STATE OF COLORADO

Colorado Water Conservation Board
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TO: Colorado Water Conservation Board Members

FROM: Tim Feehan, P. E., Assistant Director
Steve Biondo, Finance Manager

DATE: March 9, 2012

SUBJECT: **Agenda Item 38, March 20 - 21, 2012, Board Meeting**
Finance Section - Severance Tax Trust Fund Operational Account
Approval of Project Recommendations

Introduction

The Colorado Water Conservation Board (CWCB) is entitled to an amount up to a 5% share of the Operational Account of the Severance Tax Trust Fund. In January 2012, CWCB received internal requests and outside applications for funding that becomes available from the Operational Account in July 2012 via the Long Bill enacted by the General Assembly. CWCB Staff reviews the applications and then recommends to the Board the projects that should receive funding. We expect to receive $1,275,500 in funding; however, should that amount be changed, the project funding will also need to be revised. The projects recommended by CWCB Staff are provided on the following pages with the summary as Attachment A to this memo.

Recommendation

Staff recommends that the Board approve the proposed funding for each of the projects from the Operational Account of the Severance Tax Trust Fund as summarized as Attachment A to this memo; presentations of these projects were provided in a workshop prior to the Board Meeting.

Background

After July 1995, one-half of the severance tax receipts credited to the Department of Natural Resources (DNR), for the Severance Tax Trust Fund are provided to the Operational Account of the Severance Tax Trust Fund. The programs supported by the Operational Account must promote natural resource planning, management, and development related to minerals, energy, geology, and water.

The General Assembly *may* appropriate funds to the following agencies from the total amount of money in the Operational Account as follows:

Colorado Oil and Gas Conservation Commission	40%
Colorado Geological Survey	20%
Division of Reclamation, Mining and Safety	25%
Colorado Water Conservation Board	5%
Division of Wildlife	5%
Division of Parks and Outdoor Recreation	5%

CWCB provides a funding request to the DNR Executive Director for inclusion in the DNR's annual budget request for appropriation in the Long Bill. This request has been held at $1,275,500 in recent years. CWCB has made a change to its application process in Fiscal Year 2011 – 2012 so that internal requests and outside applications can be reviewed in January with funding available in July of the same year. To accommodate same year funding, the $2.1 M in requests received in January 2011 were held over and combined with the $0.4 M in requests received in January 2012, for a total funding request of $2.5 M.

Attachment A to this memo summarizes the recommended Severance Tax Trust Fund Operational Account projects for funding proposed to the Board.

Attachment B to this memo summarizes the Severance Tax Trust Fund Operational Account requests that were not recommended for funding.

Attachment C to this memo summarizes the Severance Tax Trust Fund Operational Account Spending Update for Fiscal Year 2011 – 2012.

Attachment D to this memo details the Severance Tax Distribution Process.

Following are details of the recommended projects for funding in Fiscal Year 2012 – 2013 from the Severance Tax Trust Fund Operational Account:

Interstate & Federal

1. Title of Project: Work related to Recreational projects
   Amount of Request: $80,000
   Project Manager(s): Ted Kowalski

Description of Project: The Staff has typically requested funds each year to either: 1) fund work associated with the litigation of RICDs; or 2) fund projects that have benefits to recreational interests. In the next fiscal year, the CWCB is expecting to receive requests from both Pitkin County and Grand County to assist in the design or construction of their proposed whitewater courses. Products may include: 1) finalization of design drawings for these communities to move toward building a Recreational In-Channel Diversion (RICD) and/or, 2) construction of RICD structures.

Purpose: These funds will help assist mountain communities with their economies by increasing tourism, recreation-based tourism in particular. Wild and scenic rivers and RICD water rights, and the structures themselves, affect water planning in many important ways. The statutes and CWCB's policies on recreational use of water and on RICD's demonstrate a need to ensure compliance by local communities and to help protect Colorado's compact entitlements and to assure maximum utilization of Colorado's water resources. To the extent that recreational uses of water and RICD structures are designed and constructed in a manner that promotes maximum utilization of Colorado's water resources and that allows Colorado to fully use its compact entitlements, then CWCB's missions are being fulfilled.

