Date: January 29, 2026

To: Luis Garrido, Project Manager, Customer Grid Access – Alberta Electric System Operator

From: Stephanie Hannem, Regulatory & Consultation Specialist, Land & Environment – ATCO Electric

Subject: Environment & Land Use Impacts Memo – P2611 UK Solar East

ATCO Electric Ltd. (ATCO) has reviewed and completed a high-level desktop environment and land use analysis of alternatives 1 and 2 from the Environment and Land Use Evaluation Scope document for the UK Solar East project (AESO project #P2611).

Alternative 1 includes the following developments:

- Add one 240 kV switching substation, including adding three 240 kV circuit breakers connected to the existing 240 kV transmission line 9L46 (between Pemukan 932S and Lanfine 959S substations) using an in-and-out configuration.
- Add one 240 kV circuit, approximately 2 km in length, to connect the Facility to the switching substation

Alternative 2 includes the following developments:

- Add one 240 kV circuit, approximately 9 km in length, to connect the Facility to the existing Lanfine 959S substation using a radial configuration.
- Modify the existing substation Lanfine 959S, including adding two 240 kV circuit breaker.

ATCO is confident that the attached metrics table and maps will be adequate to provide the AESO with sufficient environment and land use data. This assessment was completed by Stephanie Hannem, Regulatory & Consultation Specialist, Land & Environment. Questions concerning this submission can be directed to Stephanie Hannem by phone at 780-220-9584 or by email at stephanie.hannem@atco.com.

Sincerely,

ATCO Electric Ltd.

Stephanie Hannem
Regulatory & Consultation Specialist, Land & Environment

Metric	Alternative 1: In-and-Out connection to the 240kV transmission line 9L46	Alternative 2: Radial 240kV connection to the Lanfine 959S substation	ATCO Comments
Line Length & Land Disturbance	Approximately 2 km transmission line Approximately 3 ha switching substation site	Approximately 9 km transmission line No switching substation required	Alternative 1 requires a larger localized footprint of permanent disturbance for the switching substation. Alternative 2 would result in a longer linear disturbance however permanent land disturbance would be limited to pole locations
Land Constraints	Mix of private land and Special Areas grazing leases Hummocky terrain Mix of native grassland and cultivation Some ESAs in Study Area	Mix of private land and Special Areas grazing leases Hummocky terrain Mix of native grassland and cultivation Some ESAs in Study Area	Hummocky terrain poses challenges for identifying a suitable switching substation location
Watercourse Crossings	No water crossings	No water crossings	
Wetlands	Abundant small wetlands throughout Study Area	Abundant small wetlands throughout Study Area	Small wetlands can be avoided relatively easily by transmission pole placement but pose greater challenge for switching substation siting
Wildlife * These constraints could have an effect on the timing of the project	Burrowing owl range Sharp-tailed grouse range Sensitive raptor range for ferruginous hawk and prairie falcon Sensitive amphibian range	Burrowing owl range Sharp-tailed grouse range Sensitive raptor range for ferruginous hawk and prairie falcon Sensitive amphibian range	Wildlife constraints are the same for both alternatives; however greater line length of Alternative 2 would increase the risk of avian collisions
Historical Resource Value (HRV)	Areas of HRV 5 One small area of HRV 4	Areas of HRV 5 Two smaller areas of HRV 4	
First Nations	No First Nations or Metis communities	No First Nations or Metis communities	
Public - Residences	One residence within Study Area	One residence within Study Area	
Industry - Pipelines & Facilities	Oil & Gas facilities present but avoidable	Oil & Gas facilities present but avoidable	
Overall Recommendation:	Both alternatives have similar environmental and land use constraints. The hummocky terrain and wetland-rich nature of the project area may pose challenges for siting of a switching substation for Alternative 1. The increased line length of Alternative 2 may increase the risk of wildlife interactions during construction and avian collisions during operations; however these impacts may be mitigated through construction timing and the installation of deterrents (bird diverters).		

Spatial Datasets:

Historical Resource Value Listings - Government of Alberta 2025

Alberta Merged Wetland Inventory - Alberta Environment and Parks, Government of Alberta 2025

