



CENTRAL PEACE REGIONAL WATER SUPPLY SYSTEM PHASES 1 & 2

PROJECT OVERVIEW

June 05, 2024

ENGINEERING OVERVIEW

NOTE: Sections that include notable updates are highlighted in bold text.

1. Status of preliminary engineering includes the following:
 - .1 The revised concept for the raw water pumping station wet well 27 m (90 ft) deep excavation shoring support is to incorporate a secant pile wall shoring system. With the extensive bracing requirements for a rectangular secant pile wall shoring configuration, the Geotechnical Engineering recommendation of a circular excavation and secant pile wall configuration has been adopted as the feasible approach. The corresponding circular wet well structure for the pumping station has had impact on the process layout for the previous rectangular design, which has been revised to incorporate the required changes. The previously completed geotechnical report for the river intake and raw water pumping station has been updated based on the detailed further analysis for the wet well excavation stability. The secant pile wall ring on its own shall not be utilized for supporting additional loads within its interior. A separate concrete wet well structure will be cast inside of the secant pile wall shoring ring that will be capable of supporting the intermediate platform slab, and access stairway for the deep wet well chamber. A specialist GeoStructural Subconsultant has been engaged for the design of the secant pile wall shoring support. The secant pile wall shall be designed as a permanent structure to provide the long-term lateral support for the wet well deep excavation. An option to lower the ground elevation at the pumping station location was recently reviewed to allow for less depth for the wet well. The assessment identified that the cost for lowering the ground level at the site is significantly more than the cost savings from a shallower wet well structure. The Geotechnical Team has also reviewed the slope stability consequences corresponding to lowering the ground elevation at the site and shall present their findings in a separate technical memorandum. From the initial assessment, a slope stability issue was identified that is independent of whether the ground elevation is lowered at the site of the pumping facility. The Geotechnical Team conducted a site review of the valley hill to the south of the Bridge on May 17, 2024 in support of the slope stability analysis. The footprint limit for the river intake cofferdam has been increased in size to allow for the construction of the temporary cofferdam using rock and earth fill material in the event that a sheet pile cofferdam approach may not be constructable. The cost to implement the rock (Class 2 and Class 3 sized rip rap) and earth-based cofferdam will be high based on the material cost for the heavy rock required to withstand the River current. Cofferdam costs using rock bags or structural sheet pile material are somewhat lower but still very high in costs for the temporary berm structure. More detailed information is being gathered to refine the preliminary cofferdam cost estimates. The GeoStructural Subconsultant has been engaged to evaluate the sheet pile approach for the cofferdam and they have proposed a sheet

pile option that involves a high sheet pile cofferdam around the intake structure location with a lower sheet pile cofferdam causeway that would connect the intake location to the shoreline. At this time this appears to be the most cost-effective option that has been evaluated. Options for alternatives continue to be reviewed. A meeting was held on November 23, 2023 between the Geotechnical Team and a local contractor that has completed some cofferdam work on smaller rivers in the region to obtain preliminary construction input related to the proposed cofferdam component of the river intake works. The local contractor has previously utilized a hybrid cofferdam concept that incorporates a large rock outer berm shell with a clay berm interior and a steel sheet pile interior perimeter wall around the construction area. The potential to utilize a similar hybrid approach to the cofferdam in the Peace River is being reviewed. Another meeting occurred between the County and an Edmonton based river contractor on March 19, 2024 to discuss potential options for the cofferdam and for the geotechnical testing of the river bottom. The Geotechnical Team has obtained a cost estimate from the Edmonton contractor in April 2024 to provide barge services for geotechnical drilling of the river bottom on the open water. A third cost estimate was obtained from another contractor in May 2024 for the proposed river geotechnical. These cost estimates are being compared to the updated cost obtained in May 2024 from a West Coast contractor to provide both barge and drilling services in the river. Clarifications are being obtained in May 2024 from the three contractors to compare costs on an equal basis for time on site. And also being assessed for the proposed river geotechnical work are the capabilities of the respective drilling contractors to actually complete the drilling of the river bottom from barges launched onto the river. Previous experience for similar work is being reviewed. With the River Engineer advising of the requirement for geotechnical erosion protection of the opposite bank of the river during the implementation of the cofferdam, the River Engineer was engaged to provide design services for the opposite bank protection and a draft design for rock trenches to protect the opposite bank gravel bar has been provided by the River Engineer. The regulatory requirements for the opposite bank erosion protection work are being clarified. Options for geotechnical testing of the riverbed have been reviewed by the Geotechnical Team and it appears that test hole drilling from a barge on the River may be the least risk option. The County engaged in discussions with an Ice Bridge Contractor about the possibility of constructing an ice bridge platform to facilitate the river bottom geotechnical drilling during frozen conditions on the river and received cost quotations for implementing the ice bridge work. The additional regulatory approvals required for the riverbed drilling were applied for by the Geotechnical Team. The application for approval under the Water Act was submitted in December 2023 and permission was received from the Department of Fisheries and Oceans (DFO) related to the Federal approvals required for the river geotechnical testing. The Land Agent, Scott Land and Lease, was engaged to procure the required Temporary Field Authorization (TFA) for access on Crown lands for the river geotechnical work. However, based on the risk considerations for the timing of the ice bridge construction, the task of constructing the ice bridge for the river geotechnical drilling was cancelled for the 2023/2024 winter season. A preliminary access road design has been developed for access down the steep riverbank slope into the working area of the proposed cofferdam. To support the access roadway design, additional detailed survey of the riverbank slope was completed in early October 2023.

