COLORADO WATER CONSERVATION BOARD
Finance Committee Agenda
8:00 am – 12:30 pm
Tuesday, September 20, 2016
Edwards, Colorado

8:00 **1. Opening Comments**
- ~ Review Agenda
- ~ 2016 Projects Bill
- ~ Past Funds Performance Graphs
- ~ Projections and Budget
- ~ Funds Available for Non-Reimbursable Investments - Policy #13

8:20 **2. Non-Reimbursable Project Investment Applications**

CONSTRUCTION FUND (1-5 = 10min and 6-14 10min each)
- *(1) Flood & Drought Response Fund – Refresh*
- *(2) Colorado Floodplain Map Modernization Program*
- *(3) Satellite Monitoring/Maintenance Program*
- *(4) Weather Modification Permitting Program*
- *(5) Litigation Fund Budget – Refresh*
- (6) CDSS Operation and Maintenance
- (7) Colorado Mesonet Project
- (8) Tech Assist. for Federal Irrigation Improvement Cost-sharing
- (9) Colorado Water Loss Control Initiative
- (10) Water Forecasting Partnerships Project
- (11) Feasibility Study Small Grant Fund Increase
- (12) Fish & Wildlife Resources Fund (122.2) - Refresh
- (13) Alternative Agricultural Transfer Methods (ATMs) Grant Program

(14) SEVERANCE TAX PERPETUAL BASE FUND (Water Plan Funding)
- Water Supply Reserve Fund – Supplemental Funding ($10M Avail. 7/1/17)
- Watershed Restoration Program ($5M Avail. 7/1/17)
- Water Plan Implementation Funding ($10M Avail. 7/1/18)

10:00 **BREAK**

10:10 **3. Project Funding Update and Discussion**
- (1) Rio Grande Cooperative Project (20min)
- (2) Arkansas Valley Conduit Project (10min)
- (3) Windy Gap Firming Project (10min)
- (4) Loan Guarantee Fund (10min)

11:00 **4. Discussion regarding changes to Statutes, Policies and Procedures of CWCB**
- (1) Allowable Loan Amount – Change to Financial Policy #11(15min)
- (2) Dredging Application and Guidelines (15min)
- (3) WSRF Criteria & Guidelines – Changes (15min)

11:45 **5. Misc. Funding Discussion**
- Aquatic Nuisance Species Funding
- Reg 84 (Reuse) and Reg 86 (Graywater) - Rule Making Process Funding
- Other

12:00 **6. Lunch Served - Additional Discussion if Needed**

12:30 **Adjourn**

COLORADO
Colorado Water Conservation Board
Department of Natural Resources
1313 Sherman Street, Room 718
Denver, CO 80203

September 9, 2016

CWCB Board Members

Re: 2016 Finance Committee Meeting Invitation

Dear Board Member:

The Finance Committee Meeting has typically included all members of the Board that are available to attend. The 2016 Finance Committee Meeting will be held on September 20, 2016 at 8:00am at the Lodge and Spa at Cordillera, 2205 Cordillera Way, Edwards, CO 81632. The meeting will include a review of the financial status of CWCB's Funds; the Nonreimbursable Investment (NRI) applications; the 3 to 5 year Water Plan Funding Plan; discussion about changes to policy, procedures and statutes that govern CWCB's funding; and a discussion about future funding of projects.

All recommendations that require a formal approval by the full Board as a result of this Committee's findings will be placed on a future CWCB meeting agenda for final consideration. Those items that need to be included in the 2017 Projects Bill will be heard at the November 2016 CWCB meeting in Denver.

Please find enclosed the documents that will be utilized during the upcoming meeting. If you have any questions or have a topic you would like to have included in the agenda please call me at 303-866-3441, x3232.

On behalf of all of the CWCB staff, I would like to thank you for your commitment to the mission of the CWCB and for allowing us to move valuable projects forward.

Sincerely,

Kirk Russell, P.E., Chief
Finance Section

Attachment: Finance Committee Notebook

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street
Denver, CO 80203

P (303) 866-3441
F (303) 866-4474

TO: **Finance Committee**

FROM: **Kirk Russell, P.E., Chief, Finance Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **1. Opening Comments**

The Finance Committee will review staff recommendations and take action as necessary to guide staff to present items to the full Board in a subsequent Board meeting.

Attached to this memo are the following items which will be discussed in this Item:

The 2016 Projects Bill Fact Sheet

Past Performance of Funds - Graphs

Fund Projections and Budget Model

Funds Available for NonReimbursable Investments (2017 Projects Bill)
- Financial Policy #13 – Target Growth Rates

COLORADO WATER CONSERVATION BOARD
Department of Natural Resources

John W. Hickenlooper, Governor
Mike King, DNR Executive Director
James Eklund, CWCB Director

SENATE BILL 16-174
THE 2016 WATER PROJECTS BILL

Background

The General Assembly annually authorizes water project grants and loans from the Construction Fund and the Severance Tax Perpetual Base Fund. The Funds provide low-interest loans to municipalities, water districts, and agricultural water users throughout Colorado for a wide variety of water supply infrastructure projects. The loans are used to finance engineering and construction costs for more than 525 locally sponsored water projects

In November of 2015 the CWCB delivered Colorado's Water Plan to the Governor as required by the Governor's Executive Order D2013-005. The Plan identifies an approximate $20 billion in need to address the diverse consumptive and non-consumptive long-term needs of the State.

The **Construction Fund** was created in 1971 to provide low-interest loans for water projects and provide monies for non-reimbursable investments. The Fund is a revolving loan fund that allows the CWCB to be self-supporting and operate without money from the General Fund. Revenues come from interest earned on outstanding loans and on the fund's cash balance in the state treasury, and royalty distributions from federal mineral leases.

The **Severance Tax Perpetual Base Fund** was established by the General Assembly in 1997. The Fund is administered by the CWCB and is funded primarily with severance taxes paid by the producers of gas, oil, coal and other minerals. Repayment of principal and interest on loans and investment income also contribute to the Fund balance.

Loan interest rates vary. As of January 2016, the rates are:

- 1.85 % for agricultural loans
- 2.55% to 3.30% for municipal loans
- 6.0% for commercial loans.
- 2.0% for hydroelectric projects

These rates are adjusted bi-monthly by the CWCB.

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2016 Water Projects Bill Highlights

Provides $8.0 million for watershed protection, flood control programs, satellite monitoring of stream gauge systems, and other programs and projects.

For more information, contact Gaspar Perricone, EDO (303) 866-3311 ext. 8664

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1313 Sherman Street, Room 718
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Phone: (303) 866-3441
FAX: (303) 866-4474
Internet: www.cwcb.state.co.us

Recommended Non-reimbursable Investments

The CWCB accepts applications for non-reimbursable projects from the Construction Fund until August 1st of each year. Applications for non-reimbursable projects are accepted for:

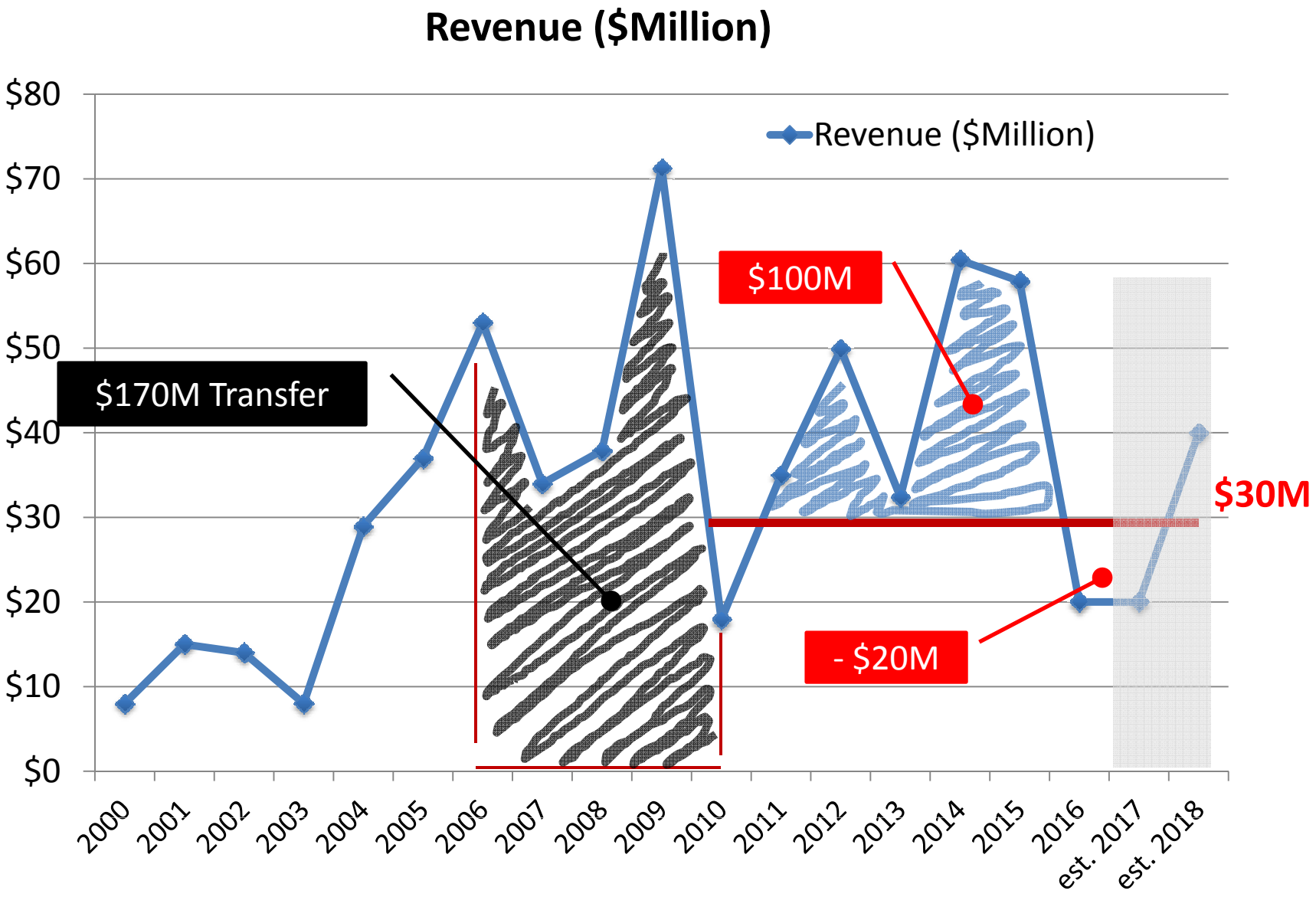
1. Projects or studies of statewide impact or importance.
2. Feasibility studies and projects designed to address statewide, region-wide, or basin-wide water issues. The Board examines whether such studies could result in new loans.

Section 1. Continuation of the Satellite Monitoring System	Appropriates funds to install, maintain, and operate satellite monitored stream gauges and lysimeters for water rights administration and data collection, as statutorily authorized.	Statewide	$380,000
Section 2. Continuation of the Floodplain Map Modernization Program	Assists communities to revise and improve floodplain studies and maps. Provides the required non-federal matching dollars that are further leveraged by local cost share and in-kind services. This Program leverages four million dollars in local and federal funds annually.	Statewide	$500,000
Section 3. Continuation of the Watershed Restoration Program	Provides planning and engineering studies, including implementation measures, aquatic habitat protection, restoration work, quantification of environmental flow needs, and monitoring efforts to address technical needs for watershed restoration and flood mitigation projects, and to support healthy stream and watershed goals outlined in Colorado's Water Plan. In FY15/16, this program leveraged $5.50 (???) for every $1.00 spent.	Statewide	$1,500,000
Section 4. Continuation of the Weather Modification Program	Assists water conservation and conservancy districts with the development of cloud seeding programs to provide benefits to recreation, streams, and reservoirs through snowpack enhancement. This Program leverages $200,000 in local funds annually.	Statewide	$175,000
Section 5. Colorado Mesonet	This project will provide funding for operation, maintenance, travel, communications, database and website management for temperature and precipitation stations referred to as the Colorado Mesonet, previously managed and operated by NOAA and currently proposed to be operated by the Colorado Climate Center at CSU.	Statewide	$150,000
Section 6. Water Forecasting Partnership Project	This project will provide better characterization of snowpack, new ground and aerial remote sensing data, and employee accepted hydrologic modeling practices, to provide more reliable volumetric water supply forecasting in the Rio Grande Basin.	Statewide	$300,000
Section 7. Bear Creek Reservoir Storage Reallocation Study	Under the authority of the Energy and Water Development Appropriations Act of 1998 the U.S. Army Corps of Engineers ("ACOE") would partner with CWCB to study the potential reallocation of the flood storage capacity of the reservoir for other beneficial uses. This would be similar to the Chatfield Reallocation Project.	Statewide	$2,500,000
Section 8. Underground Aquifer Storage Study	Provides funding to expand on existing underground aquifer storage studies to further explore aquifers deemed suitable for storage and develop conceptual framework to initiate an underground aquifer storage project	Statewide	$200,000
Section 9. Statewide Water Supply Initative (SWSI) 2016 Update	Provides additional funding to update SWSI 2010 to 2016 to re-examine the methodologies used to analyze municipal and industrial water demands, agricultural, environmental and recreational demands, hydrologic analyses, and climate and drought.	Statewide	$1,000,000

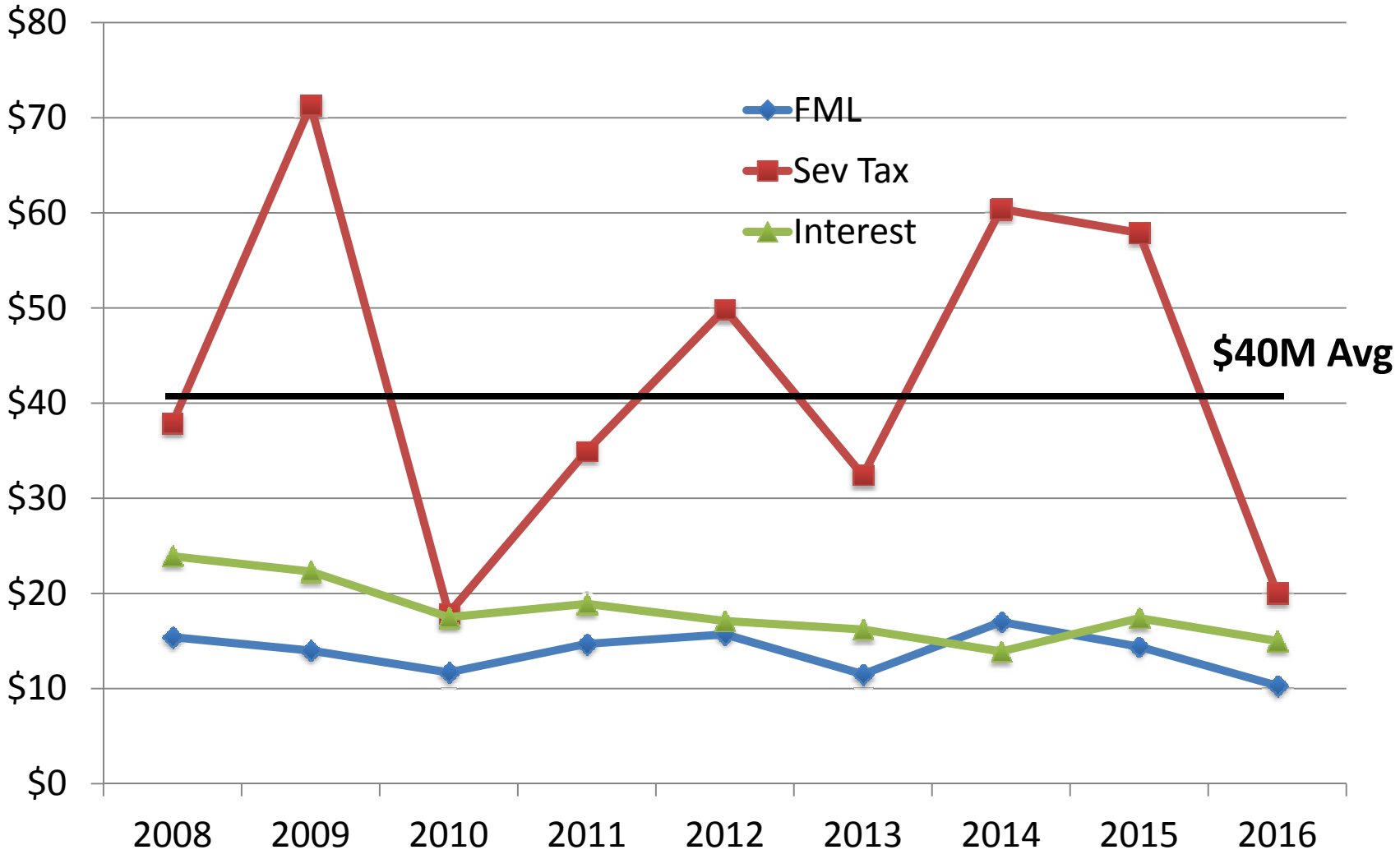
Section 10. Windy Gap Bypass Channel Project – Planning, Design and Construction	Provides $200,000 in additional funding for the planning, design, and construction of the Windy Gap Bypass Channel Project. This brings the total CWCB funding level for the project to $2.2 million	Statewide	$200,000
Section 11. Reservoir Dredging Project	Appropriation used to conduct reservoir dredging projects in partnership with a water provider such as a municipality, district, or irrigation company, subject to approval with a cost share amount no to exceed 50%	Statewide	$1,000,000
Section 12. Restoration of Flood and Drought Response Fund Balance	Refreshes the fund created to respond to flood and drought events through documentation, forecasting, post flood mapping, hazard area identification, mitigation plans, and recovery activities.	Statewide	$500,000
Section 13. Restoration of Litigation Funds Cash Balance	Restore the CWCB Litigation Fund to assist in addressing legal issues associated with compact compliance or any other litigation activities as defined under section 37-60-121, Colorado Revised Statutes.	Statewide	$600,000
Section 14. Expanding CWCB's Statutory Authority	This would amend 37-60-119 (1)(a) of the C.R.S, granting CWCB the authority to provide funding for treated water projects, such as distribution systems, metering, and water monitoring and loss control efforts, with the exception of water treatment facilities.	Statewide	N/A
Section 15. Animas-La Plata Project Authority	This would add a section to 37-60-120, C.R.S to clearly define the authority of the CWCB for its long term involvement in the Animas-La Plata Project, such as the ability to purchase, sell or lease water, hold storage, collect or disburse funds, enter into contracts, hold board positions, and other activities as necessary to assure the State's ability to participate in the project.	Statewide	N/A
Section 16. Annual Transfer from Severance Tax Perpetual Base Fund to Construction Fund	This would add a provision to 39-29-109, C.R.S. to annually transfer $5 million from the Severance Tax Perpetual Base Fund to the Construction Fund for the CWCB to use in funding various studies, programs, and project's, to assist in implementing action items identified within the Colorado Water Plan.	Statewide	$5,000,000 (not included in total)
Section 17. Safety Clause	Declares that this Act is necessary for the immediate preservation of the public peace, health, and safety.	Statewide	N/A
		Total	*9,005,000*

Notes: A small project loan report detailing the 15 loans made in calendar year 2015, valued at over $29 million, has been presented to the House and Senate Agriculture, Livestock, and Natural Resources Committees. A copy of the report is available on the legislative website at www.colorado.gov.