2. Title of Project: Arkansas River Mainstem Transit Loss Model Modifications
   Amount of Request: $25,000
   Project Manager(s): Steve Miller

Description of Project: Application coordinated with the Division 2 Engineer of the Division of Water Resources (DWR) and submitted January 2011 requesting funding to develop data input tools and procedures for transit loss models previously created with CWCB funding. The current model cannot be utilized in real time mode because manual data input is too cumbersome. This project would refine and harmonize the models resulting from two recent studies conducted in the Arkansas Basin between Pueblo and the Kansas Stateline near Holly:

1. Transit Losses and Travel Times of Reservoir Releases along the Arkansas River from John Martin Reservoir to the Colorado-Kansas Stateline; Livingston Professional Services, LLC; February 2008.
2. Transit Losses and Travel Times of Reservoir Releases along the Arkansas River from Pueblo Reservoir to John Martin Reservoir; Livingston Professional Services, LLC; February 2011.

In addition, an automated data entry/archiver routine/interface will be developed for the harmonized model, improving and simplifying its use as a water rights administration tool. A detailed scope of work for this effort will be developed in consultation with Livingston Professional

Services, DWR Division 2 and local water users as the models are implemented, further tested, and used in a predictive or planning mode.

Purpose: Improve administration of water deliveries, particularly reservoir releases on the Arkansas mainstem between Pueblo Reservoir and the Stateline. There is potential to remove sources of controversy between Colorado water users and also with the State of Kansas.

3. Title of Project: Recent Trends in Dust Deposition to Snowpack in the Rocky Mountains
   Amount of Request: $50,000
   Project Manager(s): Michelle Garrison

Description of Project: This project will provide information related to the effects of windblown dust deposition on snowpack, including albedo and snowmelt timing, within the Rocky Mountain Region.

Purpose: Evaluate the effects of dust deposition on snowpack in the Rocky Mountain Region. Collect one season of snow samples at up to 57 sites in the Rocky Mountains and examine dust deposition and snow chemistry. Use the relationship between dust deposition and snow chemistry to estimate dust deposition from 1992 - present using snow chemistry samples previously collected. Examine relationship between assumed dust deposition and snowmelt timing for 1992 – present.

4. Title of Project: Prowers Conservation District Study of Pond Loss on Water Short Canals and Lower Arkansas Valley Demonstration Recharge Pond
   Amount of Request: $60,000
   Project Manager(s): Steve Miller / Todd Doherty

Description of Project: This project will consist of the reorganization and completion of an ongoing effort to collect data related to sprinkler pumping pond losses for use in the ISAM model which is the administrative tool for evaluating compliance with the State Engineer's surface water irrigation improvement rules. The Lower Arkansas Valley Water Conservancy District (LAVWCD) will assume leadership on a redesigned study and coordinate with the Prowers Conservation District and local water users to provide reliable information on actual pond losses under a variety of circumstances for review and potential use by the DWR Division 2 Engineer.

Purpose: To obtain accurate actual values of seepage from ponds used for sprinkler pump intakes, which can be used in the ISAM model during administration of the DWR Division 2 Surface Water Irrigation Improvement Rules. Pond owners receive a credit for seepage in determining their depletion obligations under the Rules. More accurate values will assure protection of senior rights while also avoiding over deliveries of expensive replacement waters. Information on actual seepage loss rates from these existing ponds will also serve as the first phase of a more in-depth study of the potential for using recharge ponds in the Arkansas Valley to meet a variety of augmentation and replacement water needs without exclusive reliance on expensive and difficult to obtain stored water supplies.

Later phases of this program (with funding to be obtained from other sources, potentially including the CWCB Construction Fund and/or the Water Supply Reserve Account programs) will include the construction of a demonstration recharge pond. The water that seeps out of the demonstration pond into the underlying aquifer and returns to the river can be credited against

replacement flow requirements under the Irrigation Improvement Rules or return flow requirements of projects such as the Super Ditch. In addition, water may be able to be released directly from the pond and returned to the tributary, again to be credited as replacement flow or return flow. The Service Area for this recharge pond demonstration project will likely be the irrigated lands under the Fort Lyon Canal below John Martin Reservoir, with the exact site and operational parameters to be developed during the pond loss study phase.

5. Title of Project: South Park Mineral Development Assessment
   Amount of Request: $75,000
   Project Manager(s): Andy Moore

Description of Project: This project will provide Park County and other stakeholders with much needed data through monitoring, modeling, and mapping of critical resources in South Park. This work will be used to assess the risks and prescribe protective strategies and best management practices related to the emerging development of oil and gas and uranium resources in Park County.

