

TOWN OF CASTLE ROCK SERVICES AGREEMENT (Chatfield Pump Back Project – Preliminary Engineering and Design)

DATE:

PARTIES: TOWN OF CASTLE ROCK, a Colorado municipal corporation, 100 N. Wilcox Street, Castle Rock, Colorado 80104 (the "Town").

BURNS & MCDONNELL ENGINEERING COMPANY, INC., a Missouri corporation, 9785 Maroon Circle, Suite 400, Centennial, Colorado 80134 ("Consultant").

RECITALS:

- A. The Town issued a Request for Quotes/Proposals/Bids from qualified consultants with expertise in engineering and design services.
- B. Consultant timely submitted its Quotes/Proposals/Bids.
- C. Town wishes to engage Consultant to provide the services more fully described in the following Agreement and Exhibits.

TERMS:

Section 1. <u>Scope of Services.</u> Consultant shall provide design and engineering services in accordance with the scope of services attached as *Exhibit 1* ("Services").

Section 2. <u>Payment</u>. Consultant shall invoice Town upon completion of the Services rendered in accordance with the rate and fee scheduled identified in *Exhibit 1*. The Town shall pay such invoices within 30 days receipt of such invoice. In no event shall the cumulative payment to Consultant exceed \$349,149.00, unless authorized in writing by Town.

Section 3. <u>Term.</u> Consultant shall commence the Services upon execution of this Agreement and complete the Services by September 22, 2023. Consultant shall perform the Services under this Agreement using a standard of care, skill and diligence ordinarily used by reputable professionals performing under circumstances similar to those required by this Agreement. The Town shall have the right to terminate this Agreement at any time with 30 days written notice to Consultant. The Town's only obligation in the event of termination shall be payment of fees and expenses incurred up to and including the effective date of termination. Consultant shall turn over all work product produced up to the date of termination.

Section 4. <u>Annual Appropriation</u>. The continuance of this Agreement is contingent upon the appropriation of funds to fulfill the requirements of the Agreement by the Town. If the Town fails to appropriate sufficient monies to provide for the continuance of the Agreement, the Agreement shall terminate on the final day preceding the date of the beginning of the first fiscal



year for which funds are not appropriated. The Town's only obligation in the event of termination shall be payment of fees and expenses incurred up to and including the effective date of termination.

Section 5. <u>Subcontractors.</u> Consultant may utilize subcontractors to assist with specialized works as necessary to complete the Services. Consultant will submit any proposed subcontractor and the description of their services to the Town for approval.

Section 6. <u>Assignment.</u> This Agreement shall not be assigned by either party without the written consent of the other party.

Section 7. <u>Notice.</u> Any notice required or permitted by this Agreement shall be in writing and shall be deemed to have been sufficiently given for all purposes if sent by certified mail or registered mail, postage and fees prepaid, addressed to the party to whom such notice is to be given at the address set forth on the first page of this Agreement, or at such other address as has been previously furnished in writing to the other party or parties. Such notice shall be deemed given when deposited in the United States mail.

Section 8. <u>Insurance.</u> Consultant agrees to procure and maintain, at his own cost, the following policy or policies of insurance. Consultant shall not be relieved of any liability, claims, demands or other obligations assumed pursuant to this Agreement by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance, or types.

A. Consultant shall procure and maintain, and shall cause each subcontractor of the Consultant to procure and maintain a policy with the insurance coverage listed below. Such coverage shall be procured and maintained with forms and insurers reasonably acceptable to the Town. All coverage shall be continuously maintained from the date of commencement of services hereunder. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

1. Workers Compensation insurance to cover obligations imposed by the Workers Compensation Act of Colorado and any other applicable laws for any employee engaged in the performance of Work under this contract, and Employer's Liability insurance with limits of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) each accident, FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease-policy limit, and FIVE HUNDRED THOUSAND DOLLARS (\$500,000) disease-each employee.

2. Commercial General Liability insurance with combined single limits of ONE MILLION DOLLARS (\$1,000,000) each occurrence and TWO MILLION DOLLARS (\$2,000,000) aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage, blanket contractual, independent contractors, products, and completed operations. The policy shall contain a severability of interests provision.



3. Business Automobile Liability Insurance with combined single limits for bodily injury and property damage of ONE MILLION DOLLARS (\$1,000,000) each accident and TWO MILLION DOLLARS (\$2,000,000) aggregate with respect to each of Consultant 's owned, hired and/or non-owned vehicles assigned to or used in performance of the services. The policy shall contain a severability of interests provision.

4. Professional Liability insurance with limits of ONE MILLION DOLLARS (\$1,000,000) per claim and TWO MILLION DOLLARS (\$2,000,000) aggregate.

B. The policies required above, except Workers' Compensation insurance, Employers' Liability insurance and Professional Liability insurance shall include the Town, its officers and employees, as an additional insured. Every policy required above, except Workers' Compensation, Employers Liability and Professional Liability insurance, if applicable, shall be primary insurance, and any insurance carried by the Town, its officers, or its employees, shall be excess and not contributory insurance to that provided by Consultant. The additional insured endorsement for the Commercial General Liability insurance required above shall not contain any exclusion for bodily injury or property damage caused by completed operations. The Consultant shall be responsible for any deductible losses under each of the policies required above.

C. Certificates of insurance shall be completed by Consultant's insurance agent and submitted at the time of execution of this Agreement as *Exhibit 2* as evidence that policies providing the required coverage, conditions and limits are in full force and effect, and shall be subject to review and approval by the Town. Each certificate shall identify the Project and shall provide that coverage afforded under the policies shall not be cancelled or terminated until at least 30 days prior written notice has been given to the Town. If the words "endeavor to" appear in the portion of the certificate addressing cancellation, those words shall be stricken from the certificate by the agent(s) completing the certificate.

D. Failure on the part of Consultant to procure or maintain policies providing the required coverage, conditions, and limits shall constitute a material breach of contract upon which at the Town's discretion may procure or renew any such policy or any extended connection therewith, and all monies so paid by the Town shall be repaid by Consultant to the Town upon demand, or the Town may offset the cost of the premiums against any monies due to Consultant from the Town.