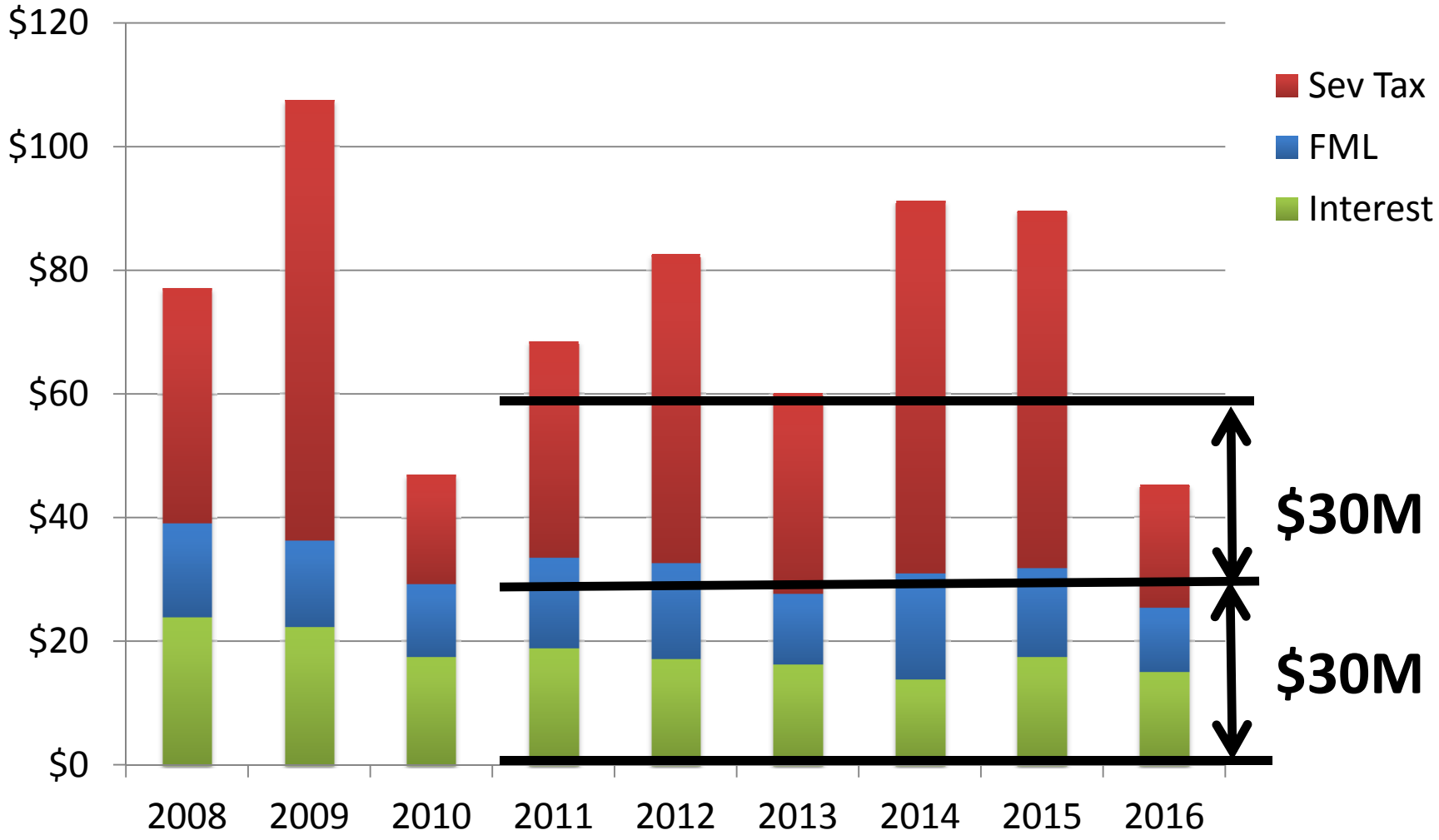
CWCB's Sev Tax PBF

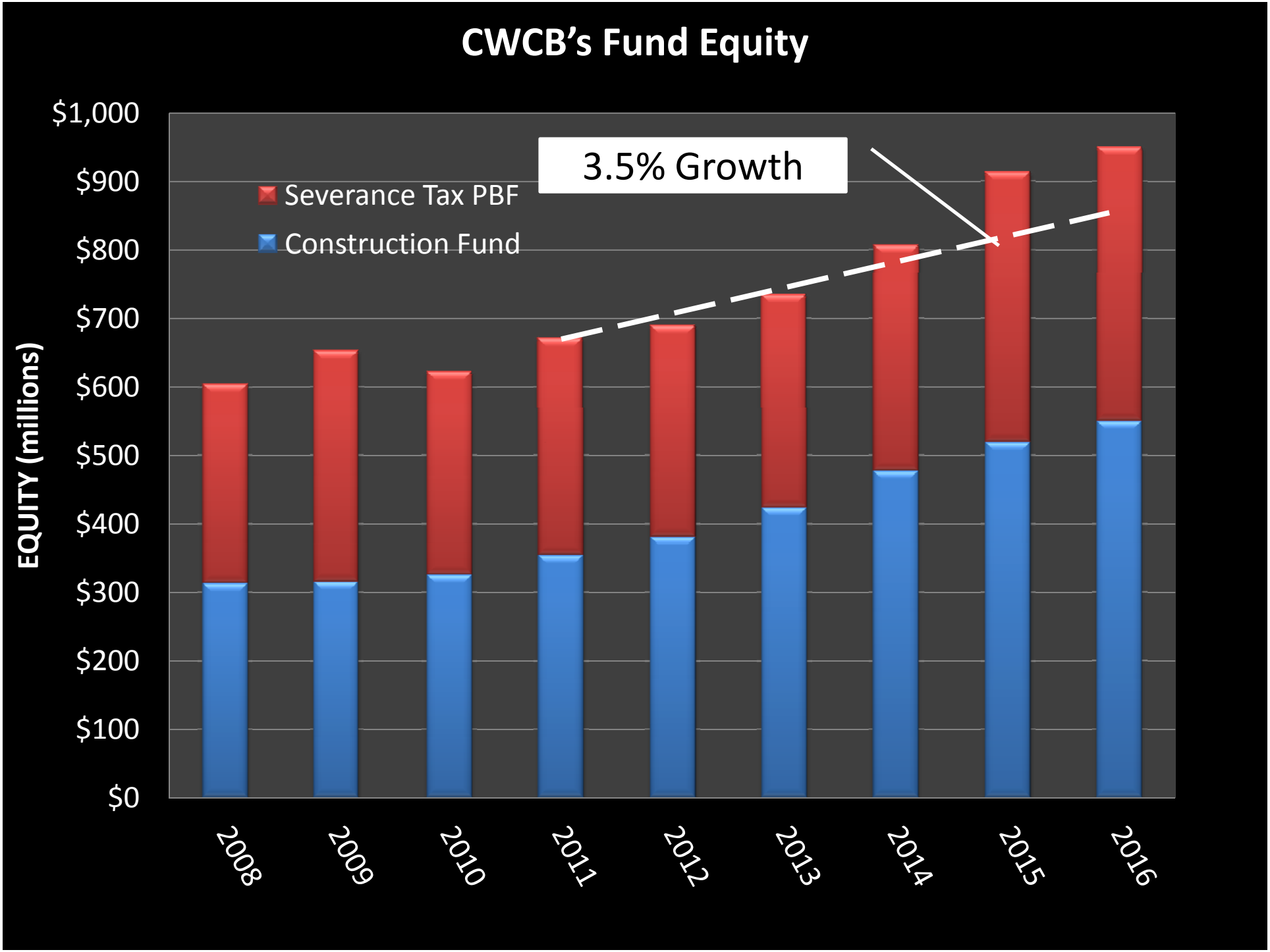


CWCB Earnings (Both CF & STPBFund)
$Millions in Revenue



CWCB Earnings (Both CF & STPBFund)
$Millions Revenue




CWCB's Fund Equity
EQUITY (millions)
$1,000
$900
$800
$700
$600
$500
$400
$300
$200
$100
$0
Severance Tax PBF
Construction Fund
3.5% Growth
2008
2009
2010
2011
2012
2013
2014
2015
2016

Colorado Water Conservation Board
September 20, 2016, CWCB Finance Committee Mtg

Projections and Budget through FY18/19 for Discussion

		Construction Fund			Severance Tax PBF		
7/1/16		($Millions)			($Millions)		
	+	$ 50.0	Est. Available 7/1/16	+	$ 59.0	Est. Available 7/1/16	
	+	$ 16.9	Loan Prin/Int/Treas	+	$ 12.2	Loan Prin/Int/Treas	
	+	$ 5.0	STPBF Transfer in	+	$ 18.0	ST (06/16 Projections) FY16/17	
	+	$ 9.8	Federal Mineral Lease (06/16 Projection)	-	$ (19.1)	Restricted for Refund SB16-218	
	+	$ 71.0	Loan Reversals (Aurora $69M)	+	$ 6.0	Loan Reversals (Emergency Loans)	
		$ 152.7			$ 76.1		
				-	$ 20.0	Projected New ST Loan (Rio Grande Res $10M)	
				-	$ 1.0	Emergency Ag Drought	
		$ 90.0	Windy Gap Firming Project Loan	-	***$ 30.0***	***Loan Guarantee Fund***	
	-	$ 30.0	Projected New CF Loans	-	***$ 10.0***	***NRI Water Plan Projects WSRA Support***	
	-	$ 7.8	16/17 Operations	-	***$ 5.0***	***Watershed Restoration Program***	
	-	$ 10.0	17/18 NRI/Programs	-	***$ 10.0***	***NRI Water Plan Projects (SB16-174 inc. from $5M)***	
		$ 137.8			$ 76.0		
		$ 14.9	Estimated Balance on 7/1/17		$ 0.1	Estimated Balance on 7/1/17	
					$ 15.0	Total Balance on 7/1/17	
FY 17/18							
7/1/17		**Construction Fund**			**Severance Tax PBF**		
	+	$ 14.9	Est. Available 7/1/17				
	+	$ 16.9	Loan Prin/Int/Treas	+	$ 0.1	Est. Available 7/1/17	
	+	$ 10.0	STPBF Transfer in	+	$ 12.2	Loan Prin/Int/Treas	
	+	$ 12.0	Federal Mineral Lease (06/16 Projection)	+	$ 40.0	ST (06/16 Projections) FY17/18	
	+	$ 2.0	Loan Reversals	+	$ 2.0	Loan Reversals	
		$ 55.8			$ 54.3		
	-	$ 25.0	Projected New CF Loans				
	-	$ 8.0	17/18 Operations	-	$ 25.0	Projected New ST Loans (Ark Val Con. $60M)	
	-	$ 10.0	18/19 NRI/Programs	-	***$ 25.0***	***Water Plan Project Funding***	
		$ 43.0			$ 50.0		
		$ 12.8	Estimated Balance on 7/1/18		$ 4.3	Estimated Balance on 7/1/18	
					$ 17.1	Total Balance on 7/1/18	
FY 18/19							
7/1/18		**Construction Fund**			**Severance Tax PBF**		
	+	$ 12.8	Est. Available 7/1/18				
	+	$ 16.9	Loan Prin/Int/Treas	+	$ 4.3	Est. Available 7/1/18	
	+	$ 10.0	STPBF Transfer in	+	$ 12.2	Loan Prin/Int/Treas/Reversals	
	+	$ 12.0	Federal Mineral Lease (No Projection)	+	$ 40.0	ST (No Projection - Use Avg) FY18/19	
	+	$ 2.0	Loan Reversals	+	$ 2.0	Loan Reversals	
		$ 53.7			$ 58.5		
	-	$ 25.0	Projected New CF Loans	-	$ 25.0	Projected New ST Loan	
	-	$ 8.0	17/18 Operations	-	$ 5.0	Total SB16-174 Proj Bill Transfer	
	-	$ 10.0	18/19 NRI/Programs	-	***$ 25.0***	***Water Plan Project Funding***	
		$ 43.0			$ 55.0		
		$ 10.7	Estimated Balance on 7/1/19		$ 3.5	Estimated Balance on 7/1/19	
					$ 14.2	Total Balance on 7/1/19	

September 20, 2016
Kirk Russell, Chief

Colorado Water Conservation Board
September 20, 2017 Finance Committee Meeting

Funds Available for NonReimbursable Investments

		FY2015/16		FY2016/17	FY2017/18
1	**Revenues Received (Considered Fund Growth)**	Projected ($M)	Actual ($M) *	Projected ($M)	Projected ($M)
2	Interest Earnings	$ 16.6	$ 16.6	$ 16.6	$ 16.6
3	Federal Mineral Lease	$ 14.0	$ 9.4	$ 9.8	$ 12.0
4	Severence Tax	$ 29.5	$ 16.7	$ 18.0	$ 40.0
5	**Total**	$ 60.1	**$ 26.1**	$ 27.8	$ 68.6
6	**Expenses Effecting Equity of the Construction Fund**				
7	CWCB Operations	$ 8.0	$ 8.0	$ 8.0	$ 8.0
8					
9	**Funds to be Refreshed - Per Statute**		Reserved ($)	Projected ($)	
10	Wild and Scenic Fund (Up to $400K)		$ 400,000	$ 400,000	
11	In-Stream Flow Acquisitions (Up to $1M)		$ 1,000,000	$ 300,000	
12	Stream Gauge Fund (Up to $250K)		$ 250,000	$ 250,000	
13	Colorado Water Education Foundation - Annual Support (Up to $150K) *		$ 150,000	$ 150,000	
14				Estimated Refreshed Subtotal =	**$ 1.1**
15					
16				Staff	
17				Recommends	
18	**Construction Fund Programs & Projects (Recommended for Projects Bill)**			$ 8.9	
19					
20	**Severence Tax PBF Projects (Water Plan Funding)**			$ 25.0	
21					
22	* The CCI growth target of 3.5% is ~$30M				

$10M

Kirk Russell
9/20/2016

POLICY NUMBER: 13

SUBJECT: **TARGET GROWTH RATES FOR THE EQUITY OF THE CONSTRUCTION FUND AND SEVERANCE TAX PERPETUAL BASE FUND**

EFFECTIVE DATE: October 1, 2000

REVISED DATES: January 27, 2004
September 14, 2004
November 18, 2015

POLICY: The Colorado Water Conservation Board (CWCB) will attempt to maintain an overall growth rate for the equity of the Construction Fund (CF) and Severance Tax Perpetual Base Fund (Sev. Tax Fund). CWCB shall grow the Construction Fund at the rate of return on the interest rates invested in water projects throughout the state. This will be the "growth rate" for the Funds.

PURPOSE: To offset the impacts of cost inflation, to maintain the financial integrity of the CWCB Construction Fund and Sev. Tax Fund and to provide a process for estimating the financial resources available for non-reimbursable investments from the Funds in any given year.

APPLICABILITY: This policy and procedure applies to the CWCB Construction Fund and Severance Tax Perpetual Base Fund.

PROCEDURE: The overall growth for the fund equity of the Construction Fund and Sev Tax Fund will be presented as part of the Comprehensive Annual Financial Report by CWCB staff at the Annual Finance Committee Meeting and subsequent Board meeting each year. Staff will present an annual estimate of funds available for non-reimbursable investments relative to the target growth rate. The estimate of funds available for non-reimbursable investments will be based on Federal Mineral Lease projections, Severance Tax projections, projected expenses and fund performances.

Staff will present a summary of long-term construction cost indices with any recommendations for revisions to the target growth rate of the equity of the fund.

Colorado Water Conservation Board
September 20, 2017 Finance Committee Meeting

NonReimbursable Investment Applications

Construction Fund Programs & Projects			**Benefit**		**Requested Amount**			**Staff Recommends**	
1	CWCB - Kevin Houck	Flood & Drought Response Fund	Statewide	$	500,000	(Up to $500K)	$	500,000	
2	CWCB - Thuy Patton	Colorado Floodplain Map Modernization Program	Statewide	$	500,000	(Up To $500K)	$	500,000	
3	DWR - M Hardesty/J Baessler	Satellite Monitoring System Maintenance Program	Statewide	$	380,000	($330K in 2015)	$	380,000	
4	CWCB - Joe Busto	Weather Modification Permitting Program	Statewide	$	175,000	($175K in 2015)	$	175,000	
5	CWCB - Carlee Brown	Litigation Fund (Budget for AG's)	Statewide	$	1,300,000	($600K in 2015)	$	1,300,000	
6	CWCB - Andy Moore	CDSS Operation and Maintenance	Statewide	$	200,000	($200K in 2014)	$	200,000	
7	CSU - Taryn Finnessey	Colorado Mesonet Project	Statewide	$	150,000	($150K in 2015)	$	154,000	
8	CWCB - Steve Miller	Tech Assist. for Fed. Irr. Improvement Cost-sharing	Statewide	$	500,000	($250K in 2014)	$	500,000	
9	CWCB - Kevin Riedy	Colorado Water Loss Control Initiative	Statewide	$	1,100,000	New	$	1,100,000	
10	CWCB - Joe Busto	Water Forecasting Partnerships Project	Statewide	$	600,000	New	$	600,000	
11	CWCB - Anna Mauss	Feasibility Studies for New Water Supply Storage	Statewide	$	500,000	($200K in 2003)	$	500,000	
12	CWCB - Chris Sturm	Wildlife Mitigation Fund (122.2) - Refresh	Statewide	$	2,000,000	($5M in 2002)	$	2,000,000	
13	CWCB - Rebecca Mitchell	ATMs Grant Program	Statewide	$	1,000,000	($750K in 2014)	$	1,000,000	
									$ 8,909,000
Severence Tax PBF Programs & Projects									
1	CWCB - Rebecca Mitchell	Water Supply Reserve Fund - Supplement	Statewide	$	10,000,000	New	$	10,000,000	
2	CWCB - Chris Sturm	Colorado Watershed Restoration Program	Statewide	$	5,000,000	($1.5M in 2015)	$	5,000,000	
3	CWCB - Kirk Russell	Water Plan Implementation Funding - Transfer	Statewide	$	10,000,000	New	$	10,000,000	
									$ 25,000,000

Total Recommended Projects Bill - Non-Reimbursable Investments = $ 33,909,000

Kirk Russell
9/20/2016

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Department of Natural Resources

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Denver, CO 80203

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Kevin Houck, P.E., Chief, Watershed Protection & Flood Mitigation Section**
Taryn Finnessey, Climate Risk Mngmt. Specialist, Water Supply Planning Section

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (1) Flood and Drought Response Fund – Refresh

Introduction

A $150,000 Flood Response Program was authorized in the 2001 Construction Fund Bill (SB 01-157) and enacted by the Colorado General Assembly. This amount was increased in the 2007 Construction Fund Bill (SB 07-122) to $300,000 to reflect the additional cost of performing existing program functions and the addition of valuable services under the program. In FY 2013 the scope of the fund was expanded to include drought response activities, which continue to be included. The original expansion of the scope did not include any increase in funds; however in fiscal year 2014 the fund was increased to $500,000 to reflect activities associated with Drought Response and to address the increasing threat of wildfires and post-wildfire activities. The Flood and Drought Response Fund (Fund) exists to give the CWCB an ability to quickly respond to events and have program funds in the areas of: 1) flood & drought documentation, 2) flood & drought forecasting and outlooks, 3) post-event floodplain mapping, 4) aerial photography, and 5) flood & drought mitigation. Funds from this account may also be used for projects and studies in support of the efforts of the Colorado Resiliency Working Group (CRWG), especially the Watersheds and Natural Resources Sector, a subgroup headed by CWCB staff as well as climate change activities that involve the CRWG. The CRWG is committed to improving state processes to incorporate resiliency into Colorado public health, safety, and welfare.

The current request is to refresh the account up to $500,000 for FY 2017/18 for flood and drought response purposes, including post-wildfire activities. Use of this fund to address both flood and drought increases the efficiency and effectiveness of the CWCB to adequately respond to natural hazards affecting Colorado while also recognizing the current fiscal constraints by utilizing existing resources. Staff clearly recognizes that there will be years in the future when both flood conditions and drought conditions exist during the same year, as was the case in 2013. In those situations, the Fund could be stressed by needs from the two extreme conditions, and Staff will prioritize expenditures.

Staff Recommendation

Staff recommends the Committee's approval of item for consideration by the Board in November to authorize from the Construction Fund up to $500,000 to the Flood and Drought Response Fund to refresh the unencumbered balance up to $500,000 for technical activities related to flood and drought response.

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Colorado Water Conservation Board
Department of Natural Resources

Flood & Drought Response Fund

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	$500,000 annually
NRI Funding Request:	$500,000
Funding Source:	*Construction Fund*
Project Type:	Program Funds
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	N/A
Drainage Basin:	All Basins

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The Flood and Drought Response Fund (Fund) exists to give the CWCB an ability to quickly respond to events and have program funds in the areas of: 1) flood & drought documentation, 2) flood & drought forecasting and outlooks, 3) post-event floodplain mapping, 4) aerial photography, and 5) flood & drought mitigation. Funds from this account may be used for projects and studies in support of the efforts of the Colorado Resiliency Working Group (CRWG), especially the Watersheds and Natural Resources Sector, a subgroup headed by CWCB staff as well as climate change activities that involve the CRWG. The CRWG is committed to improving state processes to incorporate resiliency into Colorado public health, safety, and welfare.

The current request is to refresh the account up to $500,000 for FY 2017/18 for flood and drought response purposes, including post-wildfire activities. Use of this fund to address both flood and drought increases the efficiency and effectiveness of the CWCB to adequately respond to natural hazards affecting Colorado while also recognizing the current fiscal constraints by utilizing existing resources. Staff clearly recognizes that there will be years in the future when both flood conditions and drought conditions exist during the same year, as was the case in 2013. In those situations, the Fund could be stressed by needs from the two extreme conditions, and Staff will prioritize expenditures.

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Thuy Patton, Floodplain Mapping Coordinator, Watershed Protection and Flood Mitigation Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (2) Colorado Floodplain Map Modernization Program

Introduction & Discussion

In early 2003, Congress approved a substantial funding package to provide updated floodplain mapping nationwide. Similar funding levels have been allocated by Congress in subsequent years. The CWCB approved and the General Assembly authorized a non-reimbursable investment of $500,000 in the 2003 Construction Fund Bill with annual funding amounts in all subsequent Bills. Staff is now requesting a total of $500,000 for program funding.

Colorado has received almost $12 million in federal grant dollars for floodplain mapping related activities since 2003 as part of the floodplain Map Modernization program initiated by FEMA. The FEMA funds are being matched by CWCB and local cost-share dollars to implement the map update work that includes engineering and GIS to create new digital countywide maps. The funds authorized in the 2003 and all subsequent Construction Fund Bills have provided the required non-federal matching dollars. The State funds are further leveraged by local cost share dollars and in-kind services from many communities thus far.

Staff Recommendation

Staff recommends the Committee's approval of item for consideration by the Board in November to authorize the Department of Natural Resources for allocation to the Colorado Water Conservation Board, the sum of $500,000 or so much as may be necessary in order to restore the unencumbered balance up to $500,000 for the Board to continue to assist with the preparation of revised and improved floodplain studies and maps for communities throughout Colorado and to participate in federally sponsored floodplain map modernization activities.

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Colorado Floodplain Map Modernization Program

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	$1,900,000
NRI Funding Request:	$500,000
Funding Source:	*Construction Fund*
Project Type:	Matching Funds for Grants
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

Colorado has received approximately $12 million in federal grant dollars for floodplain mapping activities as part of the floodplain Map Modernization/Risk Map Program (Program) initiated by FEMA in 2003. The FEMA funds are being matched by CWCB and local cost-share dollars to implement the map update work to create updated digital floodplain maps and flood risk tools. The initial Program funds authorized in the 2003 and all subsequent Construction Fund Bills have provided the required non-federal matching dollars (80/20 cost share program). The State funds are further leveraged by local cost share dollars and in-kind services from many communities thus far. The total funding amounts have been instrumental in keeping Colorado as a lead state within FEMA Region 8 and will continue to benefit Colorado communities in the future. It is expected that significant FEMA funding will continue as long as the Program exists. Program deliverables will become part of the Flood DSS system to increase data capture and enhance Colorado's decision support tools.

The Program will eventually impact the entire state, and the objective is to develop updated watershed-based and/or countywide floodplain maps using current base map information within a digital environment. The use of GIS technology will be employed for all new countywide studies for ease of distribution, updating and viewing. The table below summarizes funding provided by the CWCB and FEMA/Local governments for CWCB managed projects (in progress or completed).

