Date: January 19, 2025
To: Young Dawson, Senior Project Manager, Alberta Electric System Operator (AESO)
From: AltaLink Management Ltd.
Subject: Environment and Land Use Impacts Memo – P2614 Dow Fort Saskatchewan Load

AltaLink Management Ltd. (AltaLink) has reviewed and completed a high-level desktop environment and land use (ELU) analysis of Alternatives 1 through 5 from the Environment and Land Use Evaluation Scope of Work received on November 10, 2025, for the Dow Fort Saskatchewan Load project (AESO project #P2614). The customer's proposed substation location is in SE-10-55-22 W4M and illustrated on the attached mapping. A summary of the alternatives is provided below with the analysis provided in Table 1. Approximate line lengths were provided by the AESO.

Alternative 1 (in-and-out connection to 240 kilovolt (kV) transmission lines 997L and 942) includes the following developments:

- Add one 240 kV switching substation, including adding six 240 kV circuit breakers.
- Two approximately 3.5 kilometres (km) long 240 kV circuits to the proposed customer substation strung as separate single circuits.

Alternative 2 (radial 240 kV connection to the existing Lamoureux 71S substation) includes the following developments:

- Two approximately 3.5 km 240 kV circuits strung as separate single circuits between Lamoureaux 71S and the proposed customer substation.
- Modifications to the existing Lamoureux 71S substation, including expanding the 240 kV buswork and adding four 240 kV circuit breakers.

Alternative 3a (in-and-out connection to the 240 kV transmission line 997L with two single circuits) includes the following developments:

- Add one 240 kV switching substation, including adding three 240 kV circuit breakers.
- Two approximately 3.5 km 240 kV circuits strung as separate single circuits.

Alternative 3b (in-and-out connection to the 240 kV transmission line 997L with one circuit) includes the following developments:

- Add one 240 kV switching substation, including adding three 240 kV circuit breakers.
- One approximately 3.5 km 240 kV circuit.

Alternative 4a (in-and-out connection to the 240 kV transmission line 942L with two single circuits) includes the following developments:

- Add one 240 kV switching substation, including adding three 240 kV circuit breakers.
- Two approximately 3.5 km 240 kV circuits strung as separate single circuits.
- Two 240 kV line crossings are required.

Alternative 4b (in-and-out connection to the 240 kV transmission line 942L with one circuit) includes the following developments:

- Add one 240 kV switching substation, including adding three 240 kV circuit breakers.
- One approximately 3.5 km 240 kV circuit.
- Two 240 kV line crossings are required.

Alternative 5 (radial 240 kV connection to Ursus 430S substation) includes the following developments:

- Two approximately 7 km 240 kV circuits strung as separate single circuits.
- Modify the existing Ursus 430S substation, including expanding the 240 kV buswork and adding four 240 kV circuit breakers.

Questions concerning this submission can be directed to Dave Lee, Manager, Siting by email at dave.lee@altalink.ca.

Sincerely,
AltaLink Management Ltd.

Dave Lee
Manager, Siting

Table 1: P2614 – Dow Fort Saskatchewan Load – Desktop Environment and Land Use Analysis:

