COLORADO WATER CONSERVATION BOARD

WATER SUPPLY RESERVE ACCOUNT
2006-2007 GRANT APPLICATION FORM

Rio Grande Reservoir Multi-Use Rehabilitation: Refinement and Enhancement of Reservoir Reoperation and Optimization Model

Name of Water Activity/Project **River Basin Location**

$100,000	X	Basin Account	X	Yes
		Statewide Account		No

Amount of Funds Requested | Please Check Applicable Box | Approval Letter Signed By Roundtable Chair and Description of Results of Evaluation and Approval Process

*** For the Basin Account, the Application Deadline is 60 Days Prior to the Bimonthly CWCB meeting. The CWCB meetings are posted at www.cwcb.state.co.us and are generally the third week of the month.**

*** For the Statewide Account, the Application Deadline is 60 Days Prior to the March and September CWCB Board Meetings.**

*** In completing the application you may attach additional sheets if the form does not provide adequate space. If additional sheets are attached please be sure to reference the section number of the application that you are addressing (i.e., A.1. etc.).**

Instructions: This application form should be emailed, typed, or printed neatly. The Water Supply Reserve Account Criteria and Guidelines can be found at http://cwcb.state.co.us/IWMD/. **The criteria and guidelines should be reviewed and followed when completing this application**. You may attach additional sheets as necessary to fully answer any question, or to provide additional information that you feel would be helpful in evaluating this application. Include with your application a cover letter summarizing your request for a grant. If you have difficulty with any part of the application, contact Rick Brown of the Intrastate Water Management and Development (Colorado Water Conservation Board) for assistance, at (303) 866-3514 or email Rick at rick.brown@state.co.us.

Generally, the applicant is also the prospective owner and sponsor of the proposed water activity. If this is not the case, contact the Rick Brown before completing this application.

Water Supply Reserve Account – Grant Application Form

Form Revised October 2006

Part A. - Description of the Applicant (Project Sponsor or Owner);

1. Applicant Name(s): San Luis Valley Irrigation District

Mailing address: 296 Miles Street
Center, CO 81125

Taxpayer ID#: 84-6002934 Email address: slvid@centurytel.net

Phone Numbers: Business: (719) 754-2254

Home:

Fax: (719) 754-3616

2. Person to contact regarding this application if different from above:

Name: Travis Smith

Position/Title Superintendent

3. Provide a brief description of your organization below: Refer to Part 2 of criteria and guidance for required Information. Attach additional sheet(s) as needed.

The San Luis Valley Irrigation District (District) is an irrigation district formed and operating pursuant to Title 37, Article 42 of the Colorado Revised Statutes. Its office is located in Center, Colorado. The District owns and operates the Farmers Union Canal, which diverts water from the Rio Grande River and delivers it through a network of over 100 miles of ditches to nearly 62,000 acres of land in Alamosa, Rio Grande and Saguache Counties. It also owns and operates Rio Grande Reservoir located on the headwaters of the Rio Grande River in Hinsdale County, 20 miles southwest of Creede, Colorado. It is the only on-stream main stem reservoir on the Rio Grande in Colorado. The Reservoir's current storage capacity is approximately 54,000 acre-feet, the majority of which is presently used for the storage of irrigation water for use within the District.

3. Provide a brief description of your organization below **(Continued)**

As an irrigation district formed under the laws of the State of Colorado, the District meets the eligibility requirements of Senate Bill 06-179 for grant or loan funding. The District is not subject to the limitations of the Tabor Amendment. In Campbell v. Orchard Mesa Irrigation District, 972 P.2d 1037 (Colo. 1998), the Colorado Supreme Court held that an irrigation district is not a local government within the meaning of Amendment I's (Tabor Amendment) taxing and spending election requirements. While the irrigation district at issue in the Orchard Mesa case was formed under the Irrigation District Laws of 1921(C.R.S. '37-41-101 et seq., see 972 P.2d. at 1038, n.2), the Court's analysis is equally applicable to irrigation districts, such as the San Luis Valley Irrigation District, that were created and operate under the Irrigation District Act of 1905.