COUNTY/WATERSHED	CWCB Funds	FEMA/Local Funds	COUNTY/WATERSHED	CWCB Funds	FEMA/Local Funds
Archuleta	$71,000	$228,760	Mesa	$33,960	$435,780
Boulder	$17,807	$524,709	Montrose	$60,376	$241,503
Clear Creek	$2,950	$158,605	Montezuma	$53,000	$452,735
Chaffee	$44,000	$399,290	Morgan	$25,000	$270,700
Delta	$21,630	$277,763	Park	$18,800	$165,200
El Paso	$75,635	$1,472,030	Pitkin	$20,772	$466,388
Elbert	$141,548	$301,982	Prowers	$76,605	$691,024
Fremont	$23,294	$146,240	Pueblo	$71,768	$1,115,902
Garfield	$29,912	$325,000	Rio Grande	$58,300	$152,810
Gunnison	$79,250	$272,422	Summit	$21,098	$189,876
La Plata	$74,200	$391,910	Teller	$23,100	$207,900
Logan	$30,550	$271,050	Weld	$112,419	$658,530
St. Vrain	$88,580	$354,320	Purgatoire	$140,137	$347,963
Clear Creek Wtsd	$114,060	$456,240	Cache La Poudre Phase 1 & 2	$718,834	$150,000
Upper White Wtsd	$0	$353,756	El Paso Approximate Mapping	$0	$129,860
Middle South Platte Approximate Mapping	$0	$80,000	Cache La Poudre Phase 3		$285,596
Upper Gunnison 2 Phase	$38,935	$126,815	IFSAR (Moffat, Lincoln, Yuma, Phillips, Middle South Platte)	$100,000	$250,000

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James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Jeff Baessler, Deputy Section Chief, Stream and Lake Protection Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (3) Satellite Monitoring/Maintenance Program

Introduction
The Division of Water Resources (DWR) has requested an appropriation of $380,000 for the continued operational viability of the state Satellite-linked Monitoring System (SMS) and Stream Gage Refurbishment Program. Each year, funding for this program has been reviewed and approved by both the Finance Committee and the Board. It has been recognized that it is critical for both the State's water planning and water administrative agencies to support and maintain state-of-art stream gaging programs and continue to provide accurate water resources data to support multi-agency and water user needs. The DWR Satellite-linked Monitoring program is outlined in §37-60-121 and §37-80-102 C.R.S.

Discussion
The $380,000 request for FY 2017-2018 will support the continued, long-term operational viability of 520 satellite-linked water resources monitoring sites. These funds will be allocated as follows:

$275,000 for replacement of out-dated Data Collection Platforms (DCP) and associated satellite telemetry equipment and upgrading of satellite transmission components. The rate of replacement of DCPs is based on a life expectancy from normal wear, tear and software life cycle issues of 10 years. Replacement of out of date DCPs may also be required to accommodate technology upgrades and changes which are mandated by NOAA, the Federal Agency managing the GOES satellite resource.

$55,000 for refurbishing existing stream gages as needed to maintain operational reliability of stream flow data collection infrastructure and equipment. This is a recurring annual request to cover refurbishment and repair costs which arise due to deterioration of the physical stream gage infrastructure. In addition, these funds will be uses as necessary to purchase measurement equipment that can minimize or eliminate the need for future capital improvements such as personnel cableways.

The requested funding amount of $50,000 is to provide annual maintenance support for the Lysimeter in the Arkansas River Basin.

Staff Recommendation
Staff recommends the Committee's approval of item for consideration by the Board in November to authorize $380,000 from the Construction Fund to the Department of Natural Resources for allocation to the Division of Water Resources (DWR) to replace out-dated Data Collection Platforms and associated satellite telemetry equipment in the existing satellite monitoring system, and to refurbish existing stream gages.

The attached memo from Matthew Hardesty dated August 8, 2016 provides more in depth information regarding this request.

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Satellite Monitoring/Maintenance Program

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	$380,000
NRI Funding Request:	$380,000
Funding Source:	*Construction Fund*
Project Type:	DWR Streamgaging
Type of Grantee:	State Agency

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

This project entails the continued, long-term operational viability of the State Satellite Linked Monitoring System and Stream Gage Refurbishment Program, which is administered by the Division of Water Resources (DWR). This program currently encompasses 520 satellite stream gaging stations which require continued replacement of outdated data collection platforms, upgrades to transmission components, and refurbishment of the associated infrastructure. In addition, many existing gaging stations need to be modified to provide critical stream flow data for both flood and low flow monitoring. Changes in technology, which will ultimately increase reliability and real time data transmission rates, will require the DWR to continue to upgrade the system in the future. The costs associated with the continued refurbishment and operational viability of the system is currently approximately $380,000 per year.

North Fork Gunnison River – New Radar Sensor Installation (Note these installations are more cost efficient as they require significantly less infrastructure than a typical stilling well and shelter)

Purgatoire River @ Fishers Crossing
DWR/CWCB Compact Gage

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Department of Natural Resources
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MEMORANDUM

To: James Eklund, Director, Colorado Water Conservation Board
From: Matthew Hardesty, Chief of Hydrography, Colorado Division of Water Resources
Date: August 8, 2016
Subject: Division of Water Resources Satellite-linked Monitoring System and Stream Gage Refurbishment Construction Fund Request for FY 2017-18

ec: Jeff Baessler, Colorado Water Conservation Board
Scott Cuthbertson, Colorado Division of Water Resources

Summary

The Division of Water Resources (DWR) requests a total of **$330,000** from the CWCB Construction Fund for FY 2017-18. The requested funds will support the continued, long-term operational viability of water resources monitoring network that includes over 600 satellite-linked water resources monitoring sites, including replacement of out-dated data collection platforms and satellite telemetry transmission components and refurbishment/renovation of gaging stations. The specific distribution of the funds requested is as follows:

1. The sum of $251,000 will be used to replace out-dated Data Collection Platforms (DCP) and associated satellite telemetry equipment and upgrading satellite transmission components. The rate of replacement of DCPs is based on a life expectancy from normal wear, tear and software life cycle issues of approximately 10-12 years.
2. The remainder of $79,000 will maintain operational reliability of streamflow data collection and measurement infrastructure. This is a recurring annual request to cover refurbishment and repair costs which arise due to deterioration of the physical stream gage infrastructure. In addition to refurbishing existing stream gages as requested in the past, we also intend to use this money, if necessary, to purchase measurement equipment that can minimize or eliminate the need for future capital improvements such as personnel cableways.

Introduction

CWCB and DWR, consistent with Section 37-60-121 and Section 37-80-102 C.R.S., maintain the stream gaging program to support multi-agency and water user needs such as water rights administration, compact protection, flood forecasting and warning and Decision Support System implementation and use. DWR must:

- maintain the electronic equipment in satellite-linked data collection stations;
- refurbish deteriorating gage station infrastructure and non-electronic station hardware;
- refurbish/replace cableways used for high flow measurements or implement alternate means of high flow measurement (for calibration of the upper end of stage-discharge relationships);
- rebuild gage sections damaged by high flows;
- flood harden, when possible, critical gages; and,
- continue, as necessary, the operation of vital gages operated by the United States Geological Survey (USGS) when that program can no longer provide the required support.

Background

The Satellite-linked Monitoring System (SMS) has been operating since 1985, starting with 82 linked gaging stations. As the need for the data has increased, the SMS has expanded. Since inception, in excess of 8 million dollars has been invested in the development of the SMS infrastructure. Currently, DWR operates and maintains over 600 data collection platforms (DCPs) on rivers, streams, reservoirs, ditches and canals to collect and transmit basic streamflow and water elevation data to support the Division's primary mission of water rights and compact administration. Additional benefits of the system include flow alerts based on parameter thresholds, such as: low flow alerts in support of CWCB ISF programs; high flow alerts in support of flood protection decision making and flood warning; and, rate of change alerts below dams and reservoirs.

Collectively, these platforms and the computer equipment in Denver are the Satellite-linked Monitoring System (SMS). The USGS and other entities operate an additional 300+ sites in Colorado. The USGS and DWR are working to improve data availability and avoid duplication through improved gaging station effectiveness. The SMS provides basic water flow data to the staffs of DWR and CWCB as well as a number of public and private entities, such as: the Cities of Colorado Springs and Aurora, the Denver Water Board, the Arkansas River Compact Commission, Emergency Coordinators for most Colorado counties, water rights owners, recreationists such as fishermen and rafters, and conservation groups. Many programs of the DWR, such as various river operations analysis spreadsheets used in each of the seven DWR Division offices for water administration, and the DWR Dam Safety Program rely upon the real-time data acquired through the SMS. Water resources accounting programs utilizing the SMS include the Dolores Project, the Colorado-Big Thompson Project and the Fryingpan-Arkansas River Project. CWCB programs, such as Stream and Lake Protection, Flood Protection and Water Supply Protection also utilize the real-time data.

FY 2017-18 Funding Request

In order to maintain the system, DWR projects that electronic equipment will be replaced, on average, every 10 years. Based on our latest tabulation of gages, DWR is responsible for maintenance of about 460 total sets of electronic (DCP and stage sensor) equipment out of the 600+ gages it operates. At current equipment costs, the cost of DCP replacement with newest generation satellite transceivers as well as replacement of gage height sensors ranges from $4,000

to $8,000 per gage, depending on the type of gage height sensor needed (shaft encoder, constant flow bubbler or radar sensor).

Based on a review of electronic equipment replacement needs, we are now utilizing a system-wide mean gage annual maintenance cost of $470 per station based on the current mix of conventional and radar sensors. Based on that estimate, the total annual projected equipment cost to simply maintain operable electronics and ancillary equipment is approximately $216,000. Travel (vehicle mileage, per diem, etc.) and overtime support to perform this work around the State is projected at $35,000. Therefore, the amount requested for gage equipment replacement is $251,000.

Existing Stream Gage Construction and Measurement. Approximately 60% of Colorado's satellite-linked gaging stations are located in the rivers and streams. The others are located in reservoirs, ditches, and canals. Gaging station physical infrastructure (shelters, stream controls, independent reference gages, etc.) must be properly maintained and periodically refurbished in order to collect accurate data.

In addition to control and stream work, recent gage maintenance and replacement construction projects have been leaning more heavily upon radar sensors. Though these sensors are more expensive initially than the historic stilling well equipment, they are a more effective long-term solution for several reasons. First, they eliminate the need for expensive stilling well and shelter installations that have been the norm historically. Reduction of the number of stilling wells in the DWR gage network reduces the confined space safety issues associated with operation of the gage. The radar sensor also have a longer life expectancy than other stage sensors, which means the higher upfront cost will eventually be offset by a reduction in maintenance costs. Additionally, our staff have had great success in utilizing existing infrastructure such as bridges or bank-mounted cantilevers to mount the radar equipment. Both of these installation types are much less prone to flooding damage and result in additional flood hardening of our system.

At the projected pace, DWR will replace stage measurement equipment with radar sensor at a rate of approximately 6-12 annually. Based on a differential equipment cost of $4,000 for six radar conversion, this results in $24,000 that DWR requests in addition to $55,000 for refurbishing existing stream gage controls and stream channels in the vicinity of stream gages for a total of $79,000.

An important physical component of many DWR stream gages around the State is the ability to measure high flows so that the upper end of stage-discharge relationships can be improved and maintained to yield accurate high/flood flow data. As indicated in the request for FY16-17, DWR continues to increase the number of Acoustic Current Doppler Profilers (ADCP) and trained staff used to make discharge without the operator being required to enter the water. The use of the ADCP lends itself to use of existing infrastructure, namely bridges, to provide measurement locations that span the stream. In addition to minimizing or even eliminating the need for expensive cableway infrastructure, the flexibility that these devices afford in choosing a measurement location has the potential to significantly improve the quality of measurement data collected. Finally, use of existing infrastructure such as bridges minimizes the safety and liability risks associated with large cableway structures spanning rivers and streams. As a result, instead of spending money to refurbish a cableway, we will likely pursue the more effective solution of purchasing ADCP's that have the potential to offset the need for cableway infrastructure and replace ADCP's currently in use as they reach their life expectancy.

FY 2015-16 Accomplishments

The CWCB provided $330,000 in FY 2015-16 for satellite telemetry equipment upgrade/replacement and stream gage refurbishment. An additional $4,499.86 in CWCB carryover funds was available from the previous fiscal year resulting in a FY15-16 project budget of $334,499.86.

In total, DWR expended and committed a total of $334,355.45 or 100.0% of project funding.

As discussed in previous reports, we also received $43,143 of Flood Recovery reimbursement from Risk Management in FY2013-2014 which will be carried over until addition gage repairs associated with the 2013 flood can be completed. Since CWCB construction funds were utilized to complete necessary construction projects in the immediate aftermath of the 2013 Flood, we will continue to track receipt of Risk Management funds in this account and expect to reduce our annual projects request when those funds are available without the additional need for flood recovery construction.

Satellite Telemetry Upgrade Program. The procurement and installation of satellite-linked monitoring equipment and associated components including radar stage sensors totaled $290,365.45. High data rate DCP upgrades have now been completed at all DWR gage stations. However, as discussed earlier, the normal wear, tear and software life cycle anticipates replacing all equipment approximately every ten to twelve years.

Streamgage Refurbishment. Streamgage refurbishment projects and miscellaneous expenditures for system maintenance totaled $43,990. Refurbishment projects and miscellaneous expenditures were completed at the stream gages listed in Table 1. Photos from some of these gage installations are also included below.

Table 1

Fiscal Year 2015-16 CWCB Construction Funds Report Date: Final	
CARRY OVER FROM FY15 CWCB Construction Funds	$ 4,499.86
Total CWCB Construction Funds Allocated for FY2015-16	$ 330,000.00
TOTAL	$ 334,499.86
Funds remaining	$ 144.41
FEMA Grant from Risk Management for Flood	$ 43,143.00
Expenditures	
A. DCP/Sat. Telemetry Upgrades & Maintenance	
New Equipment (Sutron, etal)	$ 248,315.84
Labor	$ 19,408.02
Installation Supplies and Hardware	$ 8,001.59
Contractor	$ 14,640.00
Subtotal - Equipment	$ 290,365.45
Div. I	
Big Dry Creek - Replace existing gage	$ 18,756.35
Boulder Creek at 109th St.-Replace Boulder Creek at Boulder gage	$ 6,696.64
Bear Creek at Morrison-Install radar to replace faulty inlets	$ 876.36
Div. II	
Huerfano River near Red Wing-Replace control structure	$ 1,300.00
Purgatoire River at Fishers Crossing-	$ 1,677.02
Greenhorn Creek above Rye-Replace control structure	$ 1,151.63
Div. III	
Cotton Creek near Mineral Hot Springs-Inlet and gage pool maintenance	$ 822.99
North Crestone Creek near Crestone-Inlets and gage pool maintenance	$ 611.42
Wild Cherry Creek near Crestone-Inlet and gage pool maintenance	$ 822.99
San Isabel Creek near Crestone-Inlet and gage pool maintenance	$ 822.99
Rito Alto Creek near Crestone-Gage pool maintenance	$ 190.44
Willow Creek near Crestone-Gage pool maintenance	$ 190.44
Cableway Repair Parts	$ 1,816.00
Div. VII	
Navajo River at Banded Peaks-Intake and valve work	$ 363.17
Subtotal - Projects	$ 36,098.44
C. Miscellaneous	
Misc. supplies and equipment	$ 938.29
Misc. radar installation	$ 6,953.27
Subtotal - Miscellaneous	$ 7,891.56
GRAND TOTAL	$ 334,355.45

Boulder Creek at 109th St. Near Erie, CO

Big Dry Creek Near Fort Lupton, CO

Bear Creek at Morrison, CO

Huerfano River Near Redwing, CO

Greenhorn Creek Above Rye, CO

Cottonwood Creek Near Crestone, CO

Cotton Creek Near Mineral Hot Springs, CO

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Joe Busto, Weather Modification Program Coordinator, Watershed Protection and Flood Mitigation Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (4) Weather Modification Permitting Program

Introduction

The CWCB has had grants for winter cloud seeding since 2004. Colorado River downstream water users have been matching CWCB funding since 2007. To date the CWCB has provided $1.5M and the Lower Basin has provided $1.5. Weather modification is one of the three legs of the stool for the Colorado River drought contingency plan along with extended reservoir operations and demand management.

The CWCB WM budget has been $175,000 for the last seven years. Staff is requesting this funding for grants to operations, new equipment, and help with evaluations and studies as directed by the 2012 Weather Modification Rules and Regulations. The Lower Basin matches the CWCB dollar for dollar. The most important part of this work is that the Idaho Power Company and the Desert Research Institute have agreed to help Colorado grow and develop as well as import state of the art equipment.

The CWCB has helped by bringing in remote machines to Winter Park, the Grand Mesa, and near Mesa Verde. However, there are still 105 low elevation generators in operation. Modeling studies are suggested in the 2012 DNR Weather Modification Rules to evaluate program design. One was completed for the Front Range Water Council program. There is a scientific means to retire machines, import newer machines, and focus on areas with high cloud seeding potential. This funding has been matched with other funding with support from the new DNR rules to do modeling and climatology studies to differentiate where cloud seeding generators are well or poorly sited.

Staff Recommendation

Staff recommends the Committee's approval of item for consideration by the Board in November to authorize $175,000 from the Construction Fund to be appropriated to the Department of Natural Resources for allocation to the CWCB for the Weather Modification Program.

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Weather Modification Permitting Program

Colorado Water Conservation Board

September 2016 Board Meeting

PROJECT DETAILS	
Project Cost:	$1M+ annually
NRI Funding Request:	$175,000
Funding Source:	*Construction Fund*
Project Type:	Grants, Equip. & Evals
Type of Grantee:	Grants to Sponsors

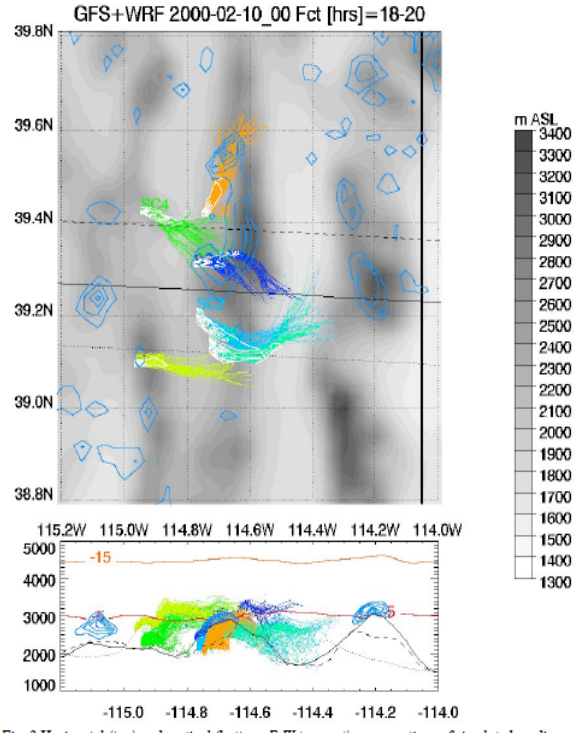
LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	Colorado, Gunnison,& SW

The CWCB has had grants since 2004. Water Manager sponsored programs were developed after the drought of early 2000s. State-to-state agreements were signed in 2007 to provide grants. Each year the CWCB distributes grants from the CWCB, New Mexico Interstate Stream Commission, Southern Nevada Water Authority, Central Arizona WCD, and California Six Agency Committee and reports on the expenditures. The CWCB funding gives staff leverage to match the pledged support of the Lower Basin dollar for dollar. The goals are to remake Colorado's programs and deploy state of the art and industry standard equipment. This will make our programs better.

At right is the Idaho Power ice nuclei generator design. It has been 17 years in development and is considered the best design in the field. They have agreed to help us at the CWCB and provide these machines for our program. Also pictured at right is a white remote sensing unit called a radiometer. It takes vertical columns of atmospheric information that is similar to a weather balloon launch but with continuous data every seven minutes. Several cloud seeding programs in other states have purchased one of more of these to remove the guess work and stop seeding the whole storm system so they can focus on wetter cloud conditions. They will save lots of money by not wasting silver and confining operations to periods of abundant liquid water.

Typically each year about $1M is spent on cloud seeding with $175,000 or 18% from the CWCB and $175,000 or 17% from the Lower Basin and New Mexico. The work of CWCB providing grant and technical assistance and equipment upgrades is a part of the augmentation goals of the Colorado River Seven Basin states and has been ongoing since 2007.

Plans for winter 2015-16 include a plume dispersion modeling study in the Central Mountains Program to try and discern which generators are well sited or not and where to put new remote generators at higher elevations. Desert Research Institute will operate remote operated generators at Winter Park, and a DRI remote generator at Telluride, and the near Mancos, Colorado will be operated by the local contract Western Weather Consultants. The radiometer that is being leased to own by the CWCB will be at Gunnison all winter. Also two new Idaho Power remotes are being imported and tested by the City of Grand Junction which was funded as a mix of BRT, CWCB, and Lower Basin funding. The rest of the funding is grants to the traditional contractor run programs.



Pictured at right is a top view and cross section of particle dispersion modeling. When coupled to a weather model it can faithfully represent the seeding process and help us evaluate the existing program designs and refine their designs for increased efficiency. This is suggested in the new WM rules meant to empower local sponsors to seek "independent" evaluations of their programs.

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Carlee Brown, Chief, Interstate, Federal, and Water Information Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (5) Litigation Fund Budget – Refresh

Introduction

Section 37-60-121(2.5) provides that the Colorado Water Conservation Board is authorized "to expend, pursuant to continuous appropriation and subject to the requirements of paragraph (b) of this subsection (2.5), a total sum not to exceed the balance of the litigation fund, which is created, for the purpose of engaging in litigation…to defend and protect Colorado's allocations of water in interstate streams and rivers…" Paragraph (b) of section 121(2.5) provides: "pursuant to the spending authority set forth in paragraph (a) of this subsection (2.5), moneys may be expended from the litigation fund at the discretion of the board if (I) with respect to litigation, the Colorado Attorney General requests that the Board authorize the expenditure of moneys in a specified amount not to exceed the balance of the fund for the costs of litigation associated with one or more specifically identified lawsuits meeting the criteria set forth in paragraph (a) of this subsection (2.5)."

The current request is to refresh the account up to $2,000,000 for FY 2017/18. Increased activity on the interstate streams, especially the Rio Grande, the Republican, and the Colorado Rivers, has brought down the balance of the litigation fund since last year. With many ongoing processes and controversies ahead, the IFWI section and Office of the Attorney General requested in May 2016 that $1,052,580 in expenses in FY 2016/17 are needed. Due to additional draw-downs from the account, a request for $1,300,000 is needed to refresh the fund up to the $2 million. This will allow staff and the Attorneys General to prepare and participate in these ongoing important matters.

Staff Recommendation

Staff recommends the Committee's approval of item for consideration by the Board in November to authorize $1,300,000 from the Construction Fund in order to restore the Litigation Fund balance to allow the Attorneys General Office to prepare and participate in ongoing legal matters on behalf of the Colorado Water Conservation Board.

