MPE Engineering Ltd.

CENTRAL PEACE REGIONAL WATER SUPPLY SYSTEM

PROJECT OVERVIEW

November 23, 2021

PRELIMINARY ENGINEERING OVERVIEW

1. Status of preliminary engineering includes the following:

   .1 MPE's Geotechnical Group has continued with their analysis of the site investigation data for the geotechnical testing completed at the Raw Water Pumping Station location. Proposal information from two Geophysical consultants has been received for the ground penetrating radar alternative for sub-bottom profile survey of the riverbed soils for the River intake vault structure. The proposal information is being reviewed with bias towards the firm that could complete the geophysical investigation this year. The geophysical investigation would be carried out as an alternative to the Dynamic Cone Penetrometer (DCP) investigation for the River bottom geotechnical.

   .2 Surveyed geotechnical test hole locations at the River have been incorporated into the preliminary drawings.

   .3 The updated wetlands information from the Environmental Consultant has been incorporated into the preliminary plan and profile drawings for the pipeline alignment that continue to be drafted.

2. **Raw Water Pumping Station Land Acquisition:** TransAlta has made it a requirement to have the pipeline alignment finalized for the Raw Water Supply Line leading west away from the Raw Water Pumping Station site. The finalized pipeline location has been identified as a necessary component of the County's land purchase offer to TransAlta at the River Intake and Pumping Station location. To meet this requirement, the project efforts will be focused on the pipeline design for this location as soon as the conclusions of the Thurber Engineering geotechnical assessment are received. The geotechnical conclusions for the hill are required for design of the pipeline alignment up the Peace River valley hill. The finalized pipeline alignment information shall be forwarded to TransAlta as soon as the pipeline alignment can be confirmed.

3. **Geotechnical Investigation – Subconsultant:** A third reading of the instrumentation that was installed in the two test holes that were completed on the Peace River valley hill was scheduled to be taken on November 25, 2021. Thurber Engineering are working on the preliminary conclusions from their geotechnical investigation for the hill and report preparation and stability analyses are underway. Thurber advised that they were working towards submitting a draft of their information this week in order that the design for the pipeline installation up the hill could then be initiated.

4. **Environmental Assessments - Terrestrial:** Determination of the pipeline alignment up the Peace River valley hill will affect whether the 500 m set back distance for the endangered sharp tailed grouse nesting lek may not be avoidable with our pipeline alignment due to the terrain constraints of the hill. Fiera Biological Consultants indicated that from their preliminary discussions with the Regional Biologist for Alberta Environment, that it could be possible to submit a non-standard application to Alberta Environment that would not avoid the 500 m setback distance if accompanied by a detailed rationale for why the setback cannot be avoided. The pipeline construction would then have to comply with other restrictions such as no construction activity during the critical breeding season (March 15 to June 15). Fiera has identified 162 wetlands along the pipeline alignment to Spirit River and Rycroft. Disturbance to most of these wetlands will be avoided by using horizontal directional drilling methods of pipeline installation. However, there may be locations where pipeline bends may occur within a wetland area that would require open excavation to implement the change of direction. For such disturbances to wetland sites, a Wetland Assessment and Impact Form (WAIF) will be required from Fiera. The MPE Design Team is working with Fiera and reviewing alternatives to minimize disturbance to the wetland areas from the pipeline construction by avoiding direction changes within wetland areas as much as possible. Any required notification under the Water Act for disturbance to wetland areas along the pipeline alignment will be completed with coordination between the Terrestrial Biologist (Fiera Biological Consulting) and the Aquatic Biologist (Mainstream Aquatics).

5. **Environmental Assessments - Aquatic:** The Aquatic Biologist and the Terrestrial Biologist have been in touch to discuss combined single notification for any required Water Act notifications. The Aquatic Biologist, Mainstream Aquatics is awaiting the conclusions of the River Engineer's report for the River intake design which shall be incorporated into the Fish and Habitat environmental assessment submission. Some direct communication is occurring between the River Engineer and the Aquatic Biologist to facilitate completion of the River intake assessment report.

6. **River Engineering:** The Hydraulic Subconsultant for the River Intake, Northwest Hydraulic Consultants (NHC), has most recently completed the following tasks related to their River Engineering assessment for the water intake design:

   .1 Evaluation of climate change in Peace River basin and impact on flows is partially assessed.
   .2 Frazil ice durations have been assessed.
   .3 Development of potential operating protocols from frazil ice partially assessed.
   .4 Ice jam water levels and analysis of break up water levels have been assessed.
   .5 Design of scour protection for the intake structure is partially complete.
   .6 Review of port design for intake structure partially complete.
   .7 Fish screen design is partially complete.
   .8 Development of the assessment report is partially complete.

7. **Historical Resources Reviews:** The Historical Resource application submission shall be coordinated with the Archaeologist Subconsultant, Circle CRM.

8. **Indigenous Consultations:** First Nations consultations shall be completed by Scott Land and Lease's Indigenous Consultation department when the project details are finalized to the point required by the applications process.

NEXT STEPS

9. Continue preliminary engineering work, obtain from Thurber Engineering their recommendations on the conceptual approach for the pipeline installation up the Peace River hill to allow finalization of pipeline alignment, incorporate River Engineer's conclusions for river intake and pumping station design, recommendation of optimal location for the Regional Water Treatment Hub site, continue to work with TransAlta personnel to finalize the Pumping Station land purchase (including finalization of pipe alignment across TransAlta property west of the pumping station site), continue with environmental assessments and corresponding regulatory approval applications, drafting of plan and profile drawings for the pipeline, engage with the Archaeologist Subconsultant for the Historical Resource application submission.

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