

Aspen Power Station

Detailed Project

Description Summary

Submitted to:

The Impact Assessment Agency

Submitted by:

Saskatchewan Power Corporation (SaskPower)

September 2023

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Abbreviations

AHPP	aquatic habitat protection permit
Burns and McDonnell	Burns & McDonnell Canada Ltd.
CCUS	carbon capture utilization storage
CCGT	Combined Cycle Gas Turbine
DFO	Department of Fisheries and Oceans Canada
DPD	Detailed Project Description
EA	environmental assessment
EASB	Environmental Assessment and Stewardship Branch
ECCC	Environment and Climate Change Canada
ENV-LB	Ministry of Environment-Lands Branch
EPC	engineering, procurement, and construction
GHG	greenhouse gas
GTG	Gas Turbine Generator
HABISask	Hunting Angling and Biodiversity Information of Saskatchewan
HRIA	heritage resource impact assessment
IA	Impact Assessment
IAAC	Impact Assessment Agency of Canada
IPD	Initial Project Description
km	kilometre
kV	kilovolt
LAA	local assessment area
m	metre
MW	megawatt
PDA	project development area
the Project	Aspen Power Station
RAA	regional assessment area

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RM	Rural Municipality
ROW	right-of-way
SaskPower	Saskatchewan Power Corporation
SCGT	simple cycle gas turbine
SHRC	Saskatchewan Human Rights Commission
SK ENV	Saskatchewan Ministry of Environment
SOCC	species of conservation concern
Stantec	Stantec Consulting Ltd.
TK&P	Traditional Knowledge and Protocol
TLRU	traditional land and resource use
TransGas	TransGas Limited
VC	valued component
WLCS	Wicehtowak Limnos Consulting Services LP
WSA	Water Security Agency

PART A: GENERAL INFORMATION

1 Project Information

Saskatchewan Power Corporation (SaskPower) is pleased to submit this Detailed Project Description (DPD) Summary of the Aspen Power Station (the Project). This document has been prepared in accordance with the requirements of *The Information and Time Limits Regulations*, and the Impact Assessment Agency of Canada's (IAAC) Guide to Preparing an Initial Project Description and a Detailed Project Description (Government of Canada 2019, Government of Canada 2022).

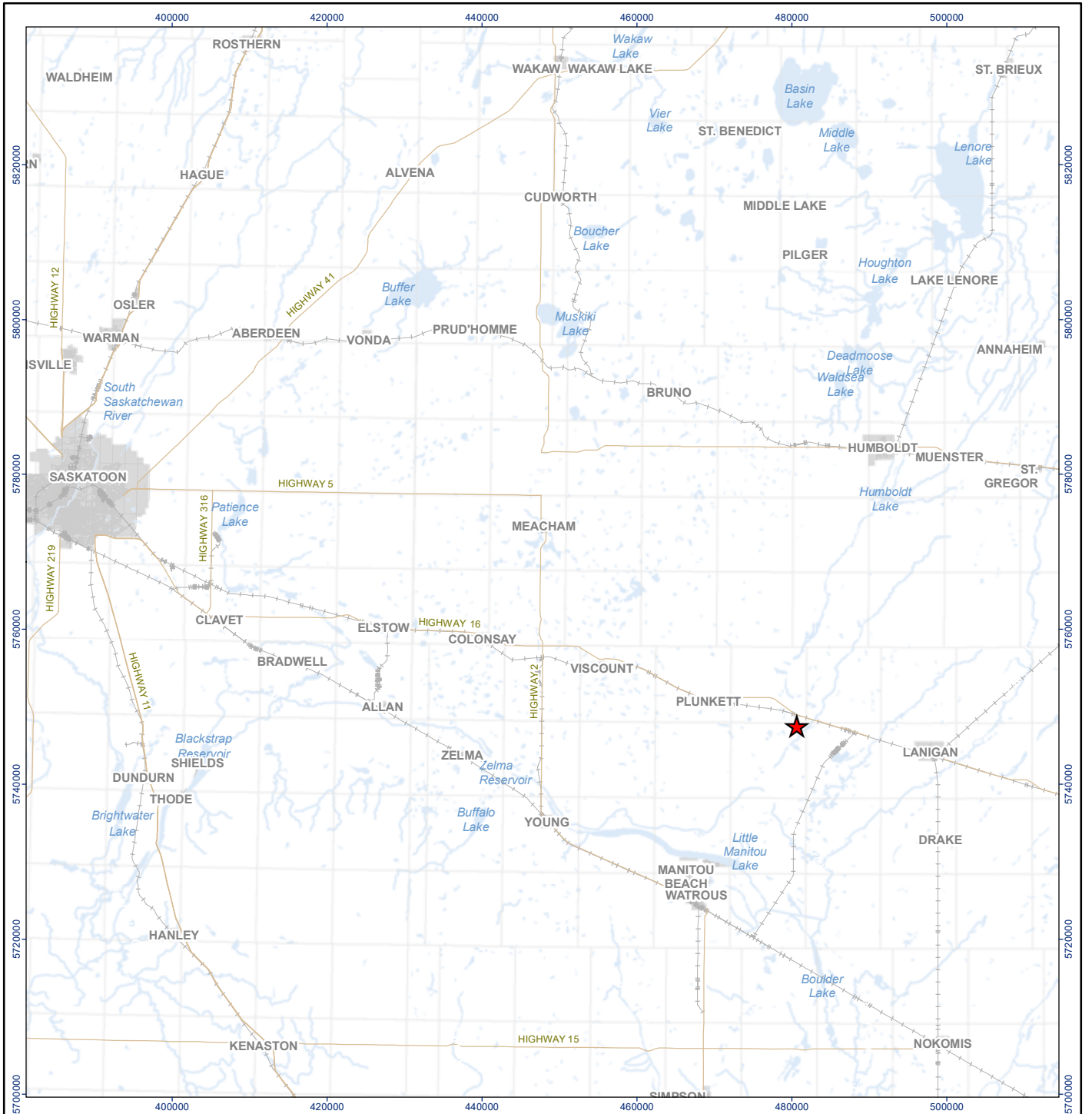
This document describes the potential effects of the Project on environmental, sociocultural, and socio-economic components. This document also outlines mitigation measures associated with the construction, operation and maintenance, and decommissioning phases of the Project and activities incidental to the Project.

1.1 Type or Sector

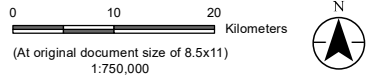
The Project is a 370 megawatt (MW) combined cycle gas turbine (CCGT) natural gas facility. The Project has a targeted commercial operation date in 2027 with expected operation until 2047.

1.2 Proposed Location

The Project is located approximately 104 kilometres (km) southeast of Saskatoon, Saskatchewan; and approximately 17 km west of Lanigan, Saskatchewan. The Project is located within one quarter section of land, NW 36-33-24 W2M, that is owned by SaskPower. The quarter section of land is within the rural municipality (RM) of Osborne No. 310. The general location of the Project is shown in Figure 1-1.



- Legend**
- Project Site
 - Major Road
 - Railway
 - Township
 - Town/City



Project Location: NW-36-33-24 W2M Near Guernsey, SK
 Prepared by KL on 2023-01-25
 TR by RM on 2023-01-25
 IR by JH on 2023-01-25
 Client/Project: 111477076-001 REVD

SaskPower Aspen Power Station

Figure No. **1-1**
 Title **Project Overview**

Notes
 1. Coordinate System: NAD 1983 UTM Zone 13N
 2. Data Sources: Base features produced under license with the Government of Canada, Government of Saskatchewan

2 Proponent Information

SaskPower is a Crown Corporation of the Province of Saskatchewan with its corporate head office in Regina. SaskPower is the main supplier of electricity in Saskatchewan.

2.1 The Proponent's Name and Contact Information

Name of the Proponent: Saskatchewan Power Corporation (SaskPower)
Address of the Proponent: 2025 Victoria Avenue, Regina, Saskatchewan S4P 0S1

2.2 Primary Representative

Primary Representative: Riley Chesterton
Project Manager, Power Production Project Delivery
306-566-6619
rchesterton@saskpower.com

2.3 Project Team

SaskPower plans to partner with an engineering, procurement, and construction (EPC) firm to build the Project. Burns & McDonnell Canada Ltd. (Burns and McDonnell) participated in the development of the Project Description. Stantec Consulting Ltd. (Stantec) evaluated potential environmental effects associated with the Project.

3 Public Engagement Summary

3.1 Siting Decision Engagement

3.1.1 PRELIMINARY ENGAGEMENT

Stakeholders have been consulted regarding the need for a natural gas generation facility and four regions that were considered for the development of the Project. The four potential regions considered were the Aberdeen, Estevan, Saskatoon, and Lanigan area (i.e., Project site). Table 3-1 summarizes the stakeholder outreach activity from March 2020 to July 2021.

Table 3-1 Stakeholder Outreach Activity from March 2020 to July 2021

Activity	Description	Date
Emails	Invitations to a workshop were sent to local municipalities, special interest groups, and Indigenous communities initially identified in the four regions under consideration.	March 11, 2020
Emails	Workshop invitation recipients were notified that due to COVID-19 the face-to-face workshops were cancelled, and other meeting options were being evaluated.	March 18, 2020

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Activity	Description	Date
Emails	Local municipalities, special interest groups, and Indigenous communities were advised the Regina area was no longer an option.	June to August 2020
Online and Paper Survey	Local municipalities, special interest groups, and Indigenous communities were sent a 5-minute electronic survey to understand preferences to provide input and receive project information.	June 25, 2020 to July 31, 2020
Phone calls	Phone calls were made to confirm local municipalities and special interest groups were aware of the new siting information and to determine how to exchange information during the COVID-19 pandemic.	June to August 2020
Electronic Newsletter	An electronic mailing list was set up so anyone could subscribe to receive project information and updates.	Launched June 2020
Webpage	A Project webpage was developed: Aspen Power Station (saskpower.com)	Launched March 2020
Toll free phone number and Email	A dedicated toll-free phone line and email address were developed.	March 2020 to Present
Virtual Meeting	Meeting with Saskatchewan Environmental Society to discuss how SaskPower could achieve net zero.	Dec 1, 2020
Letters/Email/ Newsletter	Indigenous communities, landowners, business and special interest groups were advised that the Saskatoon area was no longer an option. Studies were proceeding in the Lanigan and Estevan areas.	July 16, 2021

3.1.2 KEY COMMENTS AND CONCERNS

Local municipalities in each of the four regions were generally interested in learning more about the Project and discussing potential opportunities to work together. SaskPower considered all feedback and evaluated factors including potential environmental effects, construction accessibility, performance, availability and cost of natural gas supply infrastructure, cost of transmission, water supply and wastewater management, and the overall cost of the Project.

3.2 Site Specific Engagement

3.2.1 PUBLIC ENGAGEMENT

In July 2022 SaskPower publicly announced the Project site that was chosen. Table 3-2 summarizes the stakeholder outreach activity from July 2022 to present.

Table 3-2 Stakeholder Outreach Activity from July 2022 to Present

Activity	Description	Date
Letters	Indigenous communities, landowners, business and special interest groups were sent a Project update and invitation to meetings and a Project office.	July 12, 2022
Meetings	In person meetings and phone calls with nearby landowners.	July 26, 2022
Project Office	A come and go Project office was hosted in Lanigan. It was advertised on the radio and Facebook.	July 27, 2022
Feedback Survey	Paper and online surveys were available after the Project office. Five stakeholders submitted the survey.	August 24, 2022

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Activity	Description	Date
Letters/Email/Newsletter	A Project update was provided to landowners, business and special interest groups with a summary of the meetings and Project offices.	September 26, 2022
Project Office	A come and go Project office was hosted in Lanigan. It was advertised by direct contact and on social media.	October 25 and 26, 2022
Newsletter	Interested parties were invited to sign up for Project updates.	July 2022 to Ongoing
Webpage	A Project webpage was developed: Aspen Power Station (saskpower.com)	July 2022 to Present
Toll free phone number and Email	A dedicated toll-free phone line and email address were developed.	March 2020 to Present

3.2.2 KEY COMMENTS AND CONCERNS BY STAKEHOLDERS

Comments from local municipalities and stakeholders were mainly positive regarding the Project. The community sees the Project as an opportunity for growth and are familiar with industrial projects as there are large potash mines in development and expansion in the area. SaskPower will continue to work with stakeholders to keep them informed about the Project and address questions and concerns.

3.3 Jurisdictional Engagement

The Project team began engaging with federal, provincial, and municipal agencies in March 2020 to discuss natural gas generation, the Project, technical requirements, potential concerns, and the regulatory approval and permitting processes.

3.3.1 FEDERAL ENGAGEMENT

Table 3-3 Federal Engagement Activities from April 2020 to July 2023

Activity	Description	Date
Email	Information package was sent to IAAC.	April 20, 2020
Conference Call	Provided background information on the Project to IAAC.	April 21, 2020
Email	Sent meeting notes from April 21, 2020 for IAAC's review.	April 29, 2020
Email	IAAC confirmed that the meeting notes from April 21, 2020 were satisfactory.	May 7, 2020
Email	Sent an update on Project status.	September 10, 2021
Email	Requested an introductory meeting with IAAC.	August 30, 2022
Virtual Meeting	Provided a Project introduction to IAAC.	September 20, 2022
Virtual Meeting	Discussed Indigenous engagement.	October 4, 2022
Email	Requested an update from IAAC on the list of Indigenous communities to be engaged on the Project.	October 28, 2022
Email	Requested clarification on the terminology in the guidelines.	November 9, 2022
Virtual Meeting	Provided an overview of the Project and timelines to IAAC.	November 10, 2022
Email	Sent IAAC the PowerPoint presentation from September 20, 2022.	November 10, 2022

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Activity	Description	Date
Email	IAAC provided a revised list of Indigenous communities to be engaged on the Project.	November 28, 2022
Email	Submitted the draft Initial Project Description (IPD) to IAAC for review.	December 22, 2022
Email	IAAC provided an IPD review checklist.	January 17, 2023
Virtual Meeting	Discussed IPD review checklist.	January 19, 2023
Virtual Meeting	Discussed updated list of Indigenous communities to be engaged on the Project.	February 3, 2023
Virtual Meeting	Discussed the Project alternatives with IAAC.	March 1, 2023
Webpage	Submitted the IPD and IPD English and French Summaries to the IAAC Project Registry.	April 11, 2023
Email	IAAC confirmed that the IPD and IPD Summaries were received.	April 11, 2023
Email	IAAC determined that the Project is considered a designated project and the IPD meets the requirements of an IPD.	April 21, 2023
Email	IAAC confirmed that the IPD, IPD English and French Summaries, and Public Notice were posted to the IAAC Project Registry.	April 25, 2023
Virtual Meeting	IAAC hosted the Aspen Power Plant – Public Information Session #1	May 16, 2023
Virtual Meeting	IAAC hosted the Aspen Power Plant – Public Information Session #2	May 17, 2023
Email	IAAC provided the IPD Summary of Issues.	June 2, 2023
Virtual Meeting	Discussed the IPD Summary of Issues with IAAC.	June 5, 2023
Email	Requested a time limit suspension for the Project.	June 27, 2023
Email	IAAC confirmed that the time limit was suspended for the Project.	June 30, 2023

3.3.2 PROVINCIAL ENGAGEMENT

SaskPower is in ongoing discussions with the Government of Saskatchewan regarding provincial regulatory requirements. All regulatory requirements will be adhered to.

Table 3-4 Provincial Engagement Activities from March 2020 to July 2023

Activity	Description	Date
Email	Workshop invitation about the Project site options sent to Saskatchewan Ministry of Environment (SK ENV) Environmental Assessment and Stewardship Branch (EASB) and Ministry of Environment-Lands Branch (ENV-LB).	March 12, 2020
Newsletter	Sent to EASB, ENV-LB, Ministry of Parks, Culture and Sport, Heritage Conservation Branch, and Water Security Agency (WSA).	June 25, 2020
Email	Asked if EASB and ENV-LB would like to meet.	August 20, 2020
Email	Asked if Ministry of Parks, Culture and Sport would like to meet.	August 20, 2020
Virtual Meeting	Meeting with EASB and ENV-LB to discuss the role of natural gas generation and the Project site options under consideration.	September 14, 2020
Virtual Meeting	Meeting with Ministry of Parks, Culture and Sport about the role of natural gas generation and the Project regions under consideration.	September 16, 2020
Mail	Letter sent to WSA about the selected Project site and an invitation to public open house on July 27, 2022.	July 12, 2022

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Activity	Description	Date
Email	WSA advised that the operations and maintenance group that manages the Dellwood Brook Dam have no concerns with the Project and the water rights, approvals and compliance group will take the existing licensed surface and groundwater projects in the vicinity into account during the evaluation process.	August 8, 2022
Phone call	Provided EASB with a Project overview, anticipated timelines, and an invite to a virtual meeting.	October 26, 2022
Virtual Meeting	Provided EASB and ENV-LB with a Project introduction.	February 14, 2023
Email	Asked the Saskatchewan Ministry of Highways if a Traffic Impact Assessment was required for the Project.	May 17, 2023
Phone Call and Email	Scheduled a tour of the Great Plains Power Station with EASB.	June 29, 2023

3.3.3 MUNICIPAL ENGAGEMENT

Engagement activities were undertaken with the cities, towns and RMs within the regions being considered for the Project's location. Once the chosen Project site was publicly announced, invitations to attend the Project office were sent to local RMs and the town of Lanigan.

Table 3-5 Municipal Engagement Activities from March 2020 to August 2023

Activity	Description	Date
Conference Call	Shared results of gas quality studies with the city of Estevan.	Sept. 2, 2020
Conference Call	Shared the site evaluation process, supply plan and forecasts, and gathered feedback from the city of Saskatoon.	Sept. 17, 2020
Conference Call	Shared information about the site evaluation and Saskatchewan's power future, discussed interested and concerns, and addressed concerns of the Saskatoon North Partnership for Growth.	Nov. 12, 2020
Virtual Meeting	Presentation to RM of Corman Park.	Nov. 12, 2020
Virtual Meeting	Presentation to RM of Aberdeen.	Nov. 12, 2020
Email	Information about the further study of the Shand and Lanigan areas was sent to the RM Osborne, RM Aberdeen, RM Estevan, city of Saskatoon, and city of Estevan.	July 16, 2021
Email	Information about the Project site selection was sent to the RM Osborne, RM Aberdeen, RM Estevan, and city of Estevan.	July 12, 2022
Email	Invitation to Project office sent to RM Osborne.	July 19, 2022
Email	Information sheet and invitation to Project office sent to RM Osborne.	July 25, 2022
Email	Summary of What We Heard at the Project office sent to RM Osborne, RM Wolverine, and town of Lanigan. SaskPower offered to meet with the respective administration or council.	September 26, 2022
Email	Invitation to Project office sent to town of Lanigan, RM Osborne, and RM Wolverine. SaskPower offered to meet with the respective administration or council.	October 20, 2022
Phone Calls	Notified the RM of Wolverine, RM of Osborne, and town of Lanigan that the IPD was submitted to IAAC.	April 21, 2023
In-person Meeting	Meeting with the RM of Osborne.	May 26, 2023
In-person Meeting	Meeting with the RM of Osborne.	August 16, 2023

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3.4 Response to the Summary of Issues

The IPD was posted on IAAC’s Project Registry on April 25, 2023. IAAC invited comments on the IPD from federal and provincial authorities, and the public. IAAC also hosted two virtual information sessions on the Project. Comments received were summarized into a Summary of Issues and posted on IAAC’s Project Registry. The Summary of Issues and responses from SaskPower are provided in Appendix B of the DPD. Additional information is provided within the text of the DPD, where appropriate.

3.5 Plan for Future Engagement

SaskPower is committed to ongoing discussions with all stakeholders throughout Project development and the life of the Project. All engagement activities, stakeholder interactions, and commitments made as a result of engagement activities will be tracked. Table 3-6 summarizes the planned stakeholder outreach activities.

Table 3-6 Planned Stakeholder Outreach Activity

Activity	Description	Proposed Date
Presentations	Provide Project information and updates to interested stakeholders.	As requested
Supplier Sessions	Provide Project information about procurement and construction opportunities and commitments information to interested contractors.	To be determined
Commitment Registry	Project commitments will be logged and monitored to confirm stakeholders’ expectations are met.	Ongoing
Newsletter	Project update newsletters will continue to interested parties.	Ongoing
Webpage	The Project webpage will be updated: Aspen Power Station (saskpower.com)	Ongoing
Toll free phone number and Email	A dedicated toll-free phone line and email address will be updated and included in all information shared about the Project.	Ongoing
Site Tour	Facilitate tour(s) of other natural gas facilities. This offer has been presented during meetings, Project offices and updates.	As requested
Community contact	Provide a community contact for identifying and resolving issues during the construction period.	To be determined

The remaining activities are to be determined with stakeholders as they engage with SaskPower in how they want to participate. SaskPower continues to collect input and host discussions with interested members of the public who want more information or to address specific concerns.

3.5.1 EPC PARTNER – STAKEHOLDER ENGAGEMENT PLAN

During the planning process, the EPC partner for the Project will facilitate outreach to local businesses, neighbours, local leaders, provincial leaders, civic and government leaders, Chamber of Commerce, Rotary Club, trade organizations, labour groups, environmental groups, and local and Indigenous advancement organizations.

4 Indigenous Engagement Summary

Early engagement has occurred with Indigenous communities who may be affected by the Project. The Project is located within Treaty Six and the Métis Nation of Saskatchewan territory and is near Treaty Four (Figure 13-1). Indigenous Peoples engaged to date include First Nations within Treaty Four and Treaty Six, as well as the Métis Nation Saskatchewan. SaskPower is committed to ongoing discussions with Indigenous communities and all stakeholders throughout the development and life of the Project.

