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January 7, 2020

### DECISION MEMORANDUM

**TO:** Council members

**FROM:** John Ollis  
Manager, Planning and Analysis

**SUBJECT:** Authorization to enter into a contract with PSR for GENESYS support

**PROPOSED ACTION:** Staff recommends authorization to contract with PSR for one year of maintenance and support services for the GENESYS model

**SIGNIFICANCE:** The GENESYS model was recently redeveloped and there is a need for ongoing maintenance and support services for the model as staff uses it in development of the 2021 Power Plan.

### BUDGETARY/ECONOMIC IMPACTS

Not to exceed \$86,400

### BACKGROUND

The GENESYS model is the primary analytical tool the Council uses for understanding the impacts of changes in the hydroelectric system's operation on the regional power system and to assess resource adequacy. GENESYS is used to assess resource cost-effectiveness, to evaluate the effective load carrying capability of variable generation, and to provide estimates of the power system impacts of potential climate change scenarios. In addition, GENESYS is used to assess the impacts and costs of non-power related constraints on the regional power system, such as timing and flow restrictions at the dams implemented to benefit anadromous fish.

### ANALYSIS

The Council previously contracted with PSR to redevelop the GENESYS model in order

to bring the software code up to current standards and to implement enhancements to the model, including improving the simulation of hourly hydro capability, incorporating reserves into an optimized dispatch to reflect the interaction between assignment of reserves and other system capacity obligations; improving market representation to reflect the trade-off between decision made for economics and adequacy; and, including fuel accounting and forecast error to represent limitations on operators in dispatching the system.

PSR delivered to staff the redeveloped GENESYS model and there is a need for ongoing maintenance and support services to fix bugs, to provide general model updates and to address technical issues identified by Council staff as it uses the model in development the 2021 Power Plan.

### **ALTERNATIVES**

The alternative is to have staff perform the maintenance and support services or contract with an entity other than PSR; however, such an approach would require significant utilization of staff time to perform the services or a substantial amount of additional time for another entity to come up to speed with the redeveloped GENESYS software code. To contract with another entity at this time does not seem prudent given the timing for development of the 2021 Power Plan.