- .2 ***Support for the regulatory approval applications remains on-going for the Public Lands Act and Water Act Approvals. Prior to the Approvals being brought forward to their semi-finalized draft stage, the Project Team and Alberta Environment had held regular monthly meetings with the Department to facilitate the approval applications. Related to the Water Act Approval, in a May 2024 meeting between Saddle Hills County and Alberta Environment, the Water Act Approvals Engineer requested submission of the finalized raw water transfer pipeline alignment drawings in advance of the final landowner signoff, in order for the Department to proceed with finalization the Water Act Approval. Drafting of the amended drawing package for the pipeline alignment is being completed for the Water Act Approval submission of final documentation. Work has also been assigned to the project Environmental Subconsultants to delineate the wetland areas along the finalized version of the pipeline alignment as well as assess the alignment for other water body (creek) crossings, which are required for the Water Act Approval submissions.***
- .3 Corresponding to the updated cost estimates that were recently provided for the overall project, the County requested recommendations on priority tasks for the engineering work to determine next steps for allocation of engineering resources for advancing the project design and obtaining more detailed information to support project cost estimates for budget projections. MPE Engineering provided a recommendation to the County for the engineering tasks next steps and priorities and the County has approved proceeding with the remaining design work for the project.
- .4 Following the meeting that occurred with the County and the River Engineer, Northwest Hydraulic Consultants (NHC) on January 25, 2024, to review the River Intake Assessment report previously completed by NHC and review options for alternatives to the recommended intake configuration, the River Engineer was engaged to proceed with a further review on the feasibility of the possible alternate intake configurations in detail. Some previous geotechnical information that was available for the river bottom conditions was provided to the River Engineer to assist with the River Intake Assessment and the completed assessment was received in April 2024. The intake options assessment concluded that alternative river intake concepts were feasible for a “bank style” intake, or “infiltration gallery style” intake, but all of these feasible concepts had varying pros and cons that required consideration. Following review of the risks and rewards, the County has elected to continue with the original “in-river style” intake at the original location in the river provided that additional grant funding is confirmed by the Province to cover the costs. The original intake concept would appear to have the least risks from structural ice issues, frazil ice issues, and sedimentation issues, during operation of the river intake. In the event that there may be a grant funding shortfall from the Province, the County would only then explore a compromise option for a bank style river intake. A cost proposal to undertake the bank style intake design has been received from the River Engineer in May 2024, in such event that the County may elect to pursue this compromise alternative. The May 2024 design proposal for the bank style intake option is being reviewed by the County.