4.1 List of Potentially Affected and Interested Indigenous Communities

4.1.1 PRELIMINARY LIST OF INDIGENOUS COMMUNITIES DURING SITING

In March 2020, SaskPower identified an initial list of 16 Indigenous communities who may potentially be affected by the siting of a new natural gas power station (Table 4-1). SaskPower contacted Indigenous communities within 100 km of the four geographical areas under consideration during siting (i.e., Aberdeen, Saskatoon, Estevan, and Lanigan (which was ultimately selected as the preferred Project site)). Additionally, neighboring Indigenous communities outside the 100 km proximity were also contacted to support inclusive Project discussions with Indigenous Peoples. An invitation to participate in a workshop in either Saskatoon or Regina was sent via email to these Indigenous communities. However, the workshops were cancelled due to COVID-19.

Table 4-1 Preliminary List of Indigenous Communities and Organizations Identified by SaskPower during Siting

Indigenous Communities and Organizations
Beardy's and Okemasis Cree Nation
Carry the Kettle Nakoda Nation
Day Star First Nation
File Hills Qu'Appelle Development
George Gordon First Nation
Kawacatoose First Nation
Métis Nation – Saskatchewan (Western Region 2A)
Mistawasis Nêhiyawak
Muskeg Lake First Nation
Muskowekwan First Nation
Okanese First Nation
Peepeekisis First Nation
Piapot First Nation
Saskatoon Tribal Council
Star Blanket First Nation
Whitecap Dakota First Nation
Zagime First Nation

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4.1.2 LIST OF INDIGENOUS COMMUNITIES FOR THE PROJECT

SaskPower contacted IAAC in April of 2020 to discuss and determine an initial list of the Indigenous communities that SaskPower was to engage with regarding the Project. IAAC provided a preliminary list of 16 potentially affected and interested Indigenous communities to SaskPower, identifying the Indigenous communities within approximately 100 km of the Project (Table 4-2).

Table 4-2 Preliminary List of Potentially Affected and Interested Indigenous Communities for the Project Identified by IAAC, April 2020

Indigenous Community	Reserve Lands within Approximately 100 km of Project Location	Approximate Distance from Project (km)
Beardy's and Okemasis Cree Nation	Beardy's & Okemasis Reserve No. 96 & 97-A	68
Day Star First Nation	Day Star No. 87	80
English River First Nation	Grasswoods Indian Reserve No. 192J	93
George Gordon First Nation	George Gordon First Nation Indian Reserve No. 86	99
Kawacatoose First Nation	Kawacatoose First Nation Indian Reserve No. 88	82
	Poorman Indian Reserve No. 88	76
Kinistin Saulteaux Nation	Kinistin No. 91A	99
Muskeg Lake Cree Nation	Asimakaniseekan Askiy Indian Reserve No. 102A	94
	Asimakaniseekan Askiy Indian Reserve No. 102B	102
Muskowekwan First Nation	Muskowekwan Indian Reserve No. 85-13	94
	Muskowekwan Indian Reserve No. 85-14	96
	Muskowekwan Indian Reserve No. 85-18	98
	Muskowekwan Indian Reserve No. 85-66	100
	Muskowekwan No. 85	103
	Muskowekwan No. 85A	87
One Arrow First Nation	One Arrow Indian Reserve No. 95	109
	One Arrow Indian Reserve No. 95-1C	89
	One Arrow Indian Reserve No. 95-1E	86
	One Arrow Indian Reserve No. 95-1H	89
	Sounding Sky Reserve	101
Red Pheasant Cree Nation	Red Pheasant No. 108	251
Thunderchild First Nation	Thunderchild First Nation Indian Reserve No. 115X	398
Whitecap Dakota First Nation	Whitecap Indian Reserve No. 94	99
Yellow Quill First Nation	Nakaway Ahkeeng Reserve	99
	Yellow Quill Indian Reserve 90-10	99

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In October 2022, SaskPower contacted IAAC to request an update on the list of Indigenous communities. On February 1, 2023, IAAC provided a list of eleven Indigenous communities (Table 4-3).

Table 4-3 Revised List of Potentially Affected and Interested Indigenous Communities for the Project Identified by IAAC, February 2023

Indigenous Community	Reserve Lands within Approximately 100 km of Project Location	Approximate Distance from Project (km)
Beardy's and Okemasis Cree Nation	Beardy's & Okemasis Reserve No. 96-97-A	68
Day Star First Nation	Day Star No. 87	80
Fishing Lake First Nation	Fishing Lake Indian Reserve No. 89	110
George Gordon First Nation	George Gordon First Nation Indian Reserve No. 86	99
Kawacatoose First Nation	Kawacatoose First Nation Indian Reserve No. 88	82
	Poorman Indian Reserve No. 88	76
Kinistin Saulteaux Nation	Kinistin No. 91A	99
Métis Nation - Saskatchewan	-	-
Muskowekwan First Nation	Muskowekwan Indian Reserve No. 85-13	94
	Muskowekwan Indian Reserve No. 85-14	96
	Muskowekwan Indian Reserve No. 85-18	98
	Muskowekwan Indian Reserve No. 85-66	100
	Muskowekwan No. 85	103
	Muskowekwan No. 85A	87
One Arrow First Nation	One Arrow Indian Reserve No. 95	109
	One Arrow Indian Reserve No. 95-1C	89
	One Arrow Indian Reserve No. 95-1E	86
	One Arrow Indian Reserve No. 95-1H	89
	Sounding Sky Indian Reserve	101
Whitecap Dakota First Nation	Whitecap Indian Reserve No. 94	99
Yellow Quill First Nation	Nakaway Ahkeeng Reserve	99
	Yellow Quill Indian Reserve 90-10	99

4.2 Summary of Engagement with Indigenous Peoples

SaskPower's engagement approach has evolved as the development of the Project has progressed. In March of 2020 through the Project siting process, SaskPower contacted Indigenous communities with an invitation to participate in a workshop to provide input. When the Project site was selected, SaskPower prepared letters for all identified Indigenous communities (Table 4-2). The letters contained a description of the Project, and a request to meet face-to-face, and were sent July 12, 2022. A follow-up letter was sent out to the same Indigenous communities on October 31, 2022. Phone calls were made to each Indigenous community listed in IAAC's updated February 2023 list on February 2 and 3, 2023.

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Table 4-4 Summary of Indigenous Engagements

Indigenous Community	Date	Means of Engagement
Beardy's and Okemasis Cree Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating the Project and contact information.
	February 3, 2023	Phone call invitation to a discussion about the Project.
	June 16, 2023	Phone call to arrange a meeting about the Project.
	July 18, 2023	A meeting was held about the Project.
	Aug 9, 2023	Phone call and email invitation to complete a Traditional Land Use Vegetation Survey in August 2023.
Carry the Kettle Nakoda Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
Day Star First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
	February 2, 2023	Phone call invitation to a discussion about the Project.
	June 22, 2023	Phone call to arrange a meeting about the Project.
	June 26, 2023	The meeting about the Project was postponed.
	July 28, 2023	Phone call and email to reschedule the meeting.
English River First Nation	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
File Hills Qu'Appelle Development	March 11, 2020	Email invitation to a workshop about the Project site options.
Fishing Lake First Nation	February 2, 2023	Phone call invitation to a discussion about the Project.
	June 13, 2023	A meeting was scheduled about the Project.
	June 19, 2023	A meeting was held about the Project.
George Gordon First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
	February 2, 2023	Phone call invitation to a discussion about the Project.
	June 14, 2023	Phone call to arrange a meeting about the Project.
	June 23, 2023	A meeting was held about the Project.
Kawacatoose First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
	February 3, 2023	Phone call invitation to a discussion about the Project.
	June 13-26, 2023	Phone call and email invitations to a discussion about the Project.
	July 3-28, 2023	Phone call and email invitations to a discussion about the Project. A meeting will be held about the Project in August 2023.

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Indigenous Community	Date	Means of Engagement
Kinistin Saulteaux Nation	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
	February 3, 2023	Phone call invitation to a discussion about the Project.
	June 14, 2023	Phone call to arrange a meeting about the Project.
	June 27, 2023	A meeting was held about the Project.
Métis Nation – Saskatchewan (Western Region 2A)	March 11, 2020	Email invitation to a workshop about the Project site options.
	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
	March 31, 2023	Phone call to arrange a meeting about the Project.
	April 6, 2023	A meeting was held about the Project.
	April 17, 2023	A meeting was scheduled about the Project.
	April 20, 2023	The meeting was rescheduled about the Project.
	May 10, 2023	The meeting was postponed about the Project.
	June 12, 2023	The meeting was rescheduled about the Project.
	June 22, 2023	The meeting was rescheduled about the Project.
	July 5-August 10, 2023	Phone call and email invitations to reschedule the meeting about the Project.
Mistawasis Nêhiyawak	March 11, 2020	Email invitation to a workshop about the Project site options.
	July 24, 2023	Phone call to arrange a meeting about the Project.
	July 27, 2023	A meeting was held about the Project.
Muskeg Lake Cree Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
Muskowekwan First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
	February 3, 2023	Phone call invitation to a discussion about the Project.
	June 29, 2023	Email invitation to a discussion about the Project.
	July 5-28, 2023	Phone call and email invitations to a discussion about the Project.
One Arrow First Nation	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
	February 3, 2023	Phone call invitation to a discussion about the Project.
	June 14, 2023	Phone call invitation to a discussion about the Project.
	July 5, 2023	A meeting was scheduled about the Project.
	August 9, 2023	A meeting was held about the Project.
Okanese First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
Peeppeekisis First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
Piapot First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.

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Indigenous Community	Date	Means of Engagement
Red Pheasant Cree Nation	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
Saskatoon Tribal Council	March 11, 2020	Email invitation to a workshop about the Project site options.
Star Blanket First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
Thunderchild First Nation	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
Whitecap Dakota First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.
	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
	February 3, 2023	Phone call invitation to a discussion about the Project.
	June 13, 2023	Invitation to a discussion about the Project.
	July 5-28, 2023	Phone call and email invitations to a discussion about the Project.
Yellow Quill First Nation	July 11, 2022	Letter sent explaining the Project and seeking input.
	October 31, 2022	Follow-up letter sent reiterating Project and contact information.
	February 3, 2023	Phone call invitation to a discussion about the Project.
	June 12-16, 2023	Phone call invitation to a discussion about the Project.
	July 19-August 14, 2023	Phone call and email invitations to a discussion about the Project.
Zagime First Nation	March 11, 2020	Email invitation to a workshop about the Project site options.

4.2.1 TRADITIONAL KNOWLEDGE AND PROTOCOL STUDY

SaskPower engaged the services of Wicehtowak Limnos Consulting Services LP (WLCS), a consulting firm owned by George Gordon First Nation, to undertake a Traditional Knowledge and Protocol (TK&P) study of the Project site that considered Traditional Knowledge and impacts relevant to the *Impact Assessment Act* regulatory process (Section 21.0). SaskPower is currently planning a TK&P study focused on vegetation as the original study took place out of season for vegetation in the Project area.

4.3 Results of Indigenous Engagement to Date

To date, SaskPower has sent information via mail, email, and follow-up phone calls to Indigenous communities of potential interest/concern. SaskPower has also held in-person meetings with several of the listed Indigenous communities.

4.3.1 KEY ISSUES RAISED

Key issues raised by Indigenous communities to date have been focused on participation and procurement opportunities for Indigenous Peoples and Indigenous owned suppliers related to the Project.

4.4 Plan for Future Indigenous Engagement

Engagement with Indigenous communities is ongoing, and SaskPower will continue to make contact and be available for discussion as the Project continues. SaskPower is committed to ongoing discussions with engaged Indigenous communities throughout the development and life of the Project. SaskPower will continue to notify engaged Indigenous communities as required or as requested by the Indigenous community as the Project progresses (i.e., via email, mail, phone, or in person). Engaged Indigenous communities will be invited to participate and provide feedback in stakeholder Project-related engagement activities including, procurement information sessions, site tours, and presentations and meetings. It is anticipated that Indigenous cultural ceremonies will likely occur for the Project. SaskPower will determine (through discussions with engaged Indigenous communities) as to what cultural ceremonies or activities may be appropriate for the Project and which Indigenous communities will conduct and/or participate in each cultural activity.

In the spirit of reconciliation and good governance, SaskPower will continue to engage in good faith with Indigenous communities to determine whether there are any adverse impacts to the rights of Indigenous Peoples in accordance with Section 35 of the *Constitution Act*. SaskPower understands that the Duty to Consult obligation rests with the Government of Canada, and these early discussions with engaged Indigenous communities may help inform the Government of Canada's decision-making process.

5 Regional Studies or Plans

There are no known regional assessments of the area in which the Project is located at this time. Regional plans, development plans, and management frameworks that may be applicable to the Project are outlined in Section 18.4. The Project is located within Treaty Six and the Métis Nation of Saskatchewan territory and is near Treaty Four (Figure 13-1). There are no known traditional land and resource use (TLRU) studies in the Project area.

6 Strategic Assessments

The Strategic Assessment of Climate Change conducted under Section 95(2) of the *Impact Assessment Act* is applicable to the Project (Government of Canada 2022).

PART B: PROJECT INFORMATION

7 Purpose, Need and Benefits of Project

SaskPower must replace over 1,400 MW of conventional coal generation from 2021 to 2030 and is working to implement all of the currently available supply options. SaskPower has a plan to reduce greenhouse gas (GHG) emissions to net-zero by 2050. Natural gas generation will play a significant role in the initial transition to replace conventional coal generation and reduce GHG emissions. The Project is needed to provide firm capacity to replace retiring conventional coal generation, back up renewables, and act as contingency (by providing additional energy) for the situation where load grows faster than expected, aging units become even less reliable or fail, or other projects are delayed.

7.1 Project Purpose

The Project is required to serve increasing load requirements, enable the retirement of coal generation, and enable the addition of intermittent renewable generation projects (i.e., wind and solar). As such, the Project will play a crucial role in SaskPower's GHG emissions reduction strategy and reaching net-zero.

7.2 Project Need

SaskPower prepares a ten-year supply plan annually which outlines its generation plan to meet the province's future power needs. The plan looks at reducing GHG emissions, adding renewable generation options, and considerations to ensure that the system remains reliable and operable. In the near-term, natural gas generation is the only baseload supply option available at the scale required to replace the firm capacity from conventional coal. The Project is critically needed to provide capacity, it will also be utilized to back-up renewable generation options, and act as a contingency (by providing additional energy) if other options do not materialize, load grows, or aging units fail. This SaskPower-owned and operated Project is largely within SaskPower's control; therefore, the Project will remain a reliable source of power for the people of Saskatchewan.

7.3 Potential Benefits of Project

SaskPower is committed to a large expansion in wind and solar generation; however, these sources of power provide limited capacity to the system. To integrate these renewable supply options that are intermittent by nature, a back-up generation source is required to ensure there is enough electricity generation to meet demand at all times. Natural gas generation is an ideal candidate as it can quickly ramp up or down as the renewable generation output fluctuates.

Natural gas generation is a key component to achieving both an increase in renewable capacity and GHG emissions reduction. Natural gas combined cycle power stations emit up to 60% less carbon dioxide as compared to coal-fired generation in Saskatchewan. The transition of coal-fired generating units to renewables and natural gas represents a significant reduction in GHG and other air emissions and as more renewables are added to the system, more of the annual GHG emissions will be replaced by non-emitting

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renewable energy. Therefore, the proposed Aspen Power Station, is integral to SaskPower's plans to reach net-zero emissions.

7.4 Consequences of Project Delays

SaskPower is faced with challenges including aging infrastructure and additional power demand. System reliability could further deteriorate if the Project is delayed or existing aging generation fails. Existing coal facilities would need to continue operating to cover the supply shortage; and the expansion of renewable generation capacity would be affected, causing GHG emissions to increase.

8 Physical Activities Regulations

The *Physical Activities Regulations* lists the activities and types of projects (designated projects) that require an impact assessment (IA). The Project is subject to Section 30 of the *Physical Activities Regulations*, which states:

30. The construction, operation, decommissioning and reclamation of a new fossil fuel-fired power generating facility with a production capacity of 200 MW or more.

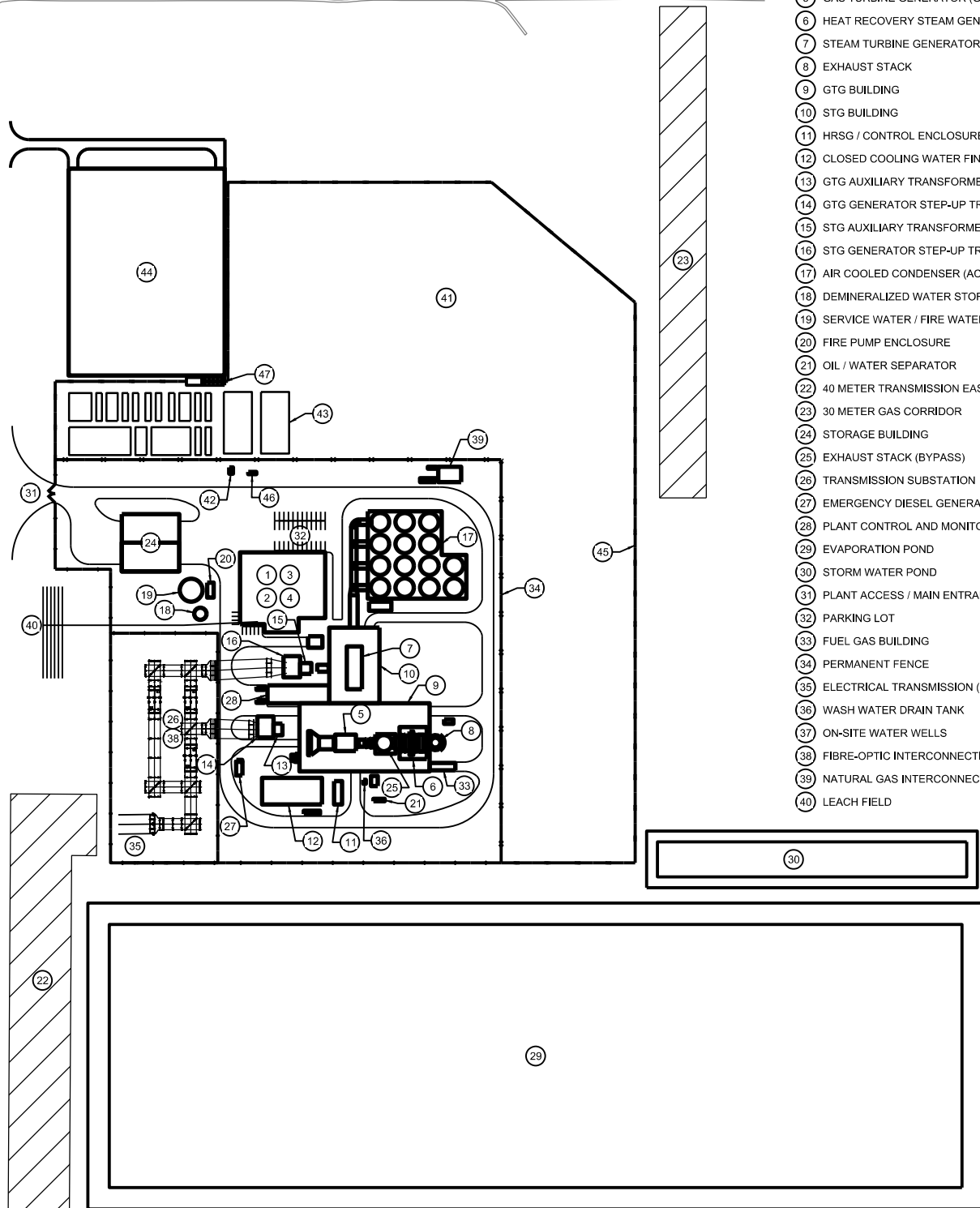
The Project will be 370 MW in size, and therefore, a DPD of the Project that includes the information outlined in the *Information and Management of Time Limits Regulations* must be provided to IAAC under Section 15 of the *Impact Assessment Act*.

9 Description of Project Activities

Components will include the Project, as well as incidental activities necessary for Project construction and operation and maintenance (Section 9.4). Except for the incidental activities, all structures and equipment will be located within the Project Development Area (PDA), as defined in Section 14.1.1. The site layout illustrates the proposed locations of the physical structures to be erected on the Project site (Figure 9-1).