Metric	Criteria	Alternative 1 (in-and-out to 997L and 942L strung as two single circuits)	Alternative 2 (two single circuits to Lamoureaux 71S)	Alternative 3a (in-and-out to 997L – two single circuits)	Alternative 3b (in-and-out to 997L – single circuit)	Alternative 4a (in-and-out to 942L – two single circuits)	Alternative 4b (in-and-out to 942L – single circuit)	Alternative 5 (two single circuits to Ursus 430S)
Land	Municipality	Sturgeon County and the City of Fort Saskatchewan.	Sturgeon County and the City of Fort Saskatchewan.	Sturgeon County and the City of Fort Saskatchewan.	Sturgeon County and the City of Fort Saskatchewan.	Sturgeon County and the City of Fort Saskatchewan.	Sturgeon County and the City of Fort Saskatchewan.	City of Fort Saskatchewan and Strathcona County.
	Potential for impacts to Environmental Preservation District	Yes	Yes	Yes	Yes	Yes	Yes	No
	Potential for impacts to Crown Land	Yes	Yes	Yes	Yes	Yes	Yes	No
	Right-of-Way Requirements	Higher, two single circuits.	Higher, two single circuits.	Higher, two single circuits.	Lower, single circuit.	Higher, two single circuits.	Lower, single circuit.	Higher, two single circuits.
	Switching Station	Yes	No, no expansion of Lamoureaux 71S required.	Yes	Yes	Yes	Yes	No, however the Ursus 430S substation will likely need to be expanded to accommodate this connection scope which may impact land use in the area.
Environmental Constraints – Water & Wetlands	Watercourse Crossing (North Saskatchewan River)	Yes	Yes	Yes	Yes	Yes	Yes	No
	Large Wetlands and Waterbodies	Yes	No	Yes	Yes	Yes	Yes	Potentially
Environmental Constraints – Wildlife	Key Wildlife and Biodiversity Zones	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Sensitive Raptor Range (Bald Eagle)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Sharp Tailed Grouse Range	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Increased Avian Collision Risk	Yes	Yes	Yes	Yes	Yes	Yes	No
Historical Resource Value (HRV)	Potential Impacts to HRV sites	Yes, HRV 3 and HRV 5.	Yes, HRV 3 and HRV 5.	Yes, HRV 3 and HRV 5.	Yes, HRV 3 and HRV 5.	Yes, HRV 3 and HRV 5.	Yes, HRV 3 and HRV 5.	Yes, HRV 5.
Industry – Pipelines & Facilities	Crossing Agreements	Yes, multiple	Yes, multiple	Yes, multiple	Yes, multiple	Yes, multiple	Yes, multiple	Yes, routing through the DOW industrial complex is also required.

Metric	Criteria	Alternative 1 (in-and-out to 997L and 942L strung as two single circuits)	Alternative 2 (two single circuits to Lamoureaux 71S)	Alternative 3a (in-and-out to 997L – two single circuits)	Alternative 3b (in-and-out to 997L – single circuit)	Alternative 4a (in-and-out to 942L – two single circuits)	Alternative 4b (in-and-out to 942L – single circuit)	Alternative 5 (two single circuits to Ursus 430S)
	Railway Crossings	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Transmission Line Crossings	Two (708L and 861L)	No	Two (708L and 861L)	Two (708L and 861L)	Two (708L and 861L)	Two (708L and 861L)	- One (862L)
Impact on Public	Residences	Multiple near 997L and 942L	Multiple southeast of 71S	Multiple near 997L	Multiple near 997L	Multiple near 942L	Multiple near 942L	Minimal residences

AltaLink Comments and Summary:

Land:
A double circuit or single circuit configuration will likely require less right-of-way than two single circuits. There are potential impacts to Crown land and impacts to areas locally zoned as an Environmental Preservation District for all Alternatives except Alternative 5. Alternatives 1, 3a, 3b, 4a and 4b require additional land for an associated switching station, while Alternative 5 will likely require expansion of Ursus 430S. Alternative 2 does not require expansion of the fenceline at Lamoureaux 71S.

Water and Wetlands:
A crossing of the North Saskatchewan River is required for all Alternatives except Alternative 5. The presence of water bodies and wetlands may impact routing or the location of any potential switching stations.

Wildlife:
All Alternatives require crossing a key wildlife and biodiversity zone. All Alternatives at least partially overlap bald eagle and sharp-tailed grouse sensitivity ranges. Avian collision risk is increased on Alternatives 1 – 4 due to the North Saskatchewan River crossing. Alternative 5 avoids more environmental sensitivities, but the line length is longer.

Historical Resource Values:
Alternative 5 does not involve potential impacts to a Historical Resource Value listed as HRV 3 located near the North Saskatchewan River.

