Medicine Hat

CITY OF MEDICINE HAT

# Facility Application – East Ring Enhancement Project (EREP) 30L and 40L Transmission Line

**October 2024**

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# Application Introduction

The City of Medicine Hat (COMH) is applying to the Alberta Utilities Commission pursuant to Sections 14, 15, 19, and 21 of the *Hydro and Electric Energy Act* for a Permit, Licences, and other approvals necessary to construct and operate the rebuild of the existing 69-kilovolt (kV) 30L and 40L transmission lines located in the COMH and Cypress County (the Project). The rebuild lines are proposed to be upgraded to a 138-kV standard (energized at 69 kV).

The 30L and 40L Facility Application (FA) is part of the greater East Ring Enhancement Project (EREP), which includes the rebuild or relocation of the 60L, 30L, and 40L transmission lines. EREP was divided into four distinct areas to better focus discussions and analysis based on the area where individuals lived. The siting, engagement, Environmental Evaluation, engineering, and design for the EREP took place in parallel. This FA is specific only to the 30L and 40L portions (the Project) of the overall EREP. A separate FA will be filed for the 60L portion of the EREP.

# Acronyms

| | |
|---|---|
| AIES | Alberta Interconnected Electric System |
| AUC | Alberta Utilities Commission |
| COMH | City of Medicine Hat |
| EE | Environmental Evaluation |
| EPA | Alberta Environment and Protected Areas |
| EPP | Environmental Protection Plan |
| EREP | East Ring Enhancement Project |
| FA | Facility Application |
| kcmil | kilo circular mil(s) |
| km | kilometre(s) |
| kV | kilovolt(s) |
| m | metre(s) |
| MHS-5 | North East Crescent Heights Substation MH69S-5 |
| MHS-3 | Southridge Substation MH69S-3 |
| MVA | megavolt ampere(s) |
| PIP | Participant Involvement Program |
| the Project | the rebuild of the existing 69-kilovolt 30L and 40L transmission lines located in the City of Medicine Hat and Cypress County as part of the East Ring Enhancement Project |
| ROW | right-of-way |
| TFO | Transmission Facility Owner |
| VEC | Valued Ecosystem Component |

# 1 EREP 30L and 40L Transmission Application

## 1.1 PROJECT DESCRIPTION (TS1)

*Provide a description of the proposed project.*

The existing 30L and 40L transmission lines (the Project) are located within the city limits of the City of Medicine Hat (COMH) and Cypress County, and the Project involves the upgrade or rebuild of the existing 69-kilovolt (kV) 30L and 40L transmission lines located on the northeast, east, and south side of the COMH. The rebuild lines are proposed to be upgraded to a 138-kV standard and energized at 69-kV.

The Project was divided into three distinct areas within the East Ring Enhancement Project (EREP):

1. Northeast COMH
2. Cypress County
3. Southeast COMH

The major aspects of the Project scope will include:

- The construction of an approximately 20-kilometre (km) single-circuit 138-kV line
- A connection to the existing Northeast Crescent Heights Substation MH69S-5 (MHS-5) on SE 7-13-5 W4M and Southridge Substation MH69S-3 (MHS-3) on NE 18-12-5 W4M
- Necessary easements, construction workspaces, and access trails required for the Project

The Project is part of the third phase of COMH's system-wide standard conversion to 138 kV to accommodate increasing load and voltage issues. The 30L/40L line will be rebuilt to a 138-kV standard but energized to 69 kV in the short term, providing the ability to increase load capacity promptly when predicted constraints materialize. By installing forecasted capacity now, COMH seeks to proactively manage needed upgrades, enabling greater capital control and rate stability.

The 30L/40L line was constructed in 1981 and 1982. It has reached the end of its life cycle and must be replaced. COMH's forecasts indicate that 30L/40L is at risk of becoming overloaded in the next 10 years during N-1 contingencies.

The 30L/40L line is part of COMH's transmission ring system. Attachment G describes the present voltage capacity of COMH's system. Since 2014, COMH has implemented a phased conversion of its transmission system to a 138-kV standard to accommodate the increased and future loads. The initiation of this Project coincided with the Alberta Electric System

Operator-directed Southern Alberta Transmission Reinforcement transmission upgrades surrounding COMH. The Alberta Utilities Commission (AUC) approved the first and second phases of COMH's 138-kV standard conversion process in Decisions 2014-112 and 2014-349, permitting the upgrade of 9L/10L and 20L.

This Facility Application (FA) and a concurrent application to convert the 60L line to a 138-kV standard are the next phases in this process. COMH's intended phasing of the 138-kV conversion is shown in Figure 1. The 30L/40L and 60L lines (in red) would be converted as the EREP. After 30L/40L and 60L, COMH intends to initiate the conversion of 50L (in purple). Completing these two phases will complete the upgraded circuit, subject to substation upgrading.