OPERATION PHYSICAL WORKS

- ① CONTROL ROOM / ADMINISTRATION / OFFICES / STAFF FACILITIES
- ② WAREHOUSE
- ③ MAINTENANCE SHOP
- ④ WATER TREATMENT BUILDING
- ⑤ GAS TURBINE GENERATOR (GTG)
- ⑥ HEAT RECOVERY STEAM GENERATOR (HRSG)
- ⑦ STEAM TURBINE GENERATOR (STG)
- ⑧ EXHAUST STACK
- ⑨ GTG BUILDING
- ⑩ STG BUILDING
- ⑪ HRSG / CONTROL ENCLOSURE
- ⑫ CLOSED COOLING WATER FIN FAN COOLER
- ⑬ GTG AUXILIARY TRANSFORMER
- ⑭ STG GENERATOR STEP-UP TRANSFORMER
- ⑮ STG AUXILIARY TRANSFORMER
- ⑯ STG GENERATOR STEP-UP TRANSFORMER
- ⑰ AIR COOLED CONDENSER (ACC)
- ⑱ DEMINERALIZED WATER STORAGE TANK
- ⑲ SERVICE WATER / FIRE WATER STORAGE TANK
- ⑳ FIRE PUMP ENCLOSURE
- ㉑ OIL / WATER SEPARATOR
- ㉒ 40 METER TRANSMISSION EASEMENT
- ㉓ 30 METER GAS CORRIDOR
- ㉔ STORAGE BUILDING
- ㉕ EXHAUST STACK (BYPASS)
- ㉖ TRANSMISSION SUBSTATION
- ㉗ EMERGENCY DIESEL GENERATOR
- ㉘ PLANT CONTROL AND MONITORING MODULE
- ㉙ EVAPORATION POND
- ㉚ STORM WATER POND
- ㉛ PLANT ACCESS / MAIN ENTRANCE
- ㉜ PARKING LOT
- ㉝ FUEL GAS BUILDING
- ㉞ PERMANENT FENCE
- ㉟ ELECTRICAL TRANSMISSION (230kV) INTERCONNECTION POINT
- ㊱ WASH WATER DRAIN TANK
- ㊲ ON-SITE WATER WELLS
- ㊳ FIBRE-OPTIC INTERCONNECTION POINT
- ㊴ NATURAL GAS INTERCONNECTION POINT
- ㊵ LEACH FIELD



CONSTRUCTION PHYSICAL WORKS

- ④① CONSTRUCTION LAYDOWN
- ④② CONSTRUCTION POWER TRANSFORMER
- ④③ CONSTRUCTION TRAILERS
- ④④ CONSTRUCTION PARKING
- ④⑤ CONSTRUCTION FENCE
- ④⑥ ELECTRICAL DISTRIBUTION (25kV) INTERCONNECTION POINT
- ④⑦ CONSTRUCTION ENTRANCE / SECURITY

PRELIMINARY - NOT FOR CONSTRUCTION

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9.1 Anticipated Size

The Project will be a power generation facility that uses natural gas to generate 370 MW of electricity. The Project will be located within the western half of NW 36-33-24-W2M. The total anticipated disturbance footprint for the Project, including temporarily disturbed areas during construction, will be approximately 700 metres (m) x 450 m (39.4 hectares).

9.2 Physical Works Associated with Construction

Construction physical works include temporary structures and facilities needed to manage the Project such as construction management trailers, laydown space, parking space, construction utilities, and temporary security measures.

9.2.1 ACTIVITIES

9.2.1.1 Pre-Construction

Project pre-construction activities will include land and geotechnical surveys required for design and construction. During this time, SaskPower will seek the appropriate regulatory approvals and permits, raise community awareness about the Project, and select the construction contractor(s) and technology provider(s). Detailed project planning will also occur during this phase. Including, the development of a site procedures manual, which will include a site emergency response plan, a spill contingency plan, an environmental management plan, and site safety procedures.

9.2.1.2 Site Preparation and Grading

Site preparation activities will be performed prior to any other construction work. The developed portion of the Project site will be stripped of topsoil and organic matter. The topsoil will be stockpiled for later use. The Project site will be excavated or filled, where required, to bring the Project site to the required elevations. Where possible, excavated materials will be re-used as fill. Following the initial work, activities will include, installing the Project site fence, preparing the switchyard area, excavating the evaporation and storm water ponds, installing the storm water collection system, and developing the main construction roads.

9.2.1.3 Foundation Excavation and Construction

Foundation construction will begin as soon as site preparation work allows. There may be some overlap of site preparation and foundation work. Piling work will begin first, followed by installation of major equipment foundations and substructures.

9.2.1.4 Building and Equipment Installation

Above grade construction activities will begin after the foundation work. It is during the building and equipment installation phase that craft labour force will peak at the Project site. To effectively manage the workforce, SaskPower expects that this phase will be broken up into scopes of work.

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9.2.1.5 Commissioning and Testing

Start-up and commissioning of the Project involves a documented, safe, timely, and orderly transition from construction to operation and maintenance. Start-up and commissioning activities include the first start-up of the gas turbine generator, facility performance testing, Project tuning, and operator training.

9.2.2 PERMANENT STRUCTURES

Permanent structures will include only the Project infrastructure described in Section 9.3.2. Construction fuel gas piping and the construction power feed will remain in place to support any future potential maintenance work throughout operation and maintenance.

9.2.3 TEMPORARY STRUCTURES

At the conclusion of the construction phase of the Project, construction management facilities and temporary fencing will be removed from the Project site. Most of the developed construction management area, including laydown and temporary parking, will have rock surfacing removed and replaced with topsoil and grass seed. A rock surfaced area will remain for maintenance trailers and approximately 50-60 electrified parking stalls for future maintenance activities during operation and maintenance.

9.2.3.1 Security

Site security will be increased throughout the Project lifecycle. In the early construction phases, a permanent site security fence will be built. A temporary fence surrounding the construction laydown area will also be constructed. Workers will be required to sign in and out of site. When trade staff levels require increased security, temporary site security services will be implemented. After commissioning is complete, a permanent closed-circuit television system will be used to monitor and control site access.

9.2.3.2 Construction Parking

In developing the construction parking area, existing topsoil will be stripped, and a rock surfaced area will be developed. Upon Project completion, approximately 50-60 electrified stalls in the construction parking lot, will remain, to support future maintenance needs of the Project. The remainder will be stripped of crushed rock and replaced with topsoil and grass seed.

9.2.3.3 Construction Laydown

Like the parking lot, existing topsoil will be stripped, and a layer of crushed rock will be developed. Most of the construction laydown space will be used for temporary storage and staging of deliveries. Upon Project completion all construction laydown areas will be stripped of crushed rock and replaced with topsoil and grass seed.

9.2.3.4 Construction Management Facilities

Construction management office trailers will be constructed early in the Project. Additional trailers will be provided for subcontractors and site representatives from major equipment suppliers. Prior to the installation of the permanent utilities, temporary facilities may be required such as a portable generator,

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portable toilets, and sanitary storage facilities. The construction trailer area will include office space and restrooms for management staff, plus larger areas for site-wide safety meetings, training, and break areas. Contractor storage trailers and tool bins may also be located here with approval from the construction management team.

9.3 Physical Works Associated with Operation and Maintenance

Operation and maintenance activities will include all structures and equipment to be located at the PDA. Including, powerhouse, multipurpose building, storage building, and balance of plant infrastructure. Additionally, operation and maintenance activities will include the incidental activities required for operation and maintenance.

9.3.1 ACTIVITIES

The Project will be owned and operated by SaskPower. Day-to-day operation and maintenance will be provided by a staff of operators, engineers, and support staff totaling approximately 25 people.

9.3.2 PERMANENT STRUCTURES

9.3.2.1 Powerhouse

The powerhouse building will be constructed to house the gas turbine generator, steam turbine generator, balance of plant infrastructure and other electrical and mechanical equipment.

9.3.2.2 Multipurpose Building

A multipurpose building will be constructed to house the operating and maintenance staff. Including the administration and control room, warehouse, maintenance shop, and water treatment area.

9.3.2.3 Storage Building

A standalone storage will be constructed to house outage maintenance and storage of equipment and materials during construction and operation and maintenance of the Project. One half of the building will be for heated storage, used for storing materials or equipment that need to be kept warm. The other half of the building is for cold storage, used for storing materials or equipment that need to be secured for preventing theft or weather damage.

9.3.2.4 Balance of Project Infrastructure

Balance of Project infrastructure will include the air-cooled condenser, fuel gas enclosure, a cooling water system, electrical systems, fire/service water tank, demineralized water tank, emergency diesel generator, oil/water separator, septic tank and leach field, storm water pond, evaporation pond, and several other permanent small buildings or enclosures.

9.3.3 TEMPORARY STRUCTURES

No temporary structures associated with operation and maintenance are expected.

9.4 Incidental Activities

The activities incidental to the Project during construction and operation and maintenance include: 25 kilovolt (kV) distribution power line, 230 kV overhead transmission power line, underground fibre-optic line(s) for telecommunications, road improvements, underground water supply pipeline, underground natural gas supply lines, and relocation of existing natural gas lines.

9.4.1 25 KV DISTRIBUTION POWER LINE

The Project will require connection to SaskPower's existing power distribution system to support construction activities. SaskPower will be responsible for routing, constructing, and operating the construction power feed to the Project site. The new 25 kV line will be approximately 23 km long and will not be dedicated for the Project and may be used for future supply to rural customers in the area. Distribution line routing, stakeholder engagement, regulatory approvals/permits, construction, and operation and maintenance are the responsibility of SaskPower.

9.4.2 230 KV TRANSMISSION POWER LINE

The Project will require a dedicated 230 kV overhead transmission line to connect the Project to the electric grid. SaskPower is planning to route, construct, and operate an approximately 2.5 km long new 230 kV transmission line to connect the Project with SaskPower's existing Wolverine Switching Station. The new line will require the crossing of existing transmission lines so there are limited routing options. SaskPower will work directly with the impacted landowners to address any concerns with structure placement during the line design process.

9.4.3 TELECOMMUNICATIONS

Telecommunications through a fibre-optic line will be required for operation and maintenance of the Project. Installation of this infrastructure is considered complementary and for the sole benefit of the Project. Existing fibre-optic cables are in place at SaskPower's existing Wolverine Switching Station. A new fiber optic line will be installed underground between the existing Wolverine Switching Station and the Project site, following the same 2.5 km route as the 230 kV transmission line (Section 9.4.2). This fibre line may be installed earlier, schedule permitting, to provide service throughout the construction phase. SaskPower will be responsible for routing, constructing, and operating the fibre-optic line.

9.4.4 ROAD IMPROVEMENTS

New roads are not required for the Project. The primary site entrance will be located 1.65 km south of the TransCanada Yellowhead Highway 16 off of Range Road 2241. This portion of Range Road 2241 between TransCanada Yellowhead Highway 16 and the Project entrance may require improvement to support construction traffic and loads. Likewise, turning lanes may need to be added to TransCanada Yellowhead Highway 16 at this intersection to accommodate the expected increase in traffic. The final travel route to access the Project site will be finalized in consultation with the RM of Usborne and RM of Wolverine, as required. Any road modifications, improvements, maintenance, and dust control requirements would be under the care and control of the RM of Usborne and RM of Wolverine. Any road improvements made to

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support construction of the Project will remain for use during operation and maintenance, as well as for use by the local community.

9.4.5 WATER SUPPLY INFRASTRUCTURE

Construction water will be used for dust suppression and soil compaction during site preparation and foundation installation. As construction progresses, additional water will be used. For approximately 1-2 weeks during start-up and commissioning, a temporary increase in water will be required. SaskPower will work with local RMs, if necessary, to source this temporary water need and deliver to site by truck. SaskWater will provide an 800 m water pipeline to supply water to the Project during operation and they are responsible for routing, constructing, and operating the waterline. SaskWater has indicated the water will be supplied from the Zelma reservoir and the new water pipeline will either be located within private land or in the developed RM road allowance.

SaskPower constructed two water supply wells on the PDA. The wells underwent a well testing program, and the wells will be used to support the water consumed during the construction phase of the Project.

9.4.6 NATURAL GAS INFRASTRUCTURE

TransGas Limited (TransGas) is in the process of determining the infrastructure requirements to provide natural gas to the Project. Final routing and siting is currently in progress. It is not known at this time what portion of the proposed pipeline will be dedicated to the Project given it is outside the care and control of SaskPower.

The Project location is in an area with substantial industrial activity, with several nearby potash mines currently served by TransGas pipelines that are operating at or near capacity. The natural gas infrastructure will be designed and constructed to provide benefits and capacity to support other natural gas customers in the area. TransGas will make applications to the appropriate regulators to obtain approval to proceed with the natural gas infrastructure prior to beginning construction.

9.5 Physical Works Associated with Decommissioning

The length of the decommissioning process and the size of the crews involved, are expected to be substantially less than that was required for construction of the Project. Physical works during the decommissioning phase will include temporary structures and facilities, such as construction management trailers, waste storage areas/containers, parking space and construction utilities. At the completion of the decommissioning phase these temporary structures will be removed. No new permanent structures will be constructed.

The Project is expected to operate until 2047. Precise timing for the decommissioning of the Project cannot be predicted at this time. However, all relevant environmental regulations in existence at the time of decommissioning will be followed.

9.5.1 ACTIVITIES

SaskPower is required to provide a decommissioning and reclamation plan. This plan will guide SaskPower's activities and will outline the decommissioning and reclamation objectives, methodologies,

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and estimated costs. At the closure of the Project, the site will be reclaimed in accordance with industry standards and applicable environmental guidelines and regulations. Post-operation monitoring and an adaptive management approach will be taken to ensure reclamation success. Below is the forecasted decommissioning and reclamation plan for incidental activities:

Electrical Power Infrastructure: The transmission and distribution incidental activities specific to the Project will be removed. Any reusable equipment, poles, conductors, or hardware will be salvaged. Unusable materials will be disposed in an approved manner and/or sold for scrap.

Fibre optic Line: The fibre optic communication line to the Project will be abandoned or repurposed by SaskTel or SaskPower following the retirement of the Project.

Road Upgrades: Road infrastructure to and from the Project, which are under the care and control of the RM of Osborne, will be maintained following the decommissioning of the Project.

Water Line: At decommissioning, SaskWater will determine whether the water supply pipeline to the Project will be removed or abandoned.

Natural Gas Infrastructure: At decommissioning, TransGas will isolate, make safe and evaluate removal of their supporting natural gas supply infrastructure and pipeline based on other customer natural gas needs at that time.

10 Project Production Capacity and Process

10.1 Maximum Production Capacity

The Project will be a CCGT electric power generation facility which will use natural gas to produce 370 MW of electricity, with the capability to generate up to a maximum of 380 MW under optimum ambient conditions.

10.2 Production Process Description

The Project is a CCGT electrical power generation facility. CCGT facilities are one of the most efficient and reliable generation technologies available due to the waste heat recovered. The Project will combust natural gas in a gas turbine that is connected to an electric generator to produce power. The heat from the exhaust gas will then be recovered in a waste heat boiler to produce steam. The steam will then be pumped to the steam turbine that is connected to an electric generator for producing additional power. The steam will then be pumped to a heat exchanger that condenses the steam into a tank. The condensation will then be recycled back to the waste heat boiler to recycle and repeat the steam power generation cycle.

To support SaskPower's supply plan of increased production from renewable sources, SaskPower anticipates a higher need for part load and rapid response generation. Therefore, the Project will also be able to operate in simple cycle gas turbine (SCGT) mode which will enable faster start and response times to support grid response to renewable generation and system disturbances. Whereas, when demand is high, SaskPower can operate in CCGT mode to maximize output and efficiency.

11 Project Schedule

The Project schedule is outlined in Table 11-1. The schedule may be affected by SaskPower internal governance approvals and by regulating agency assessments and approvals. The schedule assumes that no federal IA or provincial environmental assessment (EA) will be required and there are no SaskPower internal governance approval delays.

Table 11-1 Project Schedule Assuming no IA Required

Activity	Project Schedule
Pre-Construction	October 2022 – December 2025
Construction	April 2024 – February 2027
Operation and Maintenance	2027 – 2047 (estimated 20-year design life)
Decommissioning (after Project Life)	2047 - 2049

If an IA or EA is required, the Project milestones will need to be shifted based on the time required to conduct the assessments. It is estimated that approximately 2.5 years would be required to complete the IA for the Project. If the Project is not in operation in 2027, coal facilities would need to continue to operate, the expansion of renewable generation capacity would be affected and GHG emissions would increase (Section 7.4).

11.1 Anticipated Construction Schedule

Pre-construction activities are expected to start in the fall of 2022 and continue throughout 2023, including planning, permitting, site investigative work, and purchasing major equipment. Construction is expected to begin in April 2024, after the spring thaw. Site preparation activities will be performed before any other construction work and are expected to take approximately 4-5 months. Building construction will begin in late 2024 after the foundation construction. Construction is expected to be completed by the end of summer 2026.

The start-up and commissioning process will then begin and take approximately 11 months to complete. Start-up and commissioning activities include the first start-up of the gas turbine generator, facility performance testing, Project tuning, and operator training.

11.2 Anticipated Operation and Maintenance Schedule

The Project is expected to operate for 20 years, between 2027 and 2047. Operation and maintenance of the Project will be the responsibility of SaskPower. Operation and maintenance personnel will perform, or subcontract and oversee maintenance of all Project equipment. Maintenance and refurbishment work on the steam turbine generator and gas turbine generator will be provided by the original equipment manufacturer to maintain reliability and efficiency. Depending on how the Project is operated the manufacturer may recommend more frequent maintenance intervals.

Aspen Power Station Detailed Project Description Summary

For incidental activities operation and maintenance, SaskPower will be responsible for the overhead transmission line, SaskWater will be responsible for the water supply pipeline, and TransGas will be responsible for the natural gas infrastructure.

11.3 Anticipated Expansion Schedule of the Project

There are currently no anticipated plans to expand the generating capacity of the Project. Space is being left on the Project site for the potential future addition of carbon capture utilization storage (CCUS) technology. SaskPower currently owns and operates the world's only commercial scale CCUS facility on a power generating unit in the world. Therefore, SaskPower has extensive experience and knowledge of how to effectively use CCUS technology in new applications. Studies are also underway to assess the potential for steam cycle modifications, carbon capture footprint and integration, parasitic loads, water requirements and ability to sequester or sell carbon dioxide.

11.4 Anticipated Decommissioning Schedule

The Project is expected to operate until at least 2047. Decommissioning and reclamation will take approximately two years. An extra year may be required for post decommissioning and reclamation environmental monitoring activities. Specific decommissioning timing cannot be predicted at this time. However, all relevant environmental regulations in existence at the time of decommissioning will be followed.

12 Alternative Assessment

12.1 Alternative Means of the Project

12.1.1 SITE LOCATIONS

SaskPower conducted an extensive review and analysis of potential sites for development of a new natural gas power station. The four potential regions that were considered for the Project's location were the Aberdeen, Estevan, Saskatoon, and Lanigan areas. Local municipalities in the four potential regions were generally interested in learning more about the Project and discussing potential opportunities to work together (Section 3.0). SaskPower then narrowed the potential regions to the Estevan and Lanigan areas. Ultimately, the Lanigan site was purchased following a site selection study. Benefits of this site include the gas transmission capacity, road access, closeness to existing transmission infrastructure and continued support from neighbouring municipalities.

There are unknowns about the future of the Project and what additions, including carbon capture utilization storage may be required. It is not yet known if a carbon capture utilization storage on the Project will be economically or technically feasible. Space is being left on the Project site for the potential future addition of carbon capture utilization storage. Even though there are unknowns, natural gas fired generation is still economically preferred. Natural gas CCGT (with ability to operate as SCGT) is technology that can be installed now and provides greater flexibility to accommodate renewable energy.

Aspen Power Station Detailed Project Description Summary

12.1.2 GAS TURBINE TECHNOLOGY

To increase system flexibility a large SCGT facility was initially considered. However, SaskPower determined that this region is not well suited to support the large fluctuation in natural gas volumes that would occur with a large SCGT facility.

The gas turbine generator chosen was selected based on SaskPower's grid design, forecasted need, and its ability to fit into the SaskPower system. The gas turbine generator chosen will have the most up-to-date technology intended to keep emissions low.

12.1.3 INCIDENTAL ACTIVITIES

12.1.3.1 25 kV Distribution Power Line

Final routing of the distribution line will occur once detailed engineering design begins in summer/fall 2023. The final route will be within developed road allowances and will take into consideration technical constraints such as existing overhead and underground utilities, RM road widening plans and environmental constraints.

12.1.3.2 230 kV Transmission Power Line

Final routing of the transmission line will occur once engineering begins in summer/fall 2023. The new line will require the crossing of existing transmission lines so there are limited routing options. SaskPower will work directly with the impacted landowners to address any concerns with structure placement during the line design process.

12.1.3.3 Water Supply Infrastructure

In 2013, three wells were drilled on the Project site to evaluate groundwater resources. Recent tests indicate that these wells can provide the quantity of water needed to support most construction and operation and maintenance water demands. SaskPower is currently analyzing the quality of water from the wells to evaluate corrosion potential. Currently, it is expected that the use of water from the wells will greatly accelerate the wear on Project components, including the treatment plant. Therefore, the SaskWater underground water supply pipeline is considered the preferred water supply option until further economical analysis can be completed.

12.1.3.4 Natural Gas Infrastructure

TransGas is in the process of determining the infrastructure requirements to provide natural gas to the Project. To address these requirements, TransGas had identified two options in the IPD. Based on continued routing assessments, four potential north routes have been identified between the start and end location. Route finalization is still underway; however, efforts will be made to parallel existing disturbances such as roads and other TransGas/SaskEnergy infrastructures as possible. It is not known at this time what portion of the proposed pipeline will be dedicated to the Project given it is outside the care and control of SaskPower.

12.2 Alternatives to the Project

The Project is currently needed to provide firm capacity, back up renewables, and act as a contingency by providing additional energy for situations where the load grows faster than expected, aging units become less reliable or fail, or other projects are delayed. SaskPower has a plan to replace conventional coal generation by 2023, and reduce GHG emissions to net-zero by 2050. Natural gas generation will play a significant role in the initial transition to replace conventional coal generation and reduce GHG emissions 50% below 2005 levels by 2030.

12.2.1 NATURAL GAS GENERATION

SaskPower needs firm capacity to ensure power needs can be met during peak demand. While renewables and renewables backed by energy storage can provide some firm capacity, a significant amount of conventional, dispatchable generation will still be required to maintain system reliability. SaskPower has a limited number of generation supply options available to meet the growing demand for power, and transition from conventional coal, over the next 10 years. Natural gas is the only baseload supply option available that can be built at the scale required to serve our need to replace conventional coal, meet load growth, and enable renewables. There are no alternative options available before 2030 that are more technically or economically feasible to meet the need being filled by the Project.

