Water Supply Reserve Account – Grant and Loan Program
Water Activity Summary Sheet

Applicant:

District 64 Reservoir Company

Amount Requested: $176,000; Full funding for design and construction oversight estimated at $2.5 Million

Water Activity Name:

Ovid Reservoir Comprehensive Feasibility Study

Source of Funds: Statewide

Matching Funds: yes for initial design work amount not specified; ~ $1 Million for land and design acquisition

Water Activity Purpose:
Study/analysis of Structural Project

County:

Sedgwick

Drainage Basin:

South Platte

Water Source:

South Platte River

Water Activity Summary:

The District 64 Reservoir Company was formed by the owners of water rights in the Lower South Platte near Julesburg, Colorado. This company was formed to purchase the water rights, engineering and legal documents and title to the land where the Ovid Reservoir is planned and for other purposes relating to the provision of a water supply for the area. It was formed as a non-profit mutual ditch and reservoir company.

The Ovid Reservoir project has a conditional storage right originally proposed by Groundwater Appropriators of the South Platte (GASP). The original water court application began in 1997 resulting in a conditional storage decree awarded to GASP for the project. GASP expended considerable legal, engineering, and land acquisition costs in moving the project forward. The concept was to construct an off-channel reservoir near that state line that could be used to augment well depletions and keep the compact call off when water users needed to divert. The selected reservoir site could store 5,700 acre-feet of water, fill by gravity from the Peterson Ditch and release by gravity back to the South Platte River approximately 10 miles above the state line. Wildlife and wildlife recovery was later added as a beneficial use of the conditional water right.

The administration of the lower South Platte River has changed dramatically in the last 10 years as the result of the 2001-2006 drought with more intense administration of ground and surface water supplies, and the implementation of a number of recharge plans for augmentation and other purposes. In addition, additional changes will occur as a greater proportion of transmountain return flows are recaptured and reused by the owners of this water along the Front Range.

Ovid Reservoir is strategically located in the lower river, and provides a number of opportunities to manage water supplies for augmentation, compact management, and Colorado's participation in endangered species recovery efforts.

The CWCB has proposed a joint study of the project to explore possible partnerships between the District 64 Reservoir Company and other agencies, possibly including the State of Colorado. This joint project will include funding by CWCB from a former budget that studied potential Lower South Platte reservoirs including Ovid Reservoir. The proposed CWCB study would be coordinated in conjunction with this scope of work and grant application. The CWCB work will be done under a separate contract, if needed, with other parties and will evaluate policy and legal issues associated with the development of this project.

The scope outlined for this grant application would pay for technical work, modeling and permit applications during Phase I. If found feasible, funding for Phase II will be sought to carry the project forward to completion; with the exception of actual construction funding. Sources and makeup of construction funds will be determined in this study phase which may include grants or loans that could be obtained through a variety of sources including the CWCB construction loan program. The budget is structured such that as the project moves forward the task list has to be approved based on previous work and agreements. For example, Final Design and the preparation of construction plans would not start until policy and legal issues were addressed and agreements were reached between interested parties.

Phase I

Task 1 – Reservoir Operations and Modeling

A detailed evaluation of the possible operating scenarios will be outlined to provide information for decision making by potential end users. Applegate Group will be the lead firm for the task. Mike Applegate and Dick Stenzel will be senior advisors to the evaluation team lead by Richard Raines. Bennett Raley will provide guidance on legal issues associated with the use of the reservoir. Operating scenarios will be developed for dry year, wet year and average year hydrologic conditions. The administration policies currently in place for the South Platte River, potential future policies that may be implemented and the implications of the Platte River Recovery Implementation Program (PRRIP) obligations will be considered in developing the scenarios. A river basin spreadsheet model will be developed using existing daily flow data that was originally developed for the reservoir when the decree was awarded in Division 1 water court. The team will review the decree and determine options that are available to the new ownership group. The daily flow model will be updated to incorporate the recent drought period. Comparisons of this model will be made to the preliminary South Platte DSS modeling to incorporate improvements where appropriate. Evaluation will include consideration of augmentation replacements, recharge accretions, non-consumptive options, exchange considerations in this reach of river, and alternate points of diversion to the reservoir via a well field. The team will also consider the long term impacts of changes in trans-mountain diversion reuse water, compact obligations, and the PRRIP.

Deliverables for this task will include:

1. A detailed engineering report describing the assumptions, methodology, results and conclusions of the task.
2. A digital copy of the spreadsheet computer model with 30 years of daily flow record.
3. A user's manual for the spreadsheet model describing inputs.

The total fee for Task 1 is $112,000

Task 2 Review of Preliminary Engineering on Ovid Reservoir

A review of the previous engineering work done by Applegate Group will be performed to evaluate conclusions and recommendations with respect to the new ownership group, changes in rules and regulations since the work was completed, and changes in technology that have occurred. The project team will be lead by Applegate Group with Mike Applegate serving as senior advisor to in-house engineering. J. A. Cesare and Associates who was involved in the preliminary work will provide geotechnical expertise in this review. Evaluation of District 64 needs will be completed to determine base requirements for local water users.