Purpose: To collect environmental data and establish baseline conditions through field monitoring, geologic and groundwater modeling, and mapping.

6. Title of Project: County Groundwater Resources Series
   Amount of Request: $52,000
   Project Manager(s): Andy Moore

Description of Project: Patterned after county-wide groundwater resource series produced in the 1960s through mid-1970s, this new effort is intended to address counties omitted from the earlier series where development pressures are straining current water resources. It will support existing decision support and monitoring systems. This endeavor will generate publications tailored to inform the public, planners, and policy-makers about local geology and groundwater resources at the county level. This initial publication will address all aquifers utilized in Douglas County, including alluvial, sedimentary, and crystalline formations.

Purpose: To provide information about geology and groundwater resources at the county level for the public, planners, and policy-makers.

Finance

7. Title of Project: Document Management
   Amount of Request: $9,000
   Project Manager(s): Tim Feehan

Description of Project: To provide temporary support for Laserfiche documentation assistance to CWCB programs.

Purpose: CWCB is involved in a wide variety of water issues throughout the State. These various efforts generate a significant amount of documentation, studies, and correspondence that need to be properly managed and stored, which is currently handled by the use of Laserfiche (imaging). The requested funding will assist CWCB in managing its imaging requirements.

8. Title of Project: Extreme Precipitation Analysis Tool Software Verification Project
   Amount of Request: $100,000
   Project Manager(s): Anna Mauss

Description of Project: The software was developed by HDR Consultants under contract with DWR, in order to develop modern meteorological techniques for evaluating the safe spillway size for High and Significant Hazard dams. The Dam Safety Branch staff feels that the program requires more thorough testing and technical software documentation to assure its accuracy and effectiveness.

Purpose: This project will help DWR and in turn be a valuable tool for the CWCB Water Project Loan Program users.

9. Title of Project: Bull Creek Reservoir #4 Wetlands Study
   Amount of Request: $16,750
   Project Manager(s): Kirk Russell

Description of Project: As a result of a Corp of Engineers Permit Stipulation during the approval for construction of a #4 Reservoir Dam, Bull Creek must monitor the effects of a periodic inundation of wetlands and fens associated within the reservoir basin for 3 years. This funding request is to perform the 2012 monitoring work. This information can and will be used to develop future requirements for water development on the Grand Mesa.

Purpose: This information will be beneficial to CWCB Loan Program borrowers with permitting water projects on the Grand Mesa.

Stream & Lake Protection

10. Title of Project: Case Management and Litigation Support
    Amount of Request: $50,000
    Project Manager(s): Kaylea White

Description of Project: Retain a part-time paralegal to assist the Section with Instream Flow (ISF) case management, including organizing and imaging case files, tracking court deadlines, prioritizing case review, and drafting pleadings, memos, correspondence and other documents as appropriate.

Purpose: To enable the CWCB staff to resolve or litigate water court cases more efficiently and effectively, reducing costs for all involved parties and enabling water users to obtain decrees for their proposed uses.

11. Title of Project: Potential Effects of Future Water Development on Streamflow and Sediment Transport in the Lower Yampa River, Phase 2
    Amount of Request: $60,000
    Project Manager(s): Jeff Baessler

Description of Project: This study will utilize the data collected in Phase 1 (initiated in 2011) and the USGS iRIC two-dimensional computational streamflow-hydraulics and sediment-transport model to calibrate 14 specific streamflow models that represent typical streamflow conditions within the reach (a range from 200 to 26,700 cubic feet per second). For example, base flow conditions will be modeled at flows of: 200; 500; 750; 1,000; and 1,500 cubic feet per second. Results of this study will be published in a peer-reviewed paper to document (1) data collection and analysis techniques; (2) iRIC flow-scenario calibration and sensitivity analysis; and (3) example applications of streamflow model use, such as a comparison of water years 2002 and 2011 peak-flow conditions.

The results of this study will provide a basis for prudent water resource planning and compact development in the Yampa River Basin. It is anticipated that future water development within the basin will result in NEPA compliance and further analysis of the effects of sediment transport on species. It is likely that the USFWS will revisit the Programmatic Biological Opinion for the endangered species as a result of any future proposed projects. This study will provide unbiased analysis tools that can be used by all stakeholders to model potential effects on sediment transport.