12.2.2 ELECTRICITY IMPORTS

Imported generation is the only other baseload option available in the near term. Imported energy can be a useful bridge between phasing out conventional coal and developing new low or non-emitting technologies but the amount of import potential is limited. SaskPower has worked with our neighbours and now plans to build new transmission tie-line capacity to North Dakota. The ability to increase imports from Alberta and Manitoba are limited in the near term. An import limiting factor is that neighbouring jurisdictions are generally facing the same electric utility transitional issues as Saskatchewan.

12.2.3 RENEWABLE GENERATION

As mentioned previously, SaskPower will continue to add renewable generating sources to provide up to 50% of our capacity by 2030. Variable renewable generating sources alone cannot provide the baseload power required on our system. As such, additional technologies such as gas peaking units or energy storage systems are required to supplement renewable generation. SaskPower is currently exploring additional hydro potential, Independent Power Producer biomass options, and geothermal power.

12.2.4 ENERGY STORAGE

Energy storage systems are widely seen as the best option to mitigate the supply challenges around renewable generation and assist in transitioning renewables from intermittent to base load generation. SaskPower uses industry standard tools and planning practices to ensure reliable, sustainable, and cost-effective power for customers. Analysis that follows these best practices has been performed to evaluate different sizes and uses of batteries and other types of energy storage and the potential role they could play in the SaskPower system.

12.2.5 ENERGY MANAGEMENT, DISTRIBUTION GENERATION, AND GRID MODERNIZATION

SaskPower is pursuing Demand Side Management solutions to support decarbonization. Customer distributed generation and other smart-connected technologies like battery storage and electric vehicles are considered part of the long-term solution to decarbonization and managing a net-zero grid. However, currently SaskPower is only part of the way through its grid modernization efforts. While SaskPower is currently exploring the development and implementation of grid enhancing technologies, they do not provide additional capacity to the system.

12.2.6 SASKPOWER PROCEEDING WITH MULTIPLE PROJECTS

SaskPower is continuing to analyze all supply options to ensure that SaskPower has the correct mix of conventional generation (like natural gas), solar, wind, and energy storage to ensure a reliable, sustainable, cost-effective supply of power. SaskPower is taking advantage of all currently feasible low and non-GHG emitting supply options and mitigation measures within the province and is investing to enable the development of new options for the future.

PART C: LOCATION INFORMATION

13 Description of the Project Location

13.1 Geographic Location

13.1.1 GEOGRAPHIC COORDINATES OF THE PROJECT

The coordinates of the centre of the quarter section that the Project is located in are latitude 51°52'41.33"N (51.87815), longitude 105°16'50.64"W (-105.28073).

13.1.2 GEOGRAPHIC COORDINATES OF INCIDENTAL ACTIVITIES

The Project's incidental activities are shown in (Figure 14-2). The coordinates of the incidental activities' beginning and end points are presented below. The incidental activities study corridors include the area in which the incidental activities could be routed. The incidental activities study corridors' biophysical and human environment setting is described in Section 14.0 to assist in siting of final routes and to identify potential environmental effects and mitigation measures.

Table 13-1 Coordinates of Incidental Activities

Incidental Activity	Beginning Point	End Point
Overhead 230 kilovolt (kV) transmission line	Latitude: 51.87674 Longitude: -105.31809	Latitude: 51.87747 Longitude: -105.28649
Underground fibre-optic line	Latitude: 51.87674 Longitude: -105.31809	Latitude: 51.87747 Longitude: -105.28649
Overhead 25 kV power distribution line	Latitude: 51.880485 Longitude: -105.286831	Latitude: 51.823377 Longitude: -105.032826
Underground potable water supply pipeline	Latitude: 51.86698 Longitude: -105.28634	Latitude: 51.87443 Longitude: -105.28634
Underground natural gas infrastructure	Latitude: 52.254668 Longitude: -105.876024	Latitude: 51.87806 Longitude: -105.28649
Road upgrades	Latitude: 51.89297 Longitude: -105.28668	Latitude: 51.87455 Longitude: -105.28661

13.2 Site Maps

The Project's general location is shown in Figure 1-1.

13.3 Legal Land Description

The Project is located in the northwest quarter of Section 36, Township 33, Range 24, West of the second meridian (Figure 1-1). SaskPower is the owner of this quarter section. The Project incidental activities will be located primarily on either privately owned land or within developed road allowances.

13.4 Residences and Communities

13.4.1 PROXIMITY TO ANY PERMANENT, SEASONAL OR TEMPORARY RESIDENCES

The Project is in a region where land is primarily used for agricultural purposes. The nearest permanent, seasonal, or temporary rural residence is located approximately 0.5 km northwest of the Project. There are seven rural residences within 1.5 km of the Project (Figure 14-3). The rural residences in proximity of the Project are not defined as sensitive receptors in accordance with Health Canada guidance (Health Canada 2016, Health Canada 2017).

13.4.2 PROXIMITY TO NEAREST AFFECTED COMMUNITIES

The Project is located approximately 17 km west of the town of Lanigan, Saskatchewan, and 104 km southeast of the city of Saskatoon, Saskatchewan. There are other communities (e.g., hamlets, villages, towns, cities) near the Project, and the closest community is the organized hamlet of Guernsey at approximately 6 km (Figure 1-1).

13.5 Proximity to Traditional Land Use

SaskPower is the owner of the Project quarter section. The Project incidental activities will be located primarily on either privately owned land or within developed road allowances. Privately owned lands and leased provincial Crown land are usually not available for TLRU; therefore, the Project is not expected to affect the ability of Indigenous Peoples to exercise Aboriginal and Treaty Rights, or use, access, or develop lands and resources currently used for traditional purposes. No concerns regarding potential effects on TLRU sites, areas, and activities have been raised during engagement with Indigenous communities (Section 4.3). More information regarding engagement with Indigenous communities can be found in Section 4.0.

A lack of publicly available TLRU information does not necessarily represent a lack of current use by Indigenous Peoples. This assessment assumes that TLRU sites, areas, and activities have the potential to occur on unoccupied Crown land, even if Indigenous Peoples did not identify specific activities, or sites in those same areas. The Project and Incidental Activity Study Area boundaries are located near occupied provincial Crown land (Section 14.1.1). The nearest occupied provincial Crown land is located adjacent to the Incidental Activity Study Area where the proposed distribution line is located within the TransCanada Yellowhead Highway 16 road allowance (NE 02-34-24 W2M, SE 06-34-23 W2M, SW/SE 29-33-22 W2M). The nearest unoccupied Crown land is outside of the largest Local Assessment Area and Regional Assessment Area boundaries (air quality), approximately 20 km southeast of the Incidental Activity Study Area boundaries at SE 05-32-20 W2M. The Project and incidental activities under the care and control of SaskPower will not traverse land:

- In a reserve as defined in subsection 2(1) of the *Indian Act*.
- Designated as First Nation land as defined in subsection 2(1) of the *First Nations Land Management Act*.
- That is subject to a comprehensive land claim agreement or a self-government agreement.
- Set aside for the use and benefit of Indigenous Peoples.

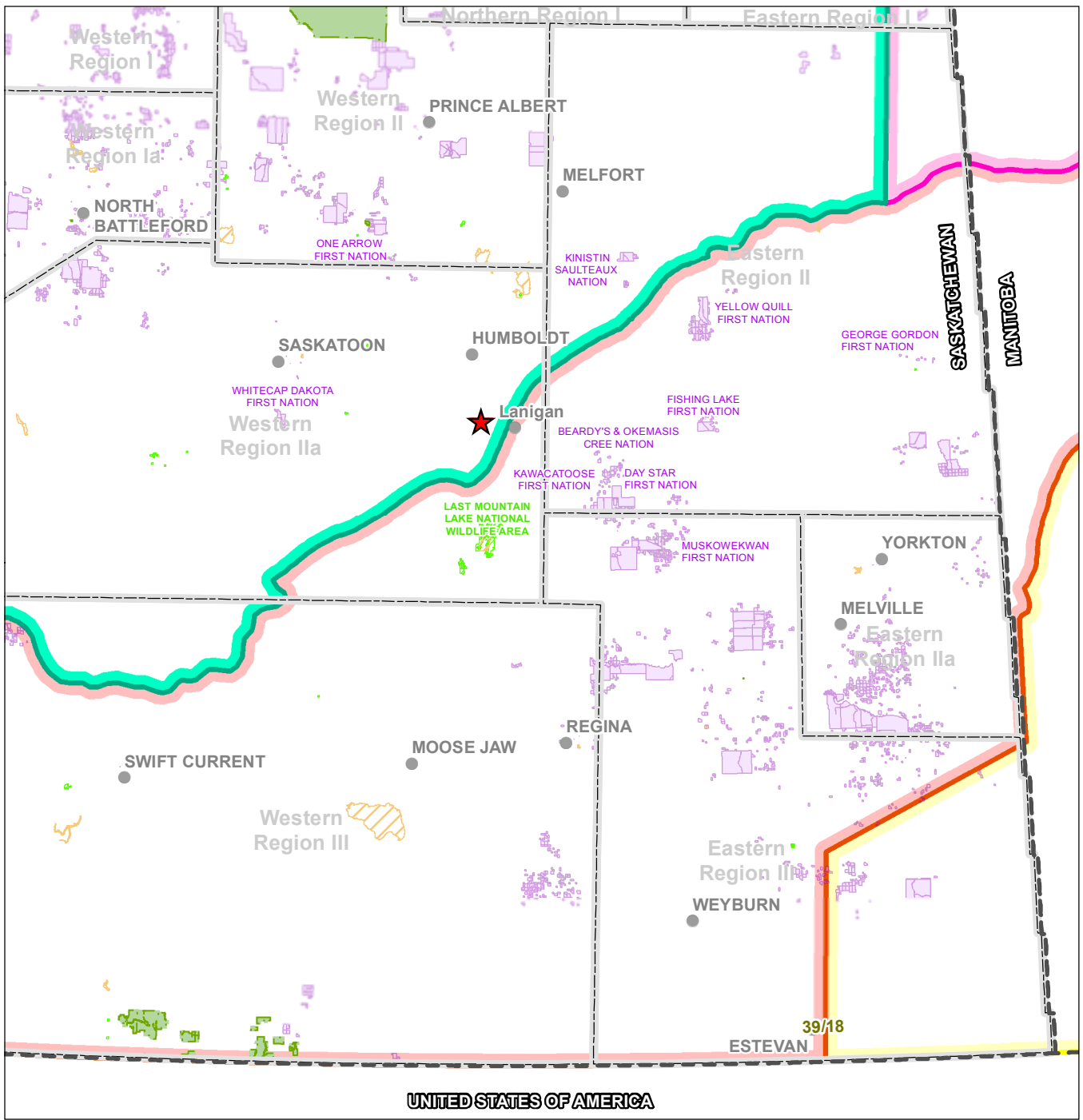
**Aspen Power Station
Detailed Project Description Summary**

Figure 13-1 shows the Project in relation to Indigenous communities, including the Indigenous communities identified by IAAC. Table 4-3 presents the approximate distances of Indigenous communities as identified by IAAC.

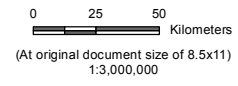
13.6 Proximity to Federal Lands

The nearest federal lands to the Project are Last Mountain Lake National Wildlife Area (approximately 47 km) and Beardy's and Okemasis Cree Nation (approximately 68 km) (Figure 13-1).

G:\active\clients\saskpower\111477076_PowerStation_Aspen\figures\111477076-002_REVE_AdminBoundaries.mxd



- Legend**
- City/Town
 - ★ Project Site
 - ▨ Migratory Bird Sanctuary
 - ▨ National Wildlife Area
 - ▨ National Park
 - ▨ First Nations Reserve
 - - - Political Boundary
 - ▭ Métis Region Boundary
 - First Nations Treaties**
 - ▨ Treaty 2, 1871
 - ▨ Treaty 4, 1874
 - ▨ Treaty 5, 1875
 - ▨ Treaty 6, 1876



Project Location: NW-36-33-24 W2M Near Guernsey, SK
 Prepared by KL on 2023-02-14
 TR by RM on 2023-02-14
 IR by JH on 2023-02-14
 Client/Project: 111477076-001 REVE

SaskPower Aspen Power Station

Figure No.
13-1

Title
Administrative Boundaries and Federal Lands

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14 Physical Environment

14.1 Spatial Boundaries

The valued components (VCs) were reviewed to determine the spatial boundary (i.e., study area) over which an effect could be evaluated (Figure 14-1). Spatial boundaries for the Project are defined below.

14.1.1 PROJECT SITE

Project Development Area (PDA): The Project will be located within the western half of NW 36-33-24-W2M. Although the total disturbance footprint for the Project, including temporarily disturbed areas during construction, is expected to be approximately 700 metres (m) x 450 m (39.4 hectares), the PDA has conservatively been defined as the entire NW 36-33-24-W2M to encompass any potential layout modifications.

Local Assessment Area (LAA): The LAA is a buffer of the PDA that represents the spatial extent within which the Project could have effects on VCs of the environment (Figure 14-1).

- Air Quality: The air quality LAA includes a 10 km x 10 km buffer of the PDA.
- Noise: The noise LAA includes a 1.5 km buffer of the PDA.
- Terrain and Soil: The LAA for terrain and soil is the PDA.
- Vegetation and Wetlands: The vegetation and wetlands LAA includes a 300 m buffer of the PDA.
- Wildlife and Wildlife Habitat: The wildlife and wildlife habitat LAA includes a 1 km buffer of the PDA.
- Human Environment: The human environment LAA includes the RM of Usborne, the town of Lanigan, and the village of Drake.

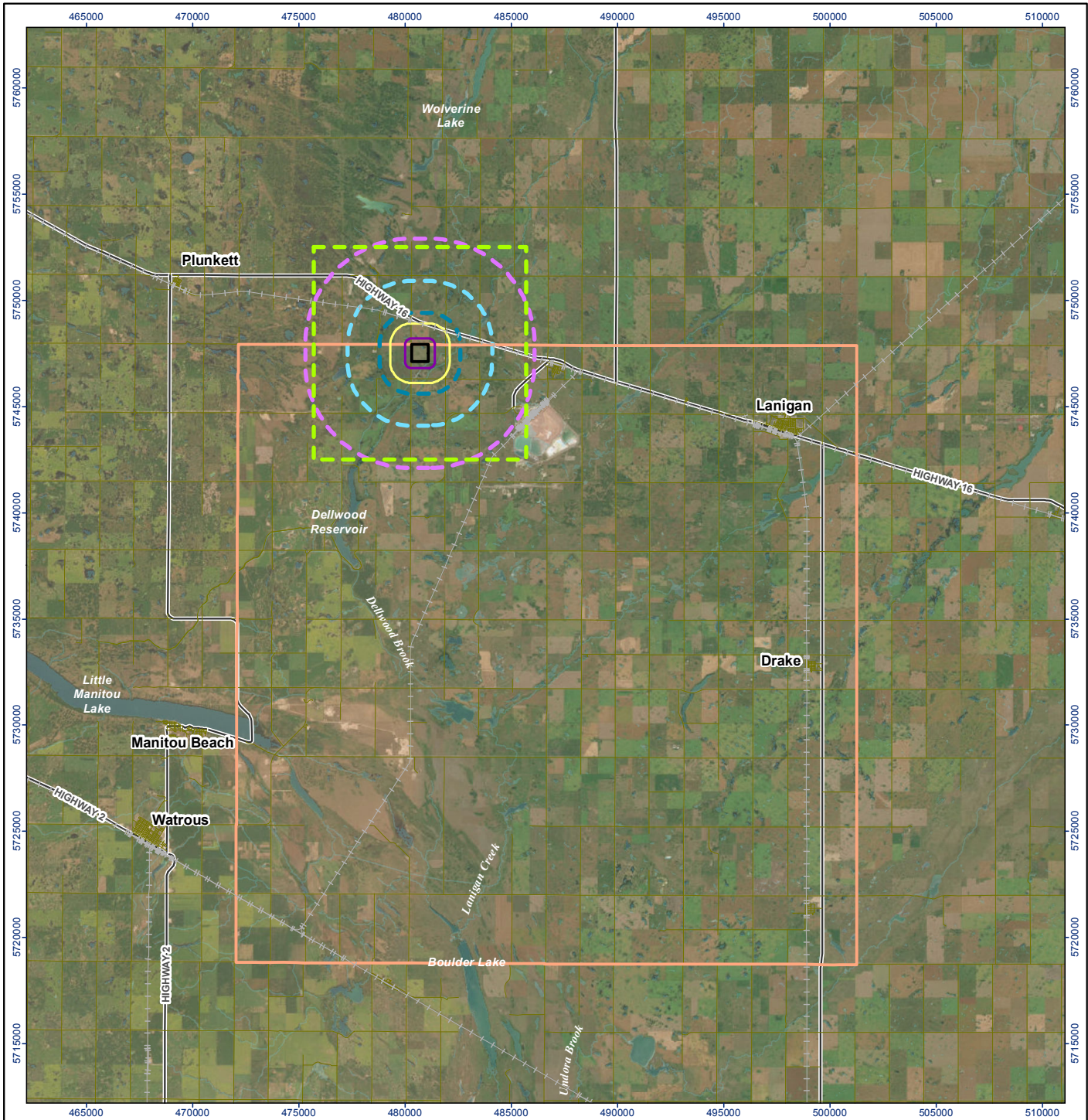
Regional Assessment Area (RAA): The RAA represents the regional context over which cumulative effects may occur. A buffer of 5 km from the PDA was used for all VCs except for those listed below.

- Air Quality: The air quality RAA is the same as the LAA for air quality.
- Noise: The noise RAA includes a 3 km buffer of the PDA.
- Human Environment: The human environment RAA includes the Province of Saskatchewan.

14.1.2 INCIDENTAL ACTIVITY STUDY AREA

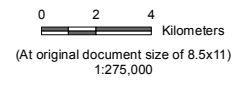
Routing and siting for incidental activities has not been finalized. Therefore, a study area has been defined which encompasses the area in which incidental activities could be routed and sited (Figure 14-2). The Incidental Activity Study Area is described with respect to biophysical and human environment resources to aid in siting of routes and to provide context for the environmental setting, potential environmental effects, and likely mitigation measures. The incidental activities to be routed and sited within this study area include: 25 kV distribution power line, 230 kV transmission power line, fibre optic line, road improvements, and water supply line.

Natural gas infrastructure has not been included as the routing is still underway. Its development and components are, and will be, outside of the care and control of SaskPower. Natural gas infrastructure will be developed by TransGas and will be subject to its own provincial and/or federal regulatory approval and permitting processes.