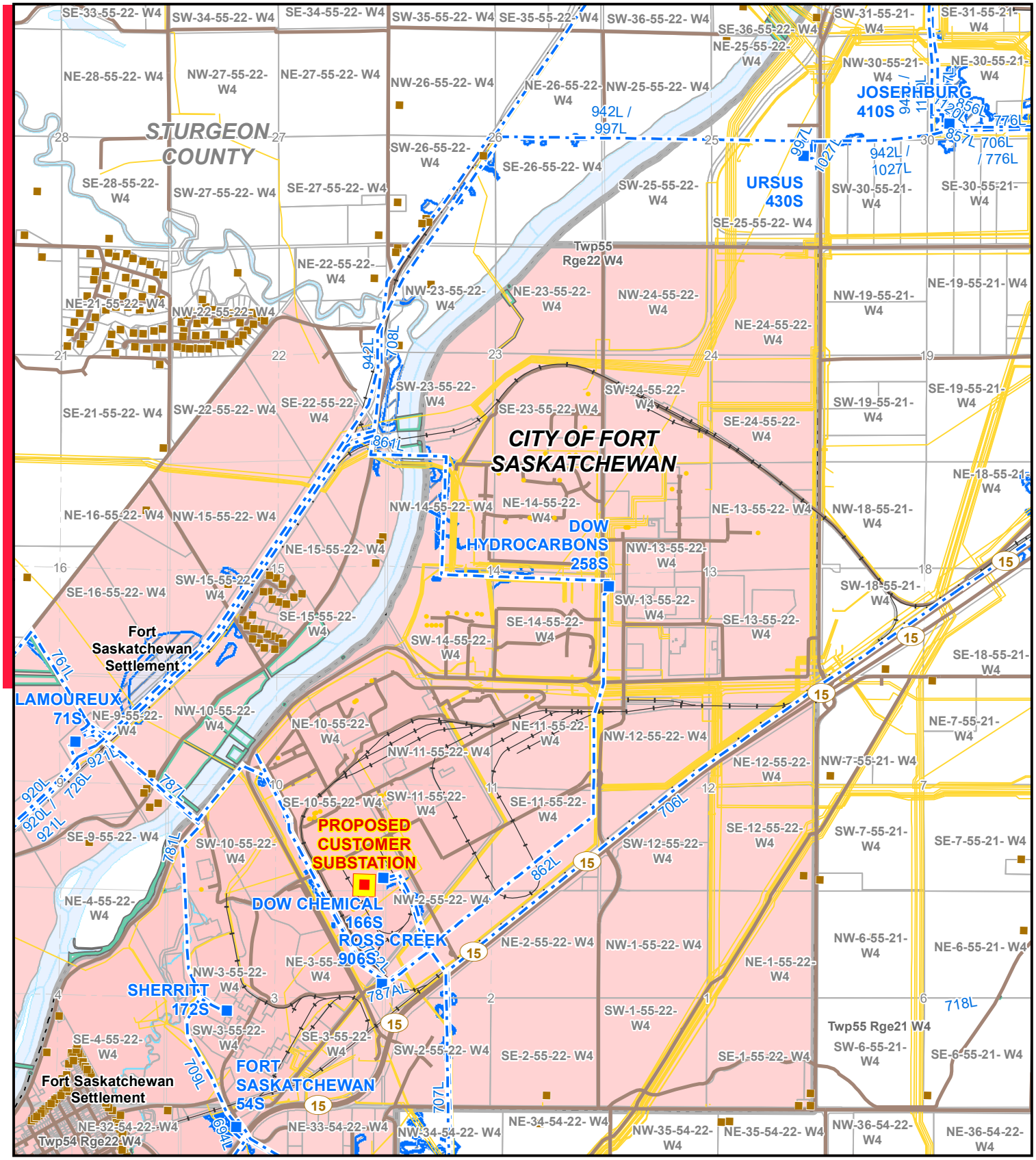
Pipelines and Facilities:
All Alternatives have some interaction with oil and gas, rail, and existing transmission facilities.

Residences:
Alternative 5 has the least potential for residential effects.

Conclusion:
Each Alternative has some level of impact, however, Alternative 5 is likely to have the least potential impact to environmental features and non-industrial land, although it is likely to have the longest transmission line length. A double circuit or single circuit configuration is likely to have less potential impact than two single circuits as less right-of-way is likely required.