.5 A site visit meeting attended by the County and MPE Engineering occurred on February 07, 2024, at the river intake location to review the County's ideas for alternatives and potential cost savings for the river intake and raw water pumping station facility. Several ideas that were raised at the site meeting were reviewed in further detail for their incorporation into the project design. These alternate ideas included lowering of the ground elevation at the pumping facility to achieve less depth for the deep wet well and alternate access to the site from the boat launch access road. Following the initial review of the ground lowering option, there were concerns that the lowered ground elevation option may have issues with snow accumulation within the bowl that is created by the excavated area surrounding the river pumping facility. This concern was considered together with the slope stability modeling corresponding to dropping the ground elevation for the pumping facility at the toe of the river valley slope. The County's Project Representative arranged for a meeting on site with Alberta Transportation and MPE on April 12, 2024 to review the requirements of the alternate access to the site from the boat launch access road within the Alberta Transportation owned land parcel adjacent to the Dunvegan Bridge. From that meeting, Alberta Transportation appeared to be receptive to allowing access from the boat launch road within the Alberta Transportation owned highway right of way. The re-routing of drainage to accommodate the alternate access from the boat launch road was a major consideration for this concept because the alternate access from the boat launch road would cross a deep ravine that discharges into the Peace River. Following a cursory review of the proposed sitework changes, it became evident that the costs to lower the ground at the pumping facility site would be significantly higher than the cost savings achieved with a shallower pumping station wet well structure. As a consequence, work on the pumping facility design will continue based on the original concept of the deep wet well structure.

2. **Raw Water Pumping Station Land Acquisition:** The transfer of land for the Raw Water Pumping Station subdivision parcel has been fully completed and the Land Title Certificate for the parcel is now in the name of Saddle Hills County. The TransAlta Utility Right of Way agreement for the pipeline portion across their lands has previously been registered at Land Titles. A meeting was arranged with TransAlta on March 05, 2024 to coordinate their requirements for use of the Working Area easement that the County had procured on the west side of the pumping facility land parcel. The meeting discussion with TransAlta involved topics that included operating on their site, tree clearing, use of the Working Area for surplus excavated material storage, landscape modifications, and gravel usage. A formal request was made to TransAlta to review the Working Area site modifications that were proposed by the County. An information package that summarizes the proposed usage of, and modifications to, the Working Area parcel was developed and was included with the formal request to TransAlta. This information package was forwarded to the County in April 2024 for review and the feedback from the County has been incorporated into a revised information package that was reviewed by the County in May 2024 prior to its submission to TransAlta. TransAlta has acknowledged receipt of the information and are presently reviewing the land use proposal for the Working Area easement.

3. **Municipal Consent for Land Acquisition:** The consents that have been acquired by Saddle Hills County from the other Municipalities include:

- From M.D. of Fairview, to acquire the lands required for the River intake structures within the municipal boundaries of the M.D. of Fairview
- From Birch Hills County, to acquire the lands required for the Raw Water Pumping Station facility within the municipal boundaries of Birch Hills County
- From M.D. of Spirit River, to acquire the lands related to the future Regional Hub Water Treatment Plant site within the municipal boundaries of the M.D.
- From M.D. of Spirit River, to acquire the lands related to the raw water transfer pipeline alignment(s) Utility Right of Ways within the municipal boundaries of the M.D.

A consent from the M.D. may also be required in the event that an expropriation action is taken by Saddle Hills County against potential landowner holdouts along the pipeline alignment.