Legend

- Railway
- Project Development Area (PDA)
- Local Assessment Area - Air Quality (10 x 10 km)
- Local Assessment Area - Noise (1.5 km)
- Local Assessment Area - Vegetation and Wetlands (300 m)
- Local Assessment Area - Wildlife (1 km)
- Local Assessment Area - Human Environment (RM of Usborne, Town of Lanigan, and Village of Drake)
- Regional Assessment Area - Noise (3 km)
- Regional Assessment Area - Vegetation and Wetlands, Wildlife (5 km)



Project Location: NW-36-33-24 W2M Near Guernsey, SK
 Prepared by KL on 2022-12-20
 TR by RM on 2022-12-20
 IR by JH on 2022-12-20
 Client/Project: 111477076-004 REV C

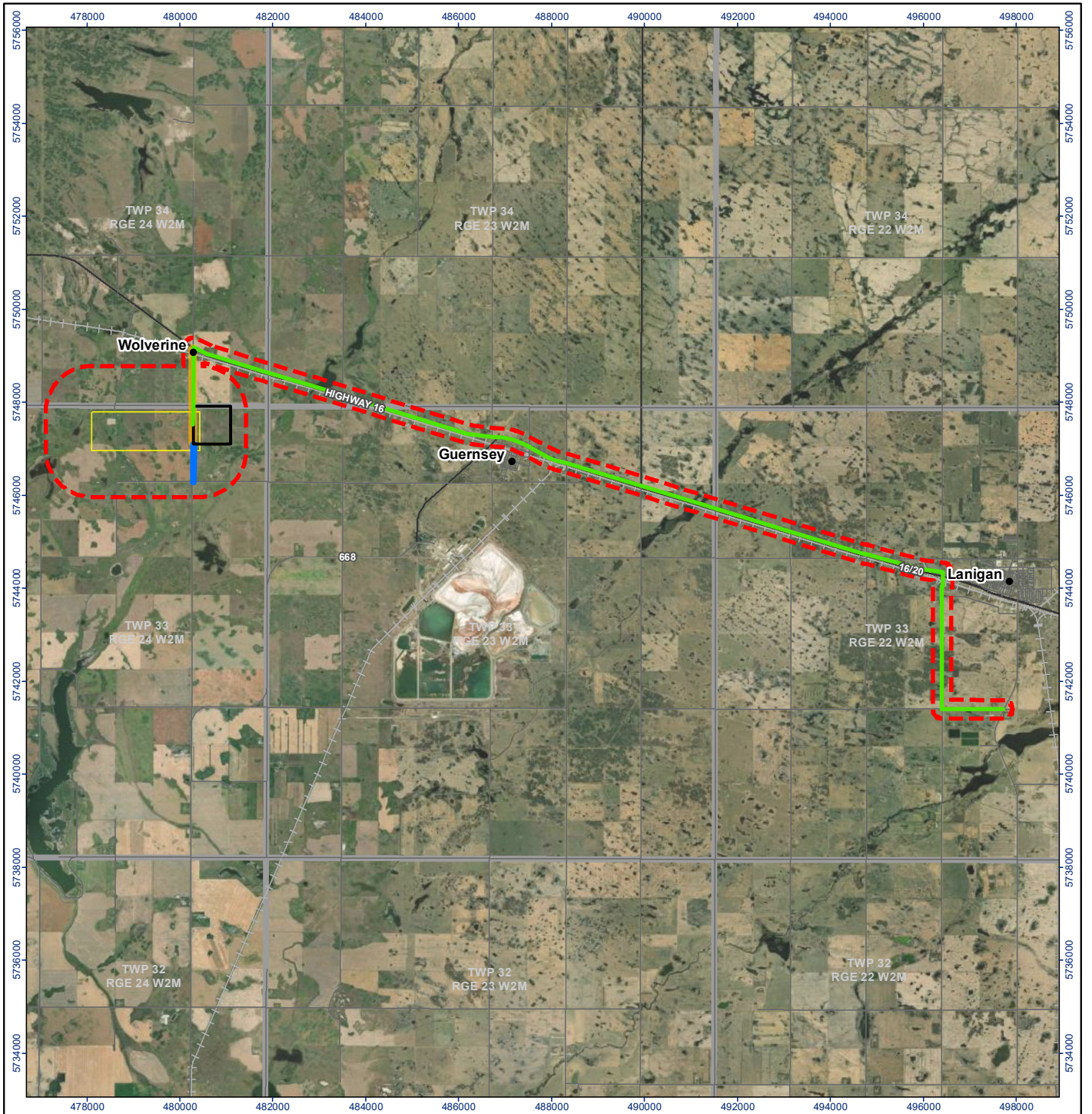
SaskPower Aspen Power Station

Figure No. 14-1

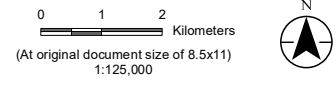
Title: Spatial Boundaries

Notes
 1. Coordinate System: NAD 1983 UTM Zone 13N
 2. Data Sources: Base features produced under license with the Government of Canada, Government of Saskatchewan, and Bing Imagery.
 3. Background: Orthoimagery © Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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- Legend**
- Incidental Activity Study Area
 - Project Development Area (PDA)
 - 25 kV Distribution Power Line
 - 230 kV Transmission Power Line Study Area
 - Water Supply Pipeline
 - Road Improvement Extents
 - Major Road
 - Minor Road
 - Railway
 - Township



Project Location: NW-36-33-24 W2M, Near Guernsey, SK
 Prepared by JH on 2023-07-27, TR by RM on 2023-07-27, IR by XX on 2023-07-27
 Client/Project: 111477076-003 REV G

SaskPower Aspen Power Station

Figure No. **14-2**
 Title **Incidental Activity Study Area**

Notes
 1. Coordinate System: NAD 1983 UTM Zone 13N
 2. Data Sources: Base features produced under license with the Government of Canada, Government of Saskatchewan, and Bing Imagery.
 3. Background: Orthoimagery © Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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14.2 Project Environmental Setting

This section describes the VCs that have the potential to interact with the Project. Methods, existing conditions, effect pathways, mitigation strategies, and summary of residual effects are presented as they relate to potential Project-related environmental effects. Effect pathways for fish and fish habitat and aquatic species are not present and potential Project-related effects to these matters of federal jurisdiction are not expected. Additional information on fish and fish habitat and aquatic species are presented in Sections 19.6 and 19.7, respectively.

14.2.1 AIR QUALITY

14.2.1.1 Methods

The focus of the air quality assessment is on Project operation and maintenance, because the operation and maintenance phase has the most potential to produce adverse air quality effects. Air emissions associated with Project construction are expected to be minor, occur only for short intervals, and their effects are expected to be limited to the immediate vicinity of the Project. The Saskatchewan Air Quality Modelling Guideline (SK ENV 2012) was used to conduct the air dispersion modelling for the Project.

14.2.1.2 Existing Conditions

Model results were compared to the Saskatchewan Ambient Air Quality Standards and the Canadian Ambient Air Quality Standards. The predicted ambient concentrations are anticipated to be below the Saskatchewan Ambient Air Quality Standards (SK ENV 2015) and the 2025 Canadian Ambient Air Quality Standards (Canadian Council of Ministers of the Environment 2012).

14.2.2 NOISE

14.2.2.1 Methods

Noise emission equipment from a power generation facility can potentially affect the acoustic environment at identified residential noise sensitive receptors within the LAA. The Province of Saskatchewan does not have a numerical noise limit applicable to the Project. For consistency with other power-generation applications, the Project's sound level design goal is to meet the permissible sound level and low frequency noise thresholds as determined by Alberta Utilities Commission Rule 012 (AUC Rule 012). The noise assessment approach is based on methods prescribed in Rule 012. Rule 012 prescribes the permissible sound level noise threshold for residential dwellings during normal operation and maintenance of a project. Seven noise sensitive receptors have been identified within 1.5 km of the Project. The more restrictive nighttime permissible sound level was used as the noise design goal for the Project, as the Project is designed to operate continuously during both daytime and nighttime hours.

To quantify the noise emitted by the Project, a noise model was developed. The noise model predicted noise level at the seven receptors, as well as area in the surrounding community. Sound modelling was performed using industry-accepted sound modelling software.

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14.2.2.2 Existing Conditions

The acoustic environment near the Project is characterized by a low population rural environment with a mix of agricultural and industrial activities. The existing daytime ambient sound level and nighttime sound were assumed, as recommended by Alberta Utilities Commission for rural environments in Alberta. The acoustic environment in a rural area in Saskatchewan is similar to Alberta; therefore, the ambient sound level recommended by Rule 012 are considered representative for the Project.

14.2.3 TERRAIN AND SOIL

14.2.3.1 Methods

14.2.3.1.1 Desktop

Existing data was used to conduct a desktop analysis of baseline terrain and soil conditions within the PDA and the Incidental Activity Study Area. Baseline terrain and soil conditions were obtained from the Saskatchewan Soil Information System (Saskatchewan Soil Information Systems Working Group 2018) and the Hunting Angling and Biodiversity Information of Saskatchewan (HABISask) (SK ENV 2022) to determine soil classification, surface texture, surface expression and slope class.

14.2.3.1.2 Field Surveys

Stantec documented site-specific observations related to topography, slopes, and general drainage within the PDA in August 2022. At each inspection site, topographic data such as slope, and surface expression were collected. Areas of bare soil, erosion, and drastic changes in topography were documented.

14.2.3.2 Existing Conditions

14.2.3.2.1 Desktop

The dominant surface texture of soils in the PDA is sandy loam, which can be susceptible to wind erosion. These surface textures are not as susceptible to water erosion as finer textured soils with higher clay content. Agricultural capability indicating that there is moderate to severe crop limitations that restrict the range of crops or that require special conservation practices.

Incidental Activity Study Area

Most of the Incidental Activity Study Area has gently sloping to nearly level to level slopes and the dominant surface soil textures include coarse textured sand and medium textures such as very fine sandy loam and loam. Coarser textured surface soils such as sandy loam and loamy sand can be more vulnerable to wind erosion than finer textures. The soils in the Incidental Activity Study Area have a low potential for water erosion. Soil agricultural capability ratings in the Incidental Activity Study Area range from capable of sustaining field crop cultivation, moderate limitations and can be cropped with little difficulty, soils have moderately severe to severe limitations that restrict the range of crops that can be grown, soils have the limited capability to support sustained perennial forage crop cultivation, or soils that have no capacity for arable land or permanent pasture.

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Detailed Project Description Summary**

14.2.3.2.2 Field Surveys

The topography in the PDA is mostly undulating; however, areas in the northwest portion of the PDA are nearly level. The topography becomes more pronounced outside the eastern boundary of the PDA where it becomes gently rolling. The overall slope of the PDA is southward towards Dellwood Brook. Two small areas of bare soil were observed in the field where wind erosion is suspected to have occurred.

14.2.4 VEGETATION AND WETLANDS

14.2.4.1 Methods

The Project is expected to result in environmental effects on vegetation and wetlands, which may include changes to plant species of conservation concern (SOCC). SOCC are defined as federally and provincially legislated species at risk and species identified in federal and provincial tracking lists and activity restriction guidelines.

14.2.4.1.1 Desktop

Provincial databases, aerial photography, and literature sources were reviewed for existing data on vegetation and wetlands. The desktop review determined land cover and wetlands, as well as historical records of plant SOCC within the vegetation and wetlands LAA and the Incidental Activity Study Area. Prior to field surveys, a desktop HABISask search was used to determine the ecoregion and ecosite within the vegetation and wetlands LAA and Incidental Activity Study Area. As well, land cover and wetlands in the PDA, vegetation and wetlands LAA, and wildlife and wildlife habitat LAA were mapped.

14.2.4.1.2 Field Surveys

As part of the vegetation and wetlands assessment, field surveys were conducted during the 2022 and 2023 field seasons to validate the land cover classification and vegetation assessment, confirm the presence of plant SOCC, acquire additional data and detail on the abundance of dominant vascular plant species within the PDA and Incidental Activity Study Area, determine the presence of weed species, and confirm the wetland boundaries and classes. The surveys used include habitat assessment, listed plant species survey, detailed vegetation survey, weed survey, and wetland/waterbody assessment.

14.2.4.2 Existing Conditions

14.2.4.2.1 Desktop

The PDA and LAA are located in the Quill Lake Plain in the Aspen Parkland ecoregion. The Quill Lake Plain mostly consists of agricultural cropland with remnant native grassland and tame pasture located in areas of sandy soils including the former federal pasture north of Highway 16. A search of the HABISask database revealed no historical occurrences of plant SOCC within the vegetation and wetlands LAA. There is no critical habitat for federally listed species at risk within the vegetation and wetlands LAA. Given the distance to Dellwood Brook from the PDA, no interactions with fish or fish habitat are expected to occur.

Aspen Power Station Detailed Project Description Summary

The PDA consists of predominantly low vegetation with the remainder comprised of cleared, wetland, and forested areas. The vegetation and wetlands LAA consists of predominately low vegetation, with the remainder comprised of cleared, wetland, forested, and waterway areas. The wildlife and wildlife habitat LAA consists predominately of cleared, with the remainder comprised of low vegetation, wetland, forested, and waterway areas.

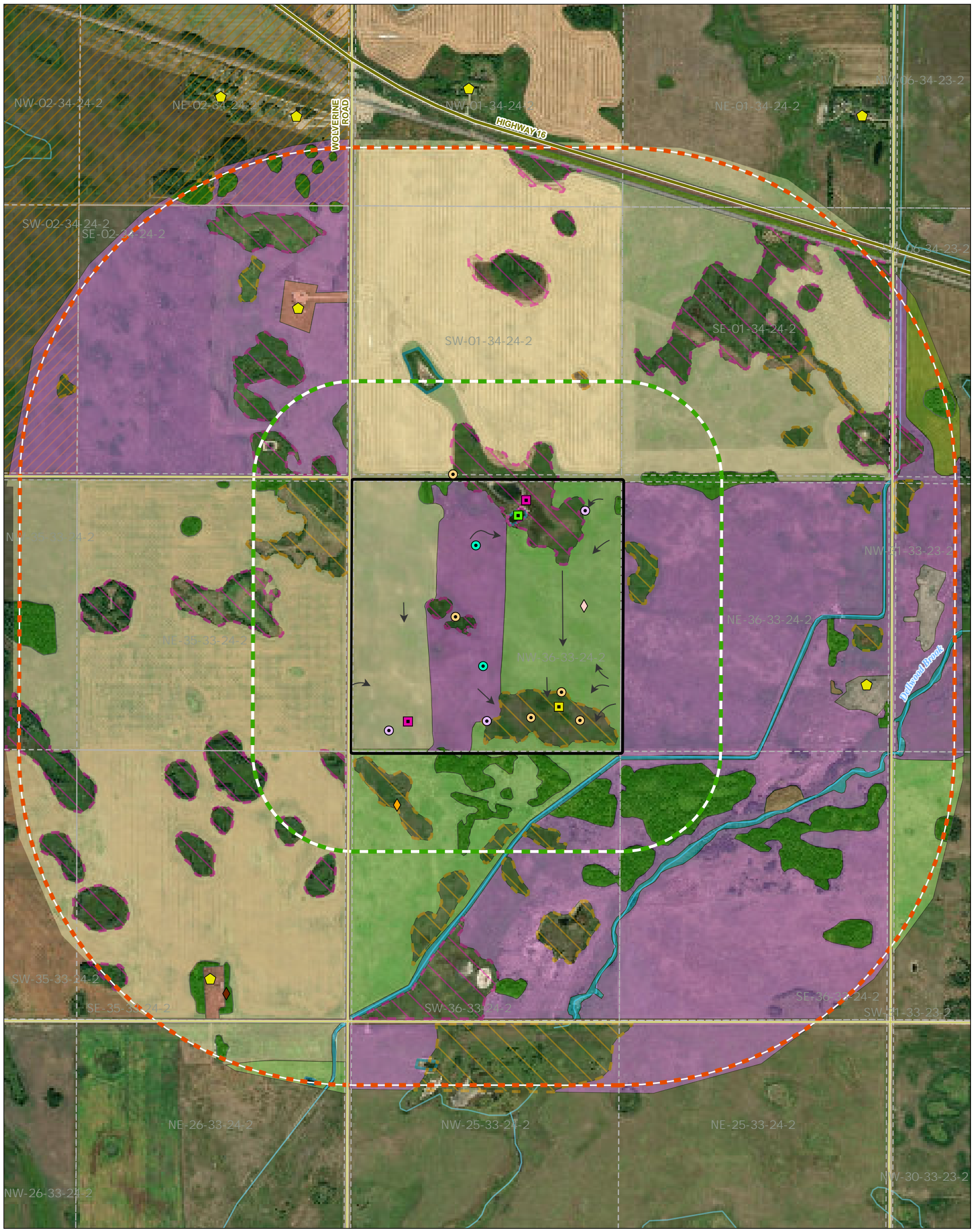
Incidental Activity Study Area

The Incidental Activity Study Area encompasses the Quill Lake Plain in the Aspen Parkland ecoregion. A search of the HABISask database revealed three records of plant SOCC within the Incidental Activity Study Area including seven occurrences of large yellow lady's-slipper, two occurrences of pale bulrush, and one occurrence of marsh felwort. There is no critical habitat for federally listed species at risk within the Incidental Activity Study Area. Large yellow lady's slipper is a perennial forb that is commonly found in wet meadows, forested wetlands, bogs, and swamps. Pale bulrush is a perennial graminoid found in ditches, canals, and streams. Marsh felwort is an annual/biennial obligate wetland forb that is found in areas of thin sandy or gravelly soil in herbaceous freshwater to brackish wetlands. Wetlands are scattered throughout the Incidental Activity Study Area.

14.2.4.2.2 Field Surveys

The land cover classification was validated based on the results of the habitat assessment (Figure 14-3). The native grassland observed in the field was dominated by slender wheatgrass invaded by non-native species including smooth brome and Kentucky bluegrass.

A total of three transects were surveyed in the PDA during the listed plant surveys. A total of 68 vascular plant species were observed and no plant SOCC were found. Four noxious weed species were observed in the PDA including Canada thistle, common tansy, perennial sow thistle, and annual hawksbeard (Figure 14-3). There are four wetlands within the PDA. Three wetlands classified as Class III (seasonal pond) and one wetland is Class II (temporary). No interactions with fish or fish habitat are expected to occur (Figure 14-3).



Notes
 1. Coordinate System:
 Name: NAD 1983 CSRS UTM Zone 13N
 2. Data Sources: Base features produced under license with the Government of Saskatchewan and the Government of Canada.

Legend

- Rural Residence
- Railway
- Surface Flow
- Watercourse
- Major Road
- Minor Road
- Project Development Area (PDA)
- Vegetation Local Assessment Area (LAA) (300 m)
- Wildlife LAA (1 km)
- Agricultural Crown Land
- Quarter Section

- Field Observations of Species of Conservation Concern**
- Spague's Pipit and Baird's Sparrow
 - Sprague's Pipit
 - Western Tiger Salamander
- Wildlife Incidental Feature**
- Coyote Den
 - Active Songbird Nest
 - Stick Nest
- Noxious Weed Observation**
- Common Tansy
 - Perennial Sow Thistle
 - Perennial Sow Thistle, Canada Thistle

- Land Cover Classification**
- | Land Cover | Land Cover Subclass |
|------------|----------------------------------|
| | Cleared, Cultivated |
| | Cleared, Hay/Forage |
| | Cleared, Industrial |
| | Cleared, Populated Area |
| | Cleared, Road |
| | Forested, Forested |
| | Low Vegetation, Low Shrub (< 2m) |
| | Low Vegetation, Native Grassland |
| | Low Vegetation, Tame Pasture |
| | Waterway, Stream |
| | Dugout, Dugout |
| | Wetland, Seasonal |
| | Wetland, Temporary |

0 500 Meters
 (At original document size of 11x17)
 1:12,000



Project Location
 NW-36-33-24 W2M
 Near Guernsey, SK
Client/Project
 SaskPower Aspen Power Station

Prepared by KL on 2/24/2023
 TR by NK on 2/24/2023
 IR by JH on 2/24/2023
 111477076-005-REVD

Figure No.
14-3

Title
Biophysical Considerations

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14.2.5 WILDLIFE AND WILDLIFE HABITAT

14.2.5.1 Methods

14.2.5.1.1 Desktop

Existing information from provincial and federal databases, satellite imagery, literature sources, and field surveys were used to characterize wildlife and wildlife habitat relative to the PDA and the Incidental Activity Study Area. A focus was placed on determining known occurrences of wildlife SOCC, migratory birds, and availability of their habitat that could be affected by the Project. Habitat suitability was evaluated to determine the wildlife SOCC and migratory birds that have potential to occur in the Project.

14.2.5.1.2 Field Surveys

As part of the wildlife and wildlife habitat assessment, wildlife surveys were conducted in the 2022 and 2023 field seasons to identify the presence or sign of wildlife species within the wildlife and wildlife habitat LAA and Incidental Activity Study Area with an emphasis on SOCC as well as their associated habitat types and landscape features (e.g., targeting all wetland classes for the presence of yellow rails). The surveys include general wildlife survey, amphibian auditory/visual survey, prairie raptor survey, sharp-tailed grouse lek survey, grassland breeding bird survey, yellow rail survey, and migratory bird concentration survey.

14.2.5.2 Existing Conditions

The Project is within in the Aspen Parkland ecoregion of the Prairie ecozone that supports a wide variety of wildlife species. Habitat for wildlife in the ecoregion is comprised predominantly of grasslands, wooded groves, and wetlands that provide important breeding and staging habitats for waterfowl and a diverse number of wildlife species.

14.2.5.2.1 Desktop

The HABISask project screening report revealed six known historical occurrences of wildlife SOCC with no critical habitat for federally listed species at risk (i.e., species listed under the *Species at Risk Act*) within the wildlife and wildlife habitat LAA, including: Sprague's pipit, rusty blackbird, bobolink, barn swallow, horned grebe, and American badger.

Incidental Activity Study Area

The Incidental Activity Study Area is comprised primarily of cultivated land and hay/forage which provides limited habitat for most wildlife species. There are some-portions of quarter sections that are permanently managed as provincial *Wildlife Habitat Protection Act* lands that are native grassland. Overall, potential wildlife and wildlife habitat associated with the Incidental Activity Study Area is limited due to anthropogenic disturbances (e.g., cultivation, residential development, and infrastructure). The Incidental Activity Study Area contains historical records of 11 known SOCC with some overlap in species found in the wildlife and wildlife habitat LAA, including: Sprague's pipit, Baird's sparrow, rusty blackbird, bobolink, barn swallow, , red-necked phalarope, horned grebe, bank swallow, and American badger.

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14.2.5.2.2 Field Surveys

Wildlife and wildlife signs (e.g., migratory bird nest, mammal den) incidentally observed during the 2022 and 2023 field surveys within the wildlife and wildlife habitat LAA include western tiger salamander, red-tailed hawk, coyote, northern harrier, mule deer, clay-colored sparrow, moose, Sprague's pipit, turkey vulture, barn swallow, and blue-winged teal.

No amphibians were detected during the 2022 amphibian auditory and visual surveys. Three species of amphibians were detected during the 2023 amphibian auditory and visual surveys, and no SOCC were present. Western tiger salamander, a SOCC, was incidentally recorded during field surveys in 2022. One stick nest was observed outside of the PDA but within the wildlife and wildlife habitat LAA in 2022. No activity was observed at the nest. One sharp-tailed grouse lek was recorded during the surveys. No yellow rails were detected during the 2022 and 2023 surveys. A total of 27 species of grassland birds were recorded during the 2022 surveys with two identified as SOCC. A total of 65 species of grassland birds were recorded during the 2023 surveys with 6 identified as SOCC. Two Baird's sparrow were recorded during the 2022 surveys in the PDA. Baird's sparrow is listed as special concern under the *Species at Risk Act* and apparently secure by the SKCDC. A total of 17 bird species were observed during the spring migratory bird concentration surveys.

14.2.6 HUMAN ENVIRONMENT

14.2.6.1 Methods

A desktop review of existing conditions for the human environment were obtained primarily through secondary research.