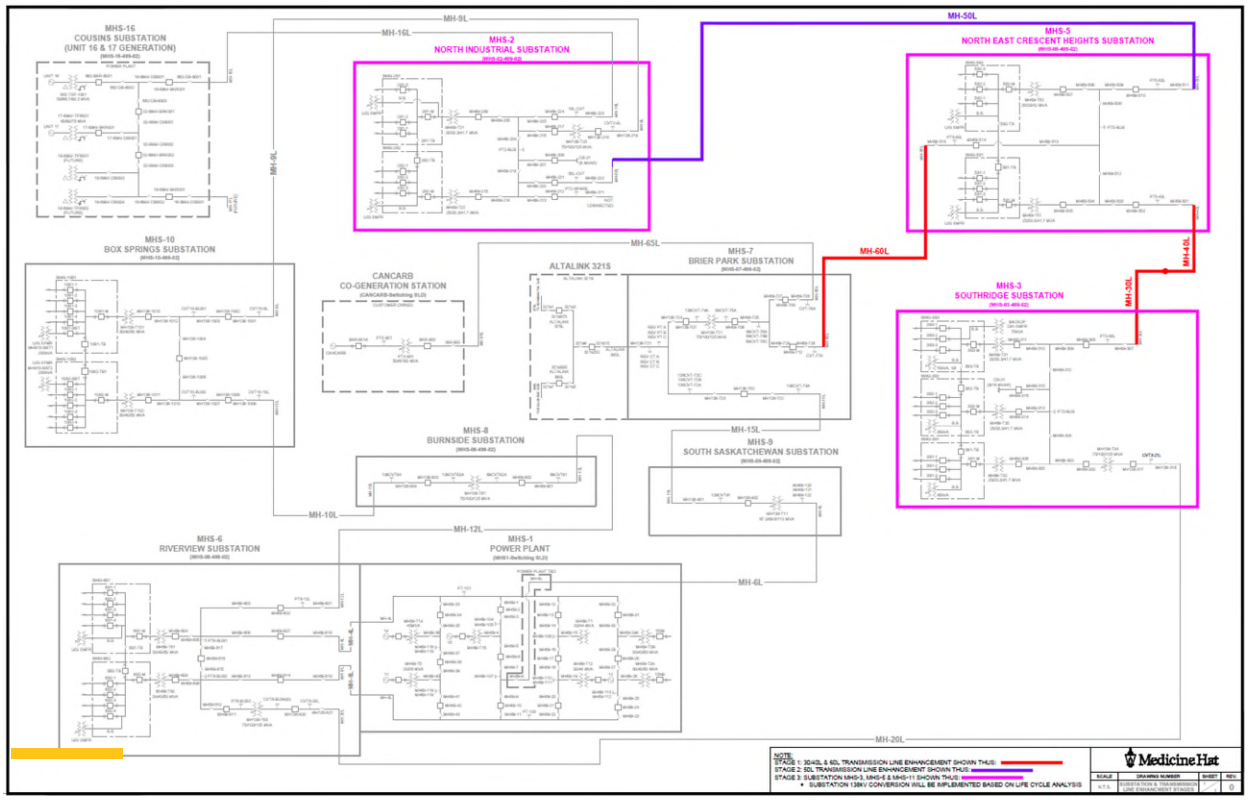


*Figure 1 - City of Medicine Hat Overall Single-Line Diagram Showing 138-kV Staging*

In addition to addressing the anticipated congestion, converting 30L/40L, 60L, and 50L to 138 kV will eliminate the need for 138-kV/69-kV transformers at substations MHS-2, MHS-3, and MHS-5 (in pink). This will reduce costs when it becomes necessary to convert those substations to 138 kV. The conversion of those substations will be triggered by the earlier asset renewal or loading requirements.

COMH's overarching goal in the FA and the phased conversion process is to space system investment to accommodate present and forecasted load growth and allow for gradual capitalization of the projects, decreasing rate increases to customers in the COMH service territory.

## 1.2 MARKET PARTICIPANT CHOICE (TS2)

*Confirm if the application is for a customer project or an application related to a proposal for a market participant under Section 24.31 of the Transmission Regulation.*

This FA is being submitted as a customer project. The COMH requires increased transmission capacity to serve its customers and support the community's growth; therefore, the COMH is both the Incumbent Transmission Facility Owner (TFO) and the customer, as it pertains to the needs of its electrical utility services.

## 1.3 CORPORATE INFORMATION (TS3)

*Provide details of the ownership structure, including the names of all companies having an ownership interest in the project and their ownership share, and if applicable, the name of the operator of the facilities that is seeking to acquire the permit or licence. Confirm that the applicant is a qualified owner.*

The COMH will own and operate the Project and is a qualified owner.

## 1.4 EXISTING APPROVALS (TS4)

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

The existing 69-kV transmission lines 30L and 40L will be directly affected by the Project.

The COMH is the holder of Permit and Licence Number MH 81-17[1] issued by the Energy Resources Conservation Board for the existing 30L transmission line.