Section 9. <u>Colorado Governmental Immunity Act</u>. The parties understand and agree that the Town is relying on, and does not waive or intend to waive by any provision of this contract, the monetary limitations (presently \$424,000 per person, \$1,195,000 for two or more persons, per occurrence) or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, \$24-10-101, *et seq.*, C.R.S., as from time to time amended, or otherwise available to Town, its officers, or its employees.

Section 10. <u>Indemnification.</u> Consultant expressly agrees to indemnify the Town or any of its officers or employees from all claims for bodily injury and property damage, or claims resulting from Consultant's professional services which are the subject of this Agreement, including, but not limited to, any person, firm, partnership, or corporation, to the extent caused by



the negligent acts, errors or omissions of Consultant or any of their employees or agents in performing work pursuant to this Agreement. In the event that any such suit or action is brought against Town, Town will give notice within ten (10) days thereof to Consultant.

Section 11. <u>Delays.</u> Any delays in or failure of performance by any party of his or its obligations under this Agreement shall be excused if such delays or failure are a result of acts of God, fires, floods, strikes, labor disputes, accidents, regulations or orders of civil or military authorities, shortages of labor or materials, or other causes, similar or dissimilar, which are beyond the control of such party.

Section 12. <u>Additional Documents.</u> The parties agree to execute any additional documents or take any additional action that is necessary to carry out this Agreement.

Section 13. <u>Entire Agreement.</u> This Agreement represents the entire agreement between the parties and there are no oral or collateral agreements or understandings. This Agreement may be amended only by an instrument in writing signed by the parties. If any other provision of this Agreement is held invalid or unenforceable, no other provision shall be affected by such holding, and all of the remaining provisions of this Agreement shall continue in full force and effect.

Section 14. <u>Time.</u> Time is important. If any payment or any other condition, obligation, or duty is not timely made, tendered or performed by either party, then this Agreement, at the option of the party who is not in default, may be terminated by the non-defaulting party, in which case, the non-defaulting party may recover such damages as may be proper.

Section 15. <u>Default and Remedies</u>. In the event either party should default in performance of its obligations under this agreement, and such default shall remain uncured for more than 10 days after notice of default is given to the defaulting party, the non-defaulting party shall be entitled to pursue any and all legal remedies and recover its reasonable attorney's fees and costs in such legal action. In addition, no Party will be entitled to lost profits, economic damages, or actual, direct, incidental, consequential, punitive or exemplary damages in the event of a default.

Section 16. <u>Waiver.</u> A waiver by any party to this Agreement of the breach of any term or provision of this Agreement shall not operate or be construed as a waiver of any subsequent breach by either party.

Section 17. <u>Governing Law.</u> This Agreement shall be governed by the laws of the State of Colorado in the Douglas County District Court.

Section 18. <u>Independent Contractor.</u> Consultant has completed the Affidavit of Independent Contractor Status, attached as *Exhibit 3*, and submitted same at the time of execution of this Agreement. In addition to the Affidavit, Contractor and the Town hereby represent that Consultant is an independent contractor for all purposes hereunder. Consultant represents and warrants that they are free from the Town's direction and control in the performance of their work or services and that they have an independent business doing the specific type of work or services which are the subject of this Agreement. More specifically, Consultant represents and warrants



that the Town does not control what work or services they will perform or the manner in which such work or services will be performed. As such, Consultant is not covered by any worker's compensation insurance or any other insurance maintained by Town except as would apply to members of the general public. Consultant shall not create any indebtedness on behalf of the Town.

Section 19. <u>No Third Party Beneficiaries.</u> It is expressly understood and agreed that enforcement of the terms and conditions of this Agreement, and all rights of action relating to such enforcement, shall be strictly reserved to Town and Consultant, and nothing contained in this Agreement shall give or allow any such claim or right of action by any other third party on such Agreement. It is the express intention of the parties that any person other than Town or Consultant receiving services or benefits under this Agreement shall be deemed to be an incidental beneficiary only.

Section 20. <u>Work with Third-Party Contractors.</u> In the event Consultant works with a third-party contractor to complete the Services for the Town, this Section applies to the Agreement. Consultant shall not be responsible for the construction means, methods, techniques, sequences, or procedures, or safety precautions or programs for which the third-party contractor is responsible for. Nor will Consultant be responsible for a third-party contractor's failure to perform construction work in accordance with contract entered into between the Town and the third-party contractor, nor will Consultant be responsible for damage to the Project site attributable to a third-party contractor, and nothing in this Agreement is intended to create any such responsibility of Consultant. Consultant shall not have control over or charge of, and shall not be responsible for, acts or omissions of a third-party contractor or of any other persons or entities performing construction work pursuant to a construction contract between the Town and the third-party contractor.

ATTEST:

TOWN OF CASTLE ROCK

Lisa Anderson, Town Clerk

Approved as to form:

Jason Gray, Mayor

Approved as to content:

Michael J. Hyman, Town Attorney

Mark Marlowe, Director Castle Rock Water

CONSULTANT:

BURNS & MCDONNELL ENGINEERING COMPANY, INC.

Ву:

Its: _____



EXHIBIT 1

SERVICES AND FEE SCHEDULE

2. Response to Scope of Work

Project Understanding

The Town of Castle Rock's Chatfield Pump Back Project (project) will convey Castle Rock Water's (CRW) stored surface water from the Chatfield Reservoir to the Castle Rock Reservoir # 1 (CR-1/CRR1) and Castle Rock Reservoir #2 (CR-2/CRR2), which is currently in design, via a pipeline and pump station. As of the end of 2021, the Townowned 590 Acre-Feet (AF) of storage space in Chatfield with the option to purchase an additional 1.410 AF (totaling 2,000 AF) from the State of Colorado.

The project was identified as near-term importance in the Town's Water Resources Strategic Master Plan, so CRW desires flexibility to blend Chatfield water with other reuse and native Plum Creek water to lower finished water total dissolved solids (TDS) to a maximum of 450 mg/L. The project will also allow CRW the ability to store in Rueter Hess Reservoir (RHR), when not needed for treatment/blending, which will free up storage space within Chatfield Reservoir.

