



STAFF REPORT

To: Honorable Mayor and Members of Town Council

Through: David L. Corliss, Town Manager

From: Mark Marlowe, P.E., Director of Castle Rock Water
Matt Benak, P.E., Water Resources Manager
Walt Schwarz, P.E., CIP Project Manager

Title: **Resolution Approving a Services Agreement between the Town of Castle Rock and Burns & McDonnell Engineering Company to complete Construction Phase Engineering Services for PCWPF Expansion Project** *[1929 Liggett Road Castle Rock, CO]*

Executive Summary

Castle Rock Water (CRW) staff request Town Council approval of a resolution (**Attachment A**) approving a Services Agreement (**Exhibit 1**) with Burns & McDonnell Engineering Company, Inc. (BMcD), for Construction Phase Engineering Services on the Plum Creek Water Purification Facility (PCWPF) Expansion project. This project is a key component to Castle Rock's long term renewable water plan and will expand the PCWPF treatment capacity from 6 million gallons per day (MGD) to 12 MGD. Facility improvements generally include expanding water treatment and solids handling systems, increasing high service pumping, and installing an emergency electrical generator.

BMcD was retained as the design consultant for this project through a competitive process and they have prepared plans and specifications for construction of this facility. As engineering consultant for the project, they have direct knowledge and experience with the specialized components designed for this project. Their continued support during construction is important to maximize value and to ensure a quality-constructed facility built in accordance with facility plans and specifications.

At the request of CRW, Burns & McDonnell submitted a proposal to provide engineering services during construction and startup. These services include but are not limited to, attending weekly progress meetings, daily construction inspection, reviewing equipment submittals, responding to requests for information from the contractor, reviewing project records, providing start-up assistance with training for CRW staff, and preparing record drawings. Staff recommends approval of the services agreement for \$3,824,954, plus a

Town-managed contingency of \$191,248 (5%), for a total project authorization of \$4,016,202. Completion of the project is expected in Spring of 2028.

Current known and estimated project costs are shown below:

BMcD	Design (including \$119,444 contingency)	\$ 2,508,324
TCR Permit Fees	Est. based on PCWPF Advanced Treatment project	\$ 120,000
Garney Companies	Pre-construction services	\$ 311,022
BMcD	Constr. Phase Engineering Services	\$ 4,016,202
Garney Companies	Construction costs	
	WP#1 (FGMP)	\$ 18,571,591
	WP#2 (FGMP)	\$ 6,739,585
	WP#3 (IGMP)	\$ 41,821,534
	TOTAL	\$ 74,088,258

Notification and Outreach Efforts

This is a secure facility located out of the public view. As such, the only notification and outreach associated with this project is through the budgeting process with Council where this item was identified as a major capital project for Castle Rock Water.

History of Past Town Council, Boards & Commissions, or Other Discussions

Town Council approved Resolution 2023-055 on April 18, 2023 approving a Services Agreement with BMcD for the design of the PCWPF Expansion.

Town Council approved Resolution 2023-152 on December 19, 2023 approving a Construction Contract with Garney for Preconstruction Services on the PCWPF Expansion.

Town Council approved Resolution 2024-046 on May 7, 2024 approving a First Amendment to the Construction Contract with Garney for Work Package #1 on the PCWPF Expansion.

Castle Rock Water staff presented this item to the Castle Rock Water Commission at their meeting held on May 22, 2024, and the Castle Rock Water Commission voted

unanimously 6 to 0 to recommend Town Council approval of the Resolution as presented.

Discussion

A need for a sustainable long-term water supply was identified in the Town's Water Resources Strategic Master Plan and one of the major goals of that plan is establishment of a renewable, sustainable water supply that accounts for 100% of the annual demand for water in Castle Rock by 2065. Renewable water sources include East Plum Creek alluvial wells, surface water using existing Town Water Rights, and imported surface water from outside of the Plum Creek Basin (e.g., WISE water). PCWPF also purifies a majority of Castle Rock's reusable water supplies.

PCWPF is currently a 6 MGD facility receiving raw water from four main sources: Castle Rock Reservoir 1 (CRR1 - connected with diversion on Plum Creek (PCD) near Sedalia and the source of most of CRW's reusable water), CR1 (a diversion on East Plum Creek near PCWPF), various alluvial wells along East Plum Creek (renewable) and deep (Denver Basin/nonrenewable) groundwater wells. CRW is currently working with BMcD under separate contract on the Chatfield Pump Back Project. This pump back project will supply water to CRR1 and Castle Rock Reservoir 2 (CRR2) from Chatfield Reservoir, expanding CRW's renewable water sources and providing a high quality, low total dissolved solids (TDS) water source for TDS blending and additional renewable water yield. CRW is also working on redesigns for the two surface water diversions that feed PCWPF, CR1 and PCD. Both of these diversions are unable to operate at the fully permitted intake due to design issues leading to sanding and debris shutting down the diversions during various creek conditions. These redesigns are currently scheduled for construction in 2025 through 2026.