The COMH is the holder of Permit and Licence Number MH 83-53[2] issued by the Energy Resources Conservation Board for the existing 40L transmission line.

The draft of the permit and licences for the Project is provided in Attachment A.

## 1.5 INDEPENDENT SYSTEM OPERATOR DIRECT ASSIGNMENT LETTER (TS5)

*Provide a copy of the ISO direct assignment letter pursuant to the Electric Utilities Act. Alternatively, if a Needs Identification Document was not required, provide a copy of the ISO approval letter pursuant to the abbreviated needs approval process, or provide a statement in the application that the project was exempt pursuant to the Transmission Regulation (as described in Subsection 7.1 of this rule).*

[1] *Transmission Line Permit and Licence MH 81-17, Application 810079, June 15, 1981.*
[2] *Transmission Line Permit and Licence MH 83-53, Application 830551, August 23, 1983.*

This does not apply to the application because an electric distribution system or transmission facility within the service area of the COMH is not part of the interconnected electric system nor is it a transmission system, as defined in the *Electric Utilities Act.*

## 1.6 FUNCTIONAL SPECIFICATION (TS6)

*Provide the most up-to-date functional specification issued by the ISO.*

Not applicable. A Functional Specification will not be issued.

## 1.7 DESIGN INFORMATION (TS7)

*Describe the design and ratings of the transmission line and major elements of the substation.*

The proposed transmission lines are being designed for a future operating capability of 138 kV from its current 69 kV. No major elements are being changed within the substation (Table 1).

*Table 1 - Design information*

| Component | Details |
|---|---|
| Total line length | Approximately 20 km |
| Transmission line structures | Structure outlines and cross-section drawings are included in Attachment C |
| Start location | NE 2-13-6 W4M |
| End location | SE 7-13-5 W4M |
| Conductor | Twin Bundle 477 kilo circular mils (kcmil) Aluminum Conductor Steel Reinforced ”Hawk” |
| Line capacity | 175 megavolt amperes (MVA) |
| Nominal voltage | 69 kV |
| Normal operating range | 67 kV to 72 kV |
| Average structure height | Approximately 17 metres (m) to 31 m |

## 1.8 TRANSMISSION LINE CONDUCTOR (TS8)

*If the ISO requires the facility applicant to determine the choice of conductors, describe the conductor size and arrangement selected and the basis for the conductor selection.*

The transmission line will utilize a twin bundled 477 kcmil “Hawk” conductor. Considering the capital cost of installation as well as the cost of losses, a line optimization study has identified this size and arrangement as the most optimal choice of conductor for the proposed transmission line.

## 1.9 CONDUCTOR RATIONALE (TS9)

*If the application is not direct assigned by the ISO, provide the rationale for the rating/size of any proposed conductor or piece of major substation equipment.*

The proposed conductor rating and size (twin bundled 477 kcmil “Hawk”) of 175 MVA was chosen based on a lower cost per kilometre, while adding additional load capability compared to rebuilding with the existing conductor size or other larger conductor types.

## 1.10 STRUCTURE AND FOUNDATIONS INFORMATION (TS10)

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

The proposed transmission line will consist primarily of single-pole wood structures with braced post insulators with a 13.8-kV underbuild. The conductor spacing is 2 m from the centreline in a delta configuration. Other typical structure types are two-pole running angle guyed wood structures where the line curves along the roadway and single-pole guyed dead-end wood structures at locations where the conductor is terminated.

Structure heights are provided in Tables 2 to 4. The structure numbers can be referenced in the mapbook (Attachment J).

*Table 2 - Preferred Route structure heights*

| Structure type | Approximate structure height range (m) | Structure number |
|---|---|---|
| Single-pole tangent | 19-26 | 95, 200-206, 208-237, 241-247, 249-254, 345 |
| Single-pole tangent with underbuild | 18-31 | 73, 76-88, 90-93, 96-102, 106-109, 112-130, 136-139, 141-150, 153-156, 161-165, 167-199, 255-264, 288-298, 301-335, 339-342, 346-356 |
| Two-pole light angle structure with brace post insulators | 20-26 | 299-300, 338 |
| Two-pole light angle structure with suspension insulators | 21-23 | 94, 110-111 |
| Two-pole butt anchored light angle structure with suspension insulators on cross-arms | 20-26 | Alternate option for 94, 110-111, 299-300, 338 |
| Single-pole guyed dead-end | 17-23 | 72, 74-75, 89, 105, 131-132, 135, 1401 151-152, 157-160, 166, 188, 207, 248, 336-337, 343-344, 357-358 |
| H-frame inline dead-end | 15-19 | 238-240 |
| Multi-pole inline dead-end for river crossing | 20-27 | 103-104 |
| Multi-pole inline dead-end for coulee crossing | 23-28 | 133-134 |