The proposed services for the project include planning, preliminary engineering, and 30% design services to provide initial design documents and identification of required permitting and easement acquisitions. The project will evaluate and identify the intake and pump station siting, as well as the alignment of the pipeline, which may parallel to the existing Western Shore Pipeline and the Existing Ravenna Pipeline, potentially within the existing easements. An alignment study and pump station siting study will be performed along with an investigation for use of the existing partnership pump station and intake at Chatfield Reservoir.

Project Approach

Our team has a proven history of completing projects on time and within budget for the Town. Communication, flexibility, responsiveness, and working proactively as an extension of your staff have all been integral to the success of these past projects. Our approach will meet the primary objectives outlined below.



Project Objectives Communicate regularly, hold bi-weekly teleconferences, provide weekly project management, address project challenges head-on.



Cost Effective Design We are flexible when it comes to design preferences, and we value the Town's continual involvement and feedback. We will deliver a cost-effective design by working closely with your staff and becoming an extension of your team.



Client Understanding We have worked with the Town on many different water infrastructure projects. Our familiarity with the Town's expectations, design/construction preferences, standards, and internal processes will streamline our design, bid, and construction phase support.



Permitting and Public Involvement We will design to minimize environmental and public impacts. Our team includes specialists in wetlands, species, and historical sites to minimize impacts to each. Our design will minimize impacts to the public, the environment, and to 3rd parties.

Key personnel such as the project manager, pipeline, pump station and process engineers, and environmental and permitting specialists will stay involved with project continuously during through the pipeline alignment and pump station location study. Our key personnel will participate in progress meetings and/or teleconferences with the Town. We will use these meetings to discuss design elements, project schedule, future milestones, and current progress. We will hold inperson or online workshops at critical design points (route selection, easement selection, etc.) to discuss alternatives and obtain project feedback.

Pump Station & Alignment Selection Alternative Analysis

figures outline the tasks for the paired comparison process





Coordination & Collaboration with Project Stakeholders

Making the project successful starts with understanding your specific operational preferences. Our team's approach is client centric. We will use an interactive route selection process that involves your stakeholders every step of the way, making sure that project objectives and expectations are understood and addressed. This ongoing dialogue will be especially important during the early stages of the process when critical decisions are being made. We will work with the Town and stakeholders, starting at the kick-off meeting, to consolidate the project concepts and produce the preferred alternative for the design. This is a crucial step that should not be rushed because it sets the foundation for the subsequent permitting, detailed design, and potential easement acquisitions. Our approach to route selections, pump station siting and pipeline design is simple – have the right people available when you need them.

Project Hydraulics

Delivery of water from the Chatfield Reservoir to CR-1 and/or CR-2 requires pumping as there is 650-feet of elevation to overcome. While there are many combinations of route, material, and wetted diameter scenarios that will be evaluated we have conducted a preliminary, conceptual, evaluation of the Chatfield Pump Back pipeline alignment assuming initially the alignment will follow the alignment shown in Attachment 2 of the RFP.

The graphs show the existing ground elevation profile, a sample hydraulic grade line (HGL), and potential pipeline pressures for an alignment adjacent to the Western Shore Pipeline and the Ravenna Pipeline, with a 30-inch PVC pipeline. In this case, 675-feet of supplemental head would still be required, and pipeline pressures could reach approximately 290 psi.

Our hydraulic modeling team will evaluate all anticipated conditions and scenarios to provide appropriate equipment recommendations and ultimately support the final recommendation of the pipeline alignment. Less pumping would likely be required in a 36-inch pipeline, but the lifecycle cost of pumping may not offset the higher capital cost of installation of a 36-inch vs. 30-inch pipeline.

For each potential water transmission line alternative and sub alternative, a hydraulic scenario will be developed, evaluated, and presented. Route evaluations will also take into consideration the most cost and operationally conscious route considering the pipeline diameter and material.

While the operating pressures in the water transmission line are on the higher end, our team has successfully designed raw water transmission lines at much higher pressures. Steel, PVC, and DIP are all good material candidates, even at these pressures.

Chatfield Pump Back Project Elevation **Conceptual Hydraulic and Pipe Grade Profile** 6200.0 Sample 30" Pipeline HGL 6100.0 6000.0 Approx. Pipeline Elevatio 5900.0 5800.0 CRR1 CRR2 (in design) 5700.0 5600.0 5500.0 **Chatfield Pump Station** 5400.0 0.00 2.00 4.00 6.00 8.00 10.00 12.00 14.00 16.00 Miles from Chatfield Reservior Intake and Pump Station



Pump Station Considerations

The pipeline will require around 290 psi of pressure to convey water to the CRR1 Reservoir. The Chatfield Reservoir has an existing intake that feeds a below-grade pump station. If the Town can purchase the intake and pump station, the infrastructure could be modified to meet the new design criteria. If the Town cannot reuse the existing pump station, but can use the intake, then they would need to construct a new pump station. The existing intake piping could be routed to either a new wet well or to an at-grade canned vertical turbine pump station.



Wet Well Option

If the Town constructs a wet well, you will be able to select from a vertical turbine or submersible pumps. Vertical turbine pumps typically have higher efficiency and are more suitable for high-head applications. Vertical turbine pumps, however, do require a building around the pumps. Submersible pumps do not require a pump building but do require an electrical room. Due to the high-pressure requirements, vertical turbines are recommended over submersible pumps. An example of a vertical turbine pump station with a new wet well is included below.



Canned Vertical Turbine Pump Station Option

The other pump station option for the Town is a canned vertical turbine pump station. Canned vertical turbine pumps have a metal can around the vertical turbine pump shaft to achieve the required submergence. Water could be routed directly from the existing intake to the pump cans.

The main advantage to canned vertical turbine pumps is their footprint. Since the pumps do not require a wet well, the pump station facility can be much smaller than with other pump arrangements. The main disadvantage to a canned vertical turbine pump station is maintenance. The cans are buried so they are not easily accessible. If there is corrosion over time, it would be difficult for the Town to inspect the cans. Vertical turbine pumps also require skylights above the pumps in the building to allow for pump removal. The pump removal can be expensive since it requires the use of a crane.