Provincial Grazing Reserve - Government of Alberta 2025

Alberta Soil Information Viewer - Government of Alberta 2026

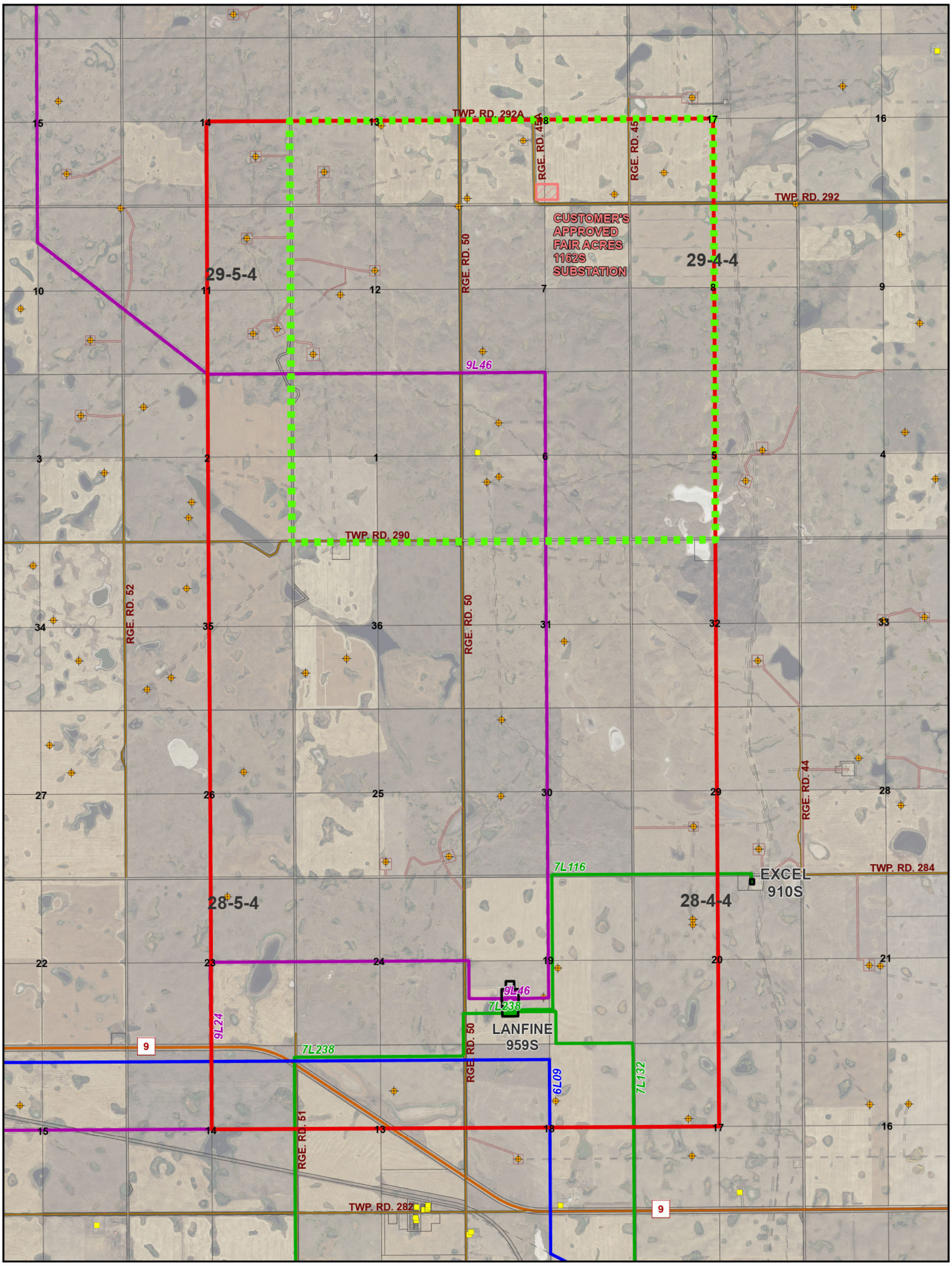
Protected Areas - Alberta Environment and Parks, Government of Alberta 2023

Special Areas: Restricted Development Areas - Special Areas Board 2021

Alberta Ditital Integrated Dispositons - Alberta Data Partnetships Ltd. 2025

Pipelines & Wettl Data - IHS 2025

Geoadmin Layers - Alberta Data Partnership 2025



CREDIT NOTES
Alberta Data Partnerships, IHS Markit, Imagery: Maxar 2017

NOTES:
- Only facilities in the vicinity of the project are shown.

