COLORADO
Colorado Water Conservation Board
Department of Natural Resources

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TO: Colorado Water Conservation Board Members

FROM: Greg Johnson, Water Supply Planning Section

DATE: March 21-22, 2018 Board Meeting

AGENDA ITEM: 29 a-b Water Plan Grants – Supply and Demand Gap Projects Initial Consideration

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This item is for consideration only. No action is required at this time

Introduction

The Supply and Demand Gap Projects funding category of Water Plan Grants was allocated $2 million for FY2018. For this third and final round of applications for initial consideration we received two new applications totaling $312,500, along with one new notice of intent to apply. Staff is supporting both of the current applications for the full amount as noted in the table below.

When combined with the previously approved applications from the November 2017 and January 2018 meetings (totaling $1,947,051), the remaining fund balance would be $52,949 if applications are approved per staff recommendation at the May CWCB meeting.

Applicant	Project Name	Request	% of Project	Staff Support
a. Town of Castle Rock	Plum Creek Water Purification Facility Advanced Treatment Project	$200,000	11%	$200,000
b. Pikes Peak Regional Water Authority	El Paso County Groundwater Depletions: Project Implementation Strategies to Meet the Supply & Demand Gap	$112,500	50%	$225,000

See attached Data Sheets for locations and summaries.

Staff Review and Comments

a. Town of Castle Rock - Plum Creek Water Purification Facility Advanced Treatment Project

The Town of Castle Rock is performing major improvements to its Plum Creek Water Purification Facility (PCWPF) to enable it to fully utilize its renewable water, including: Denver Basin aquifer water, WISE supplies, and future imported supplies that can be used to extinction. These supplies represent about 35% of the town's projected water supply (about 5,700 acre-feet). Maximizing reuse with this project will significantly decrease the town's reliance on the Denver Basin Aquifer (currently 85% of its supply), helping to achieve the goal of 75% renewable water supplies by the year 2050.

This project aligns with Colorado's Water Plan by taking advantage of the limited remaining South Platte supplies and enhancing water use efficiency and supply reliability (Section 6.2 - South Platte Goals and Measurable Outcomes). Additionally, this project supports the plan by reusing legally available supplies to extinction (Section 6.3.2 – Reuse).

Staff supports recommending a grant for $200,000 to the Town of Castle Rock for consideration and approval at the May 2018 meeting.

b. Pikes Peak Regional Water Authority - El Paso County Groundwater Depletions: Project Implementation Strategies to Meet the Supply & Demand Gap

The Pikes Peak Regional Water Supply Authority (PPRWA) is seeking to implement the Project Implementation Strategies Report (project) to help address the impending municipal water supply gap of 25,000 AF in El Paso County (EPC) resulting from 50 years of groundwater depletions in the Denver Basin and Upper Black Squirrel aquifers. The proposed project would dovetail with the El Paso County Water Master Plan to provide specific actions to address the supply gap by addressing: current depletions and estimates of costs to continue groundwater extraction; the financial capacity (debt load) of individual and collective water providers to participate in solutions; scenarios wherein the major regional provider, Colorado Springs Utilities, might equitably support regionalization; and the evaluation of methods for reuse to extinction of fully consumable water arising within El Paso County to offset regional deficits.

The project would help address groundwater depletion issues and the related 25,000 AF gap referenced in SWSI 2004, SWSI 2010, and the Arkansas Basin Implementation Plan (BIP). The project would also directly address BIP and Colorado Water Plan goals by examining regional solutions, maximizing reuse, promoting conjunctive use (including possible aquifer storage and recovery), and potentially employing water sharing agreements.

Staff supports recommending a grant for $112,500 to Pikes Peak Regional Water Authority for consideration and approval at the May 2018 meeting.

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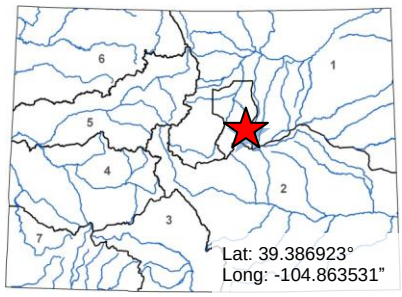
Town of Castle Rock
Plum Creek Water Purification Facility Advanced Treatment Project

March 2018 Board Meeting
Initial Consideration

Water Plan Grant Application



LOCATION
County: Douglas
Drainage Basin: Metro/South Platte

DETAILS	
Total Project Cost:	$1,800,000
Water Plan Grant Request:	$200,000
Other CWCB Funding:	$0
Applicant Match:	$26,800,000
Project Type(s): Construction	
Project Categories: Supply & Demand Gap	
Measurable Result: 3,800 – 5,700 AF (current - future) new annual water supplies developed/conserved	

Currently, about 85% of Castle Rock's annual water supply comes from nonrenewable Denver Basin groundwater while only about 15% comes from renewable water along Plum Creek. Since the town's nonrenewable Denver Basin groundwater is a finite supply, it is seeking to bolster its renewable water supplies. As such, Castle Rock Water has a goal of achieving 75% renewable water supplies by the year 2050.