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Litigation Fund Budget - Refresh

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	Approx. $700,000 annually
NRI Funding Request:	$1,300,000
Funding Source:	*Construction Fund*
Project Type:	Program Funds
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	N/A
Drainage Basin:	All Basins

Section 37-60-121(2.5) provides that the Colorado Water Conservation Board is authorized "to expend, pursuant to continuous appropriation and subject to the requirements of paragraph (b) of this subsection (2.5), a total sum not to exceed the balance of the litigation fund, which is created, for the purpose of engaging in litigation…to defend and protect Colorado's allocations of water in interstate streams and rivers…" Paragraph (b) of section 121(2.5) provides: "pursuant to the spending authority set forth in paragraph (a) of this subsection (2.5), moneys may be expended from the litigation fund at the discretion of the board if (I) with respect to litigation, the Colorado Attorney General requests that the Board authorize the expenditure of moneys in a specified amount not to exceed the balance of the fund for the costs of litigation associated with one or more specifically identified lawsuits meeting the criteria set forth in paragraph (a) of this subsection (2.5)."

The current request is to refresh the account up to $2 million for FY 2017/18. Increased activity on the interstate streams, especially the Rio Grande, the Republican, and the Colorado Rivers, has brought down the balance of the litigation fund since last year. With many ongoing processes and controversies ahead, the IFWI section and Office of the Attorney General request that the fund be refreshed by $1,300,000 up to the cap of $2 million to allow staff and the Attorneys General to prepare and participate in these ongoing important matters.

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James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Andy Moore, Water Resources Engineer,**
Interstate, Federal and Water Information Section

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (6) Colorado's Decision Support Systems (CDSS) Operation & Maintenance

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Introduction

This funding request is for ongoing operation and maintenance of Colorado's Decision Support Systems (CDSS), a joint effort of CWCB and DWR to provide data and modeling tools to assist in water resource planning and management in Colorado. Over the last 20 years, CDSS databases, analytical tools, and water resource models have been developed and implemented for most of the State, with development of the Arkansas River DSS beginning soon. These CDSS components need periodic maintenance and operational revisions to protect the State's investment and keep the tools viable as water resource planning becomes more challenging in the future. CDSS data and tools were a key component of several Basin Implementation Plans, and this role will only grow with future revisions of Colorado's Water Plan.

Staff Recommendation

Staff recommends the Committee's approval of item for consideration by the Board in November to authorize from the Construction Fund up to $200,000 to the Colorado's Decision Support System for continued Operation and Maintenance.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Decision Support System (CDSS) Operation & Maintenance

Colorado Water Conservation Board

September 2016 Finance Committee

This funding request is for ongoing operation and maintenance of Colorado's Decision Support Systems (CDSS), a joint effort of CWCB and DWR to provide data and modeling tools to assist in water resource planning and management in Colorado. Over the last 20 years, CDSS databases, analytical tools, and water resource models have been developed and implemented for most of the State, with development of the Arkansas River DSS beginning soon. These CDSS components need periodic maintenance and operational revisions to protect the State's investment and keep the tools viable as water resource planning becomes more challenging in the future. CDSS data and tools were a key component of several Basin Implementation Plans, and this role will only grow with future revisions of Colorado's Water Plan.

PROJECT DETAILS	
Project Cost:	$200,000
NRI Funding Request:	$200,000
Funding Source:	*Construction Fund*
Project Type:	Program Funds
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	N/A
Drainage Basin:	All Basins

COLORADO WATER CONSERVATION BOARD

CONSTRUCTION FUND
NON-REIMBURSABLE PROJECT INVESTMENT APPLICATION

Colorado's Decision Support Systems (CDSS) Operation and Maintenance

(Project Name)

Application Deadline: August 1 for funds available July 1 the following year.

Funding recommendations will be considered at the November CWCB Board Meeting.

Instructions: This application form should be emailed, typed, or printed neatly. 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. If you have difficulty with any part of the application, contact Kirk Russell, PE, Finance Section Chief for assistance, at (303) 866-3441, ext. 3232 or email kirk.russell@state.co.us.

Generally, the applicant is also the prospective owner and sponsor of the proposed project. If this is not the case, contact CWCB before completing this application.

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

1. Applicant Name(s): Andy Moore, Colorado Water Conservation Board

Mailing address: 1313 Sherman St. Rm 718
Denver, CO 80203

Taxpayer ID#:

Email address: andy.moore@state.co.us

Phone Numbers: Business: 303-866-3441 ext. 3229

Home:

Fax:

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

Name: Andy Moore, P.E.

Position/Title: CDSS Project Manager – CWCB Staff

3. Provide a brief description of your organization below:

CWCB and DWR: State Agencies under the Department of Natural Resources

Part B. - Description of the Project or Study

1. Name of the study or project: CDSS Operation and Maintenance

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

	Study
	Demonstration project.
	Rehabilitation or replacement of existing
X	Other (Please describe)

The purpose is for operation and maintenance of CDSS in a coordinated effort by CWCB and DWR. This is an ongoing need and the third such request in the past five years. Previous requests total $300,000, which has been fully encumbered in an existing project, hence the need for this request in anticipation of future additional needs.

3. General location of the study or demonstration project. (Please include county, and approximate distance and direction from the nearest town):

Statewide

4. Please provide a brief narrative description of the proposed study or demonstration project including purpose, need, and service area. (Attach scope of study, if available)

This funding request is for ongoing operation and maintenance of Colorado's Decision Support Systems (CDSS), a joint effort of CWCB and DWR to provide data and modeling tools to assist in water resource planning and management in Colorado. Over the last 20 years, CDSS databases, analytical tools, and water resource models have been developed and implemented for most of the State, with development of the Arkansas River DSS beginning soon. These CDSS components need periodic maintenance and operational revisions to protect the State's investment and keep the tools viable as water resource planning becomes more challenging in the future. CDSS data and tools were a key component of several Basin Implementation Plans, and this role will only grow with future revisions of Colorado's Water Plan.

5. Explain why you are requesting a grant, instead of a loan. (the Construction Fund exists primarily to provide low interest loans for the construction or rehabilitation of raw water projects. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people and organizations, and/or a large geographical area **.**

This CWCB and DWR effort is of statewide importance and benefits a wide range of people and organizations.

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

Name	Address & Phone Number

7. List any feasibility study or scope of work that has been completed or is now in progress for the proposed project or study. (Submit one copy with this application):

Non-Reimbursable Project Investment Application - CWCB Construction Fund

Form Revised April 2010

8. What is the estimated cost of the study/demonstration project? Please include estimated Study, Planning, Engineering, and Construction costs, if known:

Estimated Planning/Study Costs:	$200,000
Estimated Engineering Costs:	
Estimated Construction Costs:	
Estimated Total Costs:	$200,000

9. **How much funding are you requesting?** $200,000

Part C. - Project Sponsor Financial Information

1. The CWCB Construction Fund is primarily a revolving loan fund. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people. Provide copies of the two most recent annual reports, financial statements, corporate reports or other current documentation of financial condition and operations with this application.

2. Provide a brief narrative description of potential sources of funding (in addition to the CWCB) which have been explored or which will be explored for the proposed project or study. (Examples would be Local County and Town Governments, Water Conservancy Districts, USDA Rural Development, The Natural Resources Conservation Service, The U.S. Environmental Protection Agency, Commercial Banks, etc.)

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

Signature of Applicant: 

Print Applicant's Name: Andy Moore

Project Title: CDSS Operations and Maintenance

Date: August 1, 2016

Return this application to:

Mr. Kirk Russell, P.E., Chief
Finance Section
COLORADO WATER CONSERVATION BOARD
1313 Sherman Street, Suite 718
Denver, CO 80203

Submit applications by email to: kirk.russell@state.co.us or fax to (303) 894-2578
For questions call (303) 866-3441, ext. 3232

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street
Denver, CO 80203

P (303) 866-3441
F (303) 866-4474

John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Taryn Finnessey, Climate Change Risk Management Specialist**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (7) Colorado Mesonet Project

Introduction

Weather and climate monitoring in Colorado currently exists as a patchwork of networks operated by multiple federal, state, local and private entities, rather than a single mesonet or spatially coherent network of weather stations reporting in near real-time via major data portals. Since each network was built for a specific purpose, there is no spatial coherency to where stations are located. Each network is valuable for specific applications. Collectively, the data are critical for long term climate monitoring, agriculture, fire weather, flood warning, water supply forecasting and drought monitoring.

July 2015, CoAgMet received the first funding from the state to begin moving towards a multipurpose state "Mesonet" focusing on agricultural and water resources as well as long-term climate monitoring and short term real-time weather tracking to aid weather prediction, emergency management and other diverse uses. With this funding, we have been able to identify products and tools greatly needed to enhance data, areas needed for expansion and stations needed for upgrading to newer technology in order to provide beneficial real-time weather data.

In order to continue expanding and improving the Colorado Mesonet data and products, and track long term climate conditions that could impact our water resources, continuation of the state funding is needed. With this funding we will be able to develop climate summaries for the best long-term stations for climate monitoring, develop a new Colorado Mesonet data access and display web portal and develop daily growing season water balance graphics for drought tracking and water conservation. We will expand on soil moisture monitoring at stations to help with drought tracking. We will also start upgrading the CO-RCRN stations to measure and report variables for reference ET calculations and complete data comparisons using the CO-RCRN stations, CoAgMet stations and NWS Coop stations.

Staff Recommendation

Staff recommends the Committee's approval of item for consideration by the Board in November to authorize from the Construction Fund up to $154,000 to the Colorado Mesonet Project.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Mesonet Project

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	$154,000
NRI Funding Request:	$154,000
Funding Source:	*Construction Fund*
Project Type:	Data Collection/Maint.
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

The Colorado Climate Center runs the Colorado Agricultural Meteorological (CoAgMet) network consisting of 75 stations statewide tracking agricultural weather, climate and drought. The Center also manages the Colorado Reginal Climate Reference Network (CO-RCRN) which consists of 17 high-quality precipitation and temperature monitoring stations located in pristine environments. These sites, started by NOAA, were intended to monitor the climate over long periods of time in areas free of urbanization and with datasets free of station moves, changes in observation time and other factors that create inhomogeneity in climate datasets. Current base funding for these networks does not allow for them to be run at high quality levels and still develop products to enhance the data. CO-RCRN needs multiple station visits per year to add and remove fluids from rain gauges. The CoAgMet network, in order to be run as a reliable mesonet for real-time weather monitoring, drought monitoring, and calculations of consumptive use needs close attention paid to quality control and making sure all sensors are functioning properly. If they aren't, a technician should be deployed as soon as possible to resolve issues (particularly during the growing season). Due to budget and staff constraints, products cannot be developed while providing the close attention needed for quality data.

July 2015, CoAgMet received the first funding from the state to begin moving towards a multipurpose state "Mesonet" focusing on agricultural and water resources as well as long-term climate monitoring and short term real-time weather tracking to aid weather prediction, emergency management and other diverse uses. With this funding, we have been able to identify products and tools greatly needed to enhance data, areas needed for expansion and stations needed for upgrading to newer technology in order to provide beneficial real-time weather data.

In order to continue expanding and improving the Colorado Mesonet data and products, and track long term climate conditions that could impact our water resources, continuation of the state funding is needed. With this funding we will be able to develop climate summaries for the best long-term stations for climate monitoring, develop a new Colorado Mesonet data access and display web portal and develop daily growing season water balance graphics for drought tracking and water conservation. We will expand on soil moisture monitoring at stations to help with drought tracking. We will also start upgrading the CO-RCRN stations to measure and report variables for reference ET calculations and complete data comparisons using the CO-RCRN stations, CoAgMet stations and NWS Coop stations.

Grant funds will allow effective enhancements to the CoAgMet network, improved delivery of data and new products for water use planning and climate change monitoring. They will improve real-time monitoring capabilities to improve severe weather warnings and emergency management applications. ***Importantly, this grant funding will be used to qualify for federal matching funds through the National Mesonet to support critical operations and maintenance needs.***

COLORADO WATER CONSERVATION BOARD

CONSTRUCTION FUND
NON-REIMBURSABLE PROJECT INVESTMENT APPLICATION

Colorado Agricultural Meteorological Network (CoAgMet)/Colorado Mesonet

(Project Name)

Application Deadline: August 1 for funds available July 1 the following year.

Funding recommendations will be considered at the November CWCB Board Meeting.

Instructions: This application form should be emailed, typed, or printed neatly. 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. If you have difficulty with any part of the application, contact Kirk Russell, PE, Finance Section Chief for assistance, at (303) 866-3441, ext. 3232 or email kirk.russell@state.co.us.

Generally, the applicant is also the prospective owner and sponsor of the proposed project. If this is not the case, contact CWCB before completing this application.

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

1. Applicant Name(s): Colorado State University

Mailing address:
Sponsored Programs
601 S. Howes St.
2002 Campus Delivery
Fort Collins, CO 80523-2002

Taxpayer ID#: 84-6000545 Email address: Lisa.Anaya@colostate.edu

Phone Numbers: Business: 970-491-0537

Home: N/A

Fax: 970-491-6147

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

Name: Nolan Doesken & Zach Schwalbe

Position/Title: Colorado State Climatologist/CoAgMet Manager

3. Provide a brief description of your organization below:

The Colorado Climate Center was established by the state in 1974 through the Colorado State University Agricultural Experiment Station to provide information and expertise on Colorado's complex climate. Through its program of Climate Monitoring, Climate Research and Climate Services, the center is responding to many climate related questions and problems affecting the state today. One way the Center monitors the climate is through the CoAgMet Network. A network of 75 stations statewide tracking agricultural weather and Colorado's climate. The Climate Center is located at Colorado State University within the Department of Atmospheric Science.

Part B. - Description of the Project or Study

1. Name of the study or project: Colorado Agricultural Meteorological Network (CoAgMet)/Colorado Mesonet Enhancements

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

	Study
	Demonstration project.
	Rehabilitation or replacement of existing
X	Other (Please describe)

Collection and analyses of weather and climate information for planning and water resources applications

3. General location of the study or demonstration project. (Please include county, and approximate distance and direction from the nearest town):

The CoAgMet network covers the entire state of Colorado with 75 stations in primarily rural agricultural areas of the state.

4. Please provide a brief narrative description of the proposed study or demonstration project including purpose, need, and service area. (Attach scope of study, if available)

This project leverages the weather and climate data resources collected over many years by Colorado State University's Colorado Agricultural Meteorological Network (CoAgMet) to enhance and improve statewide climate information for water resources planning, conservation and administration. 75 existing CoAgMet weather stations currently represent much of Colorado's irrigate agricultural lands. Data from CoAgMet are already a significant component of HydroBase – the database used to feed Colorado's Decision Support System and allow high quality estimates of reference and crop consumptive use. This effort will improve the quality and usability of CoAgMet data and continue to build towards an effective statewide real-time Mesonet. A proposed scope of work is attached.

5. Explain why you are requesting a grant, instead of a loan. (the Construction Fund exists primarily to provide low interest loans for the construction or rehabilitation of raw water projects. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people and organizations, and/or a large geographical area **.**

High quality weather data for water resources application is greatly taken for granted and receives little financial support. It is a statewide effort benefiting many users from agricultural producers to municipal water providers and many others. Federal data collection efforts have provided useful long-term temperature and precipitation data but not the extensive measurements of humidity, wind and solar radiation needed for computing reference evaporation and crop consumptive use. The Colorado Regional Climate Reference Network, recently gifted to CSU from the National Weather Service, represents a federal investment in hardware of nearly $1,000,000 and is an excellent high-quality network for tracking indicators of climate change. It has no funding source whatsoever, but could fill critical monitoring gaps and improve evapotranspiration monitoring. Grant funds will allow effective enhancements to the CoAgMet network, improved delivery of data and new products for water use planning and climate change monitoring. They will improve real-time monitoring capabilities to improve severe weather warnings and emergency management applications. ***Importantly, this grant funding will be used to qualify for federal matching funds through the National Mesonet to support critical operations and maintenance needs.***

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

Name	Address & Phone Number

7. List any feasibility study or scope of work that has been completed or is now in progress for the proposed project or study. (Submit one copy with this application):

Non-Reimbursable Project Investment Application - CWCB Construction Fund

Form Revised April 2010

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8. What is the estimated cost of the study/demonstration project? Please include estimated Study, Planning, Engineering, and Construction costs, if known:

Estimated Planning/Study Costs:	$154,000
Estimated Engineering Costs:	
Estimated Construction Costs:	
Estimated Total Costs:	

9. **How much funding are you requesting?** $154,000

Part C. - Project Sponsor Financial Information

1. The CWCB Construction Fund is primarily a revolving loan fund. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people. Provide copies of the two most recent annual reports, financial statements, corporate reports or other current documentation of financial condition and operations with this application.

2. Provide a brief narrative description of potential sources of funding (in addition to the CWCB) which have been explored or which will be explored for the proposed project or study. (Examples would be Local County and Town Governments, Water Conservancy Districts, USDA Rural Development, The Natural Resources Conservation Service, The U.S. Environmental Protection Agency, Commercial Banks, etc.)

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

Signature of Applicant: 

Print Applicant's Name: Nolan J. Doesken

Project Title: Colorado Agricultural Meteorological Network (CoAgMet)/Colorado Mesonet Enhancements

Date: 29 July 2016

Return this application to:

Mr. Kirk Russell, P.E., Chief
Finance Section
COLORADO WATER CONSERVATION BOARD
1313 Sherman Street, Suite 718
Denver, CO 80203

Submit applications by email to: kirk.russell@state.co.us or fax to (303) 894-2578
For questions call (303) 866-3441, ext. 3232

Proposed Scope of Work

Colorado Agricultural Meteorological Network (CoAgMet)/Colorado Mesonet Enhancements
(For work beginning July 1, 2017)

Nolan Doesken and Zach Schwalbe
Colorado Climate Center
Department of Atmospheric Science
Colorado State University
Fort Collins, CO 80523-1371

The following activities are proposed to enhance the Colorado Agricultural Meteorological Network, provide weather and climate information of great value to Colorado's water users, planners and managers, and continue to progress towards an effective statewide Colorado Mesonet.

1) 2017 marks the 25th year of data collection and archival from the Colorado Agricultural Meteorological Network (CoAgMet). A climate data summary will be produced showing monthly and seasonal averages, variations, trends and extremes of temperature, humidity, wind, solar, reference Evapotranspiration (ET) and precipitation for the best and most complete long-term stations. This will serve as a basis for using CoAgMet data for mapping climate anomalies.

2) Develop and display new drought tracking tools to indicate plant water stress. These would include daily growing season water balance graphics based on precipitation, ET and soil moisture data.

3) Develop and implement an effective access and display web portal based on input and guidance from data users and the Colorado Mesonet advisory committee.

4) Expand soil moisture measurements to more CoAgMet sites. Complete soil testing and station calibration and then produce operational soil moisture graphs for an appropriate and geographically distributed set of stations.

5) Begin upgrading selected Colorado Regional Climate Reference Network (CO-RCRN) stations to measure and report all variables needed for ref ET calculation and include these in the CoAgMet Ref ET data flow.

6) Work with National Weather Service "National Mesonet" contractor to showcase CWCB support for CoAgMet to leverage federal funds. These funds will be used to offset basic operations and maintenance costs so CWCB support may focus on product development, enhancements and applications.

7) Complete data comparison of CO Regional Climate Reference Network stations with co-located CoAgMet stations (Center, Rocky Ford, Sand Creek Massacre, Kirk) and determine bias corrections. Do 13-year trend analysis of temperature data from the Climate Reference Stations and compare to 100-year records at nearest NWS COOP stations

8) Present results at Colorado Water Congress and at appropriate river basin water forums and Basin Roundtable meetings.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street
Denver, CO 80203

P (303) 866-3441
F (303) 866-4474

John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Carlee Brown, Chief, Interstate and Federal Section**
Steve Miller, Water Resource Specialist

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (8) Technical Assistance Grants for Federal Irrigation Improvement Cost-Sharing Programs

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Introduction

The Colorado Water Plan identifies the opportunities for and benefits to be achieved through improving irrigation infrastructure. While the cost of these improvements are often beyond the capacity of water users, several federal cost-share programs provide financial incentives to help defray those costs. These programs are competitive; to be awarded funds, proposals require sound planning and well-engineered feasibility studies with reasonable and accurate cost estimates. By providing grants for the technical assistance to prepare applications we have improved the success rate of Colorado water user applying for these federal funds. In addition, by providing funds for engineering design and environmental compliance activities by the successful applicants we have helped accelerate the actual implementation of projects, and preserved federal grant funds for project construction. Similar grant opportunities have been funded by the Board and used successfully for these purposes in 2014 and 2015 (HB14-1333, sec. 9 – Salinity TA Grant Program, $250,000 and SB15-253, sec. 7 – USDA-RCPP technical assistance, $500,000).

Eligible federal programs include the USDA Regional Conservation Partnership Program [RCPP] which is offered statewide, the Colorado River Basin Salinity Control Program which is available throughout Western Colorado, and the Gunnison Selenium Management Program which is only available in the Gunnison Basin below the Aspinall Unit.

These technical assistance funds will increase the success rate of applicants for competitive federal grant funds and thus will be highly leveraged. In addition, successful participants in these federal programs have, and will continue to have, a strong incentive to use the CWCB loan program to finance a portion of the non-federal implementation costs.

Staff Recommendation

Staff recommends the Committee's approval of item for consideration by the Board in November to authorize from the Construction Fund up to $500,000 for the Technical Assistance Grants for Federal Irrigation Improvement Cost-sharing Programs.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Technical Assistance Grants for Federal Irrigation Improvement Cost-Sharing

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	$500,000
NRI Funding Request:	$500,000
Funding Source:	*Construction Fund*
Project Type:	Grant Program
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

The Colorado Water Plan identifies the opportunities for and benefits to be achieved through improving irrigation infrastructure. While the cost of these improvements are often beyond the capacity of water users, several federal cost-share programs provide financial incentives to help defray those costs. These programs are competitive; to be awarded funds, proposals require sound planning and well-engineered feasibility studies with reasonable and accurate cost estimates. By providing grants for the technical assistance to prepare applications we have improved the success rate of Colorado water user applying for these federal funds. In addition, by providing funds for engineering design and environmental compliance activities by the successful applicants we have helped accelerate the actual implementation of projects, and preserved federal grant funds for project construction. Similar grant opportunities have been funded by the Board and used successfully for these purposes in 2014 and 2015 (HB 14-1333, sec. 9 – Salinity TA Grant Program, $250,000 and SB15-253, sec. 7 – USDA-RCPP technical assistance, $500,000).

Eligible federal programs include the USDA Regional Conservation Partnership Program [RCPP] which is offered statewide, the Colorado River Basin Salinity Control Program which is available throughout Western Colorado, and the Gunnison Selenium Management Program which is only available in the Gunnison Basin below the Aspinall Unit.