Purpose: This study will utilize sediment data collected from Phase I and a USGS hydraulics and sediment transport model to provide a basis for future independent analyses by other stakeholders to aid in water resource feasibility and planning efforts.

12. Title of Project: Instream Flow Program Outreach and Education
    Amount of Request: $15,000
    Project Manager(s): Jeff Baessler

Description of Project: This project is directed at increasing public awareness of new instream flow appropriations and acquisitions, and the Board's processes for both program areas. As the Basin Roundtables work to meet their identified non-consumptive needs, CWCB staff will need to conduct additional outreach and education activities and increase collaboration and coordination between various stakeholders. This project will involve the development and distribution of educational and marketing material in both electronic and paper form, and will cover the cost of providing advance public notice of meetings in various communities throughout the state. Furthermore, the project will provide a funding mechanism to aid staff in the increase in travel activities that will be necessary for these efforts.

Purpose: To support Instream Flow Program outreach and education related to providing increased public notice, collaboration and coordination for ISF new appropriations and acquisitions. This includes a new effort to encourage Basin Roundtable participation in the Program as one way to meet nonconsumptive basin needs.

13. Title of Project: Dolores River – Assessing the Movement of Native Fishes Relative to Temperature and Flow
    Amount of Request: $60,000
    Project Manager(s): Linda Bassi

Description of Project: The project will monitor the status of sensitive native fish species (covered by the Three Species Agreement) on the Dolores River below McPhee Reservoir

for response to efforts to improve their status in accordance with opportunities identified by an independent panel of experts in the "A Way Forward" report. This project is part of the Dolores River Implementation Team's development of an inter-agency management plan designed to recover native fisheries while accommodating the diverse interests of the water user community.

Purpose: To purchase a Passive Integrated Transponder (PIT) stationary array station that detects native fish as they swim over the antennas. This purchase will provide a vital tool for native fish monitoring for years to come and is a key component of implementing the recommendations in "A Way Forward." The PIT array station will enable Colorado Parks and Wildlife biologists to assess the importance of flow, temperature, and water turbidity relative to the timing and movement of fish in the Dolores River.

Watershed & Flood Protection

14. Title of Project: Flood Mitigation and Project Compliance
    Amount of Request: $75,000
    Project Manager(s): Kevin Houck

Description of Project: The CWCB has identified a substantial need for identification of deficiencies to flood mitigation projects throughout Colorado. Funds from this program will be used to develop solutions to bring these projects back into technical or regulatory compliance. In some cases, some financial assistance may be provided to smaller communities to perform required one-time maintenance activities for regulatory purposes provided that the local governments and other entities benefiting from the project expend as many local resources as available to perform the work. The focus of this work will be to address local requests as well as identification and design of projects that can be implemented or upgraded to reduce the flood risk. The best example of the use of these funds are the current nationwide focus on the condition of levees, which has already impacted some Colorado communities and is expected to impact many more in the coming years. Many of these levees and other flood control/mitigation projects are located in small or impoverished communities throughout the state that are in need of both technical and, in some cases, financial assistance. The CWCB staff is requesting this funding to provide a means of cost-sharing with local entities and other agencies to accomplish the much needed work. Cost-sharing will be emphasized when practicable to leverage these funds.

Purpose: Mitigate flood hazards throughout the state by partnering with local governments in plans, studies, and minor flood projects.

15. Title of Project: Multi-Objective Watershed Restoration Projects
    Amount of Request: $125,000
    Project Manager(s): Chris Sturm

Description of Project: This project will provide funding to allow the CWCB to support four or five multi-objective watershed restoration planning studies or projects, with an emphasis on watershed restoration efforts, in watersheds throughout Colorado. In the past, this program has funded diversion reconstruction designs and construction on the Gunnison River, riparian re-vegetation work on Boulder Creek, watershed planning in the Eagle River watershed, and tamarisk removal in the Dolores River watershed. Multi-objective watershed restoration projects are typically identified from grant applications submitted to other competitive programs administrated by the CWCB Watershed Protection Program.

Purpose: To provide technical and financial assistance to entities performing watershed restoration and/or protection work throughout the state. Emphasis is placed on projects with multiple objectives that leverage funding from other sources.