Vertical Turbine PS Design Elements

- Large Overhead Door: Provides access for equipment to be moved into and out of pump station & facilitates easy maintenance access. **Pump Type:** Consider vertical turbine. 2 Capacity will meet criteria identified from the hydraulic model. Flow Meter: Located in an accessible location while providing 5 and 2 pipe 3 diameters upstream and downstream of the meter, respectively. Surge Protection (if needed): Designed to mitigate surge events within the 4
- system and protect pump station equipment.
- 5 Hatch: Provides access to the wet well.
- Skylights (not pictured): Located
- 6 centered over pumps for entire pump column removal.

Electrical Room (not pictured):

Electrical equipment located in separate room to reduce air conditioning energy

- requirements. The main pump station can be ventilated but may not be air conditioned.
- Concrete Baffles: Concrete baffles will 8 be provided to meet hydraulic institute (HI) requirements and reduce vortexing.



Canned vertical pumps at the Donkey Creek Pump Station in Gillette, WY.



Proposed Site Plan

The figure below shows a proposed site plan with the various options for pump stations and intakes included. With all proposed options, the pump station improvements would be phased for demands as the Town's water demand grows. The sizing of the pumps will utilize parallel pumping that is expandable. Variable speed drives could be used to allow the installed pumps to be ramped to meet current demands but also meet peak day demands at full speed.



Pipeline Considerations

Sizing & Materials

Our experienced pipeline team understands the importance of pipeline wetted diameter, length, and material on a project as it pertains to the up-front capital cost and long-term operation (pumping) and maintenance cost. The selection and subsequent purchase of the pipeline itself is a major component of a pipeline project. Our team has successful project experience with materials including steel, ductile iron, PVC, concrete pipe, and HDPE. In addition, our team has a strong understanding of the cost implications of material availability, construction installation, cathodic protection requirements, and long-term maintenance considerations.

Discharge to CR-1 & CR-2 Irrigation Canal

The graphs (on page 4) in the Hydraulics and Pipeline section show that residual head (pressure) is expected at the discharge location to the Castle Rock Reservoir No. 1 and Castle Rock Reservoir No. 2. This is the result of needing to add enough energy to the raw water transmission line to pump over a high point elevation of approximately 6,100 feet. The discharge to the reservoirs is at approximately 5750 feet. The elevation difference from the high point to the reservoir discharge means that at least 250 feet or 110 psi of head will need to be managed as water is discharged to the atmosphere.

We understand the importance of discharging waterlines to atmospheric conditions and just recently completed a design for pressures in excess of 275 psi. We will work with the Town to present a series of conceptual alternatives, such as the use of pressure relief valves, pressure sustaining valves, hydro turbines (for energy recovery) and/or a combination of both. Our team would also likely recommend an energy dissipation end treatment to safely manage discharge flows.

Environmental Due Diligence

To support the pump station siting and pipeline alignment selection paired comparison analysis, we will perform a natural resource desktop review of the project alternatives identified. This desktop review will primarily focus on identifying suitable habitats for raptors, potential wetlands, floodplain areas, and other notable habitats that could host state and/or federal listed species. The U.S. Fish & Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) will be used to identify federally listed species. The potential occurrence of state-listed species will also be analyzed during the review. The review will begin with an examination of maps and Geographic Information System (GIS) data to evaluate the physical attributes (e.g., vegetation, topography, water resources, etc.) of the project and adjacent areas that may have suitable habitats for listed species. GIS data layers may include, but are not limited to, National Hydrography Database (NHD), National Wetland Inventory (NWI) data, Colorado Natural Heritage Program (CNHP) data, and USFWS Information for Planning and Consultation (IPaC).

Based on the proposed project location, there is potential to encounter cultural resources. Our team will conduct a Class I file and literature review, and based on the results of this review, an intensive Class III cultural inventory may be required. If it is determined that a Class III is needed, we can work with the Town on amending the scope and adding the required costs. The Class I files search, and literature review would entail submitting a files search request with the Office of Archaeology and Historic Preservation (OAHP) and reviewing historic plats, maps, and other records.

Permitting and Authorizations

Based on the project description and proposed alignment, we anticipate that the project can be permitted through permits that have an 8–12-month review period (i.e., USACE, USFWS, OAHP, 1041, etc.)

	Regulatory Agency	Permit/Clearance					
	US Army Corps of Engineers (USACE), Omaha District	Section 404 of Clean Water Act - Dredge and Fill Permit (assume the Project will fall under the Nationwide Permit and an Individual Permit will not be required)					
Federal		Section 408- Triggered when an USACE Civil Works project is altered					
	US Fish & Wildlife Service (USFWS), Ecological Services	Section 7 Threatened and Endangered Species Consultation and Clearance					
State	Colorado Department of Public Health	Section 401 of Clean Water Act-Water Quality Certification (WQC)- Required if the Project triggers a Section 404 Individual Permit					
	and Environment (CDPHE)	NPDES Permit for Storm Water Discharges from Construction Sites (Over 1 acre of soil disturbance is anticipated so an NOI and SWP2 Plan will be required)					
	Colorado Department of Transportation (CDOT)	Right-of-Way and Utility Permit					
	Colorado Office of Archaeology and Historic Preservation (OAHP)	Section 106 of National Historic Preservation Act – Section 106 Clearance					
		State Protected Species Review					
	Colorado Parks and Wildlife (CPW)	Coordination if impacts to Chatfield State Park and Waterton Canyon occur					
Local	Jefferson County	County Level Permits (Location & Extent, Stormwater, Floodplain, etc.)					
	Douglas County	County Level Permits (Location & Extent, Stormwater, Floodplain, etc.)					

Environmental factors that may trigger supplemental permitting are all things to consider during initial alignment selections.



Key Project Considerations

Our proposal is focused on the key considerations necessary to make this project a success. Below is a summary of the key project components, their impact on the project, and/or how we will address each one.

PLATTE CANYON DITCH

Platte Canyon Ditch runs east of S. Wadsworth Blvd. It is likely the pipeline alignment would follow the west side of S. Wadsworth Blvd to remain out of the 100 year floodplain, the Chatfield Gravel Ponds, and Platte Canyon Ditch.

WATERON CANYON TRAIL HEAD

Our team will evaluate alignments to reduce impact on the public and local recreational amenities.

SOUTH PLATTE RIVER

Our team will work with the USACE early on to identify crossing requirements of the South Platte River. It is likely this will require a trenchless installation. However, we recently worked with the USACE and completed an open cut crossing of the S. Platte River.