Modernization of the proposed project will consider SCADA (Supervised Control and Data Acquisition), telemetry and automation. The possibility of installing a well system adjacent to the South Platte in place of diversion facilities on the Peterson Ditch will be evaluated in conjunction with Task 1 above. There may be more flexibility in diverting with pumps that can turn on whenever the river conditions allow diversions under priority. The construction cost estimates will be updated to reflect current prices and projected forward for the contemplated project completion. Detailed estimates on reoccurring annual facilities and maintenance costs will also be prepared. The Dam Safety regulations have also been updated recently which has some added requirements for obtaining a permit. An example is the seismic analysis with regard to dam foundation liquefaction currently requires a more rigorous analysis.

Deliverables for this task will include:
1. A revised preliminary construction cost estimate reflecting anticipated schedule of the project.
2. A preliminary analysis and estimated costs of facilities operations and maintenance that are expected for the foreseeable future of the project.
3. An engineering report summarizing the results of the review. A description of the recommendations for any modifications to the project configuration will be outlined based on the new ownership group. Any recommendations for modernization or updates to technology will be detailed and broken out in terms of associated costs. The results of using an alternate well field approach for diversion will be reported in comparison to the original concept of using the Peterson Ditch.

The total fee for Task 2 is $24,000

Task 3 - Julesberg Irrigation District and Peterson Canal Options

The project team will evaluate the potential partnership and opportunities that can be established with the Julesberg Irrigation District (JID) with respect to incorporating their Peterson Ditch into the project as originally contemplated. A carriage agreement was negotiated with GASP in the original project. This agreement is non-transferable and has been the subject of discussion on how the new arrangements may be drafted. Since the unknown of who will be participating in the ownership group outside of the District 64 Reservoir Company is still unanswered, these discussions have been tentative. The Applegate team will provide engineering technical support services to the management group and legal counsel of District 64 lead by Joe Frank and Bennett Raley. Mike Applegate and Dick Stenzel will provide senior advisor roles to the engineering team lead by Jennifer Lee. Evaluation of the use of the Peterson Ditch will be done considering winter operations scenarios, competition with other users in the system, coordination with current operating requirements, and evaluation of potential changes in operating requirements that may prove beneficial to both parties. The requirements of a diversion structure on the Peterson Ditch will be reevaluated with regard to the discussions on this new ownership group. The Peterson Ditch has a relatively unreliable and old diversion structure on the South Platte River that requires constant maintenance. The opportunity for improvement of this structure and the upstream reach of ditch above the reservoir will also be considered in terms of engineering and construction costs. There are also 404 permit issues with regard to irrigation facilities that will be evaluated by legal counsel and the project team.

Deliverables for this task will include:
1. Preliminary engineering analysis of the infrastructure requirements for the Peterson Ditch summarized in a report.

The total fee for Task 3 is $40,000

Discussion:

The Ovid Reservoir project has the potential to serve the needs of multiple interests, multiple users and meet multiple needs. The project has the potential to assist agricultural and municipal users, benefit state species of concern, assist with compact administration, and aid Colorado in it's participation in the three state

endangered species program. At this time it is not clear how the project will benefit each of these users and to what extent it may benefit the specified uses. It appears that the proposed study can help delineate these uses and benefits as well as finalizing design elements and operations of the project. Overall the project appears to be and ideal candidate for funding from the Water Supply Reserve Account, State funds.

Issues/Additional Needs:

Please provide additional detail on the Applicant, see page 10 of the Criteria and Guidelines for necessary information.

The application states there are 75 shareholders in the company. Please include the number of irrigated lands that are represented by the shareholders.
Please provide detail on the monies invested to obtain the design work from the Ground Water Appropriates of the South Platte as these can be considered matching funds.
Please provide more information if available at this time regarding the subsurface geology. Specifically address how the "modest" clay layer will contain reservoir seepage or what other design considerations have been made.
For Task 1, please provide more information on the approach, method and deliverables for the water rights modeling. The budget indicates 564 hours which seems high, especially since past work has been completed.
For the Task 3 deliverables it appears that deliverables for the operational scenarios, coordinated operations, and resolution of 404 permit considerations/needs should be included for the amount of funds requested.
Please provide a schedule of activities by major task with key milestones.
Staff did not fully review or comment on Tasks 4-7 as those tasks were not part of this application.

Staff Recommendation:

Staff recommends funding up to $176,000 to complete the Ovid Reservoir Comprehensive Feasibility Study contingent on resolution of the issues and additional needs section.

All products, data and information developed as a result of this grant must be provided to CWCB in hard copy and electronic format as part of the project documentation. This information will in turn be made widely available to Basin Roundtables and the general public and will help promote the development of a common technical platform.