16. Title of Project: Colorado Dust-on Snow Program (CODOS)
    Amount of Request: $50,000
    Project Manager(s): Joe Busto

Description of Project: The Center for Snow and Avalanche Studies' (CSAS's) CODOS program monitors dust-on-snow conditions on behalf of the Colorado water management community and provides timely and operationally useful snowmelt information to those managers. CODOS is based at CSAS's Senator Beck Basin Study Area at Red Mountain Pass and also monitors dust-on-snow conditions at ten additional sites adjacent to Snotel stations. Over the course of the snowmelt season, the CODOS team conducts successive snowpack profiles at each site, documenting the presence/absence of dust layers and comparing those observations to baseline dust-in-snow data collected at Senator Beck Basin. Data from those site visits, and from Senator Beck Basin, are presented in frequent update products. Imminent or actual dust storm events are announced in CODOS Dust Alerts. These iterative products describe current dust-in-snow conditions, by major watershed, and predict the likely influence of dust-in-snow on near-term snowmelt timing and rates, using National Weather Service mid-range weather forecasts. The effects of dust on measured streamflow behaviors at the Senator Beck Basin stream gauge, and at USGS and DNR gauges throughout the mountains, are also discussed.

Purpose: Dust-on-snow is an increasingly significant factor influencing Colorado snowmelt timing, rates, and perhaps even water yields. Dust and snow system monitoring at CSAS's Senator Beck Basin Study Area (SBB) and CODOS's rigorous dust-on-snow monitoring at ten additional sites provide CWCB/DNR/DWR, and other State agencies with otherwise unavailable snowmelt timing and rate analyses and forecasts for Colorado's major watersheds. CSAS, CODOS, and SBB also support regionally relevant snow hydrology and climate change research.

17. Title of Project: Community Assistance Program
    Amount of Request: $40,000
    Project Manager(s): Jamie Prochno

Description of Project: The Community Assistance Program (CAP) is a product-oriented financial assistance program directly related to the flood loss reduction objectives of the National Flood Insurance Program (NFIP). States and communities that are participating in the NFIP are eligible for this assistance. CAP is intended to identify, prevent, and resolve floodplain management issues in participating communities before they develop into problems requiring enforcement action. In Colorado, the program is based on a 75:25 (federal to non-federal) cost-share basis and has been in existence for over 20 years. This program has been very effective in helping communities to understand and realize the benefits of the NFIP and to assist in making sure that they follow the program guidelines for the highest benefits

Purpose: Provide technical and administrative assistance for communities in the state for administering floodplain regulations and other related issues. Assists communities in adopting updated floodplain management ordinances including the requirements promulgated in the Rules and Regulations for floodplains in Colorado.

Water Supply Planning Program

18. Title of Project: Drought Mitigation and Response Plan Update 2013
    Amount of Request: $75,000
    Project Manager(s): Taryn Hutchins-Cabibi / Veva Deheza

Description of Project: The CWCB's Office of Water Conservation & Drought Planning (OWCDP) comprehensively revised the State of Colorado's Drought Mitigation and Response Plan in 2010. However, pursuant to Federal Emergency Management Agency (FEMA) requirements the plan must be updated every three years; the next revision is due in 2013. Revising the Drought Response and Mitigation Plan is required to maintain Colorado's eligibility for disaster relief funding from FEMA and is part of the state's preparation of the broader Natural Hazard Mitigation Plan. The proposed update will integrate and build upon many of the recommendations from the 2010 plan. This will help reduce the impacts from drought that can be socially, environmentally, and economically devastating. It will also ensure that the state agencies touched by drought work together in a collaborative, effective and efficient manner to respond to and mitigate for drought impacts.

Purpose: Revising the Drought Response and Mitigation Plan is required to maintain Colorado's eligibility for disaster relief funding from the Federal Emergency Management Agency and is part of the state's preparation of the broader Natural Hazard Mitigation Plan. The next revision of the plan is due to CDEM and FEMA in 2013.

19. Title of Project: Conservation and Drought Planning Program Management
    Amount of Request: $25,000
    Project Manager(s): Veva Deheza

Description of Project: The personal services, operating, travel and subsistence, capital, and legal services expenses of administering the office of water conservation and drought planning and the programs and activities authorized by 37-60-124, subsection (2) CRS.