HIGH LINE CANAL

The alignment will cross and may parallel the High Line Canal. Our team will work with Denver Water early on to identify crossing and parallel installation/permitting requirements.

STERLING RANCH DEVELOPMENT

Our team will coordinate early on with the development to understand platting and future roadway crossings. We will work to keep the alignment in the existing Ravenna easement where possible.

AURORA RAMPART PIPELINE CROSSING

The alignment will cross the City of Aurora's Rampart Pipeline. Our team will work with the City early on to identify crossing/ permitting requirements.



IMPACTS ON SURROUNDINGS

Our team will coordinate with Castle Rock Water regarding impacts to Chatfield state park and/or Waterton Canyon.

TEMPORARY PUMP STATION & INTAKE

An existing temporary pump station may be improved, converted, or replaced. Our team will work with the owning entity of the existing pump station and intake to acquire the assets or evaluate siting of a new pump station and intake. Permitting of a new intake location likely would be a lengthier process with the USACE.

ROADWAY CROSSINGS

Our team will coordinate with the County and other local jurisdictional agencies to identify roadway crossing requirements and necessary permits.

RAVENNA EASEMENTS

The existing 16-inch Fiberglass Ravenna Pipeline is located primarily within the center of existing 30-foot wide easements. Our team will evaluate utilizing the existing Ravenna easements to minimize any easement acquisition requirements for the Chatfield Pump Back Pipeline.

CREEK/ GULCH

Our team will identify and work with the Army Corps of Engineers to understand what waters are considered jurisdictional and may require trenchless installation or further permitting.

CR-1/CR-2 RESERVOIR

The pipeline needs to convey raw water rights to CR-1 and CR-2 which is in design. Our team will coordinate with the reservoir design team to understand the alignment and discharge requirements in this area.



Managing Effectively and Quality Control

Our team has a proven history of completing projects on time and within budget. Flexibility, close coordination, responsiveness, and working as an extension of our client's staff have all been integral to the success of these past projects, just as they will also be for yours. We will apply our proven ability to seek out, interpret, and manage existing data, public records, and geospatial data to make this project a success.

Budget Control

We use a well-developed accounting system, EcoSys, to track labor costs, expenses, and billing. Your project manager, Kyle, will be responsible for setting and controlling the budgets for your project. As part of the billing process, he will review billed hours, expenses, and costs monthly. He will also use additional tools to track progress and forecast expenditures through the end of the project.

As labor hours and costs are recorded through our weekly timesheet process and expense management system, the data becomes available to Kyle through a cloud-based system to analyze current and projected costs for the project.

As labor hours and costs are recorded through our weekly timesheet process and expense management system, the data becomes available to Kyle through a cloud-based system to analyze current and projected costs for the project.

While the financial systems track costs, the most important part of cost control is managing the team. We take a focused approach to design, in which our key discipline engineers complete the conceptual design to clearly understand our path forward before we involve the expanded team to complete the final design.

This helps us keep each design discipline focused and moving the project forward by managing the sequence of deliverables. Invoices include a one-page status report that identifies work accomplished during the invoicing period and work planned for the upcoming invoice period and a recap of funds expended/ funds remaining for the project.

Quality Control

Burns & McDonnell has an established, formalized quality control program that is mandatory on all projects. It is utilized to develop project documents in conformance with the project requirements. The program uses Standard Quality Control procedures to check and review documents in their final form, as well as the supporting data for those documents. Its purpose is to minimize inconsistencies, gaps, and interferences in the documents.

Specific quality control tasks are budgeted into the project. Our system of timekeeping and manpower planning uses a dedicated accounting system to monitor specific task activities. For this contract, we will implement our 6-step Quality Management Plan from the beginning of the project to its completion.

Communicate



Aanage Scope Keep the entire project team, including Town staff, aware of the project budget/schedule status. Enable the team to take ownership in the project as it evolves. Encourage each team member to be mindful of his/her purpose and commitment to the project from start to finish.

Identify project components that require the project to adjust in order to maintain the initial/approved schedules and budgets. This applies to both financial and staff resources. Consistently review and manage project needs as the project evolves.

Minimize project variations that can affect the overall budget and schedule. Keep all stakeholders aware of changes through regular updates. Address concerns or questions prior to decisions being made that could affect the project's outcome or stakeholders' standards and expectations.

By focusing on scope management, continual forecasting, and communication, we help you receive the most value without sacrificing quality or budget.



3. Action Plan & Schedule

Scope of Services – Our team anticipates completing the following scope of services. Should the Town wish to modify this scope, we are happy to adjust it as needed.

Task Series 100 – Team Collaboration & Project Management

Task 101 - Weekly Project Management and Contract Administration - Our team will perform weekly Project Management and Contract Administration tasks. These tasks include project staffing, project administration, project management, weekly project oversight of overall project organization and refinements in program administrative planning, QC process, progress reporting, correspondence, and monthly invoicing. The duration of this preliminary design work is expected to take approximately eight (8) months.

Task 102 - Regular Project Meetings (x8) - Our team will prepare for, attend, and conduct a project kick-off meeting and up to eight (8) regular progress meetings at the Town's office. Our team will review the current project status. Agendas and minutes prepared for each meeting will be action items and key project decision tables. Task 103 - Quality Assurance and Quality Control Reviews - Our team will perform quality control for the reports, memorandums, and 30% of design documents. Burns & McDonnell has an established, formalized guality control program that is described herein and is mandatory on all projects. A copy of our corporate quality control manual is available upon request.

Task Series 200 – Data Collection & Paired Comparison Analysis

Task 201 - Review of Background Documents & Establish Design Criteria - Our team will review record documents, easement documents, and previous studies (e.g., draft reports for the South Metro Water Supply Authority) provided by the Town. We will also review available geographical information, property ownership, and engineering locate requests. Our findings will be discussed in regular progress meetings to identify design criteria. Task 202 - Environmental Studies/Due Diligence - Our in-house environmental scientists will complete a desktop study for threatened/ endangered species, historical, cultural, and wetlands areas to identify if areas at the pump station or along the pipeline alignment would be disturbed during the project construction. The findings of this evaluation will be documented in a brief letter report that would be suitable for submitting to the regulatory agencies. Task 203 - Paired Comparison Analysis - Our team will consider the pipeline preliminaries developed for SMWSA and identify optimal pump station locations and waterline alignments to be evaluated with our paired comparison analysis (PCA) tool. A brief technical memorandum to communicate findings and recommendations will be submitted to CRW. The PCA will focus on evaluating the technical, environmental, and social impacts of the alternatives identified. The technical memorandum will include analysis and dialogue in regard to the paired comparison and evaluation of the associated project costs.