*Table 3 - Northeast Medicine Hat structure heights*

| Structure type | Approximate structure height range (m) | Structure number |
|---|---|---|
| Single-pole tangent | 20-23 | 362-364, 373, 375-380 |
| Two-pole light angle structure with brace post insulators | 24 | 374 |
| Single-pole light angle structure with brace post insulators | 21-23 | 365-372 |
| Single-pole guyed dead-end | 20-26 | 381-382 |
| Self-supporting single-pole steel dead-end structure | 21-23 | 359 |
| Self-supporting single-pole steel dead-end/braced post tangent structure | 22-25 | 360-361 |

*Table 4 - Southeast Medicine Hat structure heights*

| Structure type | Approximate structure height range (m) | Structure number |
|---|---|---|
| Single-pole tangent | 19-29 | 299, 384-393, 395, 399-400, 402, 427-429, 431 |
| Single-pole tangent with underbuild | 21-22 | 406, 408-416, 418, 420-425, 433-438 |
| Two-pole light angle structure with brace post insulators | 17-20 | 394, 396-398 |
| Single-pole light angle structure with brace post insulators | 21-23 | 407 |
| Two-pole butt anchored light angle structure with suspension insulators on cross-arms | 17-20 | Alternate for 394, 396-398 |
| Single-pole guyed dead-end | 18-31 | 383,401, 403-405, 441 |
| Self-supporting single-pole steel light angle structure | 22-25 | 417, 419 |
| Self-supporting single-pole steel dead-end structure | 22-31 | 426,430, 432,440 |

## 1.11 RIGHT-OF-WAY (TS11)

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

The total right-of-way (ROW) width is 15 m where the line has an underbuild (7.5 m on each side of the centreline) and 20 m where the line is without an underbuild (10 m on each side of the centreline). The ROW is larger when there is no underbuild due to increased span length. The widths are calculated based on the greater of the legal Canadian Standards Association conditions or a 5-year wind gust consideration. A typical tangent structure's ROW is shown in the cross-sections included in Attachment C.

## 1.12 SUBSTATION AND TELECOMMUNICATION (TS12)

*Describe all major substation equipment being applied for, including the height of any telecommunications structure, and provide a list of the final major equipment that would be in the substation.*

Not applicable. The Project does not include new major substation equipment.

## 1.13 TRANSMISSION LINE PROTECTION AND CONTROLS (TS13)

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

There are no switches currently nor in the rebuild design on this line. Current protection schemes will remain the same.

## 1.14 ELECTRICAL CONSIDERATIONS (TS14)

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

All potential effects will be effectively mitigated or are not typically associated with the operation of a 69-kV (or 138-kV) transmission line. At a high level, the proposed routes have a low-risk consideration regarding electrical effects with existing facilities in proximity to the proposed transmission line routes. The COMH will work with the owners of the existing facilities present (i.e., railway or pipelines) to ensure that there will not be issues between the operations of the facilities.

Electrically, the potential effects are typically short-term construction and safety considerations associated with construction crews working in closer proximity to energized power lines, as well as managing outages and electrical induction on other facilities.

The COMH will work with potentially impacted third parties to determine the magnitude of any electrical induction (i.e., interference) and will ensure that the appropriate mitigations are implemented.

## 1.15 EXISTING FACILITIES (TS15)

*Describe the changes to existing facilities required to accommodate the proposed facilities.*

Not applicable. The substation termination points are not expected to change if the proposed route is approved and constructed.

## 1.16 ROUTING ALTERNATIVES (TS16)

*Describe any transmission line routing alternatives to the proposal, and compare the relative effects (environmental, social and economic, including any associated distribution costs) of these alternatives with the proposal. If the alternatives are segmented, include a comparison of the effects of each segment to the effects of its corresponding alternative segments.*

The Preferred Route for Northeast COMH, Cypress County, and Southeast COMH follows the existing alignment for the 30L/40L portion of the EREP. There is an Alternate Route for the Northeast COMH and Southeast COMH areas. There is no Alternate Route for Cypress County. The Alternate routes and other routing alternatives that were assessed throughout the Project are discussed in further detail in the Siting Technical Report (Attachment D), Route Revision Log (Attachment E), and Route Development Methodology (Attachment F).

The route alternatives were assessed for potential impacts on property value. The potential Property Value Impacts Report is attached in Attachment Q.

## 1.17 ELECTRIC SINGLE-LINE DIAGRAM (TS17)

*Provide an electric Single-Line Diagram or switching map showing new facilities in place in the system. In the case of a substation, provide an electric Single-Line Diagram and a substation layout diagram, including major items of equipment and the fenced boundary of the substation, with units of measure/scale.*

The Area Single-Line Diagram for the Project is included in Attachment G.

## 1.18 CONSTRUCTION METHODS AND EQUIPMENT (TS18)

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

Construction is currently planned for 2026. A detailed construction schedule will be provided by the Prime Contractor.