These technical assistance funds will increase the success rate of applicants for competitive federal grant funds and thus will be highly leveraged. In addition, successful participants in these federal programs have, and will continue to have, a strong incentive to use the CWCB loan program to finance a portion of the non-federal implementation costs.

COLORADO WATER CONSERVATION BOARD

CONSTRUCTION FUND
NON-REIMBURSABLE PROJECT INVESTMENT APPLICATION

Technical Assistance Grants for Federal Irrigation Improvement Cost-sharing Programs

(Project Name)

Application Deadline: August 1 for funds available July 1 the following year.

Funding recommendations will be considered at the November CWCB Board Meeting.

Instructions: This application form should be emailed, typed, or printed neatly. 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. If you have difficulty with any part of the application, contact Kirk Russell, PE, Finance Section Chief for assistance, at (303) 866-3441, ext. 3232 or email kirk.russell@state.co.us.

Generally, the applicant is also the prospective owner and sponsor of the proposed project. If this is not the case, contact CWCB before completing this application.

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

1. Applicant Name(s): Steve Miller / Carlee Brown
CWCB Interstate and Federal Section

Mailing address:

Taxpayer ID#: Email address:

Phone Numbers: Business:

Home:

Fax:

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

Name:

Position/Title

3. Provide a brief description of your organization below:

CWCB internal application.

Part B. - Description of the Project or Study

1. Name of the study or project: Technical Assistance Grants for Federal Irrigation Improvement Cost-sharing Programs

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

	Study
	Demonstration project.
	Rehabilitation or replacement of existing
X	Other (Please describe)

Grants to fund technical assistance [engineering, planning, permitting] to water users applying for Federally funded cost-share irrigation improvement programs. Technical assistance will be used to improve the quality of applications and to support successful applicants in the design and environmental compliance work necessary before project implementation can begin.

3. General location of the study or demonstration project. (Please include county, and approximate distance and direction from the nearest town):

Eligible federal programs include the USDA Regional Conservation Partnership Program [RCPP] which is offered statewide, the Colorado River Basin Salinity Control Program which is available throughout Western Colorado, and the Gunnison Selenium Management Program which is only available in the Gunnison Basin below the Aspinall Unit.

4. Please provide a brief narrative description of the proposed study or demonstration project including purpose, need, and service area. (Attach scope of study, if available)

The Colorado Water Plan identifies the opportunities for and benefits to be achieved through improving irrigation infrastructure. While the cost of these improvements are often beyond the capacity of water users, several federal cost-share programs provide financial incentives to help defray those costs. These programs are competitive; to be awarded funds, proposals require sound planning and well-engineered feasibility studies with reasonable and accurate cost estimates. By providing grants for the technical assistance to prepare applications we have improved the success rate of Colorado water user applying for these federal funds. In addition, by providing funds for engineering design and environmental compliance activities by the successful applicants we have helped accelerate the actual implementation of projects, and preserved federal grant funds for project construction. Similar grant opportunities have been funded by the Board and used successfully for these purposes in 2014 and 2015, see question 7 below.

Non-Reimbursable Project Investment Application - CWCB Construction Fund

Form Revised April 2010

5. Explain why you are requesting a grant, instead of a loan. (the Construction Fund exists primarily to provide low interest loans for the construction or rehabilitation of raw water projects. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people and organizations, and/or a large geographical area **.**

These technical assistance funds will increase the success rate of applicants for competitive federal grant funds and thus will be highly leveraged. In addition, successful participants in these federal programs have, and will continue to have, a strong incentive to use the CWCB loan program to finance a portion of the non-federal implementation costs.

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

Name	Address & Phone Number
N/A	

7. List any feasibility study or scope of work that has been completed or is now in progress for the proposed project or study. (Submit one copy with this application):

CWCB technical assistance grants for similar purposes has been provided pursuant to:
1. HB14-1333, sec. 9 – Salinity TA Grant program, $250,000; [add data on success rate]

2. SB15-253, sec. 7 – USDA-RCPP technical assistance, $500,000; [add data on use and leverage ratio]

Non-Reimbursable Project Investment Application - CWCB Construction Fund

Form Revised April 2010

8. What is the estimated cost of the study/demonstration project? Please include estimated Study, Planning, Engineering, and Construction costs, if known:

Estimated Planning/Study Costs:	250,000
Estimated Engineering Costs:	250,000
Estimated Construction Costs:	N/A [covered by federal grants, water user funds, and CWCB loans]
Estimated Total Costs:	500,000

9. **How much funding are you requesting?** 500,000

Part C. - Project Sponsor Financial Information

1. The CWCB Construction Fund is primarily a revolving loan fund. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people. Provide copies of the two most recent annual reports, financial statements, corporate reports or other current documentation of financial condition and operations with this application.

2. Provide a brief narrative description of potential sources of funding (in addition to the CWCB) which have been explored or which will be explored for the proposed project or study. (Examples would be Local County and Town Governments, Water Conservancy Districts, USDA Rural Development, The Natural Resources Conservation Service, The U.S. Environmental Protection Agency, Commercial Banks, etc.)

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

Signature of Applicant: SRMiller

Print Applicant's Name:

Project Title:

Date:

Return this application to:

Mr. Kirk Russell, P.E., Chief
Finance Section
COLORADO WATER CONSERVATION BOARD
1313 Sherman Street, Suite 718
Denver, CO 80203

Submit applications by email to: kirk.russell@state.co.us or fax to (303) 894-2578
For questions call (303) 866-3441, ext. 3232

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street
Denver, CO 80203

P (303) 866-3441
F (303) 866-4474

John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Kevin Reidy, Water Conservation Technical Specialist**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (9) Colorado Water Loss Control Initiative

Introduction

The goal for the Colorado Water Loss Control Initiative is for participating water utilities to learn how to apply the American Water Works Association's (AWWA) M36 water loss and control methodology to their water system and to achieve a complete and transparent (as measured by Level 1 validated scores) water loss audit. Water loss was identified in SWSI 2010 as a significant factor in the M&I gap and, as outlined in Colorado's Water Plan, the CWCB will:

Support water management activities for all water providers: *The CWCB will continue to provide funding, technical support, and training workshops to assist water providers in improving the management of their water systems. This will include the use of techniques such as water budgets, smart-metering, comprehensive water loss management programs, savings tracking and estimating tools, and improved data collection on customer water uses. For example, in the next year, the CWCB will fund several regional training workshops about using the American Water Works Association M36 Methodology for Water Audits and Loss Control.*

As part of the coordinated statewide water loss control training program, the CWCB will convene a steering committee which will include (but not limited to) personnel from water utilities, AWWA, Water Research Foundation (WRF), and the Colorado environmental community. This steering committee will assist in creating and reviewing the RFP for the project and assist with the management of the training process as it moves forward. At present, WRF, AWWA, various utilities and the environmental community are highly supportive of this initiative.

Informed by the Georgia and California experiences but adapted for Colorado, the Initiative will consist of a two-track approach: a more advanced approach for the roughly 15-30 "early adopters" (agencies that have already worked through the audit process at least once using the AWWA Free Water Audit Software) and a "ground-up" approach starting with the basic principles for "new learners." The training program, which will span 24-30 months, will allow for an iterative approach with each utility to foster progressive learning that has been proven effective in the state of Georgia and is being used in California.

Although, there will likely be two training tracks with different starting points, the trainings will follow similar approaches. The following is an initial draft of the basic process and program elements:

1) Validation Webcast and Workshops
    a. Learn the basic concepts of the methodology through a webinar and are prepared for 1st round of workshops,
    b. Participants will take knowledge from webinar and carry out "data inquiry homework assignments"

   c. Return with collected data and participate in first round of workshops that will further the knowledge of basic concepts of the methodology
      i. These full day workshops will teach foundational water audit concepts and tools, provide a review of the AWWA Free Water Audit Software and its functionalities, and review data validity scoring.
   d. After the initial webinar and workshops, participants will return to their utility and conduct a water audit
2) Audit Basics Technical Review
   a. Participant will submit audit to consultant team and the team will:
      i. Conduct individual calls with each utility to provide a one on one question and answer session, to evaluate and confirm the participant's understanding and proficiency in preparing their water audit,
      ii. Provide feedback to questions/problems/issues that participant encountered during their water audit preparation.
3) Validation Workshop
   a. Participant will attend 2nd set of workshops that will provide further assistance with;
      i. Data collection and validation techniques
      ii. Recommendations received during the audit basics technical review
      iii. Answering any questions related to the preparation of the audit
4) Data Validation Level 1
   a. Participants will meet online for 60-90 minutes with consultant team to achieve:
      i. Follow up on recommendations provided during the validation workshop.
      ii. Review and gauge successful completion of the data gathering and population of their water audit.
      iii. Review grades, data validity scores, identify obvious errors and anomalies in the metrics through interview with the audit preparation team.
         1. The methodology will cover a range of analysis from initial screening of common input errors to deeper levels of revealing hidden errors to accurate assignment of input data grades. Most importantly, the methodology will be the same for each participating utility, identify data quality issues and data grading amendments, and provide recommendations for improved data validation, data collection and validity scoring.
5) Analysis of Final Water Audit Submissions and Report
   a. Consultant will review the final water audit submissions and prepare a summary report to:
      i. Summarize the work performed and results achieved.
      ii. Review and analyze the final water audit submissions of the NL group
      iii. Provide summary statistics on utility participation in each phase of the project.
      iv. Identify where the greatest need/opportunity for data validation steps and real and apparent loss control was observed.

Water loss control has been identified by the drinking water industry as a major topic of interest. With multiple states providing statewide water loss control training and having identified the AWWA M36 methodology in Colorado's Water Plan, the time is right to create statewide training on the industry standard for water loss control.

Staff Recommendation

Staff recommends the Committee's approval of item for consideration by the Board in November to authorize from the Construction Fund up to $1,100,000 for the Colorado Water Loss Initiative.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Colorado Water Loss Control Initiative

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	$1,100,000
NRI Funding Request:	$1,100,000
Funding Source:	*Construction Fund*
Project Type:	Grant Program
Type of Grantee:	State Government

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

This initial scope outlines a comprehensive program of training, technical review and assistance, and a Level 1 validation for approximately 165 urban water systems across Colorado to attain an effective level of competency with the American Water Works Association (AWWA) water balance and audit concepts, and the free AWWA Water Audit Software. The AWWA methodology is considered the industry standard for water loss control and management. This 24-30 month program includes multiple "touch points" for establishing principles & practice and reinforced understanding, through two potential tracks: "Early Adopters" and "New Learners".

The goal for the Colorado Water Loss Control Initiative is for participating water utilities to learn how to apply the methodology to their water system and to achieve a complete and transparent (as measured by Level 1 validated scores) water loss audit. Water loss was identified in SWSI 2010 as a significant factor in the M&I gap and, as outlined in Colorado's Water Plan, the CWCB will:

Support water management activities for all water providers: *The CWCB will continue to provide funding, technical support, and training workshops to assist water providers in improving the management of their water systems. This will include the use of techniques such as water budgets, smart-metering, comprehensive water loss management programs, savings tracking and estimating tools, and improved data collection on customer water uses. For example, in the next year, the CWCB will fund several regional training workshops about using the American Water Works Association M36 Methodology for Water Audits and Loss Control.*

As part of the coordinated statewide water loss control training program, the CWCB will convene a steering committee which will include (but not limited to) representation from water utility personnel, AWWA, Water Research Foundation (WRF), and the Colorado environmental community. This steering committee will assist in creating and reviewing the RFP for the project and assist with the management of the training process as it moves forward. At present, WRF, AWWA, various utilities and the environmental community are highly supportive of this initiative.

Informed by the Georgia and California experiences but adapted for Colorado, the Initiative will consist of a two-track approach: a more advanced approach for the roughly 15-30 "early adopters" (agencies that have already worked through the audit process at least once using the AWWA Free Water Audit Software) and a "ground-up" approach starting with the basic principles for "new learners." The training program will allow for an iterative approach with each utility to foster progressive learning that has been proven effective in the state of Georgia and is being used in California.

COLORADO WATER CONSERVATION BOARD

CONSTRUCTION FUND
NON-REIMBURSABLE PROJECT INVESTMENT APPLICATION

Colorado Water Loss Control Initiative

(Project Name)

Application Deadline: August 1 for funds available July 1 the following year.

Funding recommendations will be considered at the November CWCB Board Meeting.

Instructions: This application form should be emailed, typed, or printed neatly. 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. If you have difficulty with any part of the application, contact Kirk Russell, PE, Finance Section Chief for assistance, at (303) 866-3441, ext. 3232 or email kirk.russell@state.co.us.

Generally, the applicant is also the prospective owner and sponsor of the proposed project. If this is not the case, contact CWCB before completing this application.

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

1. Applicant Name(s): Kevin Reidy

Mailing address: 1313 Sherman St. Denver, CO 80203

Taxpayer ID#:

Email address: Kevin.reidy@state.co.us

Phone Numbers: Business: 303-866-3441 x3252

Home:

Fax:

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

Name:

Position/Title

3. Provide a brief description of your organization below:

CWCB

Part B. - Description of the Project or Study

1. Name of the study or project: Colorado Water Loss Control Initiative

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

	Study
	Demonstration project.
	Rehabilitation or replacement of existing
X	Other (Please describe)

This project is a training program designed to train local water provider personnel statewide in the American Water Works Association's Water Loss Control methodology. This is the industry standard for water loss control.

3. General location of the study or demonstration project. (Please include county, and approximate distance and direction from the nearest town):

Statewide

4. Please provide a brief narrative description of the proposed study or demonstration project including purpose, need, and service area. (Attach scope of study, if available)

See Attached

5. Explain why you are requesting a grant, instead of a loan. (the Construction Fund exists primarily to provide low interest loans for the construction or rehabilitation of raw water projects. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people and organizations, and/or a large geographical area **.**

This will be a CWCB run project and will benefit water providers across Colorado.

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

Name Address & Phone Number

No consultants retained at present

7. List any feasibility study or scope of work that has been completed or is now in progress for the proposed project or study. (Submit one copy with this application):

None

8. What is the estimated cost of the study/demonstration project? Please include estimated Study, Planning, Engineering, and Construction costs, if known:

Estimated Planning/Study Costs:	$1,100,000
Estimated Engineering Costs:	
Estimated Construction Costs:	
Estimated Total Costs:	$1,100,000

9. **How much funding are you requesting?** $1,100,000

Part C. - Project Sponsor Financial Information

1. The CWCB Construction Fund is primarily a revolving loan fund. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people. Provide copies of the two most recent annual reports, financial statements, corporate reports or other current documentation of financial condition and operations with this application.

2. Provide a brief narrative description of potential sources of funding (in addition to the CWCB) which have been explored or which will be explored for the proposed project or study. (Examples would be Local County and Town Governments, Water Conservancy Districts, USDA Rural Development, The Natural Resources Conservation Service, The U.S. Environmental Protection Agency, Commercial Banks, etc.)

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

Signature of Applicant:

Print Applicant's Name:

Project Title:

Date:

Return this application to:

Mr. Kirk Russell, P.E., Chief
Finance Section
COLORADO WATER CONSERVATION BOARD
1313 Sherman Street, Suite 718
Denver, CO 80203

Submit applications by email to: kirk.russell@state.co.us or fax to (303) 894-2578
For questions call (303) 866-3441, ext. 3232

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

1313 Sherman Street
Denver, CO 80203

P (303) 866-3441
F (303) 866-4474

John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Kevin Houck, Section Chief, Watershed Protection and Flood Mitigation Section**
Joe Busto, Scientist Researcher, Watershed Protection and Flood Mitigation Section

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (10) Water Forecasting Partnerships Project

Introduction

The Rio Grande Forecasting Project winter 2014-15 was a historic project in the United States. The CWCB and local water users partnered with NASA Aerial Snow Observatory, NOAA-National Severe Storms Lab, the National Center for Atmospheric Research, and Riverside Technologies, inc. to support the project by comparing existing water forecast methods to emerging technologies for snowpack assessment and water modeling. We also had RTI develop the NWS West Gulf RFC hydrologic modeling to put it in the hands of the DWR. Initial results were that the WRF-Hydro model was robust, the mobile radar put precipitation where it belonged for modeling, and we had a snow on flight and await a snow free flight from NASA. NASA will provide value added as they do for the California DWR.

In the Rio Grande, water forecasting is an issue and the DWR found that four of the last ten years have had large volumetric forecast errors with impacts in the millions of dollars to the water users. NCAR has a new $1M contract with NWS-Office of Hydrologic Development to run WRF-Hydro for the nation. It is known that WRF-Hydro is superior modeling but more quality data, field projects, and optimization are needed to outperform existing methods. We will partner with forecasters on R&D to benefit compacts, apportionment, and beneficial use in Colorado.

Traditional snow data at a few discrete points will not serve us well now or in the future. Nor will reliance on historical data sets to estimate the water volume numbers today. We need to partner and force the future by developing more accurate data and modeling for a better way of doing business. This project request builds on success in the Rio Grande with plans to work with the agencies to implement projects in other watersheds. Dick Wolfe has stated there is a general need for better forecasting statewide and Nathan Coombs of the Conejos Water District said, “Working with these experts and the new science has absolutely put more water at the head gates of our users.”

Staff Recommendation

Staff recommends the Committee’s approval of item for consideration by the Board in November to authorize $600,000 from the Construction Fund to be appropriated to the Department of Natural Resources for allocation to CWCB for the Water Forecasting Partnerships Project.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Water Forecasting Partnerships Project

Colorado Water Conservation Board

September 2016 Finance Committee

The Rio Grande Forecasting Project was a historic end-to-end field demonstration project that illustrated 21st century science will lead to better water management in Colorado and is ongoing. The new federal national water model with new data and calibration will give more accurate water supply forecast numbers leading to better administration and apportionment among all the competing interests. In yellow is staffs plan to spend the existing $300K. In teal is staff's plan to spend $600K for water forecasting work in FY 2017-18. There is a total of about $1.4M in project ideas listed.

PROJECT DETAILS	
Project Cost:	$600,000 (matching will be sought)
NRI Funding Request:	$600,000
Funding Source:	*Construction Fund*
Project Type:	Data and Modeling Upgrades
Type of Grantee:	Funding for Partnerships

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

	FY 2016-17 – Existing Funding		
Location	**Item**	**Cost**	**Notes**
Rio Grande	NASA ASO April 1 flight Rio Grande	110,000	Third year of snowpack flights in Rio Grande
Rio Grande	NOAA Mobile radar Dec-March	70,000	NOAA radar in Rio Grande matches up with GOES-R satellite mission
Rio Grande	NCAR modeling & site installs	50,000	National water model forecasts and field work
Grand Mesa	NRCS SNOTEL	17,500	Partner on SNOTEL for water forecasts and landslide
Rio Grande	Snow data & Model with USGS	30,000	USGS matching funding for snow data above Creede
statewide	soil moisture radiation sensors	20,000	NRCS installs makes national water model better
statewide	Field Work /Travel	5,000	West Gulf RFC, AMS Conference, Inspect radars
		302,500	

	Proposed WY 2017-2018		
Location	**item**	**Cost**	**Notes**
statewide	Put DWR gauges in WRF-Hydro	70,000	NCAR does work WRF-Hydro only has USGS gauges in it
statewide	soil & solar radiation sensors	35,000	NRCS installs makes WRF-Hydro better
Arkansas	Radar QPE +WRF Hydro forecasts	120,000	NOAA radar data & NCAR does experimental forecasts
Rio Grande	National water model experimental forecasts	35,000	NCAR continues to provide experimental forecasts
western slope	database for CSAS	40,000	online CSAS data for analysis and modeling
statewide	Field Work /Travel	5,000	CBRFC, AMS Conference, See mobile radar
		305,000	

	Proposed WY 2018-2019		
Location	**Item**	**Cost**	**Notes**
Gunnison Basin	NASA ASO mapping	133,000	Expands existing project to just Taylor $100K in local funding needed
South Platte	Radar QPE +WRF Hydro forecasts	120,000	NOAA develops radar data & NCAR does experimental forecasts
Arkansas	Two SNOTEL sites	35,000	Arkansas partners on two of six requested SNOTEL sites
Rio Grande	new SNOTEL	17,500	Rio partners on requested SNOTEL site
Statewide	Field work/travel	5,000	RFC meetings, AMS Conference, AGU conference
		$310,500	

	Unmet Needs		
Location	**Item**	**Cost**	**Notes**
statewide	purchase PX10,000 mobile radar	300,000	$300,000 Homeland security matched with CWCB
SNOTEL in Rio Grande	SNOTEL in Rio Grande	17,500	NRCS installs and maintains
Rio Grande	USGS data support	30,000	Can only fund one year of USGS effort right now
CSAS	continue CoDos work	40,000	CoDos in Severance Tax too many years now
South Platte	USGS UAV snowpack mapping	93,000	USGS not funded through Severance Tax
Travel to meetings	Field work/travel	5,000	RFC meetings, AMS Conference, AGU conference
		$485,500	

Total $1.403,500

COLORADO WATER CONSERVATION BOARD

CONSTRUCTION FUND
NON-REIMBURSABLE PROJECT INVESTMENT APPLICATION

Water Forecasting Partnerships Project

(Project Name)

Application Deadline: August 1 for funds available July 1 the following year.

Funding recommendations will be considered at the November CWCB Board Meeting.

Instructions: This application form should be emailed, typed, or printed neatly. 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. If you have difficulty with any part of the application, contact Kirk Russell, PE, Finance Section Chief for assistance, at (303) 866-3441, ext. 3232 or email kirk.russell@state.co.us.

Generally, the applicant is also the prospective owner and sponsor of the proposed project. If this is not the case, contact CWCB before completing this application.

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

1. Applicant Name(s): Colorado Water Conservation Board (CWCB)

Mailing address: 1313 Sherman Street, Room 718, Denver, Co 80203

Taxpayer ID#: Email address:

(Please supply current W-9 with application)

Phone Numbers: Business: 303-866-3441,

Home:

Fax: 303-866-4474

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

Name: Joe Busto

Position/Title Scientist Researcher, Watershed and Flood Protection Program

3. Provide a brief description of your organization below:

The CWCB protects, develops, and conserves water. In the Watershed and Protection Section snow data has been a priority for ten years and advances in water supply forecasting methodologies have been the focus on a recent valuable project in the Rio Grande. New snow data in ungauged basins, remote sensing data through planes and mobile radars, and new modeling techniques were employed in the Rio Grande to benefit the whole state and western U.S. by advancing the pace at which forecasting methods are developing. This funding will be a continuation of those efforts.