To this end, Castle Rock Water is improving the Plum Creek Water Purification Facility (PCWPF) to enable it to fully utilize its renewable water, including: Denver Basin aquifer water, WISE supplies, and future imported supplies that can be used to extinction. These supplies represent about 35% of the town's projected water supply (about 5,700 acre-feet). Maximizing reuse with this project will significantly decrease the town's reliance on the Denver Basin Aquifer.

Design of the PCWPF Advanced Treatment project will include the addition of a new multiple barrier advanced treatment approach to treat the new source water for removal of pathogens, organics, regulated drinking water contaminants, and non-regulated contaminants of emerging concern (CECs). The primary goal of the PCWPF Advanced Treatment Project is to meet or exceed requirements of the US EPA Safe Drinking Water Act, as well as additional requirements from the Colorado Department of Public Health and Environment (CDPHE).

The PCWPF Advanced Treatment project will include a new 1 million gallon raw water blending tank, an ozone system for advanced oxidation, a biologically activated carbon (BAC) filter conversion, granular activated carbon contactors, an ultraviolet disinfection system, facilities for onsite handling of solids, and a new emergency generator. The Water Plan Grant funds would be used for the first phase of the project – the construction of the 1 million gallon raw water blending tank.

Implementation of the Plum Creek Water Purification Facility Advanced Treatment project aligns with Colorado's Water Plan by taking advantage of the limited remaining South Platte supplies and enhancing water use efficiency and supply reliability (Section 6.2 - South Platte Goals and Measurable Outcomes). Additionally, this project supports the plan by reusing legally available supplies to extinction (Section 6.3.2 – Reuse).

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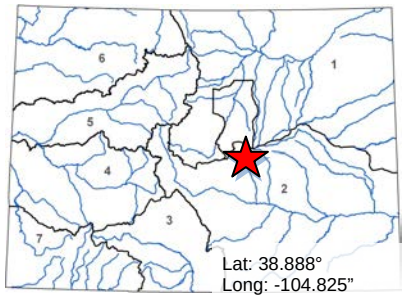
Pikes Peak Regional Water Authority
El Paso County Groundwater Depletions: Project Implementation Strategies to Meet the Supply & Demand Gap

March 2018 Board Meeting
Initial Consideration

Water Plan Grant Application



L O C A T I O N
County: El Paso
Drainage Basin: Arkansas

D E T A I L S	
Total Project Cost:	$225,000
Water Plan Grant Request:	$112,500
Other CWCB Funding:	$0
Applicant Match:	$32,500
Project Type(s): Study of specific implementation strategies for meeting groundwater depletion impacts on supply	
Project Categories: Supply & Demand Gap	
Measurable Result: 20,000 – 200,000 AF of new storage; strategies to meet 25,000 AF gap; 40,000 Coloradans impacted by land use planning impacts	

The Pikes Peak Regional Water Supply Authority (PPRWA) is seeking to implement the Project Implementation Strategies Report (project) to help address the impending municipal water supply gap of 25,000 AF in El Paso County (EPC) resulting from 50 years of groundwater depletions in the Denver Basin and Upper Black Squirrel aquifers. The El Paso County Water Master Plan (master plan), a wide-reaching initiative encompassing over 40 public service providers, is currently reviewing public policies promulgated under the El Paso County Land Use Code. Led by the EPC Community Development Department, the Water Master Plan will help inform forthcoming updates to the El Paso County Comprehensive Plan, likely involving changes in land use codes.

The proposed project would dovetail with the master plan to provide specific actions to address the supply gap generated by groundwater depletions. Since not all EPC water providers face a water supply gap, the project will focus on: current depletions and estimates of costs to continue groundwater extraction; the financial capacity (debt load) of individual and collective water providers to participate in solutions; scenarios wherein the major regional provider, Colorado Springs Utilities (CSU), might equitably support regionalization; and the evaluation of methods for reuse to extinction of fully consumable water arising within El Paso County to offset regional deficits. The project will interface with the internal dialogue at Colorado Springs Utilities regarding regionalization as referenced in the 2017 CSU Integrated Water Resource Plan.

In addition, the project would evaluate the feasibility of alluvial aquifer storage in the Upper Black Squirrel Designated Groundwater Basin. An El Paso County Water Authority (now PPRWA) sponsored study in 2008 by the Colorado Geologic Survey identified Upper Black Squirrel as capable of alluvial aquifer storage up to 200,000 acre-feet. The project would also provide other specific recommendations for projects to meet the municipal supply gap.

The project would help address groundwater depletion issues and the related 25,000 AF gap referenced in the Statewide Water Supply Initiative (SWSI) 2004, SWSI 2010, and the Arkansas Basin Implementation Plan (BIP). The project would also directly address BIP and Colorado Water Plan goals by examining regional solutions, maximizing reuse, promoting conjunctive use (including possible aquifer storage and recovery), and potentially employing water sharing agreements.