4. **Regional Hub Water Treatment Plant Site Land:** The draft Biophysical Assessment report was received from the Environmental Consultant, Fiera Biological Consulting for the Water Treatment Plant site. The Province has determined that the highest value of the wetlands on the site is not higher than C-value compensation classification which is lower in value than the B-value that was initially being considered. There is a treed wetland area located in the north central area of the quarter section that is categorized as C-value. The report's recommendation for this area is to try to retain as much of this portion of the central C-value wetland as possible due to its environmental significance. The majority of the wetland areas identified on the remainder of the quarter section are classified for D-value compensation (lowest compensation category). The corresponding boundaries for the wetlands were previously submitted by the Biologist to the Province to obtain wetland values as well as to the Water Boundaries Unit for review of any Crown claims. No response has been received from the Water Boundaries Unit for Crown claims. Geotechnical site drilling on the land parcel was completed in March 2023. The material encountered during the drilling consisted of clay and clay till materials and appeared to be consistent across the parcel. The draft geotechnical report has been completed by the Geotechnical Team, which includes a Dam Safety review assessment for the raw water storage pond berms. The native clay materials are suitable for construction of the proposed water storage ponds without the use of artificial liner materials for the interior pond surfaces. Additional follow up geotechnical site drilling was completed in May 2024 in order to obtain supplemental information that will allow for more informed berm slope designs for the proposed raw water storage ponds to meet Provincial dam design requirements. The Geotechnical Team has developed a scope proposal to provide a geotechnical dam design in accordance with Provincial standards. The proposal has been forwarded to the County for review. Preliminary concepts for site layout that are being explored by the Design Team for optimal arrangement and best use of the available area have been reviewed with the County. Changes resulting from feedback from the County have been incorporated into the sitework design. Review of the option to incorporate a dividing berm within one of the proposed raw water storage ponds was requested by the County as a potential method of alleviating problems that could correspond to oversized storage volumes for the initial operating years of the raw water storage reservoirs. Conceptual sketches of the dividing berm were developed for County review. The potential for installing floating covers for the raw water storage ponds was also reviewed in April 2024, however, the cost of the covering materials was very high. Re-routing of the area drainage to pass around the proposed storage ponds can be achieved with the incorporation of drainage ditches that will direct the flow around the perimeter of the ponds. The County conducted test pit excavations at the site in January 2024 to check geotechnical report findings that the top 1.2 m of the clay materials are contaminated with organic material. Additional soil samples were collected by MPE for geotechnical testing. The re-tested samples did confirm the presence of some organic matter in the upper 1.2 m clay zone.

5. **Public Lands Act Dispositions:** All three of the approved Public Lands Act Dispositions for the river intake, the Crown land occupation of the pipeline, and the crossing of the Dunvegan (Bronco) Creek have now been received from the Province. The overall map of the pipeline alignment identifying all of the wetlands and watercourse crossings will require adjustment and re-submission subject to the pipeline alignment changes that are now being pursued following recent problems with procuring pipeline right of way agreements along the previous route revision. The Land Agent, Scott Land and Lease, was engaged to complete an application for a Temporary Field Authorization (TFA) for access on Crown lands to proceed with the construction of an ice bridge platform to facilitate geotechnical drilling on the river during frozen ice conditions. However, the ice bridge was cancelled for the 2023/2024 winter season.

6. **Pipeline Alignment Land Agreements:** *Landowner holdouts have impacted proceeding with previous pipeline route between TWP Road 795A and TWP Road 790. An alternate alignment (third alternate) for the pipeline that is re-routed to avoid holdout properties has been determined and has been actively pursued by Saddle Hills County and the Land Agent. Most of the landowner signoffs for the most recent alignment alternate have been obtained now, and only one title holder remains yet to be signed. The County has provided assistance to reach out directly to the unsigned title holder to help with the agreement procurement and had been in communication with the Landowner, who had reviewed the agreement document and had responded with a list of conditions that involved reservations over the pipeline alignment across his property. Unfortunately, the Landowner of the final easement parcel passed away in March 2024 and the continuing negotiations to obtain the agreement across the property are now with the executor of the Landowner's estate. Signoff of an agreement shall pend on the executor being granted probate of the estate by the courts. The Land Agent reported in late-May 2024 that the lawyer for the executor of the estate was applying for a grant of probate in early June 2024. In the event that there are problems that cannot be overcome with the remaining right of way acquisitions for the latest alternate alignment(s), Saddle Hills County has taken steps as a last measure to proceed with an expropriation action against a landowner holdout along the current alignment. A pipeline alignment adjustment was also implemented to avoid an abandoned oil company well on one of the easement agreement land parcels. The Owner of the abandoned well was contacted and the Design Team has coordinated the re-alignment of the pipeline with the abandoned well Owner. A working space agreement has been arranged for the property at the top of the Peace River valley hill for the steel pipe HDD work.*

7. **Geotechnical Investigation – Subconsultant:** The Geotechnical Subconsultant for the Peace River valley hill, Thurber Engineering, is providing the geotechnical support for the HDD installation of the steel pipe section of the pipeline alignment that climbs out of the Peace River valley. The finalized Thurber geotechnical report was included as an appendix for the steel pipe HDD contract that was out for tender and recently closed.