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Part B. - Description of the Water Activity – Please Refer to Criteria and Guidance Document for Eligibly Criteria

1. Name of water activity/project:

Rio Grande Reservoir Multi-Use Rehabilitation: Refinement and Enhancement of Reservoir Reoperation and Optimization Model

2. What is the purpose of this grant application? Check one.

[ ] Environmental compliance and feasibility study

[ ] Technical assistance regarding permitting, feasibility studies, and environmental compliance

[ ] Studies or analysis of structural, nonstructural, consumptive, nonconsumptive water needs, projects, or activities (Please specify)

[x] Structural and/or nonstructural water project or activity

The purpose of this grant application is to fund the enhancement and refinement of the Reservoir Reoperation and Optimization model that was developed as part of the Phase 2 study of the rehabilitation and utilization of Rio Grande Reservoir for multi-use purposes. The District is finalizing its report from Phase 2 of the preliminary study. A copy of the draft final report has been circulated and is available on the Rio Grande Water Conservation District's website. As part of the Phase 2 study, the District developed a model that provides the ability to analyze potential storage and releases from a rehabilitated Rio Grande Reservoir for various multi-use purposes. The model is designed to allow the user to allocate a portion of Reservoir storage to a particular use, for example Rio Grande Compact (Compact) Storage, and then to analyze a variety of release patterns from that storage account to determine the effect of those various release patterns on streamflows. The model was presented and preliminarily reviewed by the Division Engineer for Water Division No. 3, the President of the Rio Grande Water Users Association, various environmental interests including Trout Unlimited, The Nature Conservancy, and the Rio Grande Wetlands Initiative, and at the August Basin Roundtable meeting. The feedback from those meetings and potential stakeholders was that further refinement and enhancement of the model would assist all water interests in the Basin in evaluating the potential impacts and benefits of changes in storage and release patterns from the Reservoir. The work proposed here includes working with and providing assistance to various entities interested in utilizing storage at the Reservoir and making necessary enhancements to the model to provide specific results to those entities. Efforts would also be made to work with entities not directly utilizing storage in the Reservoir, but have an interest in environmental effects of the storage and release patterns on streamflows.

3. Please provide an overview of water project or activity to be funded including – type of activity, statement of what the activity is intended to accomplish, the need for the activity, the problems and opportunities to be addressed, expectations of the participants, why the activity is important, the service area or geographic location, and any relevant issues etc. Please include any relevant Tabor issues. Please refer to Part 2 of criteria and guidance document for additional detail on information to include. Attach additional sheets as needed.

As noted above, the District is finalizing its report analyzing the possible rehabilitation or enlargement of Rio Grande Reservoir and the potential benefits such a rehabilitation or enlargement will provide. This report will be completed shortly and will be provided to the CWCB. It will discuss the analysis of rehabilitating and/or raising the height of the dam and the collaborative and cooperative ways in which water stored in an enlarged Reservoir can be re-regulated and delivered at a time and in a way to better meet instream, fish flow and river habitat needs.

Located on the headwaters of the Rio Grande River, the Reservoir provides a unique on-stream, pre-Compact facility available to better manage Colorado's share of the River for the benefit of the State, the San Luis Valley and the River corridor. Additional storage will provide the State of Colorado with an invaluable tool to store and better manage delivery of the water it is obligated under the Rio Grande Compact to deliver to the Colorado-New Mexico border. It will help to assure that Colorado retains for use in Colorado all its annual share of water available under the Compact. Re-regulation of deliveries under the Compact will also help to address instream flow needs for fish and river habitat and potentially decrease stream losses en route to the state line. It will also help to reduce the wide fluctuations in the curtailments presently imposed on irrigators to meet Colorado's Compact obligations. The intent is to provide irrigators with a more consistent water supply during the irrigation season while assuring that Colorado has stored water that may be needed to meet any remaining Compact obligation after the irrigation season ends.

