission). 2019a. *Rule 007: Applications for Power Plants, Substations, Transmission Lines and Industrial System Designations and Hydro Developments*. August 1, 2019. 62 p.
- AUC. 2019b. *Bulletin 2019:09 Interim information requirements for solar and wind energy power plant applications*. July 3, 2019.
- AUC. 2020. *Rule 012: Noise Control*. Edmonton, AB. March, 2020. 33 p. + Appendices
- ESRD (Alberta Environment and Sustainable Resource Development). 2014a. South Saskatchewan Region air quality management framework: for nitrogen dioxide (NO₂), Ozone (O₃) and fine particulate matter (PM_{2.5}). 60 p.
- ESRD. 2014b. South Saskatchewan Region surface water quality management framework: for the mainstem Bow, Milk, Oldman and South Saskatchewan Rivers (Alberta). 71 p.
- GOA-AEP (Government of Alberta – Alberta Environment and Parks). 2018. *Conservation and Reclamation Directive for Renewable Energy Operations*. Edmonton, AB. September 14, 2018. 66 p.
- GOA (Government of Alberta). 2006. Approved Water Management Plan for the South Saskatchewan River Basin. August 1, 2006. 45 p.
- GOA. 2016. *Historical Resources Act*. Revised Statutes of Alberta 2000 Chapter H-9. Current as of December 9, 2020. Alberta Queen's Printer. Edmonton Alberta.
- GOA. 2017. *Water Act*. Revised Statutes of Alberta 2000 Chapter W-3. Current as of December 15, 2017. Alberta Queen's Printer. Edmonton Alberta.
- GOA. 2018a. *Hydro and Electric Energy Act (HEEA) Revised Statutes of Alberta 2000 Chapter H-16*. Current as of December 5, 2019. Alberta Queen's Printer. Edmonton Alberta.
- GOA. 2018b. *Alberta Utilities Commission Act*. Statutes of Alberta, 2007 Chapter A-37.2 Current as of May 12, 2020. Alberta Queen's Printer. Edmonton Alberta.
- GOA. 2018c. *South Saskatchewan Regional Plan. 2014 – 2024*. An Alberta Land-use Framework Integrated Plan. Amended May 2018. 213 p.
- Vulcan County. 2021. Land Use Bylaw No. 2020-028. Prepared by Oldman River Regional Services Commission. Current as of January 28, 2021.

ATTACHMENT A

Draft Power Plant Approval and Substation Permit and Licence

See Separate Document File

ATTACHMENT B

Public Involvement Program (PIP)

See Separate Document File

ATTACHMENT C

Environmental Evaluation

See Separate Document File

ATTACHMENT D

Alberta Environment and Parks Renewable Energy Referral Report

See Separate Document File

ATTACHMENT E

Historical Resource Act Approval

See Separate Document File

ATTACHMENT F

Conceptual Conservation and Reclamation Plan

See Separate Document File

ATTACHMENT G

Noise Impact Assessment

See Separate Document File

ATTACHMENT H

Glare Assessment

See Separate Document File

ATTACHMENT I

Map for Public Notice

See Separate Document File

ATTACHMENT J

Federal and Provincial EIA Requirements

See Separate Document File

ATTACHMENT K

Electric Single Line Diagrams and General Arrangement for the Substation

See Separate Document File

ATTACHMENT L

Functional Specification

See Separate Document File

ATTACHMENT M

Visual Simulations

See Separate Document File