8. **Environmental Assessments - Terrestrial:** The draft of the Biophysical Assessment report was completed by the Terrestrial Biologist, Fiera Biological Consulting in July 2023 following the field surveys that were completed at the end of May 2023. Valuation of the wetland compensation costs for the Regional Water Treatment Plant site have been confirmed by the Terrestrial Biologist (in consultation with the Province), with the submission of their Biophysical Assessment draft report. As one of the key takeaways from the draft report, Fiera has recommended to try as much as possible to retain the C-value treed wetland area located in the north central area of the project site due to its environmental significance. Fiera is providing support for any of the supplemental environmental information requests raised by the Water Act Approval application review and Public Lands Act Approval application review for the project. This includes providing the wetland boundaries along the pipeline alignment (and any potentially revised alignment sections) requested by Alberta Environment at a previous meeting. Fiera has also provided any follow up disposition support for the Key Wildlife and Biodiversity Zone along the steel pipe HDD installation route up the Peace River valley hill. Coordination to facilitate winter construction for the steel pipe installation on the hill that respect the hard dates for the Restricted Activity Periods (RAP) will require support from Fiera to negotiate the period for the construction RAP window stipulated by Alberta Environment. The County had engaged with a local contractor about removal of trees at the river location of the Raw Water Transfer Station in advance of the restricted activity period for nesting migratory song birds. However, the tree clearing work shall be deferred until after the RAP for the migratory songbirds which will be after the month of August. Prior to proceeding with tree clearing at that location, Fiera was requested to provide recommendations on the requirement for any environmental sweeps that may be required for any other wildlife on the property. Most recently Fiera Biological was engaged in late-May 2024 to complete a wetlands assessment along the finalized version of the raw water transfer pipeline route as required by Alberta Environment for the Water Act Approval submission information for the finalized pipeline alignment.

9. **Environmental Assessments - Aquatic:** The Fish and Habitat environmental assessment report completed by the original Aquatic Biologist, Mainstream Aquatics, was the primary supporting documentation for the Provincial Water Act Approval as well as the Federal DFO application. The Principal Biologist for Mainstream Aquatics retired as of July 31, 2022. The new supporting Aquatic Biological Subconsultant for the project for subsequent work is Ridge Environmental Planning Ltd. Ridge Environmental Planning completed a field review in June 2023 of the proposed wastewater outfall discharge location at the Regional Water Treatment Plant location. The Fish and Habitat environmental assessment report for the wastewater outfall at the Regional Water Treatment Plant site was received from Ridge Environmental Planning in August 2023. Further engagement of the Aquatic Biologist will be required in the future to meet the requirements of the response letter received from DFO in July 2023 related to their review of the project approval application. An environmental monitoring scope of services plan has been provided by Ridge Environmental Planning for the aquatic environmental monitoring of the work that will be required by the Regulatory Authorities during the implementation of the cofferdam in the River at the intake location. The services of the Aquatic Biologist would also be required to support the regulatory applications that would be required for the proposed geotechnical drilling within the riverbed necessary for the cofferdam design work. Most recently Ridge Environmental Planning was engaged in early June 2024 to complete an aquatic assessment of any creek crossings along the finalized version of the raw water transfer pipeline route as required by Alberta Environment for the Water Act Approval submission information for the finalized pipeline alignment.