ATCO Energy Systems

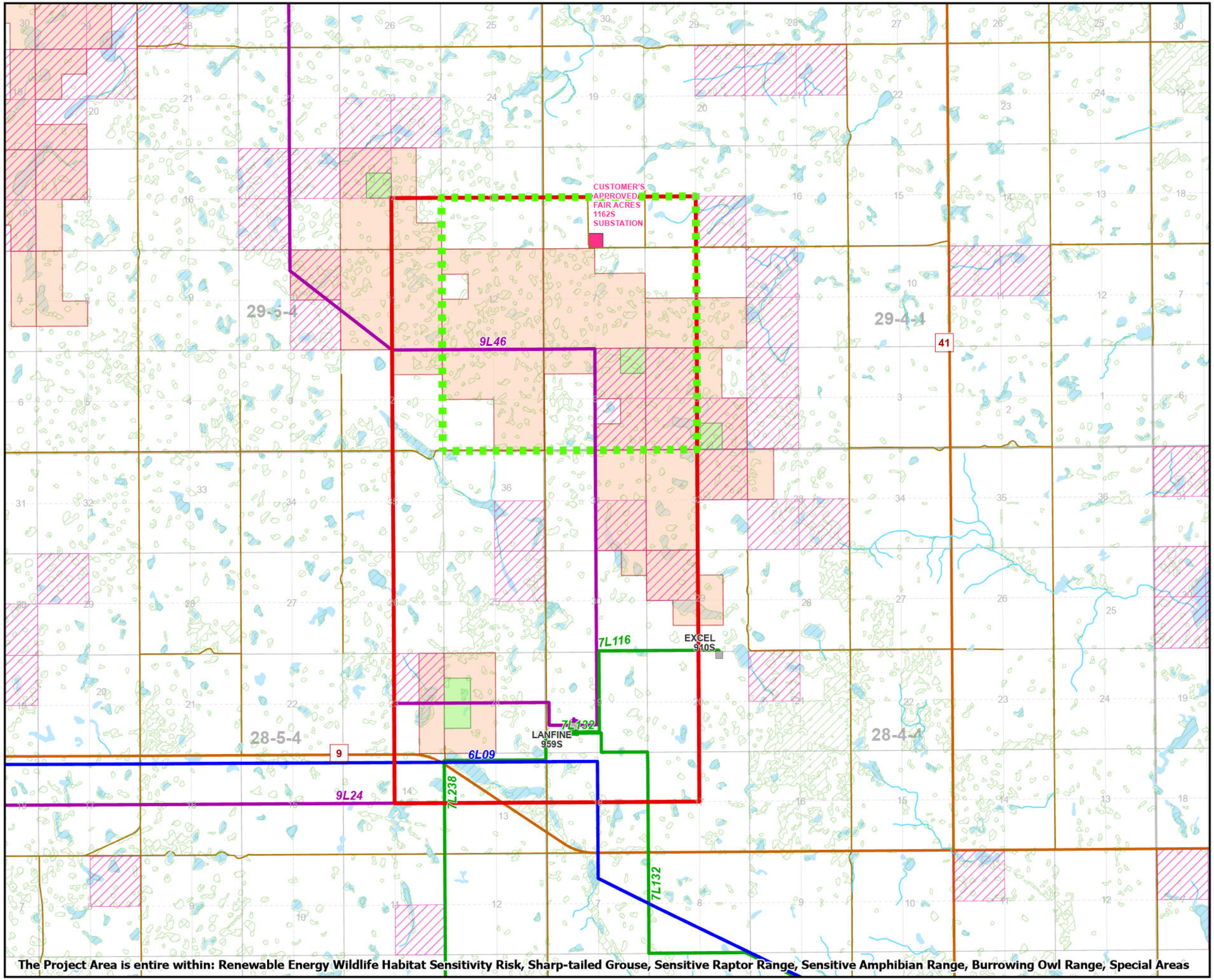
Oyen Solar East Connection Transmission Project

STUDY AREA

February 2026

RS-9L141 - ELU - 01

Cartography By: TO | Approved By: SH | 1:35,000 at Tabloid | Projection: NAD 1983 UTM Zone 12N | File Name: 9L141_Oyen_Solar_East_Connection_Study_Area



The Project Area is entire within: Renewable Energy Wildlife Habitat Sensitivity Risk, Sharp-tailed Grouse, Sensitive Raptor Range, Sensitive Amphibian Range, Burrowing Owl Range, Special Areas

- Customer's Approved Substation Site
- Study Area Alternative 1
- Study Area Alternative 2
- Existing Substation
- Existing 500 kV Transmission Line
- Existing 240 kV Transmission Line
- Existing 144 kV Transmission Line
- Existing 72 kV Transmission Line
- Road
- Primary Highway
- Secondary Highway
- Waterbody

Environmental & Historical Constraints

- Alberta Merged Wetland Inventory
- Environmentally Significant Areas (2014)

Historical Resource

- HRV 4
- HRV 5

CREDIT NOTES
Alberta Data Partnerships, S&P Global Commodity Insights

N W E S

0 1 2 Kilometres
0 0.5 1 Miles

NOTES:
- Only facilities in the vicinity of the project are shown.

