

Memo Documenting the Engineering Review Processes for the Red River Valley Water Supply Project

As the final decision about the RRVWSP draws near, it is appropriate to review the process and level of involvement that went into the engineering studies.

History

In the Needs and Options Study (2001-2005), Reclamation first formed a Technical Team consisting of federal, state and local agencies, environmental groups, engineering firms, Canadian agencies and others with an interest in the project. This team developed the plans of the study to establish the approach. This took a significant amount of time, but it established a basis for doing the study that was fully researched and evaluated. Examples of the topics covered included, but not limited to, climate study, population projections, water demand studies, industrial water demands, water conservation potential savings, and water quality modeling of the McClusky Canal, Sheyenne River, Lake Ashtabula, and the Red River. It was decided that the design and cost estimating for the Needs and Option Report should be completed by an independent engineering firm, outside of Reclamation.

Design and Cost Estimation Review

Houston Engineering and Montgomery Watson Harza were selected to develop the design criteria. They were Garrison Diversion's professional engineering firm and were contracted through Garrison Diversion's cooperative agreement with Reclamation. The design criteria was reviewed by Reclamation to ensure that all alternatives were designed in a similar manner so they were comparable at the appraisal level.

Houston Engineering and Montgomery Watson Harza completed the preliminary design and the cost estimates for the alternatives in the Needs and Options Report. Several pipeline routes and sizes were considered. The routes and various configurations were screened based on environmental concerns and cost. Reclamation's Dakota Area Office staff reviewed the design and cost estimates. The selected routes, designs, and cost estimates were released for review to the Technical Team, the Lake Agassiz Water Authority Technical Advisory Committee, Advanced Engineering and Environmental Services (Lake Agassiz Water Authority's contracted engineering firm) and the public.

Lake Agassiz Water Authority was involved in the review process because it was established by the state legislature to represent the local water users in the RRVWSP studies. It was created in response to a directive in the Dakota Water Resources Act stating that the "affected local communities" shall have a say in selecting the solution to meet the Red River Valley's water supply needs.

Peer Review

After incorporating the comments from the public review process, the designs and estimates were submitted to Reclamation's Technical Service Center for a peer review. The peer review resulted in minor changes to the estimates. The conclusion of the review was "The level of confidence in cost estimates is directly related to the level of design and design data upon which

the cost estimate is based. After the items in this report are addressed, the information and costs contained in the Needs and Options Report review appear to be sufficient to select an alternative. However, after an alternative is selected, more engineering and more design data are needed to develop a new cost estimate for seeking funds.”

Additional Feasibility Study

Once the preferred alternative, the GDU Import to Sheyenne River Alternative, was selected the route was refined, and another cost estimate was completed by Houston Engineering and Montgomery Watson Harza. Reclamation contracted with J.F. Sato and Associates, a professional engineering firm based in Littleton, Colorado, to complete a feasibility level cost estimate for the biota treatment plant, assuming that dissolved air floatation technology would be used. This information was peer reviewed by the Technical Resources Design, Engineering and Construction Office. This review resulted in further adjustments to the cost estimates for the preferred alternative.



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