Purpose: Operational expenses as outline in and in accordance with 37-60-124 CRS including activities such as 1) disseminating water conservation, drought mitigation planning, and related information to water providers and the general public; 2) Providing technical assistance to and working with municipal, industrial, agricultural, and other water providers and state agencies as they plan for, evaluate, and implement water conservation plans and programs, drought mitigation plans, or both; 3) Coordination of the planning for and assistance in the implementation of water conservation plans by state agencies pursuant to 37-96-103 CRS; 4) Administration of financial assistance for water conservation and drought mitigation planning and implementation measures and programs; and evaluating water conservation and drought mitigation plans related to the use of such plans by water providers to address water needs and to prepare for water-related emergencies based upon policies and guidelines adopted by the board pursuant to 37-60-126 CRS.

Higher Education Program

20. Title of Project: Investigation of the Effects of Whitewater Parks on Aquatic Resources in Colorado: Year 2
    Amount of Request: $46,000
    Project Manager(s): Ted Kowalski

Description of Project: The CWCB provided initial funding support for *The Investigation of Whitewater Parks on Aquatic Resources in Colorado in FY 11/12*. A report was submitted to the CWCB on August 12th, 2011 that summarized the literature review, development of project objectives and methods, and preliminary data results. For FY12/13, a report describing the results of a PIT tag study and hydraulic measurements will be provided to CWCB. In addition, an analysis of the results discussing the impacts these structures appear to be having will be included. The report will also include practical design recommendations based on the review of literature, field surveys, and analysis.

Purpose: Whitewater Parks (WWPs) have become a popular recreational amenity in cities across the United States with Colorado being the epicenter of WWP design and construction. An improved understanding of the fundamental hydraulic processes and potential environmental effects of WWPs is needed to inform management decisions about Recreational In-Channel Diversions (RICDs). The results of this research will ultimately provide resource agencies including Division of Parks and Wildlife, and WWP designers with criteria for evaluating the effect of existing WWPs and the potential impact of proposed WWPs, as well practical guidance for ensuring passage in new designs.

21. Title of Project: Evaluating the Capabilities of the South Platte Decision Support System (SPDSS) Groundwater Flow Model
    Amount of Request: $50,000
    Project Manager(s): Ray Alvarado / Andy Moore

Description of Project: As part of SPDSS, an alluvial groundwater model has been developed for the basin downstream of Chatfield Reservoir. In this project, model investigations would be used to validate the applicability of the model in assisting in water resources planning and decision making in the South Platte Basin.

Purpose: To perform model runs for various scenarios in order to evaluate the capabilities of the SPDSS alluvial groundwater model.

22. Title of Project: Impacts of Sago Pondweed Control on Water Flow and Canal Efficiency
    Amount of Request: $38,250
    Project Manager(s): Ray Alvarado / Joe Busto

Description of Project: This research will be conducted using two irrigation canals along the Front Range. Both sites have been used for previous sago pondweed research and have consistent infestations that are ideal for this project.

Purpose: Sago pondweed growth and its impact on flow rates, water depth, and evapo-transpiration will be evaluated. Canals will be monitored following herbicide application to determine the rate at which sago pondweed is eliminated from the water column and the impacts of treatment on water flows. The long term goal is to improve efficiency of water delivery systems in Colorado by providing information on sago pondweed's growth rate and effectiveness of herbicide treatment in returning canals to maximum efficiency.

23. Title of Project: CoAgMet Operations and Maintenance
Amount of Request: $50,000
Project Manager(s): Taryn Hutchins-Cabibi

Description of Project: The Colorado Climate Center at Colorado State University operates a statewide network of automated agricultural weather stations called CoAgMet (The Colorado Agricultural Meteorological Network). CoAgMet stations measure temperature, humidity, solar radiation, wind speed and direction, precipitation and soil temperature on both the hourly and daily time step. This is a valuable dataset across the state for dealing with consumptive use calculations as they pertain to water rights transfers, water management for irrigation scheduling and drought monitoring to ensure efficient use of our states' most valuable natural resource. The network also serves many other data needs including disease and pest management and environmental monitoring and renewable energy.

In order for the CoAgMet network to collect quality data for these purposes, annual site maintenance and sensor recalibrations as well as routine data quality assurance and control are all essential. In the past 3 years, annual maintenance has become a priority. Its' cost has been supplemented by support from the Water Supply Reserve Account grants from several of the Basin Roundtables across the state as they are more and more realizing the value of the CoAgMet network to their respective basins. A data rich basin has more opportunity to use physically based methods to calculate consumptive use than a basin with limited data.