Task Series 300 – Preliminary 30% Design & Basis of Design Report

Task 301 - Topographical Survey (Added Alternative)- A topographical survey can be provided by our subconsultant, Encompass Surveying. The survey will be completed using a Wingtra UTV that will capture a 100' wide corridor of LiDAR data and aerial imagery along the selected pump station and pipeline alignment. The survey will capture existing utilities via OneCall locates but does not include a private utility locator (SUE Level B) at the 30% design stage. The survey will be used to complete Task Series 302. If a survey is not used, Task Series 302 can be developed with readily available geospatial data and aerial imagery and mapped utilities from locate requests.

Task 302 - Develop Preliminary Design (30%) - We will develop 30% design drawings which will include:

- 1. Coversheet, index sheet, and preliminary general notes
- 2. Preliminary pump station layout drawings and plan view drawings of the pipeline 3. Typical details and preliminary details for appurtenances

Drawings shall be 22 inches x 34 inches, with a plan scale of 1 inch = 50 feet; or as otherwise appropriate and acceptable to the Town. All drawing graphics shall fit on 11-inch x 17-inch paper when reduced to half size.

Task 303 - 30% Engineer's Opinion of Probable Construction Cost (EOPCC) & Project Schedule - Our team will prepare the EOPCC and anticipated schedule for the project based on the 30% design documents. The EOPCC will be submitted along with the 30% design documents. The EOPCC and schedule will be based on recent bid tabulation information, historical cost data, and discussions with local suppliers and contractors.

Task 304 - Basis of Design Report - Our team will prepare a Basis of Design Report (BDR) to be submitted along with the 30% design documents for review and comment by the Town. The BDR will include:

- 1. The pump station siting location(s) includes consideration for the existing temporary pumping station location at Chatfield Reservoir.
- 2. Consideration for a partnership
- 3. The pipeline alignment
- Pipeline material and sizing recommendation 4.
- 5. Consideration for abandonment of the existing 16-inch fiberglass Ravenna pipeline
- 6. Other pertinent information evaluated, discussed, and recommended during the Preliminary Design Phase of the project.

Task Series 400 – Permitting & Easements

Task 401 - Identify Permitting Requirements & Technical Memorandum - Our team will research the regulatory requirements for the project and meet with each of the regulatory agencies identified in the proposal (1x) to develop a Permitting Plan. We will review the Town's identified permits and identify additions/subtractions. Our team will develop a permitting matrix with the permit title, permit issuer, permit holder, range of permit fees, requirements, and the timeline for acquiring. The findings and recommendations of the regulatory and permitting requirements will be summarized and submitted to CRW in a Technical Memorandum. Task 402 - Identify Easement (Land Acquisition) Requirements & Technical Memorandum - Our team will research the property ownership, ROW, and available existing easement information along the selected pipeline alignment and at the recommended pump station site. We will develop a property ownership map. The property ownership map will help evaluate the route selection for permanent and temporary easement requirements (Easement Plan). The findings and recommendations of the Easement Plan will be summarized and submitted to the Town in a Technical Memorandum.

Task Series 500 – Partnership Coordination

If the Town elects not to partner with another entity, Task 500 may be deducted less the cost of work incurred to date. Task 501 - Partnership Coordination Meetings (x5) - Our team will host, develop agendas, and prepare minutes for up to five (5) virtual partnership coordination meetings. We will review the project objectives, goals, partnership assets, and Chatfield water exchanges with the potential partners to develop appropriate design criteria for the project. Our minutes prepared after each meeting will include a table of decisions made and actions required.

Task 502 - Partnership Review and Partnership Basis of Design Recommendations - Our team will review potential partnership opportunities with another entity to feed Chatfield Reservoir water and Chatfield water exchanges to the new pump station/pipeline. We will review potential partner(s) existing assets, compatibility with the project (Chatfield water/water exchanges) and document the findings and recommendations in the BDR.



Work Breakdown Structure & Schedule

We have generated a fee and project schedule that are numerically coordinated based on our understanding of the scope of work in the RFP and the anticipated schedule. The tasks shown within the fee and schedule represent our proposed work breakdown structure (WBS). The schedule has been developed in Microsoft Project as a critical path method (CPM) schedule.