14.2.6.2 Existing Conditions

14.2.6.2.1 Current Land and Resource Use

The primary land uses within the RM of Usborne include agricultural activities pertaining to field crops, pasture lands, and livestock operations. The PDA is privately owned and is not accessible for public use. The PDA is located within Wildlife Management Zone No. 21, and the Southern Fur Conservation Area, which governs and places restrictions in terms of hunting and trapping activities. The seasons for harvesting activities of big game are primarily within September to December, with specific ranges dependent upon the species. The trapping seasons can be year-round for species such as skunk, raccoon and coyote but trapping for the remainder of the species can range from September to June. The seasons for hunting game birds is also primarily from September to December, with specific ranges dependent upon the species.

14.2.6.2.2 Employment and Economy

Population

Statistics Canada population data from 2021 for the RM of Usborne, the town of Lanigan, the village of Drake and the Province of Saskatchewan was reviewed. In 2021, the LAA, comprised of the RM of Usborne, the town of Lanigan and the village of Drake had a population of 2,141, a 0.2% increase since 2016. This represents the same rate of growth in comparison to the RAA, or the province overall. In 2021, the median

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age of the residents in the LAA was 43.3, which is older than the provincial median age of 38.8. In the LAA, 57.5% of the population was between 15-64 years of age, whereas in the RAA, 62.8% of the population fell in the same age bracket. In 2021, of a 25.0% sample of the LAA, 2.2% of the population identified as Indigenous and 8.6% identified as a visible minority (i.e., non-Indigenous, non-Caucasian). Whereas in the RAA, 17.0% of the population identified as Indigenous and 14.4% identified as a visible minority. Of the LAA, the entire population that identified as Indigenous was located within the town of Lanigan. The primary proportion (85.7%) of the population that identified as visible minority within the LAA was also located within the town of Lanigan (Statistics Canada 2022).

Education

Several education institutions operate within the LAA including Drake Elementary School, Lanigan Elementary School and Lanigan Central High School. Within the RAA, there are multiple education institutions at the elementary, secondary, and post-secondary levels. In 2016, of a 25.0% sample of data, 31.3% of the population of the LAA aged 15 years or older in private households, held a high school diploma or equivalency as their highest level of education completed, compared with 30.5% in the RAA. Of the same sample, 14.3% of the population of the LAA held an apprenticeship or trades certificate or diploma, compared to 10.4% of the RAA. Whereas 26.6% of the population of the LAA in comparison to 17.1% of the RAA held a college or non-university certificate or diploma.

Employment

Of the current population in the working age group between the ages of 15 to 64 years old, the participation rate (i.e., percentage of people who are either employed or are actively looking for work) for the LAA in 2016 was 67.1%. This compared to the RAA participation rate of 68.3%. The employment rates within the LAA and RAA were 64.0% and 63.5%, respectively.

14.2.6.2.3 Infrastructure and Services

This section provides an overview of existing conditions with respect to community services such as health, emergency, and social services, and transportation and utility interactions. The LAA is part of the Saskatoon Health Region. Medical services in the LAA include the Lanigan Hospital and the Lanigan & District Medical Clinic. Within the RAA, there are multiple additional health and emergency services in proximity to the Project. Ground ambulance services within the LAA are the responsibility of the Lanigan & District Ambulance, based in Lanigan and connected to the Lanigan Fire Hall. Aerial ambulance services are available through Saskatchewan Air Ambulance and Shock Trauma Air Rescue Service for Saskatchewan residents. Additional emergency services within the LAA include the Royal Canadian Mounted Police, which have a detachment located in Lanigan. The Lanigan Hospital is connected to the Central Parkland Lodge retirement complex/assisted living home.

The primary weight highway in the LAA that will provide access to the Project is the TransCanada Yellowhead Highway 16. The Project is adjacent to Range Road 2241 south of the TransCanada Yellowhead Highway 16. In 2022, the Government of Saskatchewan committed more than \$50 million to create 28 passing lanes on the TransCanada Yellowhead Highway 16 in the Project area. Rail lines are also present in the LAA, including Canadian Pacific and Canadian National main tracks, siding tracks, and spurs.

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14.2.6.2.4 Incidental Activity Study Area

The Incidental Activity Study Area is inclusive of the LAA, and RM of Wolverine No. 340. Land and resource use within the Incidental Activity Study Area is primarily based around the agriculture industry, as in the LAA. The RM of Wolverine had a 6.5% population increase from 2016 to 2021 (Statistics Canada 2022). Therefore, overall, the Incidental Activity Study Area, experienced a population change similar to that of the LAA and RAA. Health services provided in the LAA are also those available within the Incidental Activity Study Area. Additional emergency services in the Incidental Activity Study Area beyond those included in the LAA, include the Viscount & District Fire Association which serves the RM of Wolverine. The primary weight highway in the Incidental Activity Study Area is also the TransCanada Yellowhead Highway 16.

15 Regional Health, Social and Economic Description

15.1 Regional Health Description

The Project is located within the Saskatoon Regional Health Authority area, which is part of the provincial Saskatchewan Health Authority (Saskatoon Health Region 2022, Statistics Canada 2017, Statistics Canada 2022). Medical services within the Saskatoon Regional Health Authority near the Project include the Lanigan Hospital and the Watrous District Health Complex, as outlined in Section 14.2.6.2 (Saskatoon Health Region 2017). For most of the health-related indicators, Saskatoon Regional Health Authority had values that were comparable to the values of the Province of Saskatchewan as a whole.

In accordance with Health Canada guidance, the Project is not anticipated to require a Human Health Risk Assessment (Health Canada 2019). In accordance with IAAC guidance, the decision to conduct a Human Health Risk Assessment or a Health Impact Assessment will depend on the Project context and direction provided by IAAC (Government of Canada 2020b).

15.2 Regional Social Description

The Project is located within the RM of Osborne, which includes the town of Lanigan, the village of Drake, and the organized hamlets of Guernsey and Lockwood. The population of the RM, town, and village in 2021 had an average increase of 0.23% since 2016. The major age group is 15-64 in the RM, town, and village. The amount of one-parent family households in the RM of Osborne and the village of Drake is much less than the provincial average. In the RM of Osborne, 6.5% of census families were one-parent households where the parent is a woman+. In the Province of Saskatchewan, 17.0% of the population identify as Indigenous, whereas 0.0% of the population in the RM of Osborne and the village of Drake, and 3.2% of the population in the town of Lanigan identify as Indigenous.

15.2.1 GENDER BASED ANALYSIS PLUS

The amount of the population who identified as Women+ or as Men+ within the RM, town, and village were similar. The Project is in the vicinity of the Humboldt and Area Pride Network, which celebrates gender and sexual diversity in Humboldt, Saskatchewan and surrounding area. The Project is also in the vicinity of Out Saskatoon, Saskatoon and area's Lesbian, Gay Bi-sexual, Transgender, Queer, Two-Spirited community

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centre and service provider. As shown in Section 3.0 and Section 4.0, gender gap issues and disparities were not identified in any of the consultation with the public or Indigenous communities.

SaskPower is recognized as one of Canada's top 100 employers, and aims to reach the Saskatchewan Human Rights Commission's (SHRC) employment equity targets that mirror our province's population. SaskPower is committed to diversity and inclusion, and prioritizes its employees, partnerships, and culture to forge a work environment that values diversity and promotes inclusion for sustained growth and progress. SaskPower's Indigenous recruitment and retention strategy supports SaskPower's efforts in becoming an employer of choice for Indigenous Peoples where the importance of Indigenous perspectives within policies, practices, and services is recognized.

15.3 Regional Economic Description

The unemployment rate was highest in the village of Drake (12.5%), and lowest in the town of Lanigan (2.3%). Approximately 40.3% of the RM of Osborne's workforce and 31.3% of the village of Drake's workforce are employed in the agriculture, forestry, fishing, and hunting industries. Additional key employers in the RM are mining, quarrying, and oil and gas extraction (12.9%), construction (11.3%), and health care and social assistance (9.7%). In the town of Lanigan, approximately 19.4% of the workforce are employed in the mining, quarrying, and oil and gas extraction industry, and 11.6% of the workforce are employed in the health care and social assistance industry. Approximately 36.7% of the workforce in the RM work from home, in comparison to 3.2% of the town of Lanigan. Additionally, approximately 35.5% of the workforce in the RM are self-employed, in comparison to 7.8% of the town of Lanigan.

The peak construction workforce for the Project is estimated to be 450 employees. Labour peaks are anticipated between 2025-2026. During construction, it is anticipated that the Project will create extensive temporary employment opportunities in a broad range of positions. The Project's construction workforce and Project activities will contribute to the local and regional economy through labour income and provision of local good and services. SaskPower's approach to sourcing local labour and suppliers for the Project will be consistent with the efforts performed at other SaskPower projects. SaskPower is committed to utilizing Saskatchewan-based companies for the Project.

15.4 Health, Social or Economic Derived from Engagement

SaskPower through its commitment to diversity and inclusion, is committed to increasing the diversity of the workforce, advancing women in trades and leadership, increasing the percentage of underrepresented groups, focusing on building strong internal and external partnerships, promoting the value of diversity and ensuring practices are inclusive, creating an environment for people to excel and live up to their full potential, and consistently demonstrating inclusive behaviours and language. SaskPower has no barriers to equality with respect to decision making, participation, access, or control over the Project. Currently there is no indication that a construction camp will be required. SaskPower will monitor the surrounding communities and seek feedback prior to proceeding with a proposed construction camp to eliminate risks to diverse and vulnerable groups that can occur with an influx of a new labour force if required.

As presented in Sections 3.0 and 4.0, public and Indigenous engagement was open to all individuals, including Indigenous communities, women+, low income, under or unemployed, disabled, seniors, and systemically marginalized groups.

PART D: FEDERAL, PROVINCIAL, TERRITORIAL, INDIGENOUS AND MUNICIPAL INVOLVEMENT

16 Federal Financial Support

The Project does not include any proposed or anticipated federal financial support at this time.

17 Use of Federal Lands

The Project will not be constructed or operated on federal lands.

18 Project's Environmental Effects Assessment Jurisdictions

18.1 Federal Regulatory Requirements

In addition to the IAAC review process under the *Impact Assessment Act*, the Project will be subject to the federal regulatory requirements described in Table 18-1.

Table 18-1 Summary of Potential Federal Legislative and Regulatory Requirements for the Project

Legislation/ Regulations	Overseeing Agency	Description
<i>Aeronautics Act</i>	NAV Canada Transport Canada	SaskPower may be required to submit a Land Use Submission Form to NAV Canada, and an Aeronautical Assessment Form for Obstruction Marking and Lighting to Transport Canada.
<i>Canadian Environmental Protection Act</i>	Environment and Climate Change Canada (ECCC)	The Project is anticipated to be required to be registered as a reporting facility with the National Pollutant Release Inventory, which tracks the release, disposal, and transfer of over 320 pollutants from over 7,000 facilities. SaskPower will develop protocols for environmental emergency prevention, preparedness, response, and recovery in response to environmental emergencies through the emergency response plan and spill contingency plan.
<i>Canadian Navigable Waters Act</i>	Transport Canada	The Project and its incidental activities are not anticipated to interfere with listed or potentially navigable waters in proximity of the Project.
<i>Fisheries Act</i>	Department of Fisheries and Oceans Canada (DFO)	Effects to fish and fish habitat, as defined in subsection 2(1) of the <i>Fisheries Act</i> are not expected to be caused by the Project or its incidental activities.
<i>Migratory Birds Convention Act</i>	ECCC	The Project may interact with migratory birds and this document describes appropriate mitigation to avoid potential effects.
<i>Proposed Clean Electricity Regulations</i>	ECCC	The Clean Electricity Regulations are currently being developed for the purpose of driving progress towards a net-zero electricity grid in 2035. It is anticipated that the Project will be subject to the Clean Electricity Regulations once they come into effect.

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Legislation/ Regulations	Overseeing Agency	Description
<i>Regulations Limiting Carbon Dioxide Emissions from Natural Gas-fired Generation of Electricity</i>	ECCC	The Project will be required to comply with the Regulations, as the Regulations apply to any boiler unit or combustion engine unit that has a capacity of 25 MW or more.
<i>Species at Risk Act</i>	ECCC	Federally listed species at risk may occur near the Project and have the potential to interact with the Project, therefore, this document describes appropriate mitigation to avoid potential effects.
Standards Respecting Pipeline Crossings Under Railways	Transport Canada	The Project will be required to comply with the Standards should any railway crossings occur.

18.2 Provincial Regulatory Requirements

Provincial regulatory requirements that may affect the Project are described in Table 18-2.

Table 18-2 Summary of Potential Provincial Legislative and Regulatory Requirements for the Project

Legislation/ Regulations	Overseeing Agency	Description
<i>The Environmental Assessment Act</i>	EASB	SaskPower will submit a Technical Proposal to the EASB to inform their decision regarding the acceptability of potential environmental effects from the Project. Following the review, the EASB will determine if an environmental assessment will be required.
<i>The Environmental Management and Protection Act</i>	SK ENV	The Project is expected to require an aquatic habitat protection permit (AHPP). The Project will also require approval and an Environmental Protection Plan to construct and operate an industrial source facility. SaskPower will be required to follow the Chapter E.1.2, of the Saskatchewan Environmental Code. Should the Project include any of the substances listed in The Hazardous Substances and Waste Dangerous Goods Regulations, approval will be required.
<i>The Heritage Property Act</i>	Ministry of Parks, Culture and Sport, Heritage Conservation Branch	A heritage resource impact assessment (HRIA) was conducted on the PDA. An HRIA may be required for the incidental activities, once routes are finalized.
<i>The Highways and Transportation Act</i>	Ministry of Highways	The Project may require roadside development permits, if there is any work within 90 m of the property line or the right-of-way (ROW) edge of a provincial highway. Permits may also be required for the movement of oversized vehicles, and for identification signs.
<i>The Management and Reductions of GHGs Act</i>	SK ENV	Should the Project be determined to be a reporting facility, it will be required to follow the prescribed programs.
<i>The Saskatchewan Employment Act</i>	Ministry of Labour Relations and Workplace Safety	The Project will be required to comply with <i>The Saskatchewan Employment Act</i> and The Occupational Health and Safety Regulations.

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Legislation/ Regulations	Overseeing Agency	Description
<i>The Water Security Agency Act</i>	SK ENV – Fish, Wildlife and Lands Branch WSA	The Project is expected to require a Water Rights Licence and Approval to Construct and Operate Works. SaskPower has obtained a Permit to Conduct a Groundwater Investigation for the Project. SaskPower will be required to pay an industrial usage fee as required by WSA.
<i>The Weed Control Act</i>	Ministry of Agriculture RM of Osborne	The RM of Osborne is able to enforce the control of prohibited, noxious, and nuisance weeds within the RM of Osborne. The Project must comply with <i>The Weed Control Act</i> .
<i>The Wildlife Act</i>	SK ENV – Fish, Wildlife and Lands Branch	SaskPower has obtained a Permit for the field surveys that occurred in 2022. The Project may interact with protected species; therefore, this document describes appropriate mitigation to avoid potential effects.

18.3 Municipal Regulatory Requirements

Regulatory requirements from the RM of Osborne that may affect the Project are described in Table 18-3.

Table 18-3 Municipal Regulatory Requirements

Bylaw or Policy	Overseeing Agency	Description
<i>The Planning and Development Act</i>	RM of Osborne No. 310 Ministry of Government Relations	Required to submit a development permit application for a municipal development permit.
Building Bylaw	RM of Osborne No. 310	Obtain the necessary building permits for the Project prior to development.
Zoning Bylaw	RM of Osborne No. 310 Ministry of Government Relations	Required to submit a development permit application for a municipal development permit.
Dust Control Policy	RM of Osborne No. 310	Adhere to dust control procedures.

18.4 Regional Plans and Management Frameworks

Regional plans, development plans, and management frameworks applicable to the Project are described in Table 18-4.

Table 18-4 Regional Plans and Management Frameworks Applicable to the Project

Plan	Description
RM of Osborne Official Community Plan	Provides guidance for the management and use of land, and future development.
Upper Qu'Appelle River and Wascana Creek Watersheds Source Water Protection Plan	The Plan provides guidance for source water management and protection.
Saskatchewan's Growth Plan	Outlines 20 Actions for the 2020s and 30 goals for 2030 to build a stronger Saskatchewan.
25 Year Saskatchewan Water Security Plan	Approach to water management that includes the government's core water management responsibilities.
Prairie Resilience: A Made-in-Saskatchewan Climate Change Strategy	A system-wide approach and includes commitments to make Saskatchewan more resilient to climate change.
Saskatchewan's Climate Resilience Measurement Framework	SK ENV monitors resilience-related progress across 25 climate change effects indicators.

PART E: POTENTIAL EFFECTS OF THE PROJECT

19 Potential Effects on the Biophysical and Human Environment

19.1 Overview of Environmental Effects and Pathways

19.1.1 AIR QUALITY

The Project will result in the release of substances of interest that will change ambient air quality. The focus of the air quality assessment is on Project operation and maintenance because the operation and maintenance phase has the most potential to produce adverse air quality effects. Air emissions associated with Project construction are expected to be minor, and their effects are expected to be limited to the immediate vicinity of the Project area. The air quality assessment is limited to the consideration of substances that there are air quality objectives and standards adopted by either or both of the Saskatchewan or federal regulatory agencies. Model results were compared to the Saskatchewan Ambient Air Quality Standards and the Canadian Ambient Air Quality Standards. The predicted ambient concentrations are anticipated to be below the Saskatchewan Ambient Air Quality Standards and the 2025 Canadian Ambient Air Quality Standards. Additional information on the Project's emissions is provided in Sections 24. Construction and operation and maintenance mitigation measures are outlined in Sections 19.2.1 and 19.3.1. SaskPower will adhere to federal emission standards and guidelines for new turbine emissions (ECCC 2017).

19.1.2 NOISE

Project noise effects were quantified at the seven nearest residential dwelling receptors within 1.5 km from the Project property boundary. Incidental activities include distribution power line, transmission power line, and water supply infrastructure. Noise effects associated with construction and upset conditions were assessed qualitatively. Construction activities will occur in accordance with the construction schedule outlined in Section 11.1. Noise levels resulting from construction equipment are dependent on several factors, including the number and type of equipment operating, the level of operation, and the distance between sources and receptors. The effects that construction activities might have will vary considerably based on the proximity to the Project fence line. Construction and operation and maintenance mitigation measures are outlined in Sections 19.2.2 and 19.3.2.

Based on past experience, the noise effects are expected to be negligible during the operation and maintenance phase. Results indicate that cumulative sound levels are expected to be at or below the permissible sound level at all seven residential dwelling receptors. In addition, low frequency noise analysis indicated that Project-related low frequency noise effects are not expected to be an issue. The noise impact assessment assumed that operation and maintenance mitigation measures will be implemented during detailed design of the Project (Section 19.3.2).

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19.1.3 TERRAIN AND SOIL

The Project has the potential to affect terrain and soil through changes in terrain integrity and soil quality and quantity. Terrain integrity includes surface expressions that are influenced by changes in slopes. Soil quality and quantity can be measured as agricultural capability because it is based on several features including soil classification, texture, topsoil depth, erosion, salinity, and stoniness.

19.1.3.1 Change in Terrain Integrity

Change in terrain integrity has the potential to occur during the construction phase of the Project and incidental activities. During construction, slopes within the PDA and Incidental Activity Study Area will be disturbed during grading activities. Grading can change the terrain, creating new surface expressions on the landscape. Potential interactions of the Project with terrain integrity are not expected to occur within the PDA or Incidental Activity Study Area due to the absence of areas with steep slopes.

Soil disturbance activities are not expected to occur during the operation and maintenance phase of the Project and no additional changes to terrain integrity will occur.

19.1.3.2 Change in Soil Quality and Quantity

Change in soil quality and quantity will occur predominantly during the construction of the Project and incidental activities. Soil agricultural capability influences land use, as lower soil quality can restrict the productivity of land. Changes in soil quality and quantity can be caused by loss of topsoil, admixing, erosion, compaction, and rutting. The construction activities that have the potential to affect soil quality include soil stripping, excavation, trenching, grading, piling installation, and heavy equipment and vehicle traffic.

Soil disturbance activities can increase the risk of soil erosion during the operation and maintenance phase of the Project on areas where stockpiled soils are exposed. Vehicle traffic on exposed soils can create the risk for admixing, erosion, and topsoil loss through compaction and rutting and additional changes to soil quality and quantity can occur.

19.1.4 VEGETATION AND WETLANDS

19.1.4.1 Change in Vegetation and Wetlands

Vegetation removal, equipment travel, and introduction or spread of weed species may cause a loss or change in native vegetation communities. Construction of the Project and incidental activities will affect both native vegetation communities and previously disturbed cleared land cover. Wetlands of various sizes and classes are distributed throughout the PDA and Incidental Activity Study Area. A loss of wetland area or change in wetland class could occur during vegetation clearing and ground disturbance. It is conservatively assumed that all wetlands will be lost within the PDA. However, siting of the Project's permanent structures and incidental activities will be completed to avoid or span wetlands, where possible. The Project (including incidental activities) will not interact with water features that provide fish habitat. Routing and siting of incidental activities will avoid fish habitat and therefore, no change in fish habitat or change in fish mortality risk is anticipated as result of the construction.

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Project operation and maintenance activities including vehicle traffic could cause the introduction or spread of weed species within the PDA, ROWs associated with incidental activities, or vegetation and wetlands LAA. No change in fish habitat or change in fish mortality risk is anticipated because the Project is not expected to interact with fish and fish habitat as presented in Section 19.2.