Purpose: These data also allow for calculation of reference and crop evapotranspiration which are useful for monitoring drought conditions across the state. Preliminary products were used at the WATF (Water Availability Task Force) meetings in the past year to take a closer look at the extreme drought conditions in the Arkansas basin. Evapotranspiration data are a scarce resource and many stations now have a 20 year data record that allows one to put current conditions into a historic perspective. Current conditions can be compared to extreme drought years like 2002 as well as station averages. Evapotranspiration products allow one to understand what amount of water is simply returning to the atmosphere due to meteorological conditions rather than assuming all precipitation to be "effective precipitation" and contributing to soil moisture storage, which is not always the case.

24. Title of Project: Colorado Household Preferences in Meeting Future Water Challenges
Amount of Request: $48,500
Project Manager(s): Veva Deheza

Description of Project: State-of-the-art survey methods will be employed to conduct a comprehensive investigation of residential Colorado households' water knowledge, preferences for meeting short term scarcity, addressing long term water development challenges and customer's willingness to pay for water initiatives to meet the municipal gap.

Purpose: In the face of increasing water scarcity, decisions must be made about how future demands for water resources will be met. This includes identifying "acceptable" strategies for addressing scarcity during short term droughts and where public investment should be made in water development, infrastructure and mitigation. In particular, water providers seek customer preferences for water initiatives because of an implicit notion that policy decisions should also be consistent with public attitudes and preferences. After all, households are the likely source of funds for water development, firming and relocation. What are the preferences of Colorado households towards the various alternatives for closing the gap? Little has been researched or written on this question.

This study builds off of a recent Colorado Water Institute survey of households in the West (Pritchet et al 2009), that benchmarked the public's view of many Western water issues, and particular attention was focused on households' perceptions of water scarcity, how municipal households view water in agriculture and tradeoffs among alternatives for meeting future water demands. While the previous report is very general in its approach, the current study will focus tightly on Colorado household preferences, specific water initiatives and the context of Colorado prior appropriations, headwaters state facing significant population growth.

[ATTACHMENTS START ON THE FOLLOWING PAGE]

Attachment A

STAFF RECOMMENDED SEVERANCE TAX OPERATONAL ACCOUNT PROJECTS

FOR FUNDING FROM JULY 1, 2012 TO JUNE 30, 2013

ITEM NO.	SPONSOR	PROJECT	AMOUNT
		Interstate & Federal	
1.	CWCB	Work Related to Recreational Projects	$80,000
2.	CWCB	Arkansas River Mainstem Transit Loss Model Modifications	$25,000
3.	USGS	Recent Trends in Dust Deposition to Snowpack in the Rocky Mountains: Influence on Snowmelt Timing	$50,000
4.	PCD / LAVWCD	Prowers Conservation District Study of Pond Loss on Water Short Canals and Lower Arkansas Valley Demonstration Recharge Pond	$60,000
5.	CUSP	South Park Mineral Development Assessment	$75,000
6.	CGS	County Groundwater Resources Series	$52,000
		Finance	
7.	CWCB	Document Management	$9,000
8.	DWR	Extreme Precipitation Analysis Tool Software Verification Project	$100,000
9.	BCRCPC	Bull Creek Reservoir #4 Wetlands Study	$16,750
		Stream & Lake Protection	
10.	CWCB	Case Management and Litigation Support	$50,000
11.	USGS	Potential Effects of Future Water Development on Streamflow and Sediment Transport in the Lower Yampa River, Phase 2	$60,000
12.	CWCB	Instream Flow Program Outreach and Education	$15,000
13.	DWCD	Dolores River - Assessing the Movement of Native Fishes Relative to Temperature and Flow	$60,000
		Watershed & Flood Protection	
14.	CWCB	Flood Mitigation and Project Compliance – Statewide	$75,000
15.	CWCB	Multi-Objective Watershed Protection and Restoration Projects	$125,000
16.	CSAS	Colorado Dust-on-Snow Program	$50,000
17.	CWCB	Community Assistance Program	$40,000

Attachment A (Cont.)