ID	ID Task Name					Duration	Start	Finish	Predecessors	A	
1	RFP: Chatfield Pump Bac	P: Chatfield Pump Back Project - Preliminary Engineering & Design Services							Wed 4/19/23		Aug
2	Notice of Award by t	he Town of Castl	le Rock, Colorado	0 days	Mon 8/15/22	Mon 8/15/22		♦ 8/15			
3	Task Series 100 – 1	Feam Collaborat	tion & Project Man	174 days	Mon 8/15/22	Tue 4/18/23		-			
4	Task 101 – Weekl	y Project Manage	ement and Contract		174 days	Mon 8/15/22	Tue 4/18/23	2			
5	Task 102 – Regula	ar Project Meetin	gs (x8)		153 days	Thu 8/25/22	Thu 3/30/23		1		
14	Task 103 - Quality	Assurance and	Quality Control Rev	iews			140 days	Tue 9/20/22	Wed 4/5/23	2FS+25 days	
15	Task Series 200 – I	Data Collection	& Paired Comparis	son Analysis			80 days	Mon 8/15/22	Wed 12/7/22	2	
16	Task 201 – Reviev	w of Background	Documents & Estat	blish Design C	Criteria		20 days	Mon 8/15/22	Mon 9/12/22	2	
17	Task 202 – Enviro	nmental Studies/	Due Diligence				30 days	Tue 9/13/22	Mon 10/24/22	16	
18	Task 203 – Paired	Comparison Ana	alysis				60 days	Tue 9/13/22	Wed 12/7/22	16	
19	Task Series 300 - P	Preliminary 30%	Design & Basis of	Design Repo	ort		90 days	Thu 12/15/22	Wed 4/19/23	3	
20	Task 301 – Topog	raphical Survey					30 days	Thu 12/15/22	Wed 1/25/23	18FS+5 days	
21	Task 302 – Develo	op Preliminary De		75 days	Thu 1/5/23	Wed 4/19/23	20FS-15 days				
22	Task 303 - 30% Engineer's Opinion of Probable Construction Cost (EOPCC) & Project Schedule							Tue 2/7/23	Wed 4/19/23	21FF	
23	²³ Task 304 – Basis of Design Report							Thu 3/23/23	Wed 4/19/23	21FF	
24	²⁴ Task Series 400 – Permitting & Easements							Thu 1/26/23	Wed 4/19/23		
25	Task 401 – Identif	y Permitting Req	uirements & Techni	cal Memoranc	dum		30 days	Thu 1/26/23	Wed 3/8/23	20	
26	Task 402 – Identif	y Easement (Lan	orandum	20 days	Thu 3/23/23	Wed 4/19/23	21FS-20 days				
²⁷ Task Series 500 – Partnership Coordination								Tue 9/13/22	Tue 2/28/23		
²⁸ Task 501 - Partnership Coordination Meetings							119 days	Tue 9/13/22	Tue 2/28/23		
34	³⁴ Task 502 – Partnership Review and Partnership Basis of Design Recommendations							Tue 9/13/22	Mon 10/17/22	16	
	Task External Tasks Inactive Summary Split External Milestone Manual Task Milestone Inactive Task Duration-only Summary Inactive Task Manual Summary R Project Summary Inactive Milestone Manual Summary R					Inactive Summary Manual Task Duration-only Manual Summary Rollu Manual Summary	que	 Start-only Finish-only Critical Critical Split Progress 	C 3	Deadline	<u>.</u>







Document Path: J:\GIS\Map Requests\2022\Internal_Requests\Chatfield_Pumpback\Chatfield_Pumpback.mxd



August 24, 2022

Mr. Scott Tait, MSSE, MBA, EI, LEED® GA Project Manager-CIP, Water Resources The Town of Castle Rock Castle Rock Water 175 Kellogg Court Castle Rock, CO 80109 stait@crgov.com

Re: Proposal for Chatfield Pump Back Project

Dear Scott:

As requested, Burns & McDonnell has updated our fee proposal, RFP 2022-09 Proposal – Fee Schedule, to remove costs associated with Task 301 – Topographical Survey (Add Alternative) related to the Chatfield Pump Back Project (project).

It has been identified that Task 301 – Topographical Survey (Add Alternative) is not required at this time. Inclusion of Topographical Survey to complete the 30% design documents (drawings) will be revisited after selection of an optimal pipeline alignment and can be negotiated at a later date.

We propose to complete the professional services noted in the fee schedule for a not to exceed fee of \$349,149 and at the rates included herein. I hope that our proposal to provide professional services related to the project is acceptable to the Town of Castle Rock. As always, after your review, we are pleased to further discuss to meet your expectations and project goals.

It is our great privilege to continue to serve Castle Rock Water. If you should have any questions or comments, please do not hesitate to call me at (720) 592-3417.

Sincerely,

Kyle LeBrasse, P.E. - Department Manager

KGL/kgl cc: Jason Schaefer, P.E. – Regional Global Practice Manager

Town of Castle Rock, Colorado

RFP No. 2022-09 Chatfield Pump Back Project

Work Breakdown Structure and Fee Schedule

	Project Manager	Pipeline Lead	Pipeline Engineers	Environmental Lead	Environmental/ Cultural	Right of Way Specialist	Pump Station Lead	Process Lead	Civil	Structural	Architectural	Electrical I&C	Mechanical	Designers	Quality Control				Sub- Consultants	
Activity		, Kate Henske, PE	Ryan Brong, PE Brett Holzapfel, EIT	Ryann Loomis	Angie Woehler Clive Briggs	Jennifer Harris	Nikole Rachelson, PE	Haley Morton, PE	Nick Tessitore, PE Jordan Brothers, EIT	John Kienholz, PE	Shawn Daglish, PE	Vamsi Patwari, PE	David Olsen, PE	Kristie Weiss Naweed Aryan Swapnil Anhare	Jason Schaefer, PE	BI Total	McD I Labor	Expenses	Encompass Services Utility Locating, Survey	Total Cost
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Cost	Direct	Cost	
Task Series 100 - Team Collaboration & Project Management																				
Task 101 – Weekly Project Management and Contract Administration	40	4					4									48	\$11,400	\$230		\$ 11,630
Task 102 – Regular Project Meetings (x8) (1)	8	8	16				8	8								48	\$10,142	\$200		\$ 10,342
Task 103 – Quality Assurance and Quality Control Reviews	4														50	54	\$14,178	\$280		\$ 14,458
Sub-Total Series 100	52	12	16	0	0	0	12	8	0	0	0	0	0	0	50	150	\$35,720	\$710	\$0	\$36,430
Task Series 200 – Data Collection & Paired Comparison Analysis																				
Task 201 – Review of Background Documents & Establish Design Criteria	4	4	20	2	2	2	8	20	2	6	2	6	2			80	\$16,472	\$330		\$ 16,802
Task 202 – Environmental Studies/Due Diligence	1	1	2	4	40											48	\$8,601	\$170		\$ 8,771
Task 203 – Paired Comparison Analysis	4	16	40	2	4	2	4	16								88	\$17,286	\$350		\$ 17,636
Sub-Total Series 200	9	21	62	8	46	4	12	36	2	6	2	6	2	0	0	216	\$42,358	\$850	\$0	\$43,208
Task Series 300 – Preliminary 30% Design & Basis of Design Report												-								
Task 301 – Topographical Survey (Add Alternative) (2)(3)																0	\$0	\$0		\$ -
Task 302 – Develop Preliminary Design (30%)	40	30	180				40	150	20	40	16	32	12	460		1,020	\$181,102	\$3,785		\$ 184,887
Task 303 - 30% Engineer's Opinion of Probable Construction Cost (EOPCC) & Project Schedule	2	2	10				4	8	1	1	1	1	1			31	\$6,254	\$130		\$ 6,384
Task 304 – Basis of Design Report	10	8	20				10	20	4	4	4	4	4	20		108	\$21,486	\$430		\$ 21,916
Sub-Total Series 300	52	40	210	0	0	0	54	178	25	45	21	37	17	480	0	1,159	\$208,842	\$4,345	\$0	\$213,187
Task Series 400 – Permitting & Easements																				
Task 401 – Identify Permitting Requirements & Technical Memorandum (1)	4	4	16	4	40		4	4								76	\$14,122	\$280		\$ 14,402
Task 402 – Identify Easement (Land Acquisition) Requirements & Technical Memorandum	2	2	8	2		16	2	4								36	\$7,783	\$160		\$ 7,943
Sub-Total Series 400	6	6	24	6	40	16	6	8	0	0	0	0	0	0	0	112	\$21,906	\$440	\$0	\$22,346
Task Series 500 – Partnership Coordination																				
Task 501 – Partnership Coordination Meetings (x5) (1)	10	5	10	2			5	5								37	\$8,023	\$160		\$ 8,183
Task 502 – Partnership Review and Partnership Basis of Design Recommendations	20	16	32	4			16	32								120	\$25,285	\$510		\$ 25,795
Sub-Total Series 500	30	21	42	6	0	0	21	37	0	0	0	0	0	0	0	157	\$33,308	\$670	\$0	\$33,978
Project Subtotals	149	100	354	20	86	20	105	267	27	51	23	43	19	480	50	1,794	\$342,134	\$7,015	\$0	\$349,149