Based on analysis results during the course of the study, the District's board has decided to proceed with the rehabilitation only, with the option to enlarge at a later date. The District understands that it may decrease its storage in the Reservoir to accommodate storage needs that provide multiple benefits to several entities and to recreational and environmental needs. Allowing other entities additional storage space in the Reservoir will lead to higher water levels that remain elevated for longer periods of time than has historically occurred (e.g. annual carryover will likely increase). Seepage at the reservoir increases significantly at higher reservoir stage and must be drastically reduced for both a dam safety and functionality standpoint. Increased storage by multiple users will create the need for increased outlet capacity, control, and flexibility. Rehabilitation of the dam will fulfill these requirements to provide for a safe and fully functional Reservoir at all water elevations and during extreme precipitation events for the next 100+ years.

During Phase 2, the District developed a Reservoir Reoperation and Optimization Model (Model). As noted above, there was feedback from the stakeholders in the Basin that the Model should be enhanced and refined through consultation with those stakeholders to allow each to better determine both the potential benefits of reregulating the delivery of water through a rehabilitated Rio Grande Reservoir, which are described above, and the storage and release scenarios that will best achieve those benefits. The District is seeking Rio Grande Basin Funds for the refinement and enhancement of its Model to accomplish these purposes by providing stakeholders the opportunity to better evaluate and provide input on how their needs can best be met. The process for refining and enhancing the Model will include:

1. Conduct stakeholder workshops with various water user and stakeholder groups to assist in running the model, refine inputs, and elicit suggestions for enhancements into the model including:

a. Division 3 Engineer staff to refine water rights data, historic curtailments, and stream gains and losses from the Del Norte Gage to the State line. Additional modeling and analysis of Compact storage and release patterns to better meet Compact delivery obligations, water user needs including reduced curtailments, and enhanced stream flows and riparian habitat to the State line.

3. Please provide an overview of water project or activity to be funded including – type of activity, statement of what the activity is intended to accomplish, the need for the activity, the problems and opportunities to be addressed, expectations of the participants, why the activity is important, the service area or geographic location, and any relevant issues etc. **(Continued)**

b. Rio Grande Water Users and Rio Grande Water Conservation District—refinement of water rights data, historic curtailments, stream gains and losses from the Del Norte Gage to the State line, utilization of direct flow storage and storage for groundwater management subdistricts.

c. Colorado Division of Wildlife -- utilize Model to assist in determining its water storage needs and the best use of that stored water to meet the Division's water needs and the needs of fish, wildlife and their habitat throughout the Basin.

d. San Luis Valley Water Conservancy District – utilize Model to assist the District in its storage needs analysis and to provide release patterns that can meet the District's obligations while enhancing stream flows during low flow periods.

e. Environmental Interests including Trout Unlimited, The Nature Conservancy, U.S. Forest Service, and San Luis Valley Wetlands Initiative – determination of optimum environmental release and flow patterns from the Reservoir consistent with legal rights to which the stored water is obligated, and further refinement of quantification methods included in the Model.

2. Probable Modeling Enhancements:

a. Simplified representation of water rights and deliveries (aggregation of water rights senior to No. 216A, which is a general differentiator between senior and junior rights)

b. Inclusion of potential curtailment calculations given available Compact storage in Rio Grande Reservoir, including stream flow forecasts, and its effect on basin water users

c. Dynamically link hydropower analysis to Model

d. Refinement of stream gains and losses

e. Additional environmental flow analysis, potentially using optimization algorithm to best meet environmental flows developed from monthly Model output.

3. Other Related Work: Further hydropower analysis including grant funding potential, low-head turbines, electrical infrastructure concerns and related permitting issues.

4. Please provide a brief narrative of any related or relevant previous studies. Attach additional sheets as needed.

A.) The District, with its consultant CDM, completed the Rio Grande Multi-Use Enlargement Study Report, (Phase 1 Report) which provides a preliminary analysis of the physical and legal feasibility of enlarging the Reservoir and outlines the potential uses of an enlarged Reservoir to address multi-use consumptive and non-consumptive needs. This initial report was completed in July 2007 and was distributed to the Basin Roundtable and the CWCB.