10. **River Engineering:** The Hydraulic Subconsultant for the River Intake, Northwest Hydraulic Consultants (NHC), continues to provide engineering support related to the intake and pumping station design. The submitted report by the Hydraulic Subconsultant comprises a major document in support of the application package for the Water Act Approval, and NHC has assisted to provide some of the supplemental information that has been requested by Alberta Environment in the follow ups to the original application submission. NHC has also provided the support and hydraulic modeling for the increased size coffer dam footprint in the event of using rock and earth fill materials for the temporary coffer dam for the river intake. From their hydraulic modeling of the cofferdam impact on the River flow, NHC has identified issues with erosion of the gravel bar located on the opposite bank of the River, that will require erosion protection during the implementation period for the cofferdam when the width of the River shall be restricted by the cofferdam. To address this opposite bank erosion issue, NHC has been engaged for the design of an erosion protection system for the opposite bank gravel bar, as well as assist with any required approvals for completing the opposite bank erosion protection work. The draft of the proposed opposite bank erosion protection design concept has been received from NHC which consists of implementing rock trenches across the gravel bar that are perpendicular to the River and filled with large diameter rock (800 mm diameter size). NHC is also assisting with cost estimates for this erosion protection work. NHC has recently provided more specific analysis for the River level information during the summer cofferdam implementation period as well as the ice affected water levels for winter cofferdam impacts. NHC has also been engaged for any River Engineering scope of work that will be required to implement geotechnical testing and drilling within the Peace River. A meeting between the County and the River Engineer occurred on January 25, 2024 to further review and revisit the option of utilizing a “bank style river intake” (that was dismissed as an option by the River Engineer in their recommendation report), instead of the “in-river style intake” that was proposed by the River Engineer for the project. The River Engineer was requested by the County to further review alternatives for the river intake configuration. The River Engineer completed the additional feasibility review in April 2024 and the assessment concluded that the other options for either a “bank style” intake or an “infiltration gallery style” intake were also potentially feasible for this project. However, the alternative river intake concepts had both pros and cons that required serious consideration in order to proceed with these alternatives. The original concept for the “in-river style” intake appears to be the least risk option from the standpoint of ice jam accumulations, frazil ice effects, and sediment build up, at the intake location. As a backup plan, the River Engineer was requested in May 2024 to provide a detailed proposal to undertake the design of a “bank style” intake in the event of a grant funding shortfall that may require the County to seek cost savings with an alternate river intake compromise. The scope proposal received from the River Engineer has been forwarded to the County for review and consideration.

11. **DFO Approval Application:** Acknowledgement response letter was received in July 2023 from the Department of Fisheries and Oceans for the project application to the Department for the River intake proposal. The application for the River intake was previously submitted to the Department of Fisheries and Oceans for approval in March 2022 and was subsequently forwarded by the Department to the Fisheries Protection Program Regulatory Review unit in Winnipeg for site specific review. Follow up meetings to review the Approval application were held with DFO on October 20, 2022, February 21, 2023, and most recently on May 25, 2023. The revised footprint information for the temporary cofferdam around the river intake structure was previously submitted to the Department. The July 14, 2023, DFO letter provides the Department's recommendations for the project to avoid and mitigate the potential for prohibited effects to fish and fish habitat. The project can proceed as long as the DFO recommendations are followed in accordance. Subsequent engagement with DFO occurred in December 2023 related to the additional geotechnical test hole drilling of the river bottom that will now be required in the Peace River for the structural cofferdam alternatives. A meeting was held by the Geotechnical Team with the Department, and the Geotechnical Team were requested to provide additional details on the drilling impacts to the river and aquatic life. The additional information was gathered and sent to the Department and DFO has subsequently granted their approval to proceed with the river geotechnical drilling.
12. **Water Act Approval Applications:** *The Water Act applications for the Approval to Construct for the River Intake systems and the Water Diversion licence for withdrawal of water from the Peace River were previously submitted and are in review by Alberta Environment. Updated draft versions of both the Water Act Approval and the Water Diversion licence were received from Alberta Environment in May 2023 that included some of the final revisions discussed at the previous monthly meeting. The received semi-final draft documents were reviewed at our meeting with the Department in May 2023 and were close to being finalized. The Project Team's most recent meeting with Alberta Environment occurred on June 12, 2023. Alberta Environment was sent a copy of the finalized revised geotechnical report for the raw water pumping station and cofferdam that was requested for the Approval application. The DFO Acknowledgement Letter received in July 2023 for the project has also been forwarded to Alberta Environment as well as the Historical Resources Act Approval that was received in August 2023 from Alberta Culture. The balance of information required for finalization of the Water Act Approval is the final route alignment of the raw water transfer pipeline following signoff from all of the affected landowners along the pipeline route. At a meeting between the County and Alberta Environment in May 2024, the Water Act Approvals Engineer requested that the County submit the finalized routing drawings for the raw water transfer pipeline even if the final landowner signoff agreements for the pipeline were not yet fully endorsed. The revised design drawing information for the proposed final pipeline alignment is being drafted for the final submission package to Alberta Environment that should support finalization of the Water Act Approval for the project. The project environmental subconsultant for terrestrial biology, Fiera Biological Consulting, has been engaged to provide a wetlands assessment along the adjusted version of the finalized pipeline alignment and delineate the wetland areas crossed by the pipeline as required for the Water Act Approval. The project environmental subconsultant for aquatic biology, Ridge Environmental Planning, has similarly been engaged to provide a water body assessment along the adjusted version of the finalized pipeline alignment to identify and assess any creeks crossed by the pipeline. A Water Act Approval application for the geotechnical test hole drilling in the river was submitted in December 2023 for the additional testing required for the structural cofferdam alternative. The Geotechnical Engineer worked to clarify approval application requirements with the Alberta Environment Water Acts Engineer. An application for a Temporary Diversion Licence for withdrawal of river water to construct an ice bridge for geotechnical drilling on the frozen ice surface of the river was submitted to the Department, but the ice bridge construction was cancelled for this season.*