Spatial Datasets:
i. Roadways including highways and local roads;
ii. Railways;
iii. Existing transmission lines;
iv. Oil and gas facilities including pipelines and wells;
v. Environmentally significant areas;
vi. Key wildlife and biodiversity zones;
vii. Parks and protected areas;
viii. Historical wildlife observations;
ix. Watercourses, water bodies, and wetlands;
x. Heritage resource values and existing historical sites;
xi. Existing residences and businesses;
xii. Land use such as cultivated and industrial;
xiii. Municipal land use classifications; and
xiv. Aerial Imagery

Attachments:
DB1 - Project Area
DB2 - Historical Resource Values
DB3 - Sensitive Raptor Range
DB4 - Sharp-tailed Grouse
DB5 - Key Wildlife and Biodiversity Zones



LEGEND

- Proposed Structure
- Existing Substation
- Existing Transmission Line
- Residence
- Wellsite
- Pipeline
- River or Stream
- Railway
- Road
- Crown Land
- Wetlands
- Urban Area
- Water Body

NO: 35035824
DRAWN: EL - ALM
FILE NO.: XXXXXXX
REVISION: 0.00.00
AL FOLDER: Z:_PROJECTS_ACTIVE_One Off Requests\

DATE: 2025-12-16

0 0.25 0.5 Kilometres