Deduct (Partnership Task Series 500) (4)

Notes:

1. Meetings include the preparation of meeting agendas and meeting minutes. Meeting documents will include a decision log and an action item logs.

2. Add Alternative Surveying to be provided by Encompass Services. Fee includes 100 wide survey of selected pump station and pipeline corridor using a Wingtra UTV which will capture LiDAR data and imagery. Private Utility locates (SUE Level B) can be provided at request for an additional fee.

3. Right of entry for field investigations is assumed to be the responsibility of the Town to execute with landowners. Burns and McDonnell ROW services team can provide these services for the Town and can be negotiated if deemed necessary.

4. Deduct of Task Series 500 should CRW elect not to partner with another entity assumes no work is performed in Task Series 500 at the time of notice. Should notice be received after work has been completed, the cost of work to date of notice shall not be deducted.

5. For outside expenses incurred by Burns & McDonnell, such as authorized travel and subsistence, and for services rendered by others such as subconsultants, the client shall pay the cost to Burns & McDonnell plus 10%.

6. The services of contract/agency and/or any personnel of a Burns & McDonnell subsidiary or affiliate shall be billed to Owner according to the rate sheet as if such personnel is a direct employee of Burns & McDonnell.

7. The rates shown above are effective for services through December 31, 2023, and are subject to revision thereafter.

\$33,978

Schedule of Hourly Professional Service Billing Rates

Position Classification	Classification Level	Hourly Billing Rate
General Office *	5	\$67.00
Technician *	6	\$85.00
Assistant *	7 8 9	\$102.00 \$138.00 \$166.00
Staff *	10 11	\$189.00 \$209.00
Senior	12 13	\$232.00 \$254.00
Associate	14 15 16 17	\$262.00 \$265.00 \$268.00 \$270.00



EXHIBIT 2

CERTIFICATE OF INSURANCE



EXHIBIT 3

TOWN OF CASTLE ROCK AFFIDAVIT OF INDEPENDENT CONTRACTOR STATUS

I, ______ (print name), an authorized representative of **BURNS & MCDONNELL ENGINEERING COMPANY, INC.**, holding legal authority to sign this Affidavit declare under oath that I am 18 years or older and have the capacity to sign this Affidavit.

In accordance with Section 8-70-115, C.R.S., I certify the following:

- With respect to the Agreement, I represent and warrant that it is my express intention to be employed as an independent contractor of the Town of Castle Rock (the "Town") for purposes of performing the work or services which are the subject of the Agreement. I understand and confirm that the Town reasonably relied on this intention in entering into the Agreement.
- The Town does not require I work exclusively for the Town, except that I may choose to work exclusively for the Town for a finite period of time specified in the document.
- The Town does not establish a quality standard for the work or services performed pursuant to the Agreement, except that the Town may provide plans and specifications regarding the work but cannot oversee the actual work or provide instruction as to how the work is performed.
- The Town does not pay a salary or hourly rate but rather a fixed or contract rate, as noted in the terms and conditions of the Agreement, and any Exhibits made part of the Agreement.
- The Town cannot terminate the work or services performed during the contract period unless otherwise agreed to in the terms and conditions of the Agreement.
- I am not provided with anything, if at all, more than minimal training from the Town.
- The Town does not provide me with tools or benefits for the performance of the work or services which are the subject of the Agreement, except materials and equipment may be supplied.
- The Town does not dictate the time of performance, except that a completion schedule and a range of mutually agreeable work hours may be established in the Agreement.



- The Town does not pay me personally but rather makes checks payable to the trade or business name of the entirety for which I am employed and who is a party to the Agreement; and the Town does not combine their business operations in any way with the entity's business, but instead maintains such operations as separate and distinct.
- I understand that if a professional license to practice a particular occupation under the laws of the State of Colorado requires the exercise of a supervisory function with regard to the work of services performed under this Agreement, such supervisory role shall not affect the independent contractor relationship with the Town.
- I UNDERSTAND THAT I AM NOT ENTITLED TO UNEMPLOYMENT INSURANCE BENEFITS UNLESS UNEMPLOYMENT COMPENSATION COVERAGE IS PROVIDED BY ME OR THE ENTITY FOR WHICH I AM EMPLOYED.
- I UNDERSTAND THAT I AM OBLIGATED TO PAY FEDERAL AND STATE INCOME TAX ON MONEYS PAID PURSUANT TO THE AGREEMENT.

CONTRACTOR/CONSULTANT/VENDOR

BURNS & MCDONNELL ENGINEERING COMPANY, INC.

By: Name STATE OF COLORADO)) ss. COUNTY OF)

The foregoing instrument as acknowledged before me this _____ day of ______, 20____ by ______ as ______ of the above mentioned Contractor/Consultant/Vendor.

Witness my official hand and seal.

My commission expires:

Notary Public