13. **Historical Resources Act Approval Application:** The Historical Resources Act Approval for the project was received in August 2023 from the Provincial Regulator, Alberta Culture for the River intake facilities and the original raw water transfer pipeline alignment. A further application may be required when the final revision to the pipeline route has been confirmed by the corresponding landowner signoffs. Historical Resources Impact Assessment (HRIA) stipulated by the Province was previously completed by the Archaeological Subconsultant, Circle CRM, for the original pipeline route, and their report submitted to the Provincial Regulator.
14. **Navigable Protection Act Application:** The Notice of Works application for Navigable Waters previously submitted to Transport Canada for the river intake structure was approved (December 06, 2022) for the original temporary coffer dam during the construction and the permanent river intake. Subsequent notification was provided to Transport Canada for the potential increased footprint of the coffer dam to allow for rock and earth fill coffer dam construction, which has now been reviewed and accepted by the Department.
15. **Indigenous Consultations:** The Scott Land Indigenous Consultation group has received an Adequacy Assessment Decision for the previous Consultation submissions. First Nations Consultations were coordinated by Scott Land and Lease's Indigenous Consultation department for the Consultations required by the Public Lands Act Disposition application and the Consultation stipulated by the Federal Grant requirements for the project. For the Water Act Pre-Consultation Assessment, the Aboriginal Consultation Office (ACO) confirmed adequacy and no additional consultations required. Saddle Hills County also received confirmation from the Federal Government in January 2023 that Infrastructure Canada considers the Indigenous consultation requirement for the project to have been met.
16. **Steel Pipe Contract for Peace River Valley Hill:** The HDD Specialist Subconsultant, Blue Fox Engineering, continues to be involved with the steel pipe installation contract as the contract was put out for tender in early June 2023. Blue Fox provided engineering support for the steel pipe HDD tender documents including pre-tender cost estimates, and has provided support for evaluation of tender submissions, and shall provide resident services during construction review. At the tender close on July 18, 2023, four bids were received, and the bid submissions were reviewed in detail by Blue Fox Engineering to ensure that all submissions were evaluated on an equal (apples-to-apples) basis. The bid submission amounts were significantly higher than previous estimates and exceed the cost estimates from the 2018 project grant application amount by far more than double. The recommendation letter from Blue Fox Engineering was completed together with their detailed comparison spreadsheet. Blue Fox Engineering has also provided a proposal to look after the drilling fluid waste management for the wastewater generated by the HDD pipe installation up the valley hill, which is being reviewed. The County did not award the contract pending Council direction for review of scope to seek potential cost reductions, however, there is still interest from the bidders to proceed with the work. Factoring into consideration the scheduling window to meet the environmental Restricted Activity Periods along this portion of the pipeline, the time period to proceed with the work for the 2023 season has passed. The County has elected not to formally reject the bids that were received for the contract, pending confirmation of the grant funding status for the project for this year. The construction of the pipeline could potentially proceed in the fall season of 2024.
17. **Pre-Qualification of Specialist HDD Contractors:** Previous contemplation to undertake a Request for Qualification process for the specialized HDD installation of the steel pipe section of the Raw Water Supply Line that climbs out of the Peace River valley, was abandoned. There were reservations from the County on whether to proceed with the Pre-Qualification process in the current market with rising construction cost due to concerns over the possibility of limiting bidder competition if some qualified contractors either did not meet the Pre-Qualification requirements, or could be caught in a timing conflict that may inhibit later decision to bid. Pre-Qualification was cancelled.