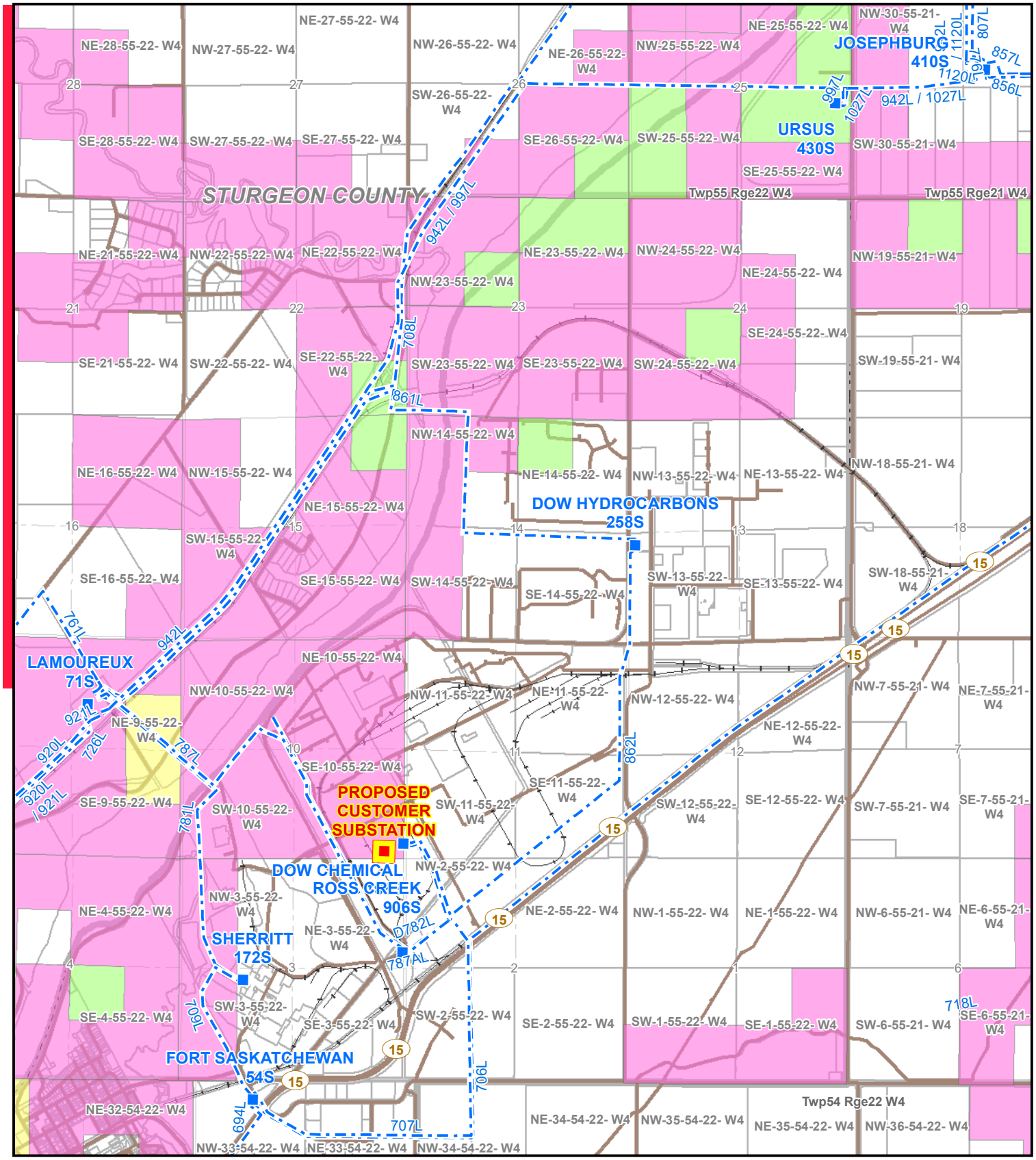
0 0.25 Miles

N

DETAIL BASE **DB1**

ALTALINK
A BERKSHIRE HATHAWAY ENERGY COMPANY

Dow Fort Saskatchewan Load Desktop ELU Project Area



LEGEND

- Proposed Structure
- Existing Substation
- Existing Transmission Line
- Railway
- Road
- HRV - 1
- HRV - 2
- HRV - 3
- HRV - 4
- HRV - 5

NO: 35035824
DRAWN: EL - ALM
FILE NO.: XXXXXXX
REVISION: 0.00.00
AL FOLDER: Z:_PROJECTS_ACTIVE_One Off Requests\

DATE: 2025-12-16

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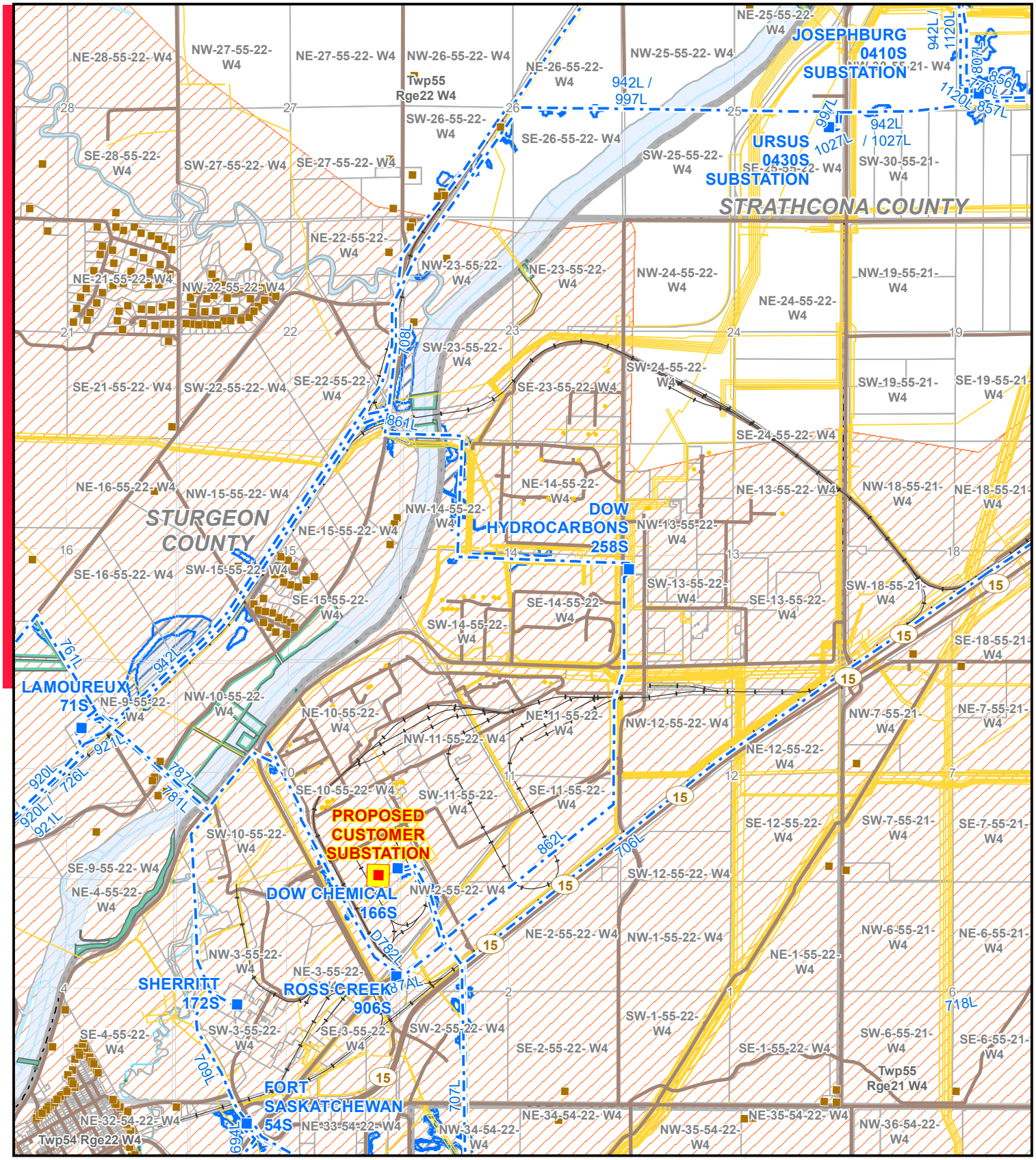
DETAIL BASE **DB2**