B.) The District, with its consultant CDM, is finalizing the Rio Grande Multi-Use Enlargement Study Report, (Phase 2 Report) which provides further analysis of issues identified in the Phase 1 Report (A.). Physical and legal issues were investigated, including a landslide evaluation, wetlands delineation, slope and seepage analysis, spillway sizing, and legal issues relating to both rehabilitation and enlargement. Preliminary designs were generated for the dam embankment, outlet works and spillway enhancements. The Reservoir reoperation and optimization Model was also developed as part of the Phase 2 work. Comments on the draft Phase 2 feasibility report have been received and the final report is expected to be completed in October, 2008, and will be provided to the CWCB.

C.) Helton & Williamson, 2003, Draft Report – "Water Available to a Potential Rio Grande Reservoir Enlargement" This draft report provided an analysis of the water that would be available for storage and re-regulation in an enlargement of Rio Grande Reservoir. The draft report concluded that there was significant opportunity to store and re-regulate water in an enlarged reservoir for Compact purposes. A copy of the Draft Report was previously submitted to the CWCB.

D.) Memorandum of Understanding for the Operation of Rio Grande Reservoir for Dam Safety Purposes, 1999, A memorandum of understanding between the District and the State to assure safe operation of the outlet works at the Reservoir during periods of high flow. A copy of the Memorandum was previously submitted with prior applications for Statewide funding.

E.) Dam Safety Inspection report by Dennis Miller of the Dam Safety Division of the State Engineer's Office, 2003. This report provides a comprehensive history of the problems with the existing outlet works, including the pounding and surging that occur at certain higher release rates and poor condition of the outlet gates and hydraulic structures within the outlet chamber. A copy of the report is being submitted with this application.

5. Please provide a copy of the proposed scope of work. Please refer to Part 2 of the criteria and guidance document for detailed requirements. Attach additional sheets as needed.

Task 1. Refine Inputs and Modeling Needs for the Reservoir Reoperation and Optimization Model

- Modeling workshop with Division Engineer and representatives of water users, including the Rio Grande Water Users and Rio Grande Water Conservation District, to refine water use data and beneficial Model enhancements including: water rights data, Compact deliveries and flow projections, curtailments, stream gains and losses, direct flow storage utilization, and potential demands from groundwater management subdistricts

- Modeling workshops with potential storage pool holders, including Division Engineer (Compact Storage), Division of Wildlife, and San Luis Valley Water Conservancy District to refine long-term storage needs and water delivery scenarios to best address water use needs and potentially meeting stream flow and riparian demands

- Modeling workshops with environmental group representatives and U.S. Forest Service to refine and determine how to best optimize available flows to better meet fish, riparian and other environmental needs and quantify the benefits of the modeled changes.

Task 1 Cost: $25,000 (Includes travel costs)

Task 2. Enhance Model by Adding:

- Simplified representation of water rights and deliveries
- Curtailment calculations given available Compact storage and streamflow forecasting
- Refined stream gains and loss data
- Inclusion of stream flow forecasts
- Dynamic linkage of hydropower analysis to Model
- More detailed and quantifiable environmental flow analysis
- Other relevant data gathered from Division Engineer, water user organizations, storage participants and land use and environmental interests.

Task 2 Cost: $60,000

Task 3. Address other issues pertaining to hydropower usage including legal issues, permitting, existing power infrastructure evaluation, and investigation into available hydropower technical options.

Task 3 Cost: $15,000
Total Project Cost: $100,000

5. Please provide a copy of the proposed scope of work. Please refer to Part 2 of the criteria and guidance document for detailed requirements. **(Continued)**

Proposed Timeline:

Task and Activity	Expected Completion in Days from Notice to Proceed
Meeting I with water users, pool holders, environmental interests. Assist in running Model, listen to desired functionality, discuss approach, solutions and methods to incorporate desired functionality.	30
Initial modeling enhancements based on Meeting I	60
Meeting II with water users, pool holders, environmental interests to discuss and evaluated enhancements made from Meeting I. Discuss any further refinements	75
Complete modeling enhancements from Meetings I and II	105
Complete hydropower evaluation, including legal, infrastructure and potential funding opportunities	105
Present results to BRT and SLVID board	120

6. List the names and addresses of any technical or legal consultants retained to represent the applicant or to conduct investigations for the water activity/project.