The original PCWPF project was completed in 2014 and included 6 MGD capacity pretreatment facilities with aeration, rapid mix, flocculation, sedimentation, and greensand filtration. The greensand filtration was followed by membrane filtration and chemical addition to form chloramines for a disinfection residual in the distribution system.

In 2021 the PCWPF Advanced Treatment (AT) project was completed and added 6 MGD capacity of advanced treatment systems such as pre-ozone, biologically active carbon (BAC) filtration (previously greensand filters converted to BAC), advanced oxidation with ozone and hydrogen peroxide, granular activated carbon (GAC) adsorption, and ultraviolet (UV) disinfection. The multiple barrier approach was designed to treat source waters for removal of pathogens, organics, regulated drinking water contaminants, and nonregulated contaminants of emerging concern (CECs). The primary goals of the PCWPF AT project were 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) and meet or exceed requirements for direct potable reuse to allow reuse of all of CRW's reusable supplies. The facility already meets the treatment requirements for the latest drinking water

standards issued by US EPA, the standards for perfluoro alkyl substances (PFAS), three years ahead of the deadline for water providers across the country.

In order to continue using and expanding renewable water sources, CRW must implement our long-term plan to expand PCWPF's current treatment capacity of 6 MGD up to 12 MGD. Expanding PCWPF will coincide with the completion of CRR2 and redesign and improvement of CR1 and PCD and provide for keeping up with growing demands as the Town adds additional residents and businesses. Once expanded, PCWPF will be the largest water treatment facility in CRW's system.

In general terms, with this project CRW will expand all treatment processes, modify the solids handling processes, install a new emergency electrical generator for the original PCWPF Building (houses high service pumping), increase high service pumping capacity, and increase laboratory areas for additional sampling and water quality testing needs. For example, treatment system improvements will include a new building adjacent to the existing pretreatment building to house 6 MGD capacity of a new rapid mix basin, flocculation and sedimentation treatment steps, and new BAC filter bays. The project will add three membrane filtration racks with 78 modules each to match existing racks. Ozone system improvements will include additional liquid oxygen storage with vaporizers, new ozone generators with chillers, ozone injection and destruct skids, and a new ozone loop reactor made of stainless-steel piping. Ten GAC filters will also be added in an expansion of the PCWPF AT building.

In order to deliver a quality-constructed project and maximize value, CRW recommends retaining BMcD for construction phase engineering services. At the request of staff, BMcD submitted a proposal to provide these services. The scope of work and fee are included as exhibits to the agreement.

The BMcD fee for construction phase engineering services is \$3,824,954. This fee is approximately 5.7 percent of estimated construction costs (\$67,443,732). The proposed BMcD fee is fair and reasonable, and considering the highly technical nature of the water treatment systems to be installed, sole-sourcing these services with the design consultant will help ensure that the project is constructed in compliance with plans and specifications. In addition, BMcD is familiar with the Guaranteed Maximum Price Construction Management (GMPCM) project delivery method. BMcD has worked with the contractor to revise designs as needed to fit the budget and scope, and their continued involvement is critical to maintaining the existing relationship that has developed between the Owner, Design Consultant and Contractor. Therefore, a sole source contract is recommended. A sole source justification form is included in **Attachment B**.

Budget Impact

Funding for this project was included in the 2024 budget in the project fund shown below. Current account balance in this account is approximately \$2,303,123. A budget amendment will be completed in 2024 to fully fund the project.

Project	Account Number	This Contract
Advanced Oxidation Facility	211-4375-443-77-75	\$4,016,202

Staff Recommendation

Staff and CRW Commission recommend Town Council approval of the Resolution as presented.

Proposed Motion

"I move to approve the Resolution as introduced by title."

Alternative Motions

"I move to approve the resolution as introduced by title, with the following conditions: (list conditions)."

"I move to continue this item to the Town Council meeting on _____ date to allow additional time to (list information needed)."

Attachments

Attachment A: Resolution
Exhibit 1: Agreement
Attachment B: Sole Source Justification Form