19.1.4.2 Change in Plant SOCC

A change in plant SOCC has the potential to occur during the construction phase of the Project. Vegetation removal and ground disturbance activities may cause a loss or change in plant SOCC. Although no plant SOCC were observed in the PDA, there is potential habitat for plant SOCC within native plant communities including native grassland, tame pasture, shrubland, forested land, and wetlands associated with the incidental activities. Construction activities may result in the loss of plant SOCC during vegetation removal activities or through the introduction or spread of weed species due to vehicle and equipment movement.

Project operation and maintenance including vehicle traffic within the ROWs associated with incidental activities may increase competition due to the introduction or spread of weed species.

19.1.5 WILDLIFE AND WILDLIFE HABITAT

19.1.5.1 Change in Wildlife Habitat

A change in wildlife habitat has the potential to occur during the construction phase of the Project. Vegetation clearing of the PDA and incidental activities is the primary pathway for habitat loss. Sensory disturbances associated with construction activities have the potential to result in indirect habitat loss outside of the PDA due to reduced habitat effectiveness. Wildlife species that reside near the Project may be deterred from using nearby habitats during the construction of all Project components. Responses vary by species, but it is expected that wildlife will avoid the Project during construction because of noise, vibrations, and increased human activity (Habib et al. 2007).

The primary pathways of potential effects on wildlife, during operation and maintenance are associated with the creation of wildlife habitat. The evaporation and storm water ponds will create potential habitat for wildlife. The evaporation and storm water ponds are not likely to maintain suitable water levels, or oxygen levels, to serve as suitable overwintering habitat for northern leopard frog. Water quality in the evaporation and storm water ponds are expected to be similar to other natural habitats and therefore ecological health risks to wildlife are not anticipated. Sensory disturbance during operation and maintenance may result in indirect habitat loss by altering wildlife habitat availability in the wildlife and wildlife habitat LAA. The operation and maintenance of all incidental activities will include minimal activity and is not expected to impose indirect effects on wildlife and wildlife habitat.

Direct habitat loss is not expected to occur during the decommissioning phase of the Project. Increased sensory disturbances associated with decommissioning activities has the potential to result in localized indirect habitat loss due to reduced habitat effectiveness in areas adjacent to the Project. Removal of noise associated with the Project upon decommissioning has the potential to improve habitat effectiveness in the wildlife and wildlife habitat LAA.

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19.1.5.2 Change in Wildlife Mortality Risk

Project construction has the potential to result in an increased direct mortality risk for wildlife. Construction activities during the breeding season can result in the disturbance to, or destruction of, migratory bird nests, as well as den sites and burrows. Ground nesting SOCC are particularly vulnerable during construction throughout the breeding season. Wildlife mortality of young may also occur if active nests and burrows have been abandoned due to sensory disturbance and the young may not be able to escape the area. Wildlife with decreased mobility are also more susceptible to direct mortality if individuals are unable to escape construction activities. There is also an increased mortality risk for wildlife due to potential vehicle collisions at the Project with increased vehicle traffic along existing access roads in the wildlife and wildlife habitat LAA. Increased activity and noise during construction may cause an indirect increase in mortality risk from disturbance to wildlife resulting in behavioural changes and increased risk of predation and mortality from exposure.

Project operation and maintenance has the potential to result in an increased mortality risk to wildlife. Presence of overhead wires pose a collision risk to birds because they are difficult to see during low light conditions. Birds perched on distribution structures are at risk of electrocution. Artificial night lighting has the potential to attract or disorient nocturnally migrating birds that may result in an increased risk of injury or mortality. Any birds and bats attracted to the Project by artificial night lighting could also be exposed to other threats such as predation or collisions with Project vehicles or equipment. Artificial night lighting is not expected to have negative effects on whooping cranes because they primarily migrate during daylight hours for long periods. Human-wildlife conflict is a mortality risk during operation and maintenance. There is also an increased mortality risk for wildlife due to potential vehicle collisions at the Project, along the access road and roads in the wildlife and wildlife habitat LAA that will be used to bring in equipment and materials to the Project.

Similar Project effects during the construction phase have the potential to occur during onset of the decommissioning phase. The removal of above-ground Project infrastructure during the breeding season can result in the destruction of migratory bird nests, as well as den sites and burrows. However, once infrastructure is removed, this can reduce mortality risks to migratory birds. The risk is greatest for wildlife with decreased mobility. Movement of Project vehicles and equipment within the Project and along roads accessing incidental activities may also increase mortality risk for wildlife.

19.1.6 HUMAN ENVIRONMENT

19.1.6.1 Change in Current Land and Resource Use

Current land and resource use within the PDA is not expected to change with construction or operation and maintenance of the Project. Within the LAA, there is the potential for the Project construction and operation and maintenance to affect current land and resource use through access disruption due to construction traffic, and a loss of available wildlife species due to sensory disturbance that may deter recreational and resource use activities. Availability of hunted wildlife species may be affected by an increase in mortality due to vehicle-wildlife collisions from increased traffic. Due to the relatively shallow installation depth of infrastructure associated with the Project and the depth of the water table, groundwater quantity and quality are not anticipated to be affected by the Project, and therefore the Project is not anticipated to affect groundwater users in the Project area. Temporary disturbance to recreational land use in the LAA is

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possible during decommissioning activities, but once reclamation is complete, it is assumed the reduction in sensory disturbance will no longer deter use of the LAA for recreational purposes.

19.1.6.2 Change in Employment and Economy

It is expected that over its lifetime, the Project will contribute to an increase in employment and economy in the RAA. The Project will provide an economic benefit to the LAA through employment opportunities and will have economic benefits from the purchasing of supplies and services from vendors across central Saskatchewan. The Project's construction workforce and Project activities will increase the demand for goods and services. The estimated spend for these services is approximately \$40,000,000. During operation and maintenance, the Project will provide employment opportunities for approximately 25 full time staff. Based on expenditures at similar SaskPower Power Stations, the Project is expected to obtain over \$250 million in goods and services from Saskatchewan based suppliers with an expectation of at least \$15 million in goods and services from Indigenous owned suppliers.

19.1.6.3 Change in Infrastructure and Services

The Project's construction workforce and Project activities may increase the demand for existing infrastructure and services, such as the road network, rail network, local landfills, health care services, and businesses. During operation and maintenance, the expected workforce of approximately 25 full time employees will shift the demand from temporary accommodations to more permanent accommodations. There may be an increased workforce during the decommissioning phase that would again increase pressure on existing infrastructure (i.e., temporary accommodation).

19.2 Construction Mitigation Measures

Construction mitigation measures are presented in this section. For a full listing of SaskPower's standard mitigation measures please refer to SaskPower's Environmental Beneficial Management Practices.

19.2.1 AIR QUALITY

Air emissions associated with Project construction are expected to be minor and occur only for short intervals. The air emissions generated during construction will result from fuel exhaust (diesel and gasoline) and typical construction activities. Multiple control measures will be implemented during construction to reduce air emissions and potential effects. Potential air quality effects from construction activities will vary depending on the level of activity, the specific operations, site conditions, control measures, and prevailing weather conditions. Most effects due to construction are expected to occur in areas within the immediate vicinity of the Project. Many of the Project site preparation and construction activities such as land clearing, filling, and grading, will be intermittent and of short duration.

19.2.2 NOISE

Project construction will generate noise levels that have the potential to be occasionally audible offsite. Construction of the proposed Project is expected to involve site clearing, excavation, placement of concrete, and the use of typical utility construction equipment. The primary sources of construction noise will be associated with equipment operation, use of heavy-duty vehicles, grading, and foundation work activities.

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Project construction is typically completed in stages, but various construction activities may overlap and with multiple construction crews operating at the same time. Construction noise mitigation measures include maximizing the distance between equipment and noise sensitive receptors; limiting pile driving and impact activities to daytime hours; routing construction equipment away from noise sensitive receptors; turning off idling equipment; and using construction equipment with proper mufflers. Construction activities will also typically be completed between the hours of 7:00 am and 10:00 pm. Nearby residences will be advised of elevated noise-causing activities in advance and the activities will be scheduled to reduce disruption to nearby residences. Concerns pertaining to the noise of the Project may be submitted to SaskPower's Project webpage, toll-free phone line, or email address. SaskPower will work to respond and resolve concerns as soon as possible in accordance with SaskPower's resolution process.

19.2.3 TERRAIN AND SOIL

Implementing mitigation measures to reduce Project effects to changes in terrain integrity, soil quality, and soil quantity during construction include implementing proper soil handling techniques; monitoring topsoil stripping to reduce soil quality loss; installing erosion control measures where required to reduce potential soil quantity loss; stabilizing soil stockpiles that may be stored for longer durations; not refuelling equipment on topsoil and topsoil/subsoil stockpiles; restricting heavy equipment and vehicle use to dry or frozen soil conditions to reduce potential compaction and rutting; and implementing mitigation measures when saturated soil conditions are observed during construction.

19.2.4 VEGETATION AND WETLANDS

There are several mitigation measures that have already been implemented to avoid or reduce Project effects to vegetation and wetlands including the Project was sited within cultivated lands where possible. Additional mitigation measures include avoiding suitable habitat for plant SOCC; obtaining approvals from the appropriate provincial regulatory before work in wetlands and work will be completed in accordance with regulatory permit conditions; horizontal directional drilling methods may be used at certain locations during the construction of incidental activities to reduce or eliminate effects to wetland habitats; clearing will be limited to the marked limits of the PDA and reduced to the extent feasible; completing pre-construction vascular plant surveys in areas of potential habitat in the Incidental Activity Study Area to identify SOCC and weed species locations; avoiding known SOCC locations and applying setbacks by staking features prior to construction; vehicles and equipment will be clean and free of weeds; reclaiming disturbed areas after construction is complete; reseeding will be completed, in areas where native vegetation has been removed or damaged, using a native seed mix for reclamation; applying appropriate weed control measures; monitoring the success of native vegetation reclamation.

19.2.5 WILDLIFE AND WILDLIFE HABITAT

There are several mitigation measures that have already been implemented to avoid or reduce Project effects to wildlife and wildlife habitat including the Project was sited within cultivated lands where possible. Additional mitigation measures include avoiding suitable habitat for plant SOCC; completing vegetation removal outside of the migratory bird nesting period to the extent feasible; reducing sensory disturbances by using standard noise abatement equipment on machinery to control noise levels and avoid unnecessary idling if a sensitive wildlife feature is encountered; applying a species appropriate setback by staking features; completing pre-construction nest surveys in areas that contain nesting habitat for any work

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occurring within the migratory bird nesting period; avoiding high risk mortality locations when routing overhead transmission lines; maintaining lower speed limits in areas where wildlife SOCC or movement corridors have been identified; vehicle operators will take all reasonable measures to avoid wildlife-vehicle collisions; personnel will not be permitted to harass or feed wildlife, and nuisance wildlife will be reported.

19.2.6 HUMAN ENVIRONMENT

Standard industry practices and avoidance measures, in addition to Project-specific mitigation measures will be implemented during construction to reduce effects to the human environment. Mitigation measures will include providing stakeholders with updates on Project activities; posting appropriate restriction signage, not entering private property without approval; installing a security fence and repairing any damaged fences; marking all buried and overhead lines; vehicles and equipment will be clean and free of weeds; developing project labour agreements for construction work; prioritizing hiring of local construction workers; supplementing the local labour force with mobile workers when needed; developing employment and procurement programs and an emergency response plan; following potable water, sanitary waste and solid waste regulations; following crossing requirements and road restrictions; local highways, roads and rail lines will not be blocked.

19.3 Operation and Maintenance Mitigation Measures

For a full listing of SaskPower's standard mitigations please refer to SaskPower's Environmental Beneficial Management Practices.

19.3.1 AIR QUALITY

SaskPower will adhere to federal emission standards and guidelines. In addition, SaskPower commits to meeting ambient air quality objectives, and industry standard best practices for operational emissions. Mitigation measures will include installing the most up-to-date technology reduce overall emissions; improving cycle efficiency to reduce emissions; conducting regular inspection and maintenance to support performance and emissions reduction.

19.3.2 NOISE

To meet the noise thresholds at nearby dwellings, some of the equipment will require noise mitigation measures in their design. Actual mitigation will be selected during detailed design of the Project. Typical mitigation measures may include silencer, barriers, enclosures, acoustic shrouding, low noise equipment, acoustic louvers, or building with high sound transmission class rating. During the operation and maintenance phase, concerns pertaining to noise may be submitted to the Project's dedicated webpage, toll-free phone line, or email address.

19.3.3 TERRAIN AND SOIL

Implementing mitigation measures to reduce Project effects to changes in terrain stability, soil quality, and soil quantity during operation and maintenance include restricting heavy equipment and vehicle use to dry or frozen soil conditions to reduce the potential for compaction and rutting; implementing mitigation measures when saturated soil conditions are observed during operation and maintenance.

19.3.4 VEGETATION AND WETLANDS

Vegetation and wetland mitigation measures during Project operation and maintenance will focus on maintenance of protective measures and on-going application of control measures. Including restricting operation and maintenance activities to the PDA and incidental activities ROWs; vehicles will be clean and free of weeds; maintaining sediment fencing; regularly inspecting the PDA for weed occurrences.

19.3.5 WILDLIFE AND WILDLIFE HABITAT

Wildlife and wildlife habitat mitigation measures during Project operation and maintenance include protective measures and on-going application of control measures. Water quality in the evaporation and storm water ponds are expected to be similar to other natural habitats, so mitigation measures to discourage use of the stormwater pond by wildlife are not deemed necessary. Other mitigation measures will include personnel will not be permitted to harass or feed wildlife, nuisance wildlife will be reported, and overhead transmission line routing will avoid high risk mortality locations (e.g., wetlands), where possible.

19.3.6 HUMAN ENVIRONMENT

Standard industry practices and avoidance measures, in addition to Project-specific mitigation measures will be implemented during operation and maintenance to reduce effects to the human environment. Mitigation measures will include providing stakeholders with updates on Project activities; vehicle operators will take all reasonable measures to avoid wildlife-vehicle collisions; repairing any damaged fences; marking all buried and overhead lines; supplementing the local labour force with mobile workers when needed; following employment and procurement programs and the emergency response plan; following crossing requirements and road restrictions; local highways, roads and rail lines will not be blocked.

19.4 Decommissioning Mitigation Measures

The Project is expected to operate until at least 2047. Precise timing for the decommissioning of the Project cannot be predicted at this time. All relevant environmental regulations in existence at the time of decommissioning will be adhered to. SaskPower anticipates minimal effects to the surrounding communities with respect to employment upon decommissioning of the Project, as the addition of full-time employees during operation and maintenance are not expected to have a substantial effect on goods and services. A decommissioning and reclamation plan will be developed for the Project outlining the decommissioning and reclamation objectives, methodologies, and estimated costs.

19.5 Accidents and Malfunctions

Accidents and malfunctions are unplanned events that have a reasonable chance of occurring, or those that could result in significant environmental effects. Potential accidents and malfunctions that may occur during Project construction, operation and maintenance include hazardous materials spills, natural gas releases, fires, vehicle accidents, and accidental damage to utilities.

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An emergency response plan and spill contingency plan will be developed for the Project in accordance with the *Canadian Environmental Protection Act* and the *Environmental Emergency Regulations*. The emergency response plan will be consistent with those in place at existing SaskPower generating facilities, and will include emergency response procedures, incident action protocols, critical incident response guidance, and emergency response communication plans.

19.5.1 HAZARDOUS MATERIALS SPILLS

Hazardous materials will be stored and used on site during Project construction and operation and maintenance. Improper handling, use, or storage of these materials could result in a release. In addition, the release of hazardous materials could occur through several scenarios including vehicle collisions, refueling, and equipment breakdowns. Small spills of hazardous materials can usually be contained and cleaned up by onsite staff using standard equipment. Larger spills could result from a vehicle, or mobile equipment collision that ruptures a tank used to store hazardous materials. Mitigation measures will be implemented to reduce potential effects for accidental hazardous material releases. Additionally, a spill contingency plan will be developed for the Project, that will identify protection and emergency response measures to use if there is a release of hazardous materials.

Hazardous material releases have the potential to affect the health of staff through inhalation, ingestion, and/or direct contact. However, effects to the health of the public as a result of hazardous materials releases during the Project's construction and operation and maintenance phases are not anticipated to occur. The Project's emergency response plan and spill contingency plan will be consistent with those in place at existing SaskPower generating facilities, and will be developed in accordance with Health Canada guidance, the *Canadian Environmental Protection Act*, and the *Environmental Emergency Regulations*.

19.5.2 NATURAL GAS RELEASES

Unplanned or planned natural gas releases have the potential to occur during the operation and maintenance phase of the Project. The Project's emergency response plan will be developed for the Project that will be consistent with those in place at SaskPower generating facilities and will identify emergency response measures to be implemented if a natural gas release occurs.

19.5.3 FIRES

Fire may be caused by natural events such as lightning strikes, electrically powered Project component malfunction, equipment malfunction, or anthropogenic activities. In the unlikely event of an accidental fire, effects could include the damage or destruction of Project buildings, equipment, and infrastructure. Fires also have the potential to cause loss of life, air quality degradation, vegetation loss, wildlife and wildlife habitat loss, agricultural loss, and infrastructure loss. Mitigation measures will be implemented to reduce the potential for fires or damages resulting from fires. Additionally, an emergency response plan will be developed for the Project and will identify protection and emergency response measures to be implemented if a fire occurs.

19.5.4 VEHICLE ACCIDENTS

Movement of vehicles, equipment and personnel to the Project could result in collisions resulting in injury or death to humans and wildlife. Vehicle collisions have the potential to occur under a range of conditions related to road conditions, weather, driver fatigue and distractions, collisions with wildlife, or vehicle malfunctions. These accidents have the potential to occur during any phase of the Project. Mitigation measures to reduce the risk of vehicle collisions will be implemented.

19.5.5 ACCIDENTAL DAMAGES TO UTILITIES

Project activities such as ground disturbance, clearing, and equipment operation have the potential to cause damage to aboveground and underground utilities and infrastructure. Striking utilities or infrastructure can cause damage to communications, electricity transmission and distribution systems, water supply, sewage lines and storage, and natural gas infrastructure. Damages can be caused by hand tools, heavy machinery, equipment and vehicle collisions, and operating equipment under overhead lines without proper clearance. Damages to utilities have the potential to cause health and safety consequences, affect air quality, and cause work delays or shutdowns. Construction, and operation and maintenance safety plans will include following ground disturbance protocols and mitigation measures, which will require review of the work and advance planning prior to approval to proceed.

19.6 Fish and Fish Habitat

Effects to fish and fish habitat, as defined in subsection 2(1) of the *Fisheries Act* are not expected to be caused by the Project. The Project (including incidental activities) will not interact with water features that provide fish habitat. Routing and siting of incidental activities (e.g., 25 kV overhead distribution line) will avoid fish habitat and therefore, no change in fish habitat or change in fish mortality risk is anticipated as a result of the construction, operation and maintenance, or decommissioning of the incidental activities considered in the DPD. The PDA is located approximately 350 m northwest of Dellwood Brook. Dellwood Brook is the closest potential fish bearing water feature to the Project and flows southwest through the Incidental Activity Study Area before entering the Dellwood Reservoir, approximately 5.3 km downstream. Given the distance to Dellwood Brook from the PDA, no interactions with fish or fish habitat are expected to occur.

If fish habitat is identified during future Project design, SaskPower will comply with the fish and fish habitat protection provisions of the *Fisheries Act* and adhere to DFO's Fish and Fish Habitat Protection Policy (DFO 2019), Measures to Protect Fish and Fish Habitat (DFO 2023), and applicable Codes of Practices (DFO 2022). Although it is not anticipated, if Project activities have the potential to cause the death of fish, or harmful alteration, degradation, or destruction of fish habitat that cannot be avoided, SaskPower will obtain authorization from the DFO prior to the start of construction. SaskPower commits to the implementation of beneficial management practices to reduce or avoid potential effects to fish and fish habitat. For a full listing of SaskPower's standard mitigations for fish and fish habitat please refer to SaskPower's Environmental Beneficial Management Practice Manual (SaskPower 2022).

19.7 Aquatic Species

There are no known aquatic species at risk, as defined by the *Species at Risk Act*, expected to occur within the Project LAA and Incidental Activity Study Area and none are expected to occur due to the lack of suitable aquatic habitats. As a result, the Project is not expected to adversely affect aquatic species, as defined by the *Species at Risk Act*.

19.8 Migratory Birds

The *Migratory Bird Convention Act* protects migratory birds, their eggs, and nests. The mitigation measures outlined in Sections 19.2.5 and 19.3.5 support the Project's compliance with the *Migratory Bird Convention Act* regulations. There are no lands designated as a Migratory Bird Refuge within the Project area.

Mortality risk to migratory birds will be reduced through implementation of a mitigation plan and ongoing monitoring during construction to identify any conflicts with migratory birds. During construction activities, the removal of vegetation associated with construction activities has the potential to result in direct habitat loss for nesting migratory birds. The removal of vegetation could also result in indirect habitat loss and reducing habitat effectiveness due to sensory disturbances. The likelihood of Project activities interacting with migratory birds is greater in areas where natural habitats exist (e.g., wetlands) but the risk is greatly reduced with the implementation of mitigation measures. Where suitable wildlife habitat does exist, mitigation measures will be used to reduce direct and indirect Project-related effects on migratory birds.