Name	Address/Phone Number
Kelly DiNatale CDM	555 17th Street, Suite 1100 Denver, CO 80202 (303) 383-2300
Tod Smith Whiteing & Smith	1136 Pearl Street, Suite 203 Boulder, CO. 80302 (303) 444-2549

7. Water Availability and Sustainability – this information is needed to assess the viability and effectiveness of the water project or activity. Please provide a description of each water supply source to be utilized for, or the water body to be affected by, the water activity. For water supply sources being utilized, describe its location, yield, extent of development, and water right status. For water bodies being affected, describe its location, extent of development, and the expected effect of the water activity on the water body, in either case, the analysis should take into consideration a reasonable range of hydrologic variation. Attach additional sheets as needed.

Water Availability

The water supply sources affected by this project are the Rio Grand River and transmountain water diverted from the San Juan River Basin into the Rio Grande River Basin. The District stores water in the Rio Grande Reservoir for irrigation purposes under Priority No. 1916-63A (45,833 acre-feet) and Priority No. 1934-2 (5,280 acre-feet). Other water stored in the Reservoir includes the following:

- Transmountain water delivered through the Pine River Weminuche Pass Ditch stored by the San Luis Valley Water Conservancy District under the decrees in Case Nos. 84CW16 and 94CW62 (an average of 262 acre-feet annually). The Conservancy District may also exchange native water to the Reservoir under decrees in Cases 03CW41, 05CW13 and 07CW63 (each of which allows for the exchange of varying amounts of water depending on the supply, the District's augmentation demands, and available exchange opportunity), and the Fun Valley decree in Case No. 96CW6 (15 acre-feet).
- Transmountain Water stored in the Reservoir by the Division of Wildlife pursuant to an agreement between the District and the Division. That water is presently used by the Division to maintain a small conservation pool in the Reservoir and for subsequent delivery to other Division facilities in the Basin.
- The District and the Rio Grande Canal Water Users Association store water under direct flow storage decrees in Case Nos. W-3979 and 3980, respectively.
- The Commonwealth Irrigation District stores water under a direct flow storage Decree in Case No. 95CW18.
    - *These direct flow storage decrees permit storage of water available under direct flow priorities when flows at Del Norte exceed certain amounts*
- The State stores small amounts of water for use to meet Compact obligations pursuant to an agreement entered in the late 1980s with the District and the Rio Grande Water Users Association.

The enhancement and refinement of the Model will not affect water availability.

Sustainability

An enhanced and refined Model will allow all participants in the Reservoir rehabilitation project to accurately evaluate a full range of options for storage of additional Compact water, transmountain water, recreational or conservation pool, and additional water under direct flow storage decrees. Storage of Compact water will help in assuring that Colorado's full entitlement is available to water users each year. The delivery of Colorado's full entitlement will help sustain flows in the Rio Grande River and will enhance deliveries to the area covered by Groundwater Subdistrict No. 1 and assist and supplement the efforts of the other Groundwater Subdistricts in recovering and sustaining the unconfined aquifer. The opportunity to store additional transmountain water will assist in sustaining and enhancing a conservation pool in the Reservoir and at other recreational and wildlife habitat facilities throughout the Basin. It will also help to meet the increasing domestic and commercial water needs in the Rio Grande Basin by providing augmentation water to protect the River's flow against increased depletions. The Model will also provide detailed analysis and the ability to compare various scenarios re-regulating flows from the Reservoir in ways that will best address

8. If you have not specifically and fully addressed the Evaluation Criteria found in Part 3 of the criteria and guidance document please provide additional detail here. Attach additional sheet(s) if needed.