Various types of equipment are used throughout the construction stage of a project. This equipment ranges from quads or light trucks for survey purposes to heavy tracked vehicles and cranes for foundation, structure and conductor installation. Heavy equipment (i.e., excavators, graders, bulldozers, compactors, dump trucks, and scrapers) is used for civil construction activities like earthworks. Information regarding Project construction is included in the Participant Involvement Program (PIP; Appendix D in Attachment O). A list of estimated equipment types to be used in the construction of the Project is included in Attachment H.

There are three current methods for transmission ROW maintenance.

1. **Patrolling:** All transmission lines are patrolled quarterly, as well as directly after major wind events. Patrolling covers structure (i.e., pole integrity, hardware, grounding, and clamps), conductor clearances to vegetation, and any signs of wildlife contact.
2. **Vegetation management:** All transmission lines have tree trimming performed on a 5-year schedule and as needed for faster-growing species (poplars) based on patrols. A clearance zone of 4 m to 5 m is maintained for 69 kV and 138 kV, respectively.
3. **Pole testing:** Wooden poles are tested for structural integrity at the ground level every 7 years.

## 1.19 PROJECT SCHEDULE (TS19)

*Provide the requested approval date from the AUC, the expected construction start date, the expected in-service date of the project and the requested construction completion date to be stipulated in the project permit(s) and licence(s).*

The requested approval date for the Project from the AUC is January 17, 2025, with construction scheduled to commence in the second quarter of 2026. The expected in-service date of the Project is in 2029. The requested construction completion date for the Project permit and licence is December 31, 2029.

## 1.20 CONSTRUCTION WORKSPACES AND ACCESS TRAILS (TS20)

*If available, provide the location of any required temporary or permanent workspace areas and access roads, and state whether these locations are requested to be listed in a permit and licence.*

The required access roads and temporary and permanent workspaces required for the transmission line are included in Attachment I. The COMH is requesting that the lands comprising the necessary temporary construction workspace be expressly included in the permits and licences issued for the Project.

If the necessary land rights cannot be obtained on reasonable terms through negotiation with the applicable landowners, the COMH will need to be in a position to obtain those rights through an application to the Land and Property Rights Tribunal for a right of entry order. As such, the COMH requests that these sites be explicitly included in the permits and licences issued by the AUC.

## 1.21 DRAWINGS AND MAPS (TS21)

*Provide the following drawings and maps with units of measure/scale and the direction of north specified:*

1. *A legible map defining the study area and state the reasons for the chosen area.*
   a. *Legible maps of the proposed facilities showing:*
   b. *The preferred transmission line route and any alternative routes or segments.*
   c. *Right-of-way widths.*
   d. *Location of the transmission line on the right-of-way.*
   e. *Location of the transmission line relative to property lines.*
   f. *Kilometre points along each transmission line route.*
2. *Legible maps and air photo mosaics upon which the proposed transmission line route(s) and/or substation have been imposed and showing the residences, landowner names, and major land use and resource features along the routes and/or adjacent to the substation (e.g., agricultural crops or pasture, topography, soil type, existing land use, existing rights-of-way, existing or potential historical, archaeological or paleontological sites, and superficial and mineable resources).*
3. *Legible maps showing the most relevant environmental features, wildlife and aquatic habitat, ecological communities, environmentally sensitive areas, protected areas and designations present in the local study area.*

The study area, as described in the Siting Technical Report (Attachment D), Route Revision Log (Attachment E), and Route Development Methodology (Attachment F), was selected to provide reasonable boundaries where routing options for the Project were evaluated. Any potential routing outside of this boundary would increase the overall length, impacts, or cost of the Project.

The maps are provided at various locations in the Environmental Evaluation (EE), PIP, and supporting attachments as indicated in Table 5.

*Table 5 - Maps*

| Map item | Location |
|---|---|
| A legible map defining the study area | Attachment E |
| Legible maps showing the following:<br>• The preferred and alternative transmission line routes<br>• ROW widths<br>• Location of the transmission line on the ROW<br>• Location of the transmission line relative to property lines<br>• Kilometre Points along each transmission line route | Attachment E and Attachment J |
| Legible maps and air photo mosaics showing the proposed transmission line route(s) and the residences, landowner names, and major land use and resource features along the routes | Attachment J, Attachment L, and Attachment O |
| Legible maps showing the most relevant environmental features, wildlife and aquatic habitat, ecological communities, environmentally sensitive areas, protected areas, and designations present in the Local Study Area | Attachment J |

## 1.22 SPATIAL DATA (TS22)

*Provide a Keyhole Markup Language (.kml/.kmz) file that contains the geographic data of the transmission line centrelines for all applied for transmission route options and substation locations. This file should reflect the information shown on the drawings and maps submitted to address information requirement TS21.*

A Keyhole Markup Language file including the transmission line centrelines, ROW boundaries, structure locations, and temporary workspaces is included in Attachment K.