Part B. - Description of the Project or Study

1. Name of the study or project: Water Forecasting Partnerships Project

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

	Study
	Demonstration project.
	Rehabilitation or replacement of existing
X	Other (Please describe)

This funding will be used to partner with agencies like NRCS, NOAA, NCAR, NASA, other agencies and local water users to develop the data and modeling techniques in known problem areas where forecasting and management of water in rivers and dams is an issue. These projects are about wise use and better administration of water resources by greater certainty.

3. General location of the study or demonstration project. (Please include county, and approximate distance and direction from the nearest town):

Working with the NRCS we are developing a list of areas for SNOTEL upgrades with solar radiation and other sensors deployed in all watersheds. Working with other partners we will seek matching funding through federal agencies, research programs, etc. to conduct remote sensing data and field demonstration projects aimed at better volumetric water supply forecasting.

4. Please provide a brief narrative description of the proposed study or demonstration project including purpose, need, and service area. (Attach scope of study, if available)

The Gunnison, Rio Grande, Arkansas. Colorado, and South Platte Basins have complex water management relationships between snowmelt, groundwater, river flows, and reservoir operations. They are complicated by a lack of data, traditional federal modeling techniques. The new national water model went live in June 2016 and is a framework for more accurate modeling but is still a raw not well calibrated national project. It is beyond the federal scope to "optimize" it through new data and calibration projects. Using the DWR Snake Diagram there is almost 10MAF water that leaves the state on an average annual basis. The going rate to lease water is $250/AF then about $2.5B in water is flowing out Colorado and downstream each year. Compared to the amount of water we average modest investments in data and modeling can help more properly forecast and manage our water assets. It is merited here more an anywhere in the west due to competing uses and downstream obligations. We need a 21st century headwaters monitoring and modeling system.

5. Explain why you are requesting a grant, instead of a loan. (the Construction Fund exists primarily to provide low interest loans for the construction or rehabilitation of raw water projects. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people and organizations, and/or a large geographical area.

The CWCB has been using the new national water model and feeding it with new ground snow data, mobile radar, and NASA aerial flight snow data. This experimental forecasting project is ongoing in the Rio Grande. The results for winter 2014-15 were very promising. The seasonal runoff volume forecasts (April through October) were four times more accurate than the official federal water supply forecast. The experimental forecast was 7% off and the official federal forecast was 31% off. This equates to $42M in water in the Rio Grande left the state that was not known about (forecasted) until the season was over. The staff strategy is to embrace the new national water model and seek ways to fill the data gaps and calibrate it. The Rio Grande work needs to continue and expand to other parts of the state. Staff has outlined projects and planning numbers to upgrade the new national water model to be accurate in Colorado. See attached priorities list. Staff has doubled the request to $600K for this year. About $300K of that increased request will be to partner on the purchase a mobile unmanned radar. The Division of Homeland Security and Public Safety were keenly interested in the gap filling radars through RWEACT on Wolf Creek Pass. The NWS no longer needed storm spotters but could rely on this radar to make accurate flash flood warnings. DHS has approached the CWCB about splitting the purchase and O&M of a State owned mobile radar. In summer months it will be used for fires and floods to plug coverage gaps. In winter months it will be used by the CWCB for winter studies, radar QPE, cloud seeding, etc. This radar was designed by Oklahoma University Advanced Radar Research Corporation with staff input and built by a commercial vendor to be commercial grade. Radars are $1,000/day to rent. It makes sense to have one

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

Bob Palmer, Director, O.U. Advanced Radar Research Corporation
Ken Howard, NOAA National Severe Storms Lab
NWS River Basin Forecast Centers
Dave Gochis, National Center for Atmospheric Research
Jeff Deems, National Snow and Ice Data Center
Jeff Derry, Center for Snow and Avalanche Studies.

7. List any feasibility study or scope of work that has been completed or is now in progress for the proposed project or study. (Submit one copy with this application):

2016 Weather and Climate Data Needs Assessment conducted by the Colorado Climate Center states that weather radar in Southwest and South Central Colorado is the top priority.

Rio Sno Flo Report January 2016

Values of Deploying a Compact Polarimetric Radar in a Mountainous Area: Mineral County, Colorado

Non-Reimbursable Project Investment Application - CWCB Construction Fund

Form Revised July 2014

8. What is the estimated cost of the study/demonstration project? Please include estimated Study, Planning, Engineering, and Construction costs, if known:

Estimated Planning/Study Costs:	
Estimated Engineering Costs:	
Estimated Construction Costs:	
Estimated Total Costs:	

9. **How much funding are you requesting?** $600,000

Part C. - Project Sponsor Financial Information

1. The CWCB Construction Fund is primarily a revolving loan fund. Non-reimbursable investments are approved only when the project or study is of statewide interest and benefits a wide range of people. Provide copies of the two most recent annual reports, financial statements, corporate reports or other current documentation of financial condition and operations with this application.

2. Provide a brief narrative description of potential sources of funding (in addition to the CWCB) which have been explored or which will be explored for the proposed project or study. (Examples would be Local County and Town Governments, Water Conservancy Districts, USDA Rural Development, The Natural Resources Conservation Service, The U.S. Environmental Protection Agency, Commercial Banks, etc.)

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

Signature of Applicant:

Print Applicant's Name: Joe Busto

Project Title: Scientist Researcher, Watershed and Flood Protection Program

Date:

Return this application to:

Mr. Kirk Russell, P.E., Chief
Finance Section
COLORADO WATER CONSERVATION BOARD
1313 Sherman Street, Suite 718
Denver, CO 80203

Submit applications by email to: kirk.russell@state.co.us or fax to (303) 894-2578
For questions call (303) 866-3441, ext. 3232

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Denver, CO 80203

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F (303) 866-4474

John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Anna Mauss, P.E., Finance Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (11) Feasibility Study Small Grant Fund Increase

In 1999 through SB 99-173, the Legislature authorized the Board to set aside $200,000 of Construction Fund money in a special fund reserved for feasibility studies for water resources infrastructure systems projects. Section 37-60-122.7(5) of the C.R.S. established the fund. The money in the fund is continuously appropriated to the Board for immediate availability for making small grants to water users to help pay for the costs of preparing feasibility studies in conformance with the CWCB Water Project Loan Program Guidelines. The fund is intended to encourage planning by local water supply entities and to evaluate technical feasibility and the financial aspects of projects if funded through Water Project Loan Program.

In an effort to align with the goals of the Colorado Water Plan, staff is aksing the board to support a statute change in Section 37-60-122.7(5) to increase the appropriation to $500,000. The intent of the increase is to encourage and support reconnaissance and feasibility planning by local water providers. This change will need to be included in the FY17 Projects Bills.

In addition, staff is asking the board to consider an change to Policy 17 – Application Approval and Use of Grants from the Feasibility Study Small Grant Fund. Currently the policy gives the CWCB director approval authority for grants up to $5,000 without Board authorization. Staff is recommending increasing the CWCB director's approval limit to $50,000. This is consistent with the limit on Water Conservation Planning grants offered by the CWCB. (See attached Policy Number 17.)

Staff Recommendation

Staff recommends the Committee's approval of item 11 for consideration by the Board in November to authorize up to $500,000 from the Construction Fund to be appropriated to the Feasibility Study Small Grant Fund.

Staff further recommends increasing the approval limit of the CWCB director to $50,000 for grants from the Feasibility Study Small Grant Fund.

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Colorado Water Conservation Board
Department of Natural Resources

Feasibility Study Small Grant Fund Increase

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	$500,000
NRI Funding Request:	$500,000
Funding Source:	Construction Fund
Project Type:	Grant Fund Refresh
Type of Grantee:	CWCB

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

In 1999 through SB 99-173, the Legislature authorized the Board to set aside $200,000 of Construction Fund money in a special fund reserved for feasibility studies for water resources infrastructure systems projects. The money in the fund is continuously appropriated to the Board for immediate availability for making small grants to water users to help pay for the costs of preparing feasibility studies in conformance with the CWCB Water Project Loan Program Guidelines. The fund is intended to encourage planning by local water supply entities and to evaluate technical feasibility and the financial aspects of projects if funded through Water Project Loan Program.

In an effort to align with the goals of the Colorado Water Plan, staff is aksing the board to support a statute change in Section 37-60-122.7(5) to increase the appropriation to $500,000. The intent of the increase is to encourage and support reconnaissance and feasibility planning by local water providers. This change will need to be included in the FY17 Projects Bills.

A transfer of approximately $500,000 from the Construction Fund's unreserved cash into the fund is requested to fund the Feasibility Study Small Grant Fund.

POLICY NUMBER: 17

SUBJECT: **APPLICATION APPROVAL AND USE OF GRANTS FROM THE FEASIBILITY STUDY SMALL GRANT FUND**

EFFECTIVE DATE: November 24, 1998

REVISED DATE: January 27, 2004

POLICY: The Colorado Water Conservation Board (CWCB) will accept applications for grants from the Feasibility Study Small Grant Fund (the Fund) at any time during the year.

The CWCB will review grant applications from the Fund for water project feasibility studies that meet the established goals and loan program needs of the CWCB Construction Fund and Severance Tax Trust Fund Perpetual Base ~~Account~~ Fund and potential projects that align with the goals of the Colorado Water Plan.

All grants from the fund will be limited to fifty percent of the total study cost. The CWCB Director has the authority to approve grants for up to ~~$5,000~~ $50,000 without prior Board authorization. The applicant must complete the project feasibility study within one year of the approval date.

Eligible study costs will include:

a. Study preparation costs.
b. Engineering costs including surveying, preliminary design, geo-technical analysis of foundation conditions, and the design report.
c. Appraisal costs when an appraisal is required for the loan.
d. Financial audit costs when no financial information currently exists.

PURPOSE: To establish an application and approval process for grants from the Feasibility Study Small Grant Fund.

APPLICABILITY: This policy and procedure apply to grant applications from the Feasibility Study Small Grant Fund.

PROCEDURE: A grant applicant will submit the following to the CWCB staff for review:

a. A letter of request for the grant. The letter must state that the feasibility study will be in the CWCB format, and that the applicant plans to apply for a

loan from the CWCB and has selected an engineer to complete the study.

b. Scope of work and cost estimate for the study from the engineer.
c. Loan Application (preliminary).
d. Articles of Incorporation and Bylaws (or equivalent documentation.)
e. Financial Statements for the 2 most recent years (Income/expense and balance sheet)
f. The applicant's current W-9 form.

Staff will review the grant application for compliance with the above criteria and, in their professional opinion, likelihood of successful project development. Applications greater than $50,000 ~~$5,000~~ will be referred to the Board for consideration at the next regularly scheduled Board meeting. Applications for $50,000 ~~$5,000~~ or less will be referred to the CWCB Director.

Approved by the CWCB
January 27, 2004 Board Meeting
Agenda Item #12

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Chris Sturm, Stream Restoration Coordinator**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (12) Fish & Wildlife Resources Fund (122.2) - Refresh

Introduction

The Fish and Wildlife Resources Fund (aka Fish & Wildlife Mitigation Fund) was established by the Legislature in 1987 with a base of $5 million to help mitigate the impacts of existing water facilities. Pursuant to C.R.S. Section 37-60-122.2 and Financial Policy 15 and 20 (attached). The purpose of the Policy is for the consideration and approval of Fish and Wildlife Resources Fund grant applications pursuant to sub-sections 2-4 of section 37-60-122.2, C.R.S.

The Board accepts applications throughout the year for grants from this Fund for design plans, engineering, and construction projects to: (1) address impacts from construction of water diversion, delivery, and storage facilities that require a permit, license, or other approval from the US. (2) respond to the needs of declining native species and to the species protected under federal law.

The fund was refreshed in 2002 in the amount of $5,000,000.

Staff Recommendation

Staff recommends the Committee's approval of this item for consideration by the Board in November to authorize a transfer from the Construction Fund $2 million to the Fish and Wildlife Resources Fund.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Fish & Wildlife Resource Fund (122.2) - Refresh

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	$2 million
NRI Funding Request:	$2 million
Funding Source:	*Construction Fund*
Project Type:	Mitigation Grants
Type of Grantee:	Varies

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

The Fish and Wildlife Resources Fund (aka Fish & Wildlife Mitigation Account) was established by the Legislature in 1987 with a base of $5 million to help mitigate the impacts of existing water facilities. The statute was amended in 2002 to recognize the role instream flows play in mitigating impacts, and authorized the CWCB as well as sponsors of existing facilities to use these funds. The following projects have received approval for use of these funds over the years:

$1.25 million for the Grand Valley Water Management Program
$2 million for the Native Aquatic Species Facility
$1.28 million for purposes related to the Wolford Mountain Reservoir Project
$400,000 for the purposes related to the Stagecoach Project
$1 million for the Native Species Conservation Trust Fund
$162,000 for Lower Blanco Property Owners Association Rio Blanco River Restoration Phase III & IV
$70,000 for Colorado Springs Utilities, Clear Springs Ranch Fish Passage
$560,000 for Painted Sky R C & D Council, Inc.'s efforts to reconstruct the Hartland Diversion Dam
$75,000 for the Coalition for the Upper South Platte's Upper South Platte Diversion Reconstruction Project
$50,000 for Colorado State University's Stream Mitigation Banking Protocols work
$100,000 for South Suburban Park and Recreation District's South Platte River Enhancement Phase II Project

POLICY NUMBER: 15

SUBJECT: **CONSIDERATION AND APPROVAL OF FISH AND WILDLIFE RESOURCES FUND APPLICATIONS FOR INSTREAM FLOWS AND RIVER RESTORATION PROJECTS.**

EFFECTIVE DATE: September 12, 2002

POLICY: The Colorado Water Conservation Board (CWCB) will accept applications throughout the year for grants from the Fish and Wildlife Resources Fund for the appropriation or acquisition of instream flow water rights and river restoration construction projects to mitigate the effects of the construction, operation, and maintenance of water diversion, delivery, and storage facilities.

Applications for mitigation grants from the Fish and Wildlife Resources Fund will be accepted for the following types of projects:

1. The appropriation or acquisition of water rights for the purpose of preserving or improving the natural environment to a reasonable degree to mitigate the impact of an existing water facility.
2. River restoration feasibility studies and construction projects that are designed to directly mitigate or significantly improve the environmental impacts of existing water facilities.

The CWCB may, in any year, approve grants to fund any project in the above categories that the Board deems worthy of funding through the Fish and Wildlife Resources Fund. In order to protect the long-term integrity of the Fish and Wildlife Resources Fund, instream flow and river restoration projects mitigating the impacts of existing water supply facilities will be limited to 40% of the Fish and Wildlife Resources Fund balance as of July 1, 2002.

The project applicant must have completed a fully executed funding contract with the CWCB within 2 years of the grant authorization by the CWCB, or the Board will consider de-authorization of the grant.

PURPOSE: To establish an approval process for instream flow and river restoration construction project grants from the Fish and Wildlife Resources Fund.

APPLICABILITY: This policy and procedure applies to applications for instream flow or river restoration construction project grants from the Fish and Wildlife Resources Fund.

PROCEDURE: Prior to a Board meeting, the CWCB staff will prepare for the Board's consideration a summary of the technical, financial, and institutional characteristics of each proposed instream flow water right appropriation or acquisition, river restoration feasibility study or construction project. Each application will be reviewed for conformity with the goals and

objectives of the CWCB Strategic Plan. Grant applications will be considered only in the following two categories:

1. The appropriation or acquisition of water rights for the purpose of preserving or improving the natural environment to a reasonable degree to mitigate the impact of an existing water facility.
2. River restoration feasibility studies and construction projects that are designed to directly mitigate or significantly improve the environmental impacts of existing water facilities.

The Board will consider and CWCB staff will evaluate and recommend to the Board grant applications for appropriation or acquisition of water rights to be held by the Board based on the following project types:

- Instream flow water rights that assist in the administration of compact-entitled waters, or address problems relating to compact-entitled waters,
- Instream flow water rights that facilitate the resolution of federal water rights issues, and
- Instream flow water rights that assist in the recovery of threatened or endangered wildlife species or the conservation of existing wildlife species within riparian ecosystems.

The Board will consider and CWCB staff will evaluate and recommend to the Board grant applications for river restoration feasibility studies and construction projects based on the following:

- Soundness of the project design, work plan or plan of study,
- The need for the proposed project,
- The need for financial assistance.
- Financial, technical, or administrative participation or coordination by all affected local governments.

NOTE: Recognizing that future needs and responses to those needs cannot be predicted with certainty, the Colorado Water Conservation Board reserves the right to recommend for funding any instream flow acquisition, river restoration construction project, or study that it determines would mitigate the effects of an existing water supply facility and furthers the purposes of the Fish and Wildlife Resources Fund.

Approved by the CWCB
September 12, 2002
Agenda Item #16a

POLICY NUMBER: 20

SUBJECT: **CONSIDERATION AND APPROVAL OF FISH AND WILDLIFE RESOURCES FUND GRANT APPLICATIONS PURSUANT TO SUB-SECTIONS 2-4 OF SECTION 37-60-122.2, C.R.S.**

EFFECTIVE DATE: May 17, 2011

POLICY: The Colorado Water Conservation Board (CWCB) will accept applications throughout the year for grants from the Fish and Wildlife Resources Fund for design plans, engineering, and construction projects to: (1) address impacts from the construction of water diversion, delivery, and storage facilities that require a permit, license, or other approval from the United States; and (2) respond to needs of declining native species and to those species protected under the federal "Endangered Species Act of 1973", 16 U.S.C. sec. 1531, et seq., as amended, in a manner that will carry out the state water policy.

Applications for grants from the Fish and Wildlife Resources Fund will be accepted in the following categories:

1. Mitigation Grants to reduce, minimize, or avoid undesirable impacts on fish and wildlife resources as outlined in the official state recommendation, i.e. the State Fish and Wildlife Mitigation Plan (Mitigation Plan).
2. Enhancement Grants to improve the habitat of fish and wildlife resources beyond existing conditions in the vicinity of the project.
3. Species Recovery Grants for the purpose of responding to needs of declining native species and to those species protected under the federal "Endangered Species Act of 1973", 16 U.S.C. sec. 1531, et seq., as amended, in a manner that will carry out the state water policy.

The Board shall make Mitigation Grants only if the applicant funds mitigation costs for the first 5 percent of the project's design, engineering, and physical construction costs (construction costs). The Board shall make Mitigation Grants for the costs of mitigation for the impacts to fish and wildlife resources from the construction, operation, or maintenance of water diversion, delivery, and storage facilities up to an additional 5 percent of a project's construction costs. Mitigation Grant disbursements shall not exceed 70 percent of the amount of the grant during any fiscal year. Mitigation grants shall be made only for recommendations in the Mitigation Plan. The Board does not intend to make Mitigation Grants for mitigation required outside of the Mitigation Plan. Mitigation should not include that already required by a Federal Record of Decision, County 1041 permit, or other permitting entity. The Mitigation Plan may be adopted as part of a Federal Record of Decision or other permit. If so, the Board shall fund only those components of the adopted Mitigation Plan that are not included as part of the permitting entity mitigation requirement. Mitigation grants shall only be awarded for a project after that project has received a permit, license, or other approval from the United States and/or other permitting entities.

The Board shall consider applications for Enhancement Grants after receiving a recommendation from the Wildlife Commission. The Board may award an Enhancement Grant with the concurrence of the Wildlife Commission.

Enhancement Grant costs will be shared equally by the CWCB and the Division of Wildlife.

The Board shall consider applications for Species Recovery Grants when funding is not available from the Native Species Conservation Trust Fund.

The CWCB may, in any year, approve Enhancement and Species Conservation Grants that the Board deems worthy of funding through the Fish and Wildlife Resources Fund. Mitigation Grants shall be funded and will take precedence over Enhancement and Species Recovery Grants. The CWCB will manage the Fish and Wildlife Resources Fund in a manner that, over time, distributes grants evenly between east and west slope applicants.

In the event that funds in the Fish and Wildlife Resources Fund are insufficient to fully fund a Mitigation Grant request, the applicant will receive disbursements of the grant as the General Assembly allocates such money for such purposes. The CWCB may determine that full funding is not available based on the number of Mitigation Grant applications and the distribution between east and west slope applicants.

Fish and Wildlife Resources Fund allocations will be made for both Board Polices 15 and 20 in the order that applications are received and approved.

The project applicant must have completed a fully executed funding contract with the CWCB within 2 years of the grant authorization by the CWCB or the Board will consider de-authorization of the grant.

PURPOSE: To establish an approval process for grants from the Fish and Wildlife Resources Fund.

APPLICABILITY: This policy and procedure applies to applications for grants from the Fish and Wildlife Resources Fund.

PROCEDURE: Prior to a Board meeting, the CWCB staff will prepare for the Board's consideration a summary of the technical, financial, and institutional characteristics of each proposed design plan or construction project. Each application will be reviewed for conformity with the goals and objectives of the CWCB Strategic Plan. Grant applications for Mitigation Grants shall be funded if the funds are available, and Enhancement and Species Recovery Grants will be considered after Mitigation Grants are fully funded.

The Board will consider and CWCB staff will evaluate and recommend to the Board Enhancement and Species Recovery Grant applications based on the following:

- Soundness of the project design, work plan or plan of study;
- Promotion of the goals and objectives of the Board's Strategic Plan;
- The need for the proposed project;
- The need for financial assistance; and
- Financial, technical, or administrative participation or coordination by all affected local governmental or other entities (in-kind or cost-share funding).

NOTE: Recognizing that future needs and responses to those needs cannot be predicted with certainty, the Colorado Water Conservation Board reserves the right to recommend for funding any design plan, engineering, or construction project that

it determines would: (1) address the fish and wildlife impacts from the construction of water diversion, delivery, and storage facilities that require a permit, license, or other approval from the United States; or (2) respond to needs of declining native species and to those species protected under the federal "Endangered Species Act of 1973",16 U.S.C. sec. 1531, et seq., as amended, in a manner that will carry out the state water policy.

Approved by the CWCB
Date May 17, 2011
Agenda Item 10

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Craig Godbout, Water Resource Specialist,**
Water Supply Planning Section

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investment Applications**
NRI (13) Alternative Agricultural Water Transfer Methods (ATMs) Grant Program

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Introduction

The 2007 Legislature approved the Colorado Water Conservation (CWCB) to develop a competitive grant program to advance various agricultural transfer methods as alternatives to permanent dry-up in the Arkansas and South Platte Basins (authorized under SB 07-122). In 2009, an additional appropriation was made to continue the advancement of alternative agricultural water transfers.