This project addresses the Evaluation Criteria in the following ways:

1. Promoting Collaboration and Cooperation

The re-regulation of water stored in a rehabilitated Rio Grande Reservoir will promote collaboration and cooperation among the water users in the Rio Grande Basin by:

- Providing the State with increased storage to better time the deliveries of water to meet Colorado's obligations under the Rio Grande Compact while assuring that Colorado optimizes the use of its entire annual entitlement.
- Providing for the re-regulation of flows to better meet non-consumptive needs in the Basin including winter fish flows, instream flows for riparian habitat, recreational needs and River restoration.
- Providing a permanent reservoir conservation pool at the Reservoir and better management opportunities for the State's Division of Wildlife.
- Providing increased storage for transmountain water used to meet the increasing demand for augmentation water for domestic and commercial growth in the Basin, thus minimizing the need for agricultural dry-up and transfer of consumptive use for augmentation of domestic and commercial depletions.

The development, refinement and enhancement of the Model promotes, in itself, collaboration and cooperation between all water interests in the Basin including the Division Engineer, water users, land use, and environmental interests. Each of those interests will have direct and specific input into the Model's components providing a common tool for determining potential rehabilitated reservoir operating scenarios that will achieve the greatest benefits for all water interests in the Basin.

2. **Facilitating Water Activity Implementation**

Rio Grande Reservoir is the only on-stream reservoir on the Rio Grande mainstem in Colorado. Its location on the headwaters of the Rio Grande River provides a unique opportunity to address multiple water use demands throughout the Basin including providing additional assurances that Colorado will be able to utilize its full annual entitlement of water from the River under the Rio Grande Compact.

The San Luis Valley has suffered extraordinary losses of available water supply in the past ten years. Drought has been a major factor, as well as an increase in the amount of irrigated land being put into production. Agriculture in the Valley provides two to three times the return per acre of other agricultural basins on the east slope (James Pritchett and Jenny Thorvaldson, Agricultural and Resource Economics, Colorado State University, presentation to Arkansas River Basin Roundtable, May 10, 2006.) At the same time the demand has and continues to increase significantly for water for non-irrigation purposes including non-consumptive in stream uses for fisheries, and potentially in stream flows for riparian habitat and recreational uses. In addition, there has been a marked increase in domestic and non-agricultural commercial development in the Basin. The reoperation and reallocation of storage to address these needs, primarily through assuring that Colorado retains its full annual entitlement under the Compact and re-regulating water deliveries to meet multiple uses is essential and must be implemented as quickly as possible. This together with the creation of groundwater subdistricts and other water conservation measures will help to assure that the San Luis Valley remains a highly productive agrictultural region of Colorado while meeting its ever-increasing needs for water for non-consumptive uses and development of a more economically diverse economy.

8. If you have not specifically and fully addressed the Evaluation Criteria found in Part 3 of the criteria and guidance document please provide additional detail here. **(Continued)**

The Model will provide an essential and shared tool by which all interests can collaborate and determine how a rehabilitated reservoir can be operated to meet the legal, historical and changing demands in the Basin.

Rio Grande Reservoir is owned by the District and has historically been used for the primary benefit of its landowners. The Reservoir also has served the needs of the State and other water users. While the State has provided funding for emergency reservoir repairs during the 1980s and early 1990s, the majority of the costs to construct, operate, maintain and repair the Reservoir have been borne by the District's landowners, including the repayment of significant loans from the Colorado Water Conservation Board for those prior repairs. The District's landowners presently pay the highest assessments of any water user organization in the San Luis Valley. In addition, those landowners will soon be paying additional substantial assessments for the groundwater subdistrict recently created by the Rio Grande Water Conservation District to address the continual depletion of the unconfined aquifer in the San Luis Valley. Again, the sub-district assessments paid by the District's landowners will be among the highest.