## 1.23 VISUAL CONSIDERATIONS (TS23)

*If applicable, describe the measures proposed to minimize potential visual effects of the proposed development, including the identification of project components and locations that require screening and the screening measures (e.g., fences, earth berms, painting, landscaping) to be used.*

Visual impacts are recognized as a consideration when planning transmission lines. Residential proximity, the presence of visual screening, paralleling existing infrastructure, and the view direction are all considered when planning transmission routes.

The COMH will work with landowners where issues or concerns are raised regarding structure locations to mitigate potential visual impacts where practical or feasible.

More information regarding visual considerations is discussed in the PIP (included in Attachment O).

# 2 Environmental Information

## 2.1 ENVIRONMENTAL EVALUATION (TS24)

*Submit an environmental evaluation of the project. The environmental evaluation must:*

- *Describe the present (pre-project) environmental and land-use conditions for the proposed route, substation location and any alternatives.*
- *Identify and describe the potential effects of construction and operation of the project on the environment. In particular, describe any potential adverse effects on soils, terrain, vegetation species and communities, wetlands, wildlife species and wildlife habitat, aquatic species and habitat, groundwater, surface water bodies and hydrology, environmentally sensitive areas, and land use within the local study area following and referencing published Alberta Environment and Parks (EPA) guidelines if applicable.*
- *Describe the methodology used and any field surveys conducted to identify, evaluate, and rate any potential environmental effects and determine their significance, along with an explanation of the scientific rationale for choosing this methodology.*
- *Describe the mitigation measures the applicant proposes to implement during the life of the project to reduce the potential adverse effects.*
- *Describe the predicted residual adverse effects of the project and their significance after implementation of the proposed mitigation.*
- *Describe any monitoring activities the applicant proposes to implement during the life of the project to verify the effectiveness of the proposed mitigation.*
- *List the qualifications of the individual(s) who conducted or oversaw the environmental evaluation.*
- *Present an overall comparison of the proposed routes, in particular, identify the environmental features and any potential environmental effects (e.g., on native vegetation communities, rare plants, wetlands, topography, unique terrain features, sensitive soils, wildlife species setbacks and wildlife habitat, and environmentally significant areas), and identify land use and resource features (e.g., agricultural, residential, recreational, forestry, trapping and hunting areas, protective notations, and existing or potential archaeological sites) for each route in a table with stated units (kilometre, total number, etc.).*
- *Summarize the compatibility of the proposed facility with various municipal services if a proposed transmission line passes through or immediately adjacent to an urban centre.*
- *If the project crosses agricultural land, describe any plans to prevent the spread of weeds and pests on agricultural land.*
- *If the project involves the modification or repair of an existing substation, describe any current or past on-site use of polychlorinated biphenyls (PCB) and summarize any site-specific incident spill records. Where soil disturbance will occur on or immediately adjacent to the substation site, describe any soil sampling or contamination assessment to be undertaken and describe any plans to safely manage, transport and dispose of contaminated soils.*

An independent third-party EE for the Project was completed and concluded that the predicted residual effects for each Valued Ecosystem Component (VEC) assessed are not significant with the implementation of the recommended environmental mitigation measures and monitoring measures provided in the accompanying Environmental Protection Plan (EPP; Attachment M) and the adherence to relevant regulatory requirements. The EE is included in Attachment L.

## 2.2 PROJECT ON FEDERAL LANDS (TS25)

*For projects wholly or partially located on federal lands (First Nation reserves, national parks or military bases), provide a copy of the environmental impact analysis completed for the corresponding federal government department. Indicate whether the project has the potential to cause effects that may cross into another jurisdiction. Environmental effects that originate on federal lands, but cross into another jurisdiction, must be addressed as part of the environmental review process. Projects on federal lands may be subject to provincial laws, standards and permits. The applicant must address how it has considered AUC Rule 007 and Rule 012 and describe the steps taken, if any, to address specific requirements set out in these rules.*

Not applicable. The Project is not located on federal lands.

## 2.3 ENVIRONMENTAL PROTECTION PLAN (TS26)

*Submit a stand-alone, project-specific environmental protection plan (or environmental management plan) that itemizes and summarizes all of the mitigation measures and monitoring activities that the applicant is committed to implementing during construction and operation to minimize any adverse effects of the project on the environment.*

The Project-specific EPP outlines recommended mitigation and monitoring measures to reduce or avoid environmental impacts on the VECs identified for the Project. The EPP is included in Attachment M.

## 2.4 DECOMMISSIONING AND RECLAMATION (TS27)

*Describe any decommissioning of existing transmission facilities and describe the reclamation plan that will be carried out, including for any temporary workspace areas and temporary access roads following commissioning.*

All portions of the ROW used for temporary workspace and temporary access will be reclaimed following construction. The ROW will be reclaimed to an equivalent land use capability in accordance with landowner expectations and regulatory requirements, including the Government of Alberta's (GOA's) *Reclamation Practices and Criteria for Powerlines*. Areas of native grassland will be replanted with certified and inspected native grass and forb seed mixes appropriate for the land cover type. Following the construction phase, the ROW in the vicinity of wetlands will be revegetated, with an appropriate seed mix, as quickly as feasible to reduce the potential for siltation. No seeding will take place within wetland boundaries and vegetation will be allowed to recover naturally.