18. **Electrical Service to the Pumping Station:** The route for servicing of the Raw Water Pumping Station facility shall be from the Village of Rycroft which is the nearest connection point for the required three-phase power supply. The initial ballpark proposal cost quotation for the power servicing received by the County from ATCO was very high in cost. Representatives from the County and MPE met with ATCO in Edmonton on February 01, 2023 to review the potential for decreasing the servicing cost for the Raw Water Pumping Station. The meeting was successful as the County was able to convince ATCO to revisit their servicing cost and provide a substantial discount. The adjusted servicing amount was received from ATCO on March 10, 2023 with an 80% load investment from ATCO as an update on the previous 60% load investment. This has resulted in a cost reduction of approximately \$164K to the previous ballpark proposal. The County has initiated commencement of the ATCO design process with acceptance of the preliminary quotation. A more accurate cost estimate should be forthcoming from ATCO following their detailed design reviews. Saddle Hills County has regular monthly meetings scheduled now with ATCO to track progress on the power servicing projects for the County including the service to the River Raw Water Pumping Station. ATCO has undertaken site review of the finalized routing of the power line to the River location. The question of whether fibre optic communication lines could also be installed on the power poles together with the electrical cables was raised by the County and the County remains in discussions with ATCO for potentially proceeding with the fibre work. A meeting with ATCO occurred on March 07, 2024 in Edmonton, to obtain update of the upcoming work. The County has since received an updated servicing proposal agreement from ATCO. The cost of the servicing proposal has increased from the previous estimates and the County is presently reviewing the updated power servicing proposal. The review comments from the MPE Electrical Engineering Team on the updated ATCO servicing proposal have been provided to the County for consideration. The County also forwarded a question to ATCO in April 2024 as to whether the power line alignment has been confirmed not to conflict with the proposed Alberta Transportation Highway 2 re-alignment on the route towards the Dunvegan Bridge.
19. **Project Budget:** An updated preliminary opinion of probable costs for the project was developed and shared with the County. The estimated costs have increased significantly since the 2018 Pre-Design Report and the County has made a request to the Province for additional grant funding under the Water for Life program to make up the projected cost difference. The County has had follow up meetings related to the grant request with representatives from the Province and has presented a cash flow projection to the Province that provides a schedule of expenditures over the course of the next three years as it relates to grant funding. The County met with the Province again in March 2024 and again in April 2024, and expect to receive formal response from the Province this spring 2024 that will confirm additional grant amounts for the upcoming year.

NEXT STEPS

20. Complete the preliminary engineering and continue with the detailed design for the project including the drafting of revised plan and profile drawings for the pipeline (for Alberta Environment Water Act Approval in advance of confirmation of landowner signoffs), work with Land Agent and County Staff on procuring the final landowner agreement for pipeline right of ways, continue to hold meetings with Alberta Environment for the project and the approval submissions, undertake review of the competitive cost quotations to proceed with geotechnical test hole drilling of the river bottom for the structural cofferdam alternatives, confirm schedule for the river geotechnical test hole drilling, continue with the river intake and pumping station design, and also wet well installation design, and excavation shoring design with the geotechnical group, dismiss options to lower the ground elevation at the pumping facility location following confirmation of direction from the County on proceeding with the selected options, dismiss alternate access road from the boat launch road together with stormwater drainage modifications and approval with Alberta Transportation for the potential access change, follow up on TransAlta requirements for use of the Working Area easement on their property, incorporate design requirements and corresponding approval requirements for the erosion protection of the opposite bank during implementation of the temporary cofferdam, finalize access roadway design down to the cofferdam at river's edge, develop updated cost estimates for the cofferdam work, continue with Federal and Provincial regulatory approvals, procure the Regulatory Approvals required for the additional geotechnical drilling investigation work within the riverbed for the structural cofferdam design, evaluate steel pipe HDD contract for potential cost reductions which may include direct discussions with Contractors, provide responses to Public Lands Act and Water Act applications supplemental information requests from Alberta Environment as they are requested, confirm with Archaeological Subconsultant the Historical Resources Assessment Approval for final pipeline route, coordination with ATCO for the power servicing to the Raw Water Pumping Station, proceed with tree clearing at the Raw Water Transfer Station site, await response from the Province in support of supplemental grant funding for the 2024 construction year and for project completion.

Haj Oshiki, P.Eng.