This grant program focuses on identifying and assisting in the development of agricultural transfer methods (ATM)/programs that reduce consumptive use by reducing the amount of irrigation water applied to the crops, change in the type of crops planted, reducing the number of irrigated acres from historic levels while lessening the impact to rural communities. Several types of agricultural transfers have been proposed as potential alternatives to the traditional agricultural transfers that often result in permanent dry-up of all or a large portion of irrigation systems as a means to obtain additional water supplies for emerging needs.

Through FY 2015-2016, the Board approved twenty-six grant applications that totaled approximately $4,600,000. The most recent amount awarded in August 2016 was $200,000 for a Water Bank Pilot Project on Colorado's west slope with the Grand Valley Water Users Association as fiscal agent.

Since these projects were awarded their funding, much progress has been made by CWCB and the project sponsors in furthering alternatives to permanent water transfers in Colorado. Through these ATM grant projects, CWCB and others have identified numerous hurdles that must be overcome for these alternative water transfer methods to be successful in Colorado. Specifically, the major hurdles facing the implementation of ATM programs in Colorado include: (1) high transaction costs, (2) ability to transfer a portion of a water right (3) certainty of long-term supplies and (4) water rights administration.

The fund was refreshed in 2012 in the amount of $1,000,000 and again in 2014 in the amount of $750,000.

Staff Recommendation

Staff recommends the Committee's approval of item for consideration by the Board in November to authorize $1 million from the Construction Fund to be appropriated to the Alternative Agricultural Water Transfer Methods Grants.

COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Alternative Agricultural Water Transfer Methods (ATMs) Grant Program

Colorado Water Conservation Board

September 2016 Finance Committee

PROJECT DETAILS	
Project Cost:	$1,000,000
NRI Funding Request:	$1,000,000
Funding Source:	*Construction Fund*
Project Type:	Transfer Grants
Type of Grantee:	

LOCATION	
Benefits:	Statewide
Water Source:	Various
Drainage Basin:	All Basins

The following projects have received approval for use of these funds over the years:

CWCB - Alternative Agricultural Water Transfer Methods Grant Program: April 2016

Lower Arkansas Valley WCD, Rotational Land Fallowing & Water Leasing Prog., $320,000
Colorado Corn Growers Assoc., Measures for Preservation of Colorado Irrigated Agriculture, $349,650
Farmers Reservoir & Irrigation CompanyAlternative Agricultural Water Transfer $202,500
Parker Water & Sanitation District, Lower South Platte Irr. Research & Demo. Project, $477,500
Colorado River Water Conservation District, Compact Water Bank, $180,000
East Cherry Creek Valley WCD, Maintaining Ag. Productivity on Formerly Irrigated Lands, $111,030
Colorado Corn Growers Association, FLEX Market Model Project,$158,365
Lower Arkansas Valley Water Conservancy District, Farm Financial Planning Tool, $31,633
Colorado Water Innovation Cluster, Lake Canal Demonstration Project, $135,105
Colorado State University, Land Fallowing in the Arkansas, $78,489
The Nature Conservancy, ATMs to meet nonconsumptive & consumptive needs in the Yampa, $132,000
Parker Water & Sanitation District, Lower South Platte Irrigation Demonstration Project, $320,166
Lower South Platte Water Conservancy District, Water Cooperative, $300,477
Upper Arkansas WCD, Building Accounting & Administrative Tools for Lease Fallowing, $121,500
Colorado State University, Sub Surface Drip Irrigation Alfalfa, $8,841
Conejos WCD, ATMs to Increase Supplies for Conejos Basin Ag, Municipal & Enviro Purposes, $124,124
Colorado State University, Implementation of Deficit Irrigation Regimes; Demo & Outreach, $124,734
Colorado State University, Poudre Basin Water Sharing Working Group Efforts, $86,940
Ducks Unlimited, FLEX Water Market - Education & Implementation Phase, $120,250
Colorado River Water Conservation District, Water Bank Feasibility Study - Phase 2, $180,000
Lower South Platte WCD, Northeast Colorado Water Cooperative Implementation, $173,900
Colorado River WCD, No Chico Brush Agricultural Water Research Project, $173,080
Colorado River Water Conservation District, Colorado Water Bank Working Group, $180,000
Colorado State University, Agricultural Field Studies and Estimates of Saved Consumptive Use, $180,000
Lower Arkansas Valley WCD, Rotational Land Fallowing Leasing Catlin Canal Pilot Project, $173,782
Larimer County, Open Space Pilot Project, $178,425
Grand Valley Water Users Association, Water Bank Pilot Project, $200,000

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Kirk Russell, Section Chief, Finance Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **2. Non-Reimbursable Project Investments**
NRI (14) Sev Tax PBF - Water Plan Funding

At the July 2016 Board Meeting, staff indicated the availability of $75 million ($25M x 3 years) as a result of revenue from Severance Tax in excess of average in recent years. The staff is recommending that this excess cash be dedicated to funding needs identified in the Colorado Water Plan. It is important to note that the Severance Tax revenue projections for 2017 and 2018 are very low which may have an impact on other programs within CWCB. The revenue projections can be very inaccurate, therefore CWCB does not make financial commitments based on these projections. As a result, staff is recommending that the $25 million three year Funding Plan be based on an annual decision and placed in the Projects Bill annually. The Board will review the CWCB's financial capacity each year at the annual Financial Committee meeting and make recommendations to fund at the $25 million level. Staff and Board recognize that this $75 million Funding Plan is less than 0.5% of the $20 billion need for funding as identified in the Water Plan. This is a summary of the Funding Plan for discussion.

1) $10 million to the Water Supply Reserve Fund. This supplemental funding will help offset the current low distribution of Severance Tax revenues. This will require transferring $10 million from the Severance Tax Perpetual Base Fund to the Water Supply Reserve Fund on July 1, 2017 for use in funding water supply projects under the criteria and guidelines developed for the WSRF.

2) $5 million to the Watershed Restoration Program. This will require transferring $5 million from the Severance Tax Perpetual Base Fund to the Watershed Restoration Program on July 1, 2017 for planning, engineering, and implementation measures, aquatic habitat protection, restoration work, and monitoring efforts to address technical needs for watershed restoration and flood mitigation projects, and to support healthy stream and watershed goals.

3) $10 million to assist in funding the Implementation of the Water Plan through NRI's. The 2017 Projects Bill will increase the current annual transfer to $10 million from the Severance Tax Perpetual Base Fund to the Construction Fund for NRI applications considered in September 2017 for inclusion in the 2018 Projects Bill. Applications will be evaluated based on Finanical Policy #12. Funds are available to successful applicants in July 2018.

Staff Recommendation
Staff recommends the Committee's approval of the $25 million Funding Plan for consideration by the Board in November.

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Kirk Russell, P.E., Chief, Finance Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **3. Project Funding Update and Discussion**
(1) Rio Grande Cooperative Project

Background

In November of 2011, the CWCB Board recommended approval of a funding package of $30 million for the Rio Grande Cooperative Project. This was subsequently placed in the CWCB Projects Bill SB12-165 and was signed by the Governor in 2012. The authorization included a loan for $10 million for the improvements needed to the Beaver Park Reservoir, owned and operated by Colorado Parks and Wildlife which was completed in 2015. In addition, a $5 million grant was awarded to the San Luis Valley Irrigation District (District) to prepare final design plans for repairs needed at the Rio Grande Reservoir and to fund the seepage control improvements. The authorization also included a $15 million loan-grant for the repair of the outlet tunnel and spillway.

The District recently received approval of final design by the State Dam Safety Branch for the repairs. This resulted in an increase in the engineer's estimate of total project cost. The District is requesting an increase from the current $15 million loan-grant authorization to $25 million in loan-grant authorization.

Attached is a memorandum from DiNatale Water consultants which provides a summary of the three phases of the Rio Grande Multi-use Project.

Staff Recommendation

Staff Recommends the Committee's approval of advancing the request for an additional $10 million project authorization to the San Luis Valley Water Irrigation District's total funding package. This will require a modification to the Severance Tax Statute. (see attached)

RIO GRANDE COOPERATIVE PROJECT

39-29-109 Severence tax trust fund

(A) Notwithstanding any provision of this paragraph (a) to the contrary, the state treasurer shall transfer to the Colorado water conservation board construction fund, for use by the Colorado water conservation board, also referred to in this subparagraph as the "board", ~~thirty~~ FOURTY million dollars for the planning, design, and construction of the Rio Grande cooperative project. Of this amount, the board shall allocate up to ten million dollars for improvements associated with the Beaver Park reservoir, owned and operated by the division of parks and wildlife, and up to THIRTY ~~twenty~~ million dollars for improvements to the Rio Grande reservoir, owned and operated by the San Luis valley irrigation district. The state treasurer shall transfer ~~the moneys in two consecutive annual installments of fifteen million dollars on July 1, 2012, and July 1, 2013~~ TEN MILLION DOLLARS ON JULY 1, 2017.

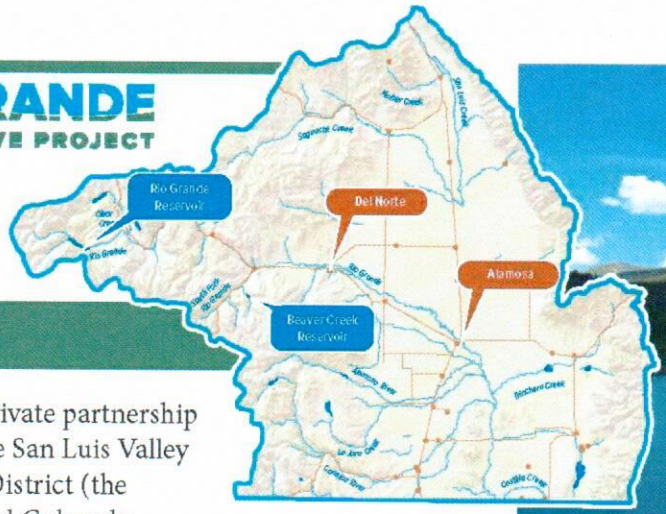
(B) Pursuant to section 37-60-122 (1) (b), C.R.S., the board may loan moneys in an amount up to ten million dollars to the division of parks and wildlife and up to TWENTY FIVE ~~fifteen~~ million dollars to the San Luis valley irrigation district.

(C) Pursuant to section 37-60-121 (1) (b) (IV), C.R.S., the board may determine the amount of loan, or loan-to-grant ratio, for the ~~second fifteen~~ TWENTY FIVE million-dollars to the San Luis valley irrigation district ~~installment~~, as set forth in sub-subparagraph (A) of this subparagraph (X), commencing on July 1, 2013.

(D) All interest earned from the investment of moneys in the fund shall be credited to, and made a part of, the Colorado water conservation board construction fund. All funds not expended remain and are part of the Colorado water conservation board construction fund.

RIO GRANDE
COOPERATIVE PROJECT

Project Fact Sheet



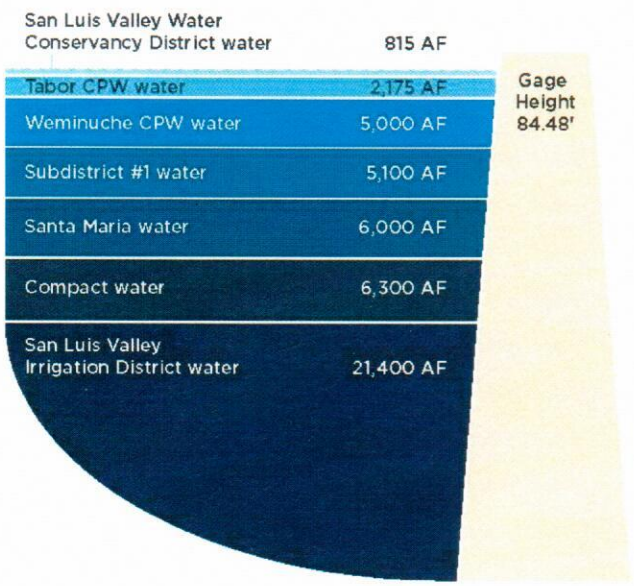
OVERVIEW

- A public-private partnership between the San Luis Valley Irrigation District (the District) and Colorado Parks and Wildlife (CPW) designed to ensure reliable water supplies to meet the future needs of multiple users in the Rio Grande Basin.
- The Cooperative Project received initial funding from the Colorado Water Conservation Board (CWCB) in 2012.

BENEFITS

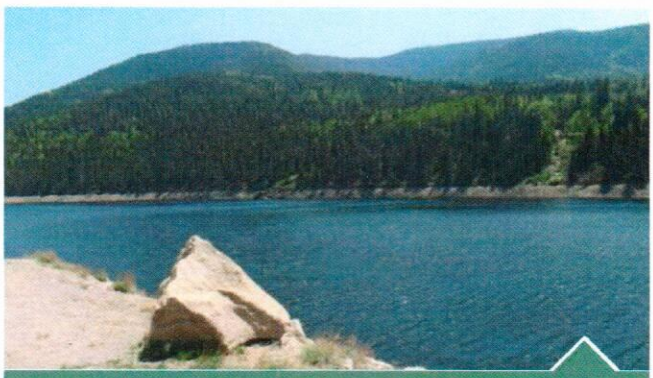
- Store and regulate supplies for multiple users within the basin.
- Coordinated reservoir operations will result in improved timing of water deliveries in the basin that can also provide environmental and recreational flow enhancements without impacting water rights.

RIO GRANDE RESERVOIR STORAGE IN SPRING OF 2015



RIO GRANDE RESERVOIR

- Storage capacity of 54,000 acre-feet.
- 100 year-old dam has dam safety issues related to seepage, spillway capacity and outlet works.
- Phase 1 completed in 2013 addressed seepage repairs at a cost of $4M.
- A land exchange with the Forest Service is underway, which is necessary for the outlet works.
- Phase 2 scheduled for 2018 will address outlet works at an estimated cost of $25M.



BEAVER RESERVOIR

- CPW owns and uses a number of native and trans-mountain water rights in the Rio Grande Basin, including Beaver Reservoir.
- Storage capacity of approximately 4,500 acre-feet.
- Under a storage restriction due to dam safety issues.
- $16 million repair cost. Outlet works and seepage repairs underway.
- In Spring of 2016, an agreement to store CPW water was completed with the San Luis Valley Irrigation District.

MEMORANDUM

TO: Travis Smith, San Luis Valley Irrigation District

FROM: DiNatale Water Consultants

SUBJECT: Rio Grande Reservoir Multi-Use Project Phases 1, 2, and 3 and the Rio Grande Reservoir Cooperative Project

DATE: September 9, 2016

The following memo provides a summary of the outcomes from the San Luis Valley Irrigation District's (District) Phases 1 through 3 of the Rio Grande Reservoir (RGR) Multi-Use Project and the follow up RGR Cooperative Project.

1. RIO GRANDE RESERVOIR PROJECT – PHASES 1 AND 2

Phase 1 and Phase 2 of the RGR Multi-Use Project are complete. Phases 1 and 2 of the study evaluated storage enlargements, rehabilitation needs, permitting issues and potential fatal flaws associated with these activities. In addition, multi-use opportunities for the Reservoir were explored and detailed. The Phase 1 study concluded that 10,000 acre-feet was the maximum potential enlargement of the Reservoir based on geotechnical investigations and wetlands assessments that elevating the dam crest was the most feasible option. The geotechnical investigation determined that an enlargement of the existing dam crest by 10 feet was the recommended maximum due to concerns resulting from the landslide along the left abutment of the existing dam. However, permitting issues and limited legally available water supplies were significant concerns for the Reservoir enlargement. With or without an enlargement, rehabilitation of the Reservoir's outlet works and spillway, and amelioration of seepage primarily along the left (northern) abutment were identified as necessary to properly rehabilitate the Reservoir and assure its future safe operation.

The Phase 1 and 2 reports identified several potential storage pools as part of a multi-use project. Storage pools for the Division of Water Resources (for Compact Storage), the Colorado Parks and Wildlife (CPW) (formerly the Division of Wildlife), and the San Luis Valley Water Conservancy District were analyzed. The Compact storage pool benefits could include: (1) providing the State of Colorado with a tool to better manage, retain, and utilize the State's share of Rio Grande water while assuring that it meets its water delivery obligations at the Colorado-New Mexico border

required under the Compact; (2) storing and re-regulating the delivery of Compact water to the State border could also enhance in-stream flows for fish and riparian habitat particularly at low flow periods late in the irrigation season and during the winter; (3) a Compact pool could also provide the State Engineer with a tool to help reduce the wide fluctuation in curtailments – the percentage reduction in the flow available at the Del Norte gage for diversion – to assure Colorado meets its water delivery obligations to the New Mexico border. This will provide irrigators with a more consistent water supply during the irrigation season while assuring that Colorado has stored a sufficient amount of water that, if needed, can be released to meet any remaining Compact obligation after the irrigation season ends.

Phase 2 also addressed the following steps in the development of a plan for the rehabilitation of Rio Grande Reservoir:

- Conceptual drawings of rehabilitation and potential enlargement
- Geological/Geotechnical investigation of dam and upstream landslide areas
- Refinement of flood hydrology using EPAT
- Development of reoperations model
- Wetlands delineation
- Biological assessment
- Draft participation agreements
- Stakeholder meetings

The Phase 2 preliminary design of the dam rehabilitation included seepage reduction, upgrades of the outlet works, spillway improvements, and the potential for hydropower. The dam has seeped water since its construction due, for the most part, to the fact that the left abutment of the dam is constructed on a landslide. The seepage increases significantly at higher levels of storage in the Reservoir. The outlet gates have been a recurring problem since the initial construction of the Reservoir. The existing outlet gates restrict the flexibility of releases from the Reservoir and threaten the integrity of the dam. The spillway required some concrete repair and a determination of whether, as constructed, it could safely pass the design flood. Rehabilitation costs were estimated at approximately $22-$26 million with higher costs if hydropower is included.

The Reservoir will need to be rehabilitated to address the diverse needs identified in the studies. In particular, new outlet works will allow for more controlled releases and safe operation and seepage control measures will allow for higher levels of carryover storage.

A monthly timestep Microsoft Excel Reservoir reoperations model was developed in Phase 2 to illustrate the potential benefits of a rehabilitated Reservoir. The model can be used to evaluate the benefits of storage for the District, Colorado Parks and Wildlife, State compact storage, San Luis Valley Water Conservancy District, Groundwater Management Subdistricts, and other stakeholders and lessees. The model uses historical data from 1985-2005, and calculates storage and releases from the Reservoir on a monthly time-step.

Following the Phase 2 analysis of the preliminary design plans, water availability, post-compact storage limitations, climate change predictions, wetland impacts and permitting issues, the District's Board of Directors determined that, due to the lack of water availability, compact

limitations, geotechnical concerns and permitting issues, it would not pursue a reservoir enlargement.

2. RIO GRANDE RESERVOIR PROJECT – PHASE 3

The purpose of Phase 3 was to investigate reservoir reoperations for multiple benefits and evaluate the hydropower potential. To do so, a daily reoperations model was developed that allows potential storage lessees and stakeholders to evaluate the benefits of storage in the reservoir for firming yields, meeting compact deliveries, providing for augmentation of domestic, commercial, municipal and groundwater management sub district's needs, generating hydropower, and providing environmental and recreational benefits.

The Division Engineer often implements a heavy curtailment during peak runoff to ensure that compact deliveries are met. However, if conditions change there is a possibility of over delivery, so as the hydrograph declines the curtailment is reduced and, often, removed, and irrigation ditches are allowed to dry-up the River. This results in little flow at the state line, which can result in a lowering of water levels in the River's alluvium and increases the amount of flow needed during the winter and early spring to refill the alluvium. Environmental and recreational benefits may be realized through re-timing deliveries of transmountain and compact water to benefit instream flows, fish and riparian species, and maintaining a live river through the entire length of the Rio Grande to the state line, without injuring any water users or reducing the amount of legally available water.

The analysis of hydropower in Phase 3 addressed legal issues, permitting requirements, existing power infrastructure evaluation, available hydropower technical options, land ownership requirements and associated dam improvements required to implement hydropower. The Phase 3 study concluded that there are impediments to the addition of hydropower, including:

- A potential need for a special use permit from the US Forest Service that could result in a modification to the Reservoir's existing 1891 Act Right of Way
- FERC permitting and the addition of federal dam safety jurisdiction in addition to the State Engineer
- Inadequate hydraulic head in the Reservoir throughout the summer months to generate enough power to make the project cost-effective (i.e. to generate power sufficient to pay for the capital and O&M costs of adding hydropower facilities)
- The need to upgrade 11 miles of electrical transmission line for a 2 MW option

Therefore, hydropower is not being pursued at this time; however, the outlet design does not preclude the possibility of retrofitting hydropower facilities to the Reservoir outlet tunnel in the future.

3. RIO GRANDE RESERVOIR COOPERATIVE PROJECT

The Rio Grande Reservoir Multi-Use Project studies (Phases 1 – 3) identified basin-wide benefits from reoperation of Rio Grande Reservoir and the use of storage for multiple beneficial purposes. These studies also conclude that CPW can particularly benefit from storage in Rio Grande Reservoir as it requires storage to manage some of its water resources. In addition, the benefits of storage for Rio Grande Compact compliance and basin administration were described. These multi-use studies revealed that Rio Grande Reservoir must be repaired in order to meet future needs of water users in the basin by providing long-term regulation of basin water supplies available to many water users for a variety of uses, assisting in the management of supplies for the groundwater management subdistricts, as well as storage for river administration and compact compliance.

Over the past several years, District and CPW staff have met to strategize a way to evolve the concept of the Rio Grande Cooperative Project into a formal partnership. The Cooperative Project was founded on the premise of the rehabilitation and reoperation of two, pre-compact, on-channel reservoirs owned by a public and a private entity that would be repaired and reoperated in a manner that would maximize the benefit of water deliveries for both the public and private water users. In addition, the entities would enter into a long-term operating and storage agreement. In the summer of 2011, the Colorado Water Conservation Board (CWCB) approved a $30 million dollar grant/loan package for the rehabilitation of the two reservoirs.

Using a portion of the funds allocated for the Cooperative Project, excessive seepage was addressed through the installation of a clay liner and grout curtain on the upstream face of the dam, which was completed in 2013. Additional analysis of the probable maximum flood determined that the existing spillway has sufficient capacity to safely pass the inflow design flood and reconstruction of the spillway is not necessary.

CPW has water rights and obligations throughout the Rio Grande Basin; however, they were not formally catalogued within the department. As part of the Cooperative Project, DWC summarized CPW's native and transmountain water rights that can be stored and/or regulated in either Rio Grande or Beaver Park reservoirs as well as CPW's current use of these water rights.