Therefore, it is beyond the present capability of the District and its landowners to incur additional costs to fund the Reservoir reoperation and optimization modeling enhancements. As the District's Phase I and Phase II feasibility and preliminary design Reports confirm, additional storage will not directly benefit the District or its landowners but will address supply and management issues of benefit to all water users in the Basin for both consumptive and non-consumptive water demands. While matching funds are not available to the District for Model enhancements, the District has and will continue to seek funding for other sources for any subsequent analysis, including final design. Federal funding has been investigated, but substantial funds from the federal government trigger a NEPA process, with associated costs that can easily run up to several million dollars. Therefore, federal funding is not sought for the modeling work.

3. **Meeting Water Management Goals and Objectives and Identified Water Needs** –

Enhancement and refinement of the Model will provide essential information for water users and environmental interests to evaluate the benefits of rehabilitating the Reservoir. All interested parties will have the opportunity to address their concerns and request enhancements. Developing a common modeling tool used by all parties increases the likelihood of consensus among parties of differing interests. The preliminary design report completed the analysis of the potential rehabilitation and enlargement of the Reservoir and of the various needs, both consumptive and non-consumptive, that may be better met through the re-regulation of stored water. The enlargement of Rio Grande Reservoir and the re-regulation of deliveries from storage meet several of the management objectives identified in the Statewide Water Supply Initiative (SWSI) as well as the Rio Grande Basin Roundtable's water assessment needs, including:

- Assisting the State in administration of water under the Rio Grande Compact to better assure Colorado's full use of its entitlement each and every year.

8. If you have not specifically and fully addressed the Evaluation Criteria found in Part 3 of the criteria and guidance document please provide additional detail here. **(Continued)**

- Assisting in addressing regional water supply problems including, for example, the increasing demand for augmentation water for domestic and commercial development, the loss of agricultural lands due to changes in use of surface water rights and the depletion of groundwater sources, the ability to store and utilize all water available to Colorado's pre-Compact reservoirs, the need for recreational flows, fish flows and riparian enhancement and protection, the need for water for development below the River's headwaters and above the CWCB's in stream flow reaches and potential recreational corridor in stream flow diversions.

- Assisting in the conservation and protection of fish in the River's main stem, particularly in the River's upper reaches above South Fork, Colorado.

- Assisting in the presently on-going and future River restoration projects and floodplain management.

- Assisting the Division of Wildlife in the development of a larger conservation pool in the Reservoir as well as enhanced opportunities to store and exchange water for fish and wildlife habitat.

- The rehabilitation of Rio Grande Reservoir and the re-regulation of deliveries from storage will promote the full optimization of Colorado's annual entitlement and cooperative water management, facilitating conservation and efficient use of that supply to meet multiple uses.

- Rio Grande Reservoir is the only existing Reservoir located on the main stem of the Rio Grande River in Colorado.

On the following page is a table showing how the benefits of rehabilitating Rio Grande Reservoir correspond to the SWSI objectives. The Model will allow all interested parties to work together to determine reoperation scenarios that will best address all of these needs while meeting all legal obligations

4. **The Water Activity Addresses Issues of Statewide Value**

Of foremost importance, the rehabilitation of Rio Grande Reservoir and the re-regulation of the delivery of water to meet Colorado's obligations under the Rio Grande Compact, will help ensure that the State obtains, preserves and optimizes the full amount of water annually available to Colorado under the Compact.

Rehabilitation of Rio Grande Reservoir and the re-regulation of deliveries from storage will assist in meeting instream flow, fish habitat, riparian and recreational needs throughout the River corridor in Colorado. Re-regulation in deliveries as well as the opportunity to store additional transmountain water will provide help to sustain agricultural production in the area of the State that has the greatest economic return per acre. Again, the Model will provide an essential tool in determining the best way to re-operate a rehabilitated reservoir to best meet these needs.