ITEM NO.	SPONSOR	PROJECT	AMOUNT
		Water Supply Planning	
18.	CWCB	State of Colorado Drought Mitigation and Response Plan Update 2013	$75,000
19.	CWCB	Conservation and Drought Planning Program Management	$25,000
		Total for CWCB Program Projects	$1,042,750
		Higher Education	
20.	CSU	Investigation of the Effects of Whitewater Parks on Aquatic Resources in Colorado: Year 2	$46,000
21.	CSU	Modeling the Influence of Current Agricultural Consumptive Water Use on Flow Regimes in the South Platte Decision Support System Groundwater Flow Model	$50,000
22.	CSU	Impacts of Sago Pondweed Control on Water Flow and Canal Efficiency	$38,250
23.	CSU	CoAgMet Operations and Maintenance	$50,000
24.	CSU	Colorado Household Preferences in Meeting Future Water Challenges	$48,500
		Total for Higher Education Program Projects	$232,750
		Total Severance Tax Trust Fund Operational Account Recommendations	$1,275,500

Attachment B

Severance Tax Trust Fund Operational Account Projects Not Recommended

ITEM NO.	SPONSOR	PROJECT	AMOUNT
		Interstate & Federal	
1.	CWCB	Riparian Invasive Species Control, Round 2	$100,000
2.	Tamarisk Coalition	Tamarisk Grant Program Support	$100,000
3.	El Paso County Commissioners	El Paso County Groundwater Quality Study, Phase 2	$60,000
4.	USGS	Geochemical Modeling and Laboratory Testing of Selenium Mobilization Processes	$99,700
5.	USGS	Time-of-Travel Calculations for Streams in Colorado	$94,000
6.	USGS	Geophysical Investigation of Alluvial Aquifers in Selected Parts of the South Platte River Basin	$77,800
7.	USGS	Spatial Analysis and Updates to the SPDSS Groundwater Flow Model	$100,000
		Stream & Lake Protection	
8.	Alamosa River Foundation	Alamosa River Instream Flow Project	$100,000
9.	USGS	Water-Level Fluctuations as a Control on Mercury Concentrations in Selected Colorado Reservoirs	$67,000
		Water Supply Planning	
10.	CWCB	Water Conservation Planning Web Tools	$50,000
		Higher Education	
11.	CSU	Crop Coefficients for Corn Grown in Arkansas Valley	$100,000
12.	CSU	Ecological-Economic Tradeoffs of Wetlands Created by Flood Irrigation Practices in Watersheds	$50,000
13.	CSU	Economic Impacts of the Special Subdistrict #1 Assessment in the San Luis Valley	$41,240

Attachment C

Fiscal Year 2011 – 2012 Severance Tax Trust Fund Operational Account Spending Update

Below is a list of projects and the allocated funds of $1,275,500 for Fiscal Year 2011 – 2012 that will be completed by June 30, 2012. This is an informational only item.

ITEM NO.	PROJECT	AMOUNT
	Interstate & Federal	
1.	Intra-State Water Planning	$10,000
2.	Recreation Project	$75,000
3.	Crop Coefficient for Alfalfa Grown in Arkansas Valley	$75,000
4.	2012 Tamarisk Symposium	$5,000
5.	Tamarisk Re-vegetation Workshops	$15,000
6.	Basin Study	$56,350
7.	Water Tables	$5,000
8.	Groundwater Level Monitoring in Rural Douglas County	$20,000
9.	Irrigated Lands Refresh Project – 2010	$15,000
	Finance	
10.	Rio Grande Cooperative Project	$81,150
11.	Inundation Mapping for Dam Owners (DWR)	$59,500
12.	South Platte Groundwater Data Collection and Instrumentation	$100,000
13.	Principia Mathematica	$37,200
14.	Hydro Investigation San Luis Creek & Rio Grande Plaza Areas	$62,800
	Stream & Lake Protection	
15.	Case Management and Support	$50,000
16.	Native Warm Water Fish in Dolores River Project	$50,000
	Watershed & Flood Protection	
17.	Flood Mitigation and Project Compliance	$75,000
18.	Multi-Objective Watershed Restoration Projects	$100,000
19.	Chatfield Downstream Channel Improvement Project	$115,000
20.	Community Assistance Program	$40,000
	Water Supply Planning	
21.	Drought Planning and Response Implementation	$87,000
22.	Local Water Conservation Resource Tools	$57,000
23.	CoAgMet Communications	$49,500
24.	Economic and Social Impacts Associated with Drought	$35,000
	Total Severance Tax Operational Account Projects for 2011-2012	$1,275,500

Attachment D

Severance Tax Trust Fund Distribution Chart