ALTALINK
A BERKSHIRE HATHAWAY ENERGY COMPANY

Dow Fort Saskatchewan Load Desktop ELU
Historical Resource Values



LEGEND

- Proposed Structure
- Existing Substation
- Existing Transmission Line
- Residence
- Wellsite
- Pipeline
- River or Stream
- Railway
- Road
- Crown Land
- Wetlands
- Sensitive Raptor Range
- Water Body

NO: 35035824
DRAWN: EL - ALM
FILE NO.: XXXXXXX
REVISION: 0.00.00
AL FOLDER: Z:_PROJECTS_ACTIVE_One Off Requests\

DATE: 2025-12-16

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0 0.25 Miles

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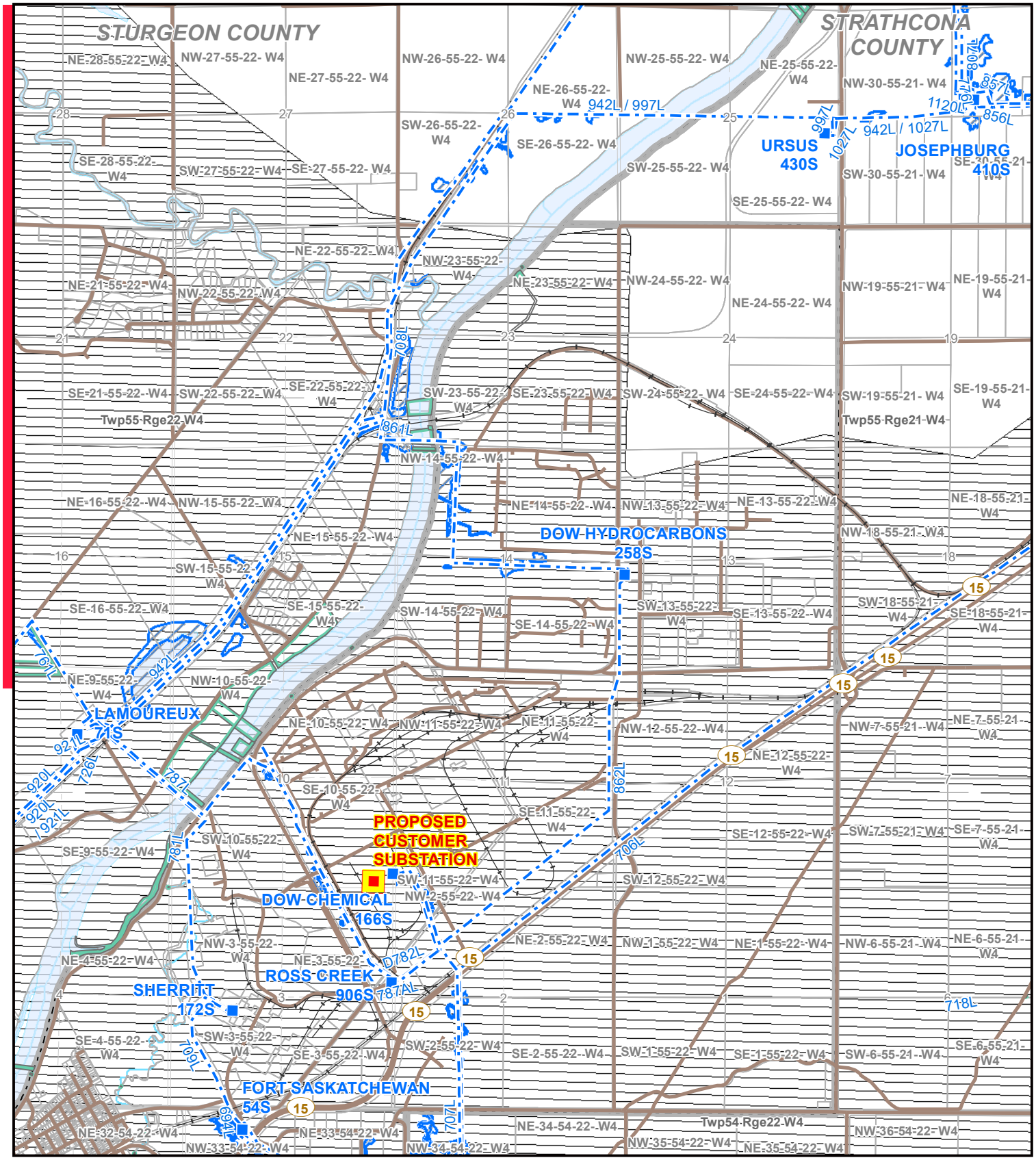
DETAIL BASE **DB3**

ALTALINK
A BERKSHIRE HATHAWAY ENERGY COMPANY

Dow Fort Saskatchewan Load Desktop ELU
Sensitive Raptor Range



LEGEND

- Proposed Structure
- Existing Substation
- Existing Transmission Line
- River or Stream
- Railway
- Road
- Crown Land
- Wetlands
- Sharp-tailed Grouse
- Water Body