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Benefits of Rehabilitation or Enlargement

Enlargement Benefits	SWSI Objectives								
	Sustainably Meet M&I Demands	Sustainably Meet Agricultural Demands	Optimize Existing and Future Water Supplies	Enhance Recreational Opportunities	Provide for Environmental Enhancement	Promote Cost Effectiveness	Protect Cultural Values	Provide for Operational Flexibility	Comply with All Applicable Laws, Regulations, and Water Rights
Provide flexibility to store water used for Compact administration	✓	✓	✓			✓		✓	✓
Reduce fluctuations in curtailments	✓	✓	✓			✓		✓	✓
Deliver water at periods of low-flow reducing conveyance losses	✓	✓	✓			✓	✓	✓	✓
Deliver water later in season following more definite annual flow projections	✓	✓	✓			✓		✓	✓
Storage of credit water upstream with reduced evaporation charges	✓	✓	✓			✓		✓	✓
Storage of additional transmountain water	✓	✓	✓			✓	✓	✓	✓
Meet rapidly growing demand for augmentation water	✓	✓	✓				✓		✓
Preserve existing agricultural lands		✓	✓				✓		✓

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Benefits of Rehabilitation or Enlargement

Enlargement Benefits	SWSI Objectives								
	Sustainably Meet M&I Demands	Sustainably Meet Agricultural Demands	Optimize Existing and Future Water Supplies	Enhance Recreational Opportunities	Provide for Environmental Enhancement	Promote Cost Effectiveness	Protect Cultural Values	Provide for Operational Flexibility	Comply with All Applicable Laws, Regulations, and Water Rights
Storage and release of water for environmental and riparian enhancements				✓	✓		✓	✓	✓
Re-regulation of flows for recreational purposes				✓	✓	✓	✓	✓	✓
Permanent conservation pool				✓	✓		✓		✓

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9. Additional Information – If you feel you would like to add any additional pertinent information please feel free to do so here. Attach additional sheets as needed.

No Basin Roundtable funds have been utilized in the first two phase of the study of the potential rehabilitation of Rio Grande Reservoir. The proposed enhancement and refinement of the Reservoir Reoperation and Optimization Model is in response to the opinions and requests of many water interests and stakeholders in the Rio Grande Basin that such enhancements and refinements would be extremely useful to all interested parties in the evaluation of the effects and potential benefits of rehabilitating and reoperation Rio Grande Reservoir. Due to this response, and the fact that this project has to this point not received any basin account funding, it seems appropriate to fund this segment of the project with Basin funds.

The above statements are true to the best of my knowledge:

Signature of Applicant:

Print Applicant's Name: Randall Palmgren, President
Project Title: Rio Grande Reservoir Multi-Use Rehabilitation: Refinement and Enhancement of Reservoir Reoperation and Optimization Model

Return this application to:

Mr. Rick Brown
Intrastate Water Management and Development Section
COLORADO WATER CONSERVATION BOARD
1580 Logan Street, Suite 600
Denver, CO 80203

To submit applications by Email, send to: rick.brown@state.co.us To submit applications by Fax, send to: (303) 894-2578

The following information is available via the Internet. The reference information provides additional detail and background information regarding these criteria and guidelines and water policy issues affecting our state.

Colorado Water Conservation Board Policies

Loan and Grant policies and information are available at - http://cwcb.state.co.us/Finance/

Water Supply Reserve Account Criteria and Guidelines –
http://cwcb.state.co.us/IWMD/tools.htm#Water_Supply_Reserve_Account

Interbasin Compact Committee and Basin Roundtables

Interbasin Compact Committee By-laws and Charter –
http://dnr.state.co.us/Home/ColoradoWaterforthe21stCentury/Interbasin+Compact+Committee/IbccHomePage.htm

Basin Roundtable By-laws –
http://dnr.state.co.us/Home/ColoradoWaterforthe21stCentury/IbccHome.htm

Legislation

House Bill 05-1177 - Also known as the Water for the 21st Century Act –
http://cwcb.state.co.us/IWMD/statutes.htm

House Bill 06-1400 – Adopted the Interbasin Compact Committee Charter –
http://cwcb.state.co.us/IWMD/statutes.htm

Senate Bill 06-179 – Created the Water Supply Reserve Account –
http://cwcb.state.co.us/IWMD/statutes.htm

Statewide Water Supply Initiative

General Information - http://cwcb.state.co.us/IWMD/

Phase 1 Report - http://cwcb.state.co.us/IWMD/PhaseIReport.htm