# 3 Noise

## 3.1 NOISE IMPACT ASSESSMENT (TS28)

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

Not applicable, as no new substation or transformer additions are included as part of the Project. The COMH will ensure compliance with AUC *Rule 012: Noise Control* and applicable municipal noise by-laws during construction.

Audible noise from corona is not typically associated as a concern with the operation of a 69-kV or 138-kV transmission line. The existing 60L transmission lines have not experienced any concerning noise complaints during the history of operation. The proposed transmission line is being designed for 138 kV operation, which will improve its performance under the 69-kV operation. The conductor configuration is changing from a single conductor to a bundled conductor, which will automatically reduce any potential corona effects compared to the existing operation.

# 4 Approvals from Other Agencies

## 4.1 OTHER APPLICABLE ACTS AND REQUIRED APPROVALS (TS29)

*Identify any other acts (e.g., Environmental Protection and Enhancement Act, Water Act, Public Lands Act and Wildlife Act) that may apply to the project, identify approvals the project may require, and provide the status of each of these approvals.*

Other acts that may apply to the Project are as follows:

- Federal environmental legislation, policies, and regulations:
  - *Migratory Birds Convention Act* (1994, SC 1994, c. 22)
  - *Species at Risk Act* (SC 2002, c. 29)
  - *Fisheries Act* (RSC 1985, c. F-14)
- Provincial environmental legislation, policies, and regulations:
  - *Agricultural Pests Act* (SA 1984, c. A-8.1)
  - *Alberta Land Stewardship Act* (SA 2009, c. A-26.8)
  - *Alberta Wetland Mitigation Directive* (GOA 2018b)
  - *Alberta Wetland Policy* (GOA 2013a)
  - *Code of Practice for Watercourse Crossings* (GOA 2019a)
  - *Code of Practice for Powerline Works Impacting Wetlands* (GOA 2019b)
  - *Environmental Protection and Enhancement Act* (RSA 2000, c. E-12)
  - *Environmental Assessment (Mandatory and Exempted Activities) Regulation* (Alta Reg 111/1993)
  - *Historical Resources Act* (HRA; RSA 2000, c. H-9)
  - *Public Lands Act* (RSA 2000, c. P-40)
  - *Soil Conservation Act* (RSA 2000, c. S-15)
  - *Water Act* (RSA 2000, c. W-3)
  - *Wildlife Act* (RSA 2000, c. W-10)
  - *Wildlife Regulation* (Alta Reg 143/1997)
  - *Weed Control Act* (SA 2008, c. W-5.1)
  - *Weed Control Regulation* (Alta Reg 19/2010)
  - *South Saskatchewan Regional Plan 2014 – 2024* (GOA 2018a)
- Municipal environmental legislation, policies, and regulations:
  - *Land Use Bylaw 2022/09* (Cypress County 2022)
  - *Land Use Bylaw 4168* (COMH 2022a)
  - *Tri-Area Intermunicipal Development Plan Bylaw* (COMH 2020)
  - *myMH Municipal Development Plan* (COMH 2022b)

The Project requires the following additional approvals:

- NAV CANADA Land Use Submission – to be completed prior to construction
- Transport Canada Aeronautical Assessment – to be completed prior to construction
- *Historical Resources Act* approval – refer to TS31

## 4.2 FEEDBACK ON ROUTE OPTIONS (TS30)

*For the preferred route and possible alternatives, applicants must provide a summary of feedback received to date from AEP (including the local wildlife biologist of AEP) addressing the environmental aspects of the project, and confirmation that AEP is satisfied with any proposed mitigation measures and monitoring activities, or identify any unresolved project aspects where agreement with AEP was not achieved.*

Feedback from Alberta Environment and Protected Areas (EPA) was provided on April 5, 2023 and September 5, 2024. EPA had no major concerns regarding environmental impacts and their recommended mitigations are in line with the Project-specific EPP. EPA's recommended mitigations are to:

- Mark the wires at the South Saskatchewan River crossing and in proximity to the heron rookery to reduce the potential for bird collisions
- Ensure that mitigations are in place to address snakes and amphibians (e.g., if they are observed during construction between April and August, even in areas where habitat is limited)
- Ensure that mitigation for toads is included, that the construction crews are aware of possible hibernating toads underground, and that the appropriate contingency/notification process is followed

## 4.3 HISTORICAL RESOURCES (TS31)

*Confirm that a Historical Resources Act approval has been obtained or has been applied for. If a historic resource impact assessment is required, briefly describe any known historical, archaeological sites, palaeontological sites, or traditional use sites of a historic resource nature. If a Historical Resources Act approval has been obtained, provide a copy of it.*

A *Historical Resources Act* approval for EREP was received on July 29, 2024. A copy of the approval is included in Attachment N.

