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January 5, 2016

DECISION MEMORANDUM

TO: Council members

FROM: John Fazio, Ben Kujala, Council Staff

SUBJECT: Approval of contracts to prepare for the redevelopment of GENESYS

PROPOSED ACTION:

Approve two separate sole-source contracts, one for Dr. Michael McCoy and one for Gwendolyn Shearer, to aid staff in developing the best approach to redevelop the Council's adequacy model (GENESYS).

SIGNIFICANCE:

These contracts are a direct result of the Council's draft plan action items ANALYS-20 (review analytical methods), ANALYS-21 (GENESYS model redevelopment) and ANALYS-22 (Enhance the GENESYS model to improve the simulation of hourly hydroelectric system operations.) Because the regional power supply is becoming more complex, with significant amounts of variable generation resources and new market structures, it is imperative that GENESYS be able to accurately reflect more granular system operations, including how balancing reserves are treated. These contracts will help staff identify those sections of the model that must be enhanced to properly address these issues.

BUDGETARY/ECONOMIC IMPACTS

Total expenditures for these two contracts are not to exceed \$80,000 for the 2016 fiscal year. Both Dr. Michael McCoy and Gwendolyn Shearer (contractors) charge \$150 per hour, which translates into a maximum of 533 hours of combined work. At this time, it is not precisely known how these hours will be allocated between the two contractors. The contracts will be written in a way to ensure that the combined expense from both contracts will not exceed the budget total of \$80,000 (and will not exceed the maximum

533 hours of combined work time). The system analysis group in the Council's power division will also devote a significant amount of time toward this task but this will not result in additional expenses related to these contracts. The power division's 2016 budget has sufficient balance to fund these contracts.

BACKGROUND

The GENESYS model is one of the major quantitative tools used to develop the Council's regional power plan. GENESYS is primarily used to assess the adequacy of the power supply but it also provides hydroelectric system output to both the AURORAxmp model and the Council's Regional Portfolio Model. In addition, GENESYS is used to validate that the power plan's resource strategy will produce adequate supplies. GENESYS has also become one of Bonneville Power Administration's major tools for assessing federal system adequacy and is being used to a lesser degree by several other regional entities.

ANALYSIS

In order for the Council to complete the GENESYS redevelopment project in time for its next power plan, the new version must be complete and thoroughly tested by the end of the 2017 fiscal year. The anticipated timeline for this work involves preparation for the redevelopment work to be done in the 2016 fiscal year and the actual redevelopment to be done in the 2017 fiscal year. Preparation for the redevelopment includes a review of the uses of the model, a survey of who is likely to use it and an assessment of which of its capabilities must be enhanced. This work may include the development of a new user interface, which will not only allow easier use of the model but will also simplify access to both input and output data.

The Council believes that only Dr. Michael McCoy and Gwendolyn Shearer have the capability to aid staff in developing an efficient and implementable approach to redevelop the GENESYS model within the required time frame (no later than the end of the 2016 fiscal year). This should allow sufficient time for the Council to implement the second phase of the project, namely the actual redevelopment.

Both Dr. McCoy and Ms. Shearer have worked for the Bonneville Power Administration, Power Systems Research, Inc. and with Council staff on the GENESYS model, specifically focusing on resource adequacy analysis. Because of this experience, they have an intimate knowledge of the GENESYS model and have significant experience with Pacific Northwest power operations. There are no other contractors who could take this project on without first going through a long learning-curve period that would consume a significant amount of staff time. Thus, in staff's opinion, using a different contractor would not be cost effective and would raise the risk of not completing all tasks within this fiscal year.

ALTERNATIVES

The Council could take on this project without contracting with Dr. McCoy or Ms. Shearer but that would require significantly more staff time (thus limiting staff's ability to implement other action items in the seventh plan). It also significantly increases the risk that the redevelopment will not be completed by the end of the 2017 fiscal year.