ATCO Energy Systems

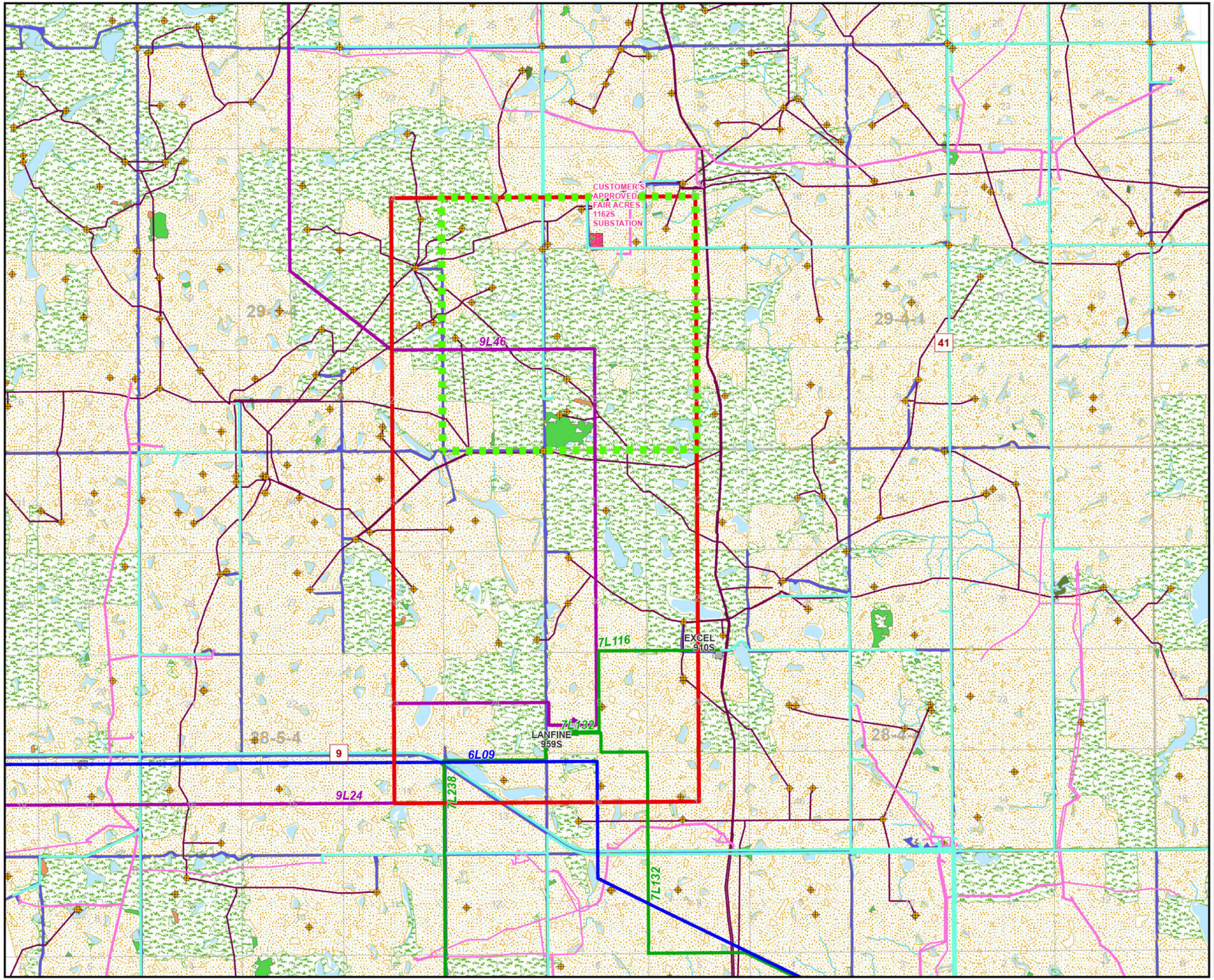
Oyen Solar East Connection Transmission Project

ENVIRONMENTAL & HISTORICAL CONSTRAINTS MAP

February 2026

RS-9L141 - ELU - 02

Cartography By: TO | Approved By: SH | 1:60,000 at Ledger | Projection: NAD 1983 UTM Zone 12N | File Name: 9L141_Oyen_Solar_East_Connection_Reference_Map



Customer's Approved Substation Site
Study Area Alternative 1
Study Area Alternative 2
Existing Substation
Existing 500 kV Transmission Line
Existing 240 kV Transmission Line
Existing 144 kV Transmission Line
Existing 72 kV Transmission Line
Road
Primary Highway
Secondary Highway
Waterbody

Land Use Constraints

Surface Well Sites
High Pressure Pipelines
Low Pressure Pipelines
Telus Trench
Broadleaf forest
Cropland
Grassland
Barren land
Shrubland
Urban and built-up
Wetland

N W E S

0 1 2 Kilometres
0 0.5 1 Miles

NOTES:
- Only facilities in the vicinity of the project are shown.

ATCO Energy Systems

Oyen Solar East Connection Transmission Project

LAND USE CONSTRAINTS MAP

January 2026

RS-9L141 - ELU - 03

Cartography By: TO | Approved By: SH | 1:60,000 at Ledger | Projection: NAD 1983 UTM Zone 12N | File Name: 9L141_Oyen_Solar_East_Connection_Reference_Map