# 5 Participant Involvement Program

## 5.1 PARTICIPANT INVOLVEMENT PROGRAM OVERVIEW (TS32)

*Summarize the participant involvement information, including a description of the activities undertaken and include any engagement materials provided. (See Appendix A1 – Participant involvement program guidelines and Appendix A1-B – Participant involvement program guidelines for Indigenous groups).*

A summary of the PIP information is included in Sections 2.0, 4.0, 5.0, 6.0, 7.0, 8.0, 9.0, 10.0, and 14.0 of the PIP (Attachment O).

## 5.2 INTERESTED PARTY IDENTIFICATION (TS33)

*List all occupants, residents and landowners within the appropriate notification radius as determined using Appendix A1 – Participant involvement program guidelines, as well as Indigenous groups and other interested persons that were notified or consulted as part of the participant involvement program.*

A list of occupants, residents, and landowners within the notification radius is included in Appendix B of the PIP (Attachment O). Indigenous groups and other interested parties that were notified are included in Sections 12.0 and 13.0 of the PIP (Attachment O).

## 5.3 PARTICIPANT CONTACT INFORMATION (TS34)

*Supply a list of contact information for all persons who had been contacted as part of the participant involvement program in a spreadsheet in accordance with the template included in Appendix A1 – Participant involvement program guidelines.*

A list of contact information for persons who had been contacted as part of the PIP is included in Appendix C of the PIP (Attachment O).

## 5.4 CONSULTATION WITH LOCAL JURISDICTION (TS35)

*Summarize consultation with local jurisdictions (e.g., municipal districts, counties).*

A summary of the engagement with local jurisdictions is included in Section 11.0 of the PIP (Attachment O).

## 5.5 INTERESTED PARTY CONCERNS (TS36)

*Identify all persons who expressed a concern(s) about the project. For each person, include the following information:*

- *The specifics of the concern(s).*
- *Steps taken to resolve the concern(s).*
- *Whether the concern(s) was resolved.*

Questions and concerns raised, and the steps taken to respond to the questions or resolve the concerns, are summarized in Sections 8.0, 9.0, 10.0, 12.0, and 13.0 of the PIP (Attachment O). At this time, the COMH has been unable to resolve all concerns with the Project.

# 6 Economic Assessment

## 6.1 COST ESTIMATE (TS37)

*Provide an AACE Class 3 cost estimate for the preferred route and all alternatives on a common basis, in accordance with the requirements in ISO Rules Section 504.5 and the AESO Information Document #2015-002R, Service Proposals and Cost Estimating. The format of the cost estimate provided must take the form of the estimate summary that is obtained by completing the AESO's cost estimate template (available on the AESO web page). Where identifiable, include costs to be borne by persons other than the applicant and the applicant's customer(s) in the comparison. This information requirement may not be applicable to market participant and merchant line applications.*

The cost estimates are calculated as "tip-to-tail" routes and are provided in Attachment P:

- Preferred routes (Northeast COMH Preferred Route, Cypress County Preferred Route, and Southeast COMH Preferred Route): **$18,856,686** (Attachment P-1)
- Alternate routes (Northeast COMH Alternate Route, Cypress County Preferred Route, and Southeast COMH Alternate Route): **$21,208,769** (Attachment P-2)
- Northeast COMH Preferred Route, Cypress County Preferred Route, and Southeast COMH Alternate Route: **$20,111,301** (Attachment P-3)
- Northeast COMH Alternate Route, Cypress County Preferred Route, and Southeast COMH Preferred Route: **$19,954,154** (Attachment P-4)

# 7 Market Participant Choice

## 7.1 MARKET PARTICIPANT CHOICE AND TRANSMISSION FACILITY OWNER (TS38)

*In addition to the above, if the applicant is a market participant applying under Section 24.31 of the Transmission Regulation, the applicant must also:*

- *Provide confirmation that all required agreements are in place with the TFO including the Asset Transfer Agreement, the written agreement with the TFO for the temporary operation of the transmission facility, if available, and confirmation of ISO approval of the connection proposal.*
- *Specify the temporary period for which the market participant expects to hold the operating licence, which may not exceed the term specified in the written agreement with the TFO for the temporary operation of the transmission facility.*

Not applicable. COMH is the TFO.

# 8 Energy Storage Facility

## 8.1 ENERGY STORAGE FACILITY APPLICATION (TS39)

*If an energy storage facility is to be constructed and operated as part of a transmission line, the applicant must also submit the information specified in Section 10.*

Not applicable. The Project does not include an energy storage facility.

## 8.2 APPROVAL NUMBER

*An applicant seeking to construct and operate an energy storage facility as part of a transmission line must provide the approval number for the associated Needs Identification Document application.*

Not applicable. The Project does not include an energy storage facility.