NO: 35035824
DRAWN: EL - ALM
FILE NO.: XXXXXXX
REVISION: 0.00.00
AL FOLDER: Z:_PROJECTS_ACTIVE_One Off Requests\

DATE: 2025-12-16

0 0.25 0.5 Kilometres

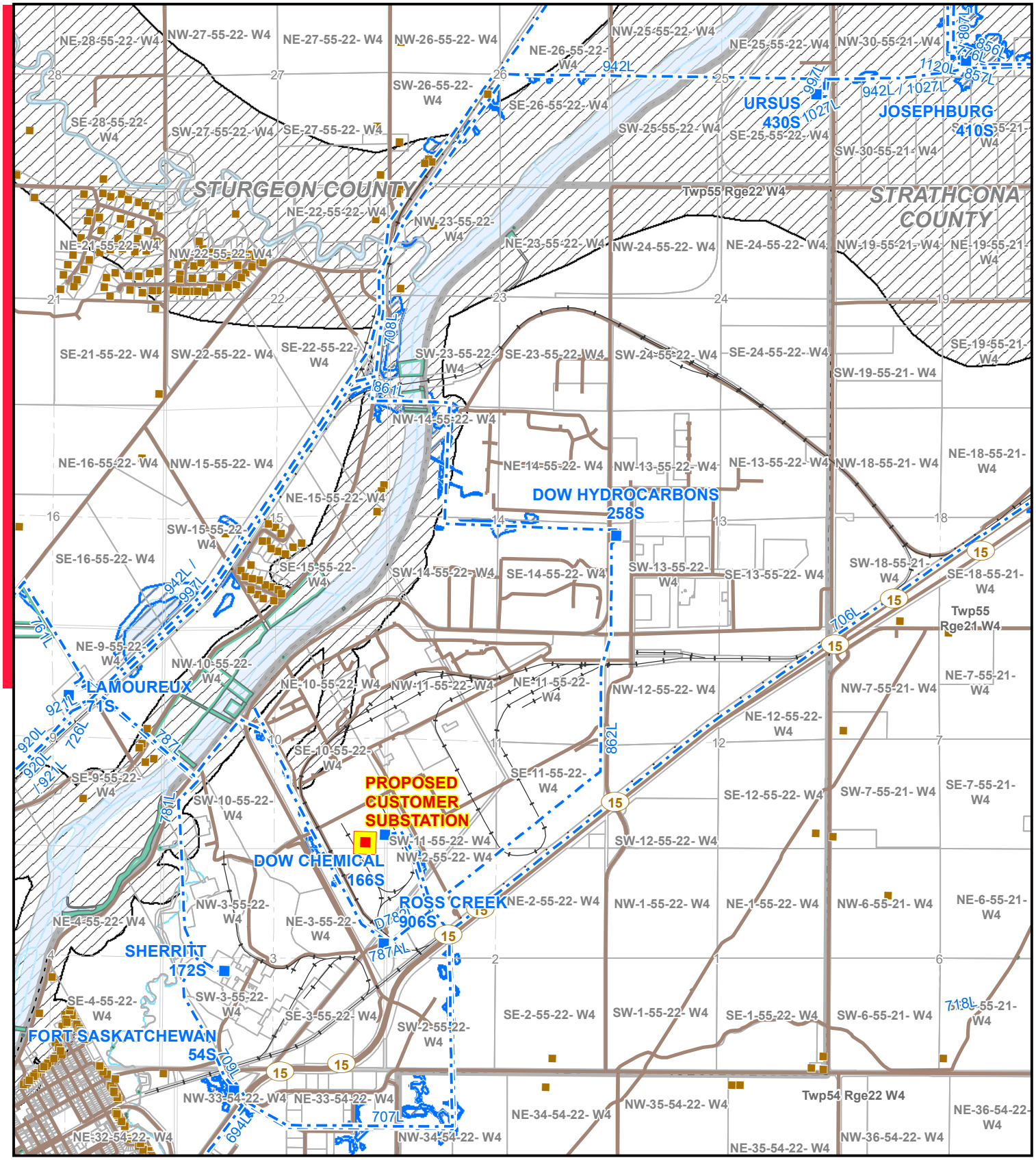
0 0.25 Miles

N

DETAIL BASE **DB4**

ALTALINK
A BERKSHIRE HATHAWAY ENERGY COMPANY

Dow Fort Saskatchewan Load Desktop ELU
Sharp-tailed Grouse



LEGEND

- Proposed Structure
- Existing Substation
- Existing Transmission Line
- Residence
- River or Stream
- Railway
- Road
- Crown Land
- Wetlands
- Key Wildlife and Biodiversity Zones
- Water Body

NO: 35035824
DRAWN: EL - ALM
FILE NO.: XXXXXXX
REVISION: 0.00.00
AL FOLDER: Z:_PROJECTS_ACTIVE_One Off Requests\

DATE: 2025-12-16

0 0.25 0.5 Kilometres

0 0.25 Miles

N

DETAIL BASE **DB5**

ALTALINK
A BERKSHIRE HATHAWAY ENERGY COMPANY

Dow Fort Saskatchewan Load Desktop ELU
Key Wildlife and Biodiversity Zones