Rio Grande Reservoir provides storage for the several water rights owned by CPW. The District and CPW have a temporary storage agreement that allows for the annual storage in RGR of water owned by CPW. The ability of CPW to store water in the Reservoir is essential to the State in achieving the maximum beneficial use of its water rights. Beaver Creek Reservoir does not have a storage capacity large enough to accommodate the amount of water stored and managed by CPW annually for meeting its obligations.

Using information from the daily reoperations Excel model from Phase 3, a RiverWare model was developed as part of the Cooperative Project to test operational scenarios designed to optimize CPW's operations within and between Rio Grande and Beaver Park Reservoirs.

The concept of a public-private partnership, initially between the District and CPW was designed to ensure reliable water supplies to meet the future needs of multiple users in the Rio Grande Basin. Initially, a joint venture between the District and CPW, the partnership concept includes the rehabilitation of RGR along with a long-term storage agreement for CPW to store water in RGR. As a

result of these studies and discussions, the District and CPW have worked informally to cooperatively make timely deliveries of CPW's water until a formal storage agreement can be finalized.

The Cooperative Project's primary objectives are to store and regulate water rights to better meet water demands of the San Luis Valley and the upper Rio Grande basin including: in-stream flow enhancement, channel maintenance, recreation, terrestrial and aquatic wildlife habitat, irrigation, augmentation, municipal and industrial, and other beneficial water uses including Compact compliance. The primary objectives can be accomplished by repairing Rio Grande Reservoir, establishing a CPW pool of water in Rio Grande Reservoir and through coordinated releases from Beaver Park Reservoir.

Using recommendations from the Cooperative Project, in 2012 CPW boosted flow in the Rio Grande during the late summer to meet environmental and riparian needs.

During the summer of 2013, the District celebrated the completion of the initial phase of the RGR rehabilitation involving the installation of a clay liner designed to address seepage concerns. The District is waiting for completion of a land exchange with the Forest Service at the foot of the dam that will allow for the construction and repair of the outlet works at the Reservoir. CPW has completed rehabilitation of Beaver Creek Reservoir. As the rehabilitation work at RGR continues, the Cooperative Project continues to evolve and has moved forward into the adoption of an agreement for CPW storage in RGR. Storage and releases of CPW water can be coordinated between the two reservoirs to improve streamflow, wetlands, riparian, and provide fish and wildlife benefits while simultaneously optimizing the yield of its water resources. Coordinated reservoir operations can result in improved timing of water deliveries in the basin that will benefit all basin water users, including the State of Colorado Department of Natural Resources agencies, including Parks and Wildlife, Division of Water Resources and the Water Conservation Board.

4. NEXT STEPS

Final design of the proposed outlet rehabilitation is complete and has been submitted to the State Engineer's Office. However, construction is dependent upon the approval of additional funding from CWCB and finalization of the land exchange with the US Forest Service. Last spring, the Rio Grande National Forest completed the exhaustive process to analyze the effects of a proposed land exchange with the San Luis Valley Irrigation District that would convey National Forest System lands immediately below the Rio Grande Reservoir dam in exchange for SLVID-owned land within the Weminuche Wilderness and along uplands below the dam.

On February 23, 2016 Forest Supervisor Dan Dallas signed a Final Decision Notice approving the land exchange. On April 29, 2016 the parties entered into a binding land exchange agreement to complete the exchange. One item is holding up the land exchange closing: a partial revocation by the BLM of Public Land Order 1510, a withdrawal created in 1957 that reserves specific lands within the Rio Grande and San Juan National Forests for use of the Forest Service as recreation areas and campgrounds. PLO 1510 withdrew these lands from "all forms of appropriation under the public land laws", i.e. these lands cannot be conveyed to non-federal ownership with the

withdrawal in place. The primary purpose of withdrawals like PLO 1510 is to protect lands that are occupied by capital improvements in which relocation or replacement would be impractical. Although the 6.15-acre federal parcel SLVID is acquiring is part of the 293-acre Thirty Mile Recreation Area listed in PLO 1510, it has never had any federally-owned capital improvements on it.

Receiving the partial revocation from the BLM is not a major hurdle; however, the BLM gives very low priority to its mandated withdrawals administration function on behalf of other federal agencies. Requests made from within BLM are given top priority, followed by other Department of Interior agencies, and finally agencies outside of DOI. This has been exacerbated by a huge loss of institutional knowledge within BLM on how to process withdrawal actions due to retirements and the elimination of positions at the national and state levels that were devoted exclusively to the withdrawal program. A reprioritization of the lands program workload in the BLM Colorado State Office is needed, so that there are staff resources to complete work on the partial revocation request affecting the Rio Grande Reservoir Land Exchange and the request can be approved by the BLM State Director and transmitted to the BLM Washington Office.

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TO: **Finance Committee**

FROM: **Kirk Russell, P.E., Chief, Finance Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **3. Project Funding Update and Discussion**
(2) Arkansas Valley Conduit Project

Staff will review the status of the existing $60 million authorization with the committee and provide an update regarding additional funding that may be needed in the future.

Additional information will be provided at the meeting regarding this item.

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Anna Mauss, P.E., Loan Program Marketing**
Kirk Russell, P.E., Chief, Finance Section

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **3. Project Funding Update and Discussion**
(3) Windy Gap Firming Project

CWCB staff is continuing funding conversations with Windy Gap Firming Project participants and other funding entities. Options discussed have included participants bringing cash for their portions of the project costs, individual financing for each participant, and pooled financing.

One of the pooled financing options discussed was a senior/subordinate loan structure. This would work as a credit enhancement similar to the investment guarantee fund.

In this scenario, the Colorado Water Resources and Power Development Authority (CWRPDA) would issue revenue bonds secured by a senior lien on payments from participants. CWCB would provide a subordinate loan secured by a junior lien position.

The idea behind this type of financing option is to meet the debt service coverage ratio required by the bond market to keep the interest rate as low as possible for all participants. In order to qualify for the most favorable interest rate, the pooled participants need meet a favorable debt coverage ratio (income – expenses / debt). If the total project cost is such that optimum debt coverage cannot be met by pooled participants, the CWCB might be able to offset the risk to the bond holders by issuing a subordinate loan.

For instance, assuming a total project cost of $400 million, a possible loan arrangement under this scenario would be a $300 million revenue bond by CWRPDA and a subordinate loan of $100 million by the CWCB.

While the debt coverage ratio needs to meet the bond issuer's requirements, the revenue above 100% of the bond debt coverage will be used to pay the CWCB debt service. The CWCB could be at risk if the pooled participants' income was not enough to cover the bond payment. If this happened, staff has discussed a possible step up provision (requiring all other participants to step up and make up the difference for those that did not make the annual payment). Another remedy could include options for other participants to buy the space from members in default to make up for any shortfalls.

The CWCB would likely match the interest rate of the bond market at the time of issuance so the CWCB loan would be at the market rate instead of a subsidized interest rate.

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TO: **Finance Committee**

FROM: **Anna Mauss, P.E., Loan Program Marketing**
Kirk Russell, P.E., Chief, Finance Section

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **3. Project Funding Update and Discussion**
(4) Loan Guarantee Fund

CWCB staff continues to research the idea of establishing a Loan Guarantee Fund as a credit enhancement option for regional water projects.

In the municipal bond market, Debt Service Reserve Funds are mandatory accounts set up to pay principal and interest on revenue bonds in the event that revenues are unable to cover the obligations when they are due. Most Debt Service Reserve Funds are 10% of the bond issue's value or one year of debt service. Under the Loan Guarantee Fund concept, the CWCB would set aside cash to fund the reserve account. The fund would act as bond insurance and would only be used if a participant was in default and did not make a principal and interest payment.

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John Hickenlooper, Governor

Robert Randall, DNR Executive Director

James Eklund, CWCB Director

TO: Finance Committee

FROM: Anna Mauss, P.E., Project Manager
Finance Section

DATE: September 20, 2016, Finance Committee

AGENDA ITEM: 4. Discussion regarding changes to Statutes, Policies and Procedures
(1) Allowable Loan Amount – Change to Financial Policy #11

Introduction
The Colorado Water Plan identified approximately $20 billion in funding needs related to water supply infrastructure projects over the next 35 years. In an effort to be responsive to the water providers' needs and help move water projects forward, staff is asking the board to consider amending Policy 11.

Current Policy
Policy 11 currently limits lending, on most projects, to 90% of the total project cost. Policy 11 only allows 100% financing for projects partially funded by NRCS.

Recommended Change
Staff is recommending increasing the allowable lending limit to up to 100% of project costs for agricultural and municipal borrowers. Private, unincorporated borrowers (i.e., individuals or closely held corporations) and commercial borrowers will remain at the 90% limit. If funds are limited, the Board will maintain the right to reduce the maximum percentage of loan to project costs.

Background
Historically it was considered important to require borrowers to have an equity stake in projects. However, staff previously recommended, and the Board approved, a variance to Policy 11 to allow for lending of up to 100% of the total project costs for loans made in response to the September 2013 flooding in the South Platte Basin.

Borrowers, especially municipal borrowers, do have other funding options that allow 100% financing. These include the bond market, U.S. Department of Agriculture Rural Development loans, Drinking Water Revolving Fund loans, and the Colorado Water Resources and Power Development Authority's water revenue bond program.

Over recent years with the growing popularity of loan/grant funding, borrowers began using Water Supply Reserve Fund (WSRF) grants as the matching funds for CWCB loans, therefore having no upfront cash vested in projects. To date, all of the loans made with such funding packages have been successful and all loans are in good standing.

Given the limited amount of grant funds currently available, and the CWCB's desire to help implement the Colorado Water Plan, the present seems like the fitting time to change Policy 11.

POLICY NUMBER: 11

SUBJECT: **ALLOWABLE LOAN AMOUNTS BASED UPON A PERCENTAGE OF THE TOTAL PROJECT COST**

EFFECTIVE DATE: November 24, 1997

REVISED DATE: May 24, 2005

POLICY: For agricultural and municipal borrowers, the ~~The~~ Colorado Water Conservation Board (CWCB) may lend up to 100 ~~90~~ percent of the total costs for the planning, engineering design, and construction of projects. This includes mutual ditch or reservoir companies that have commercial shareholders when those are the minority shares. ~~For those projects partially funded by the Natural Resources Conservation Service (NRCS) programs, the CWCB may authorize a loan of up to 100 percent of the total cost of the planning, engineering design and project construction, with assurance of repayment of a portion of the initial loan amount with NRCS funding. The final balance of the loan shall not exceed 90% of the total project cost.~~

For a private entity, commercial borrowers, or an entity deemed by the Board to be at such a risk that the Board's Policy requires collateral at a value of 110 percent of the borrowed amount as presented in Financial Policy #5 (Collateral), the CWCB may lend up to 90 percent of the total costs for the planning, engineering design, and construction of projects.

Regardless of borrower type, the CWCB may lend up to 90 percent of the project costs associated with projects for the sole purchase of water rights or land.

PURPOSE: This policy allows the Board to make available to those project sponsors with the greatest need for financial assistance, loans that require less funding from other sources relative to the overall project cost.

APPLICABILITY: This policy applies to the consideration of all requests for funding from the CWCB Construction Fund and Severance Tax Trust Fund Perpetual Base Fund.

PROCEDURE: Not Applicable

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James Eklund, CWCB Director

TO: **Finance Committee**

FROM: **Derek Johnson, P.E., Loan Program Project Manager**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: 4**. Discussion regarding changes to Statutes, Policies, & Procedures of CWCB (2) Dredging Application Guidelines**

CWCB staff, in response to SECTION 11 of Senate Bill 16-174, which appropriated $1,000,000 for the purpose of funding reservoir dredging projects, seeks discussion and feedback regarding guidelines to make this funding available through a grant program.

In the interest of expedience in making these grant funds available, a draft Grant Program Guidance document has been prepared. The primary topics of discussion are:

- Financial aspects of funding – cost sharing and maximum CWCB funding percentages
- Evaluation Criteria – Scoring applications and how grant recipients are selected, as well as the amount of funding available in the event of multiple qualifying projects
- Administration Timeline – defining when grant applications are submitted, reviewed

CWCB Reservoir Dredging Program
Grant Program Guidance
(draft targeted for) November 2016

A. Background

Senate Bill 16-174, passed by the 2016 Colorado General Assembly, establishes funding for Colorado Water Conservation Board (CWCB) projects. The legislative declaration states:

> **SECTION 11. Reservoir dredging project - appropriation.**
> (1) For the 2016-2017 state fiscal year, $1,000,000 is appropriated to the department of natural resources for use by the Colorado water conservation board. This appropriation is from the Colorado Water Conservation Board Construction Fund created in section 37-60-121, C.R.S. To implement this section, the Colorado Water Conservation Board may use this appropriation to conduct a reservoir dredging project in partnership with a water provider such as a municipality, district, or irrigation company, subject to the approval by the board with a cost share amount not to exceed fifty percent.
> (2) The money appropriated in subsection (1) of this section remains available for the designated purposes until July 1, 2018, at which time the unencumbered balance of the money reverts to the unappropriated balance of the Colorado Water Conservation Board construction fund.

The CWCB is the state executive branch agency responsible for state water policy and planning. The Board's mission is to conserve, develop, protect, and manage Colorado's water for present and future generations. Its major program sections include Watershed & Flood Protection; Water Supply Planning; Finance; Stream and Lake Protection; and Intrastate & Federal. More information about the CWCB and its sections can be found at http://cwcb.state.co.us/.

The purpose of this Grant Program Guidance is to establish and describe the program for the issuance and administration of grants from the CWCB Reservoir Dredging Program.

B. Grant Approval Criteria

1. Competitive Process

The Board will select projects to fund from applications that best meet the basic application (B.5) and evaluation criteria (B.6). CWCB staff reserve the right to negotiate with successful applicants to modify the scope and budget of their projects to better meet CWCB objectives and fund availability. An evaluation team will be formed to review applications and recommend projects for grant funding. The evaluation team will consist of at least three CWCB staff members. Staff will submit funding recommendations for grants per section C.1.

2. Grant Categories

There is a single grant category available under the CWCB Reservoir Dredging Program:

Reservoir Dredging Grants
Projects and plans designed to develop or restore reservoir storage capacity will be considered in this category. This may include projects and plans designed to connect isolated dead pool areas to outlet works.

3. Cost-Sharing

Reservoir Dredging Grants will be funded by the CWCB for eligible construction activities on a cost-share basis. The portion of CWCB funding from the CWCB Reservoir Dredging Program shall not exceed 50% of the total cost of the individual plan or project.

Project costs may consist of a combination of in-kind contributions and cash match as defined below, but no more than half of the match may be in the form of in-kind services.

Cash Match
Cash Match funds are actual expenditures paid directly with cash funds from the grantee to a vendor. Examples are supplies, services, and necessary equipment purchases or rentals. Grant funding from other sources will be considered a cash match for this purpose.

In-Kind Match
Services and labor provided by paid staff of the grantee to perform all or part of the approved project scope of work, including project administration. Project-specific land acquisition or access agreement costs may also be claimed as in-kind contributions and credited against the minimum requirement. Costs that will not be considered include: general organization operating costs such as utilities, operating supplies and services; amortized costs or rental costs for buildings and equipment used for the general operation of the organization; general property and liability insurance costs; and overhead percentage charges to cover such items. These general business expenses are not reimbursable costs and may not be claimed as matching contributions.

4. Eligible Entities

Water providers, such as municipalities, districts, or irrigation companies, which own or operate a water storage reservoir. Federal agencies or private landowners are not eligible to receive grant funding; however, projects may be conducted on private, state, or federal lands with appropriate permissions and under the sponsorship of an eligible entity. The CWCB will strive to achieve geographic diversity by approving qualifying projects west and east of the continental divide.

5. Application Requirements

The CWCB Reservoir Dredging Program objective is to facilitate construction projects that restore or create water storage.

Basic Applicant Qualifications
Grant applicants must demonstrate:

- The project will not interfere with CWCB goals of restoring and/or protecting water, lands and other natural resources
- The project will result in the availability of additional storage volume in the applicable reservoir
- Ability to provide required in-kind and cash match funding

Grant applications that do not meet or demonstrate the above criteria will not be considered further in the application process.

6. Application Evaluation Criteria

As a threshold matter, only grant applications that conform to the Application Requirements set forth above in section B.5 will be considered. Grant applications that meet these qualifications will then be evaluated with respect to the following three factors:

- How well does the applicant fit the qualifications test?
- Does the applicant organization have the capability to accomplish the proposed work?
- How effective is the proposal at accomplishing the goals of the dredging grant program?

Applications will be evaluated and ranked to determine grant funding based on the following criteria and rating system:

Qualifications Evaluation (Maximum of 10 points)

- Identify the lead project sponsor and describe additional stakeholders' level of participation and involvement. 5 points
- Specify in-kind services and cash contributions (match) amount for the proposed activities. See section B.3 of the grant program guidance to determine match funding requirements. Discuss whether other funding sources are secured or pending. 5 points

Organizational Capability (Maximum of 25 points)

- What is the applicant organization's history of successfully managing projects? Provide several past project or planning examples. List partner organizations and agencies with which applicant cooperated to implement past projects or planning efforts. 10 points
- What level of staffing will be directed toward the implementation of the proposed project/planning effort? Discuss the number of staff and amount of time dedicated for the project. Include brief resumes for each member of the active project team. 5 points
- Demonstrate that the project budget and schedule are realistic. Please use the budget/timeline spreadsheet attached to the application. Please note that the start date will take place after funding awards are announced and grants are contracted. 10 points

Proposal Effectiveness (65 points)

- Provide an engineering feasibility study detailing technical aspects of the project, including:
    - Applicant information (type of organization, description of existing facilities/water system, service area description and map, water demands, number of customers/shareholders, source(s) of revenue, current rates or assessments).
    - Demonstrate the cost effectiveness of the proposed dredging activities effectiveness versus acquiring additional storage by other means, including purchase of storage rights or other physical means.
    - Description of selected project
    - Implementation schedule
    - Permitting summary
    - Summary of any institutional considerations (contracts, permits, and agreements required for project implementation)

  60 points
- Describe the proposed monitoring or implementation plan. How will the project or plan measure success of its objectives? 5 points

An attempt will be made to fund all qualified projects at the same percentage level of funding. In the event that certain projects are not financially feasible at available funding levels, the scoring and ranking of the applications will be used by staff to determine which projects will receive funding.

C. Grant Program Administration

1. Application Timeline

The timeline for the grant application cycle is:

Applications available	November 2016
First Round of applications due	February 1, 2017
First round of applications reviewed and approved	2017 March Board Meeting
Expected date of first round applications under contract	September 30, 2017
Second round of applications due (pending fund availability after first round)	October 1, 2017
Second round of applications reviewed and approved	2017 November Board Meeting
Expected date of second round applications under contract	May 31, 2018
Last date to encumber funds for projects	July 1, 2018

2. Grant Administration

Contracting:
After approval or conditional approval of funding by the Board, CWCB staff will direct the applicant to revise and supplement submitted documents if required for issuance of a purchase order or execution of a contract. Grants less than $100,000 will be completed by use of a purchase order. Grants for $100,000 or more will require execution of a contract.

Successful applicants are expected to execute a contract with CWCB within 6 months of award. If a grant is not executed within this timeframe, CWCB staff may return the funds back to the appropriate account.

Reporting Requirements:
Progress Reports: The applicant shall provide the CWCB a progress report every 6 months, beginning from the date of issuance of a purchase order, or the execution of a contract. The progress report shall describe the status of the tasks identified in the statement of work, including a description of any major issues that have occurred and any corrective action taken to address these issues. The CWCB may withhold reimbursement until satisfactory progress reports have been submitted.

Final Report: At completion of the project, the applicant shall provide the CWCB a final report on the applicant's letterhead that:

- Summarizes the project and how the project was completed.
- Describes any obstacles encountered, and how these obstacles were overcome.
- Confirms that all matching commitments have been fulfilled.
- Includes photographs, summaries of meetings and engineering reports/designs.

The CWCB will withhold disbursement the last 10% of the budget until the Final Report is completed to the satisfaction of CWCB staff. Once the Final Report has been accepted, and final payment has been issued, the purchase order or grant will be closed without any further payment.

Payments:
Payment will be based on actual expenditures invoiced by the grantee. The request for payment must be transmitted on the grantee's letterhead, and shall include:

- Date of request
- Grantee's contact name, email address, physical address, and phone number
- Date of CWCB grant approval
- Contract or purchase order number
- Description of the work accomplished by major task as presented in the approved budget
- Supporting documentation for items or services billed
- Estimate of the percent completion for individual tasks and the entire water activity in relation to the percentage of budget spent
- Identification of any major issues, and proposed or implemented corrective actions

Grant Amendments:
Grants may be amended as appropriate, including modifications to the Statement of Work, Budget, and Schedule; purchase order or contract extensions; and Change of Grantee. All amendment requests shall be submitted on either the applicant's or the grantee's letterhead, and shall include:

- Date of request
- Applicant's or grantee's contact name, email address, physical address, and phone number
- Roundtable that recommended the grant
- Date of CWCB approval
- Contract or purchase order number and expiration date
- Rationale for amendment
- Desired expiration date
- The signed Letter of Request shall be accompanied by (when applicable): a revised Statement of Work, Budget, and Schedule; a letter drafted by current Grantee requesting the release; a letter drafted by proposed Grantee accepting grant obligations and responsibilities; and an update Certificate of Insurance.

Requests for extension of the grant document shall be delivered to CWCB 30 days prior to current expiration date of purchase orders, and 90 days prior to expiration of a contract.

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TO: **Finance Committee**

FROM: **Rebecca Mitchell, Section Chief**
Water Supply Planning Section

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **4. Discussion regarding changes to Statutes, Policies, and Procedures of CWCB**
(3) WSRF Criteria & Guidelines - Changes

This item will utilize the information provided in the Board Meeting packet for Agenda Item #22.

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TO: **Finance Committee**

FROM: **Kirk Russell, P.E., Chief, Finance Section**

DATE: **September 20, 2016 Finance Committee Meeting**

ITEM: **5. Miscellaneous Funding Discussion**

This agenda item is available for additional discussion and funding needs the Board is considering for the future. Two items have been proposed in recent staff-Board conversations. They are the Aquatic Nuisance Species funding shortfall and costs associated with the Water Reuse – Rule Making Process.

Additional topics may be provided at the meeting and as time allows.