The primary strategy to mitigate the risk of migratory bird mortality during construction includes timing vegetation clearing activities outside of the migratory bird nesting period, to the extent feasible. If an active nest or other wildlife feature is encountered, a species appropriate buffer will be applied and work in that area may be temporarily shut down. Increased sensory disturbances associated with construction and decommissioning activities has the potential to result in localized indirect habitat loss due to reduced habitat effectiveness. However, removal of noise and infrastructure associated with the Project upon decommissioning has the potential to improve habitat effectiveness. Overhead transmission line routing will avoid high risk mortality locations (e.g., wetlands) where possible. In instances where this is not feasible, mitigation measures will be implemented to increase line visibility to migratory birds (i.e., line markers) and reduce the potential for wildlife mortality following SaskPower's beneficial management practices for line marking. Mortality risk to migratory birds will be reduced through implementation of a mitigation plan acceptable to the SK ENV and ongoing monitoring during construction will occur to identify any conflicts with migratory birds. Project-specific mitigation measures, along with standard industry practices and avoidance measures will be implemented to reduce potential effects on migratory birds.

19.9 Species of Conservation Concern

This section summarizes the potential effects on SOCC and their habitat resources because of Project construction, operation and maintenance and decommissioning activities. The wildlife and wildlife habitat LAA and the Incidental Activity Study Area is situated predominantly on agricultural lands adjacent to anthropogenic disturbances (e.g., cultivated areas, residential housing, highways, gravel roads). The removal of vegetation associated with construction activities has the potential to result in direct habitat loss for birds. Construction activities (e.g., vegetation clearing, vehicle traffic, trenching) occurring during the bird nesting period can result in the destruction of bird nests. Sensory disturbances associated with

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construction and decommissioning activities (e.g., noise from increased vehicle traffic, heavy equipment, lights) in the PDA and Incidental Activity Study Area could result in indirect habitat loss and reduced habitat effectiveness for SOCC if activities coincide with spring, summer, and/or fall when SOCC have potential to occur in the Project area.

Where suitable wildlife habitat does exist, mitigation measures will be used to reduce direct and indirect Project-related effects on SOCC. The likelihood of Project activities interacting with SOCC is greater in areas where natural habitats exist (i.e., native grassland, tame pasture, forests, wetlands) but the risk is greatly reduced with the implementation of mitigation measures.

The primary strategy to mitigate the risk of SOCC mortality during construction includes timing vegetation clearing activities outside of the bird nesting period, to the extent feasible, to avoid mortality of ground-nesting or slow-moving wildlife during this sensitive period (i.e., nesting and rearing). Overhead wires could pose a mortality risk to birds during operation; however, risk to SOCC is low as the wildlife and wildlife habitat LAA and Incidental Activity Study Area does not support or attract large concentrations of birds, including whooping crane. If an active nest or other wildlife feature is encountered, a species appropriate buffer will be applied and work in that area may be temporarily shut down until an acceptable mitigation plan is developed in consultation with the SK ENV and the Canadian Wildlife Service, as required.

19.10 Summary of Effects

The Project is a 370 MW CCGT natural gas facility. Natural gas generation is a critical component in achieving both an increase in renewable generation capacity and a reduction in GHG emissions, in accordance with SaskPower's GHG emissions reduction strategy.

Air quality emissions will result in negligible effects. Noise emissions from the Project will not exceed Alberta Utilities Commission Rule 012 – Noise Control. The Project has the potential to affect terrain and soil through changes in terrain integrity and soil quality and quantity, particularly during the construction phase. The construction and operation and maintenance phases of the Project have the potential to affect vegetation and wetlands, particularly through vegetation removal, ground disturbance, equipment travel, and the introduction or spread of weed species. Wildlife and wildlife habitat potential effects are primarily during the construction phase, through a change in wildlife habitat and a change in wildlife mortality risk.

Project effects on health, social and economic conditions during construction may include some access disruption to infrastructure and services and resource use locations due to construction traffic. However, the effects of the Project on health, social and economic conditions are anticipated to be minimal. The Project is expected to benefit all communities in the vicinity of the Project, regardless of gender, race, or social status. Consultation with the public have not identified adverse effects of the Project on social, economic or health of inhabitants of the area nor on any diverse or vulnerable groups. The Project is not expected to result in negative effects to vulnerable population groups or result in gender-based violence. Therefore, the Project is expected to benefit the residents of Saskatchewan.

20 Potential Environmental Changes on Federal Lands or Lands Outside of Saskatchewan

The study areas selected for the Project (i.e., LAAs and RAAs) symbolize the spatial extent that the Project could have effects on the VCs and the regional context over which cumulative effects may occur (Section 14.1.1). The largest spatial extent is a 10 km x 10 km buffer of the PDA (i.e., the LAA and RAA for air quality). The nearest federal lands to the Project are approximately 47 km away (Section 13.6). Therefore, no changes to the environment are expected to occur on federal lands because of the Project.

The Project is also approximately 252 km from the closest provincial border (Manitoba), and 320 km from the closest national border (United States of America). Therefore, the Project is not expected to cause any changes in the environment that would adversely affect lands outside of Saskatchewan, including other provinces or countries (Figure 13-1).

21 Indigenous Peoples Potential Impacts

21.1 Potential Environmental Impacts to Indigenous People

The Project is located within Treaty Six and the Métis Nation of Saskatchewan territory and is near Treaty Four territory (Figure 13-1). Carrying out the Project is not expected to change the environment such that it would affect Indigenous Peoples, including Aboriginal and Treaty Rights, effects to physical and cultural heritage, the current use of lands and resources (including country foods) for traditional purposes or any structure, site or thing that is of historical, archaeological, palaeontological or architectural significance.

21.2 Potential Physical or Cultural Heritage Impacts

WLCS, working with Knowledge Keepers from George Gordon First Nation, completed a TK&P study that integrated western approaches and Traditional Knowledge, and a TK&P assessment of the PDA. Field activities included verifying desktop findings, observing and documenting landscape elements and suspected or known cultural elements and completion of ceremonial activities for suspected or known cultural features. During the field assessment, the Knowledge Keepers noted area(s) of potential cultural concern and WLCS recommended further assessment be conducted. As a result of these findings, SaskPower engaged the services of an archaeologist to conduct an HRIA of the PDA (Section 21.4).

21.3 Indigenous Peoples Current Use of Lands and Resources for Traditional Purposes

The Project site is located on a quarter section that is owned by SaskPower. The incidental activities will be located primarily on either privately owned land or within developed road allowances. Privately owned lands and leased provincial Crown lands are typically not available for TLRU and no unoccupied Crown land was identified near the Project and Incidental Activity Study Area. So, the Project is not expected to affect the ability of Indigenous people to exercise Aboriginal and Treaty Rights, or use, access or develop lands and resources (including country foods) currently used for traditional purposes. There are no known

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TLRU studies in the Project area (Section 5.0). Through engagement efforts with the Indigenous communities to date, SaskPower is not aware of any current use of lands and resources for traditional purposes in the Project area (Section 4.0).

In accordance with Health Canada guidance, the Project is not anticipated to affect groundwater or surface water that is used for drinking water, recreational, or traditional purposes (Health Canada 2016). The Project is not anticipated to affect groundwater or surface water bodies in proximity of the Project, as the majority of the water that will be used for the Project will be sourced from the Zelma Reservoir through existing infrastructure operated and maintained by SaskWater. Water from the Project water supply wells will be used during construction only. As outlined in Section 19.5.1 and Section 19.5.2, the Project has the potential to result in an accident or malfunction that could affect groundwater or surface water. Mitigation measures as described in Section 19.5.1 and Section 19.5.2 will be adhered to.

As discussed in Section 19.1.1, the Project will result in the release of substances of interest that will change ambient air quality; however, concentrations of the substances of interest at nearby residential receptors are predicted to be less than the federal standard requirements. Therefore, in consideration of the proximity of the Project to unoccupied Crown land and Indigenous communities, it is not anticipated that atmospheric deposition is a potential transport pathway of contaminants of potential concern for the Project.

In accordance with Section 19.5 and Section 19.5.1, potential accidents and malfunctions that may result from the Project are not anticipated to become transport pathways for contaminants of potential concern into country foods. SaskPower will continue to monitor engagement activities in accordance with Section 4.5, for potential concerns pertaining to country food consumption related to potential contaminant exposure for TLRU.

21.4 Archaeological Sites and Significance

The PDA does not contain any known archaeological resources and is not considered to be an archaeologically sensitive area by the provincial regulator. An HRIA was conducted of the PDA. The archaeological study area was an approximate 20 km by 20 km square area around the PDA. There are two clusters of significant archaeological sites within the study area. Both clusters should be avoided while routing incidental activities. There are archaeologically sensitive areas in the land parcels next to the PDA. Any incidental activities that approach the recorded locations of any of the known archaeological resources will be subjected to a HRIA to evaluate if the resource is at risk of being impacted. SaskPower will engage an archaeologist to conduct the HRIA and will strive to include Indigenous Peoples in any archaeological investigations.

During the TK&P study of the PDA, WLCS identified cultural features within the PDA (Section 21.2). The archaeologist concluded that the cultural sites identified by WLCS were not archaeological in nature and did not need to be recorded as an archaeological resource or have their locations reported. No further archaeological investigations were recommended at the sites. The archaeologist also conducted subsurface testing within the PDA. The subsurface testing within the PDA did not reveal any buried archaeological components and the archaeologist did not recommend further investigations in the PDA. The provincial regulator reviewed the consultation report and issued a clearance letter indicating that all regulatory requirements under Saskatchewan's *The Heritage Property Act* had been satisfactorily completed and the regulator had no further concerns with the Project.

21.5 Engagement Efforts Undertaken with Indigenous Peoples

To date, no concerns about the Project or specific potential adverse impacts to Indigenous communities have been raised through the engagement activities with Indigenous groups (Section 4). Engagement with Indigenous communities is ongoing, and SaskPower will continue to reach out and be available for discussion as the Project advances to address any concerns.

22 Health, Social or Economic Changes to Indigenous Peoples

22.1 Health and Social Changes to Indigenous Peoples

The Project is not expected to affect the health, well-being, and social conditions of Indigenous Peoples. To date, no concerns regarding potential effects on health, well-being, and social conditions have been raised during engagement with Indigenous communities (Section 4.3). Should Project effects to the health, well-being or social conditions of Indigenous Peoples be identified, SaskPower will provide opportunities for the involvement of the engaged Indigenous communities for mitigating said impacts. Future engagement and consultation activities with Indigenous Peoples will continue to be inclusive of all individuals, including women+, low income, under or unemployed, disabled, seniors, and systemically marginalized groups.

The Project is not anticipated to have effects on access to traditional land by Indigenous Peoples. In accordance with Health Canada guidance, the Project is also not anticipated to have an effect on sensitive receptors (e.g., hospitals, schools, retirement complexes/assisted living homes). Hazardous material releases have the potential to affect the health of staff through inhalation, ingestion, and/or direct contact. However, effects to the health, well-being, and social conditions of Indigenous Peoples as a result of an accident or malfunction (e.g., hazardous materials release) during the Project's construction and operation and maintenance phases are not anticipated to occur. As described in Sections 19.5 and 19.5.1, the emergency response plan will be developed in accordance with Health Canada guidance and will be consistent with those in place at existing SaskPower generating facilities.

In accordance with Health Canada guidance, the Project is not anticipated to require a Human Health Risk Assessment (Health Canada 2019). In accordance with IAAC's guidance, the decision to conduct a Human Health Risk Assessment or a Health Impact Assessment will depend on the Project context and direction provided by IAAC (Government of Canada 2020b).

22.2 Economic Changes to Indigenous Peoples

Socio-economic effects are expected to be positive for Indigenous communities due to opportunities for employment. SaskPower will require the EPC partner to develop and meet Indigenous employment targets. SaskPower's Indigenous Procurement Department will assist with developing opportunities. As part of the Project's commitment, at least 8% of the subcontract spend will be with Indigenous suppliers. Prior to any bid packages tendered to the market, the EPC firm will advance engagement with engaged Indigenous communities and organizations to ensure all perspective participants are aware of the opportunities the Project will bring to the local economy. Prospective subcontractor partners will be required to have a plan

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for meaningful engagement and capacity building opportunities for engaged Indigenous communities and organizations, and Indigenous owned suppliers.

23 Greenhouse Gas Emissions Assessment

23.1 Emissions Target

SaskPower has made a commitment to track the emissions outcomes from its generation facilities. Implementing the SaskPower Supply Plan will achieve GHG reduction goals of -50% GHG from 2005 by 2030. These reductions will be achieved by relying on natural gas and imports, reducing reliance on coal, and increasing deployment of lower emitting technologies. The Project will enable increased variable renewable generation, which is the basis for achieving net-zero emissions.

23.2 Estimation of Net Greenhouse Gas Emissions

Natural gas power stations using combined cycle technology emit 60% less carbon dioxide than coal-fired generation in Saskatchewan. As SaskPower phases out coal-fired generation and adds natural gas and renewable generation to the system, the GHG emissions will continue to be reduced. The Project is not forecasted to directly reduce GHG emissions; however, the Project will secure supply and will allow the system to expand its non-emitting resources. With more renewables added to the system, the Project will smooth the transition away from coal-burning and less efficient/older natural gas generators.

The GHG emissions are presented as carbon dioxide equivalents. The GHG emissions for each phase of the Project based on equation 1 in the Strategic Assessment of Climate Change (Government of Canada 2020a) are estimated to be:

- Net total GHG emissions during construction: 22,217 tonnes
- Theoretical maximum annual direct GHG emissions for the full design capacity (i.e., combined-cycle operation at 100% capacity factor) during operation and maintenance: 1,252,885 tonnes
- Net total GHG emissions during decommissioning: 22,229 tonnes

23.3 Mitigation and Monitoring Measures

SaskPower more than doubled wind energy capacity in 2022. Additional wind energy and solar energy is expected to be in service in 2026 and 2028 in Saskatchewan. As SaskPower looks to increase the non-emitting and renewable generation by up to 50% by 2030, SaskPower must carefully plan to ensure a very flexible system. SaskPower has a Renewable Integration Action Team that is assessing many aspects of integrating renewable generation options. Currently natural gas is the only option available to Saskatchewan at the scale required to enable significant addition of variable renewables. To support SaskPower's supply plan of increased production from renewable sources, the Project will also be able to operate in SCGT mode which will enable faster start and response times to support grid response to renewable generation and system disturbances. Whereas, when demand is high, SaskPower can operate in CCGT mode to maximize output and efficiency.

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As described in Section 7, the Project is currently needed to provide capacity, back up renewables, and act as a contingency for the situation where load grows, aging units become less reliable or fail, or other Projects are delayed. The GHG emissions intensity will be related to the efficiency of the Project. Therefore, the Project will be designed considering the emissions intensity and efficiency of the Project. For example, the gas turbine generator will have the most up-to-date technology intended to keep emissions low. Design improvements will allow for a higher number of starts, faster starts and electrical grid support response, and lower number of operating hours, with lower overall emissions, and higher integration of intermittent renewable generation, improved power output, Project efficiency, and emissions.

23.3.1 CARBON CAPTURE UTILIZATION AND STORAGE

SaskPower currently owns and operates the world's only commercial scale CCUS facility on a power generating unit in the world. As such, SaskPower has extensive experience with carbon dioxide capture, its performance, potential challenges, as well as knowledge of how to effectively utilize this technology in new applications.

SaskPower will be conducting further studies to determine the feasibility of carbon capture for the Project to ensure that the Project is in compliance with the forthcoming Clean Electricity Regulations.

23.3.2 NET-ZERO 2050 PLAN

SaskPower is currently planning to reach net-zero GHG emissions by 2050 or sooner. This plan is called the long-term plan and informs the annual supply plan. The long-term plan and the annual supply plan are not locked in, as every year new information results in iterations to the planning process. New regulations, revised cost assumptions, availability of technology, and adjusted load forecast, are a few of the factors that influence the need to revise the plan.

SaskPower is currently in the process of updating the long-term plan and has included public engagement as a key component during this time of energy transition. Public participation is included at each stage of the planning process and a final report is targeted for public release in June 2024.

SaskPower is on track to meet interim targets to reduce GHG emissions to 50% below 2005 levels by 2030 and increase total capacity from renewables up to 50% by 2030. SaskPower is working now to determine which low and non-GHG emitting technologies will be suitable supply options for Saskatchewan and available in the time required.

As mentioned in Section 12.2.5, SaskPower is also working to increase demand side management and other customer programs. The potential for distributed energy resources will increase as SaskPower's progress on grid modernization continues.

24 Waste and Emissions

24.1 Wastes Generated during Construction and Startup

24.1.1 LIQUID DISCHARGES

The potential sources of liquid discharge during the construction phase include sanitary waste, rainwater, snowmelt, and machinery fluids (e.g., diesel fuel, lubricating oils). Each source will be controlled differently to avoid spills and unplanned releases.

24.1.2 STARTUP LIQUID DISCHARGES

Startup and commissioning of the Project will require several testing and cleaning processes involving liquid waste. The liquid waste will be collected and held in temporary holding tanks, and then hauled off-site and disposed of by a licensed contractor in accordance with applicable regulations.

24.1.3 SOLID WASTES

Solid wastes that will be generated during construction, and startup and commissioning will be typical of activities associated with power generation construction, such as packing materials, office wastes, scrap lumber, excess concrete, metals, cables, glass, cardboard containers, and other miscellaneous debris. Solid waste will be sorted and any recyclable materials (e.g., cardboard, wood, and metal) will be diverted for recycling, where facilities or programs for that material are available.

24.2 Wastes Generated During Operation and Maintenance

24.2.1 LIQUID DISCHARGES

The Project will contain various sources of possible liquid discharges that must be controlled during operation and maintenance. The storm water pond will remain in service throughout the operation and maintenance stages of the Project. The wastewater generated from the Project will mainly be from the water treatment process and will be discharged to an on-site evaporation pond. The evaporation pond will be sized based on the Project site climate and the necessary rate of evaporation. The evaporation pond will have a liner to prevent seepage of wastewater into the soil. During operation and maintenance of the Project, sanitary waste will be collected and pumped to an on-site septic tank and leach field.

24.2.2 ACCIDENTS AND MALFUNCTIONS

In the event of a liquid discharge due to an accident or equipment malfunction, wastewater drains around the equipment be gravity drained and directed through the oil/water separator for treatment.

Oil releases have the potential to effect the health of staff through inhalation, ingestion, and/or direct contact. However, effects to the health of the public as a result of oil releases during the Project's construction and operation and maintenance phases are not anticipated to occur. As described in Section 19.5.1, the Project's emergency response plan will include emergency response measures and

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preparedness systems that will be developed in accordance with emergency response plans in place at existing SaskPower generating facilities and Health Canada guidance.

24.2.3 SOLID WASTES

Solid wastes generated during the operation and maintenance phase of the Project will be typical of activities associated with the operation of a power generation facility. Wastes will include domestic and office waste generated by operations personnel, packaging wastes from supplies, and wastes from ongoing maintenance activities (e.g., oil containers, rags, etc.). Wastes generated during operation and maintenance will be disposed of by licensed waste contractors using approved facilities.

24.3 Wastes Generated During Decommissioning and Reclamation

The main sources of liquid discharge during the decommissioning phases will include sanitary waste, rainwater, snowmelt, and machinery fluids (e.g., diesel fuel and lubricating oils). Each source will be controlled to avoid spills and unplanned releases. Solid waste will be collected, hauled off, and recycled and/or disposed of by licensed waste contractors using approved facilities.

24.4 Mobile Combustion Emissions Generated During Construction

Air emissions generated during construction of the Project will result from fuel exhaust (diesel and gasoline) and typical construction activities. Construction emissions are dependent on the Project schedule and construction equipment plan. Additional dust emissions may be generated through vehicle traffic, earthwork, or grinding and crushing. To control dust emissions, water trucks will be used regularly to spray down heavy traffic areas on disturbed or unpaved surfaces. In addition, there will be daily vehicle traffic as workers commute to and from the Project site.

24.5 Stationary Combustion Emissions Generated During Operation and Maintenance

Emission of air contaminants during operation and maintenance of the Project will result from the combustion of natural gas. There will also be emissions of air contaminants generated from the emergency diesel generator, emergency diesel fire pump, and dew point heater.

24.5.1 GAS TURBINE GENERATOR

Emissions from the Gas Turbine Generator (GTG) are dependent on seasonal temperature variations and operating load. In addition to the GTG, there will also be emissions of air contaminants generated from the emergency diesel generator, emergency diesel fire pump, and dew point heater.

24.5.2 EMERGENCY DIESEL FIRE PUMP

An emergency diesel fire pump will be built to support the Project in case of a fire.

24.5.3 EMERGENCY DIESEL GENERATOR

An emergency diesel generator will be built to provide essential services to the Project in case of a power interruption.

24.5.4 CIRCUIT BREAKER EQUIPMENT

Nine circuit breakers are proposed for the substation. The circuit breakers will contain sulfur hexafluoride and have the potential to emit sulfur hexafluoride emissions.

24.5.5 VENTING AND FUGITIVE EMISSIONS GENERATED

Fugitive emissions will come from small leaks in equipment connections throughout the Project. The fugitive emissions amounts were calculated by considering the approximate number of connects, flanges, open ended lines, pump seals and valves from engineering plants for the Project.

24.6 Emissions Generated During Decommissioning and Reclamation

During the decommissioning phase, dust and fine particulate emissions will be generated from demolition activities, material handling, and vehicles creating dust by traveling on land. In addition, off-road construction equipment will release combustion by-products when they operate by combusting fuel. During the decommissioning phase the Project will be idle; however, it is anticipated that the fire protection system will remain operational. Therefore, the periodic testing required of the diesel fire pump will generate emissions in this phase. The expected decommissioning emissions would be consistent with construction emissions and diesel fire pump emissions. The overall duration of the decommissioning process, and the size of the crews involved, are expected to be substantially less than that required for construction of the Project.

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