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# ENVIRONMENTAL ASSESSMENT

FOR THE

## MT. CRESTED BUTTE WATER AND SANITATION DISTRICT WATER TREATMENT PLANT EXPANSION



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FEBRUARY 2020

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JVA Project No. 1028e

FEBRUARY 2020



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# PROJECT SUMMARY

## PROJECT IDENTIFICATION

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**Applicant:** Mt. Crested Butte Water and Sanitation District  
**Address:** 2 Prospect Drive  
Crested Butte, Colorado 81224  
**JVA Project No.:** 1028e

## CONTACT INFORMATION

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### **System Owner/Contact Person**

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Crested Butte, Colorado 81225

### **Engineer**

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JVA, Inc.  
817 Colorado Avenue, Suite 301  
Glenwood Springs, CO 81601

## PROJECT OVERVIEW

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The Mt. Crested Butte Water and Sanitation District (District) is performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) Expansion Project, which also includes improvements to the East River Pump Station (ERPS) and raw water pipeline.

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since original construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. During the past four years, average daily water demand was approximately 0.33 Million Gallons Per Day (MGD) with a peak demand of 0.85 MGD. The 20-year projected peak day demand is 1.24 MGD, assuming a 2-percent growth rate and 320 gallons per day per single-family dwelling (gpd/sfd). A Facility Assessment Report of the WTP, pump station, and pipeline was completed in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Assessment Memorandum included an alternatives analysis for improving and expanding plant capacity referencing the findings of the Facility Assessment Report. Based on these evaluations, the District is expanding the WTP with a membrane treatment system, raw

water pump station, intake structures, and a new raw water transmission pipeline. The WTP will be expanded to a total capacity of 1.5 MGD and a firm capacity of 1.0 MGD. The proposed improvements at the WTP will all occur within the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. Raw water will be diverted from the East River and pumped through a new pipeline to the existing pre-sedimentation pond near the WTP. The new pipeline and pump station will be located within existing easements on both private and United States Forest Service property. The total project cost is estimated to be \$21 million. The District has an outstanding debt that will be repaid by 2021. The annual debt service will need to be raised to approximately \$1.1 million by 2020 to service the debt for this project. The District proposes raising monthly water rates and tap fees, annually every January 1<sup>st</sup>, until at least 2022.

## COMMENT PERIOD

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In conformance with the requirements of the National Environmental Policy Act and the Colorado Environmental Review Process, a Finding of No Significant Impact (FONSI) will be subject to a 30-day public review period. The FONSI will be published for review in the local newspaper as well as on CDPHE Water Quality Grants and Loans Website, Water Quality: Findings of No Significant impact. Any comments received will be given due consideration. Comments should be addressed to:

Evan Butcher, Project Manager  
CDPHE Water Quality Control Division  
WQCD-OA-B2  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530

# PURPOSE AND NEED FOR ACTION

## COMPLIANCE

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The current WTP is in compliance with all CDPHE regulations. Lead and Copper levels and Disinfection Byproduct concentrations in treated water are all well below the respective Maximum Contaminant Loads and Secondary Maximum Contaminant Loads set forth by the EPA.

## AGING INFRASTRUCTURE

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The existing WTP was constructed in 1985 following the construction of the ERPS and raw water pipeline in 1976. All facilities have had minimal improvements since construction and existing equipment is approaching the end of its useful life. The existing infrastructure was evaluated using a Process SWAT Condition Assessment and subsequent Treatment Assessment, completed in 2018.

## CAPACITY AND POPULATION GROWTH

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The District cannot reliably meet increasing water demands due to aging infrastructure and capacity limitations. The proposed project will expand the capacity of the WTP, ERPS, and raw water pipeline to meet the 20-year projected water demand of the District. The WTP will be expanded to a total capacity of 1.5 MGD and a firm capacity of 1.0 MGD. The design of the WTP allows for future expansion to a total capacity of 2.0 MGD, which is the anticipated capacity required for the District to reliably meet buildout water demands. The raw water pipeline will be designed and constructed to buildout capacity due to anticipated construction challenges of the raw water pipeline. The ERPS will be designed for a total and firm capacity of 2.0 MGD and 1.33 MGD, respectively, and expandable to a total and firm capacity of 2.67 MGD and 2.0 MGD, respectively, to coincide with water rights.

The existing ERPS consists of a concrete wet well and three 75 horse-power (HP) constant speed vertical turbine pumps. The existing capacity of the pump station is 750 gallons per minute (gpm), or approximately 1.1 MGD. Electrical limitations restrict pump operation to only two pumps at a time, limiting redundancy and capacity.

At the existing WTP, direct filtration is achieved with two Trident treatment trains which combine clarification and filtration into a packaged unit. The design capacity of each train is 350 gpm (0.5 MGD) with a total design capacity of 700 gpm (1.0 MGD).

# PROJECT SUMMARY

The District completed an SRF Project Needs Assessment (PNA). The PNA included an alternatives analysis for the ERPS, pipeline, and WTP improvements. The alternatives for the ERPS included no action or the construction of a new pump station. The existing ERPS has been in service for over 30 years and requires significant repair and improvements for continued operation. Although no action would be the low cost option, it is not a feasible alternative for continued operation of critical infrastructure or to meet future water demands. Similarly, pipeline alternatives included no action or construction of a new pipeline while maintaining the existing pipeline for redundancy. The current pipeline is reaching the end of its useful life, and limits future raw water pumping capacity. Taking no action on the raw water pipeline is not a feasible alternative.

The alternatives assessed for the improvement of the WTP included refurbishing the current mixed media filtration system, installing a new membrane filtration system in the existing WTP building, or installing a new membrane filtration system in a new process building, adjacent to the existing WTP building. All capital and Operation and Maintenance (O&M) costs for each alternative include costs for a new ERPS and pipeline. A summary of the alternatives is provided below in Table 1.

**Table 1 – WTP Alternatives Analysis Summary**

Water Treatment Plant				
Alternative	Advantages	Disadvantages	Capital Cost	Annual O&M Cost
Recondition Existing Trident Filters and System	<ul style="list-style-type: none"> <li>○ Lowest Capital Cost</li> <li>○ Operators are familiar with system</li> <li>○ Shortest timeline</li> </ul>	<ul style="list-style-type: none"> <li>○ Does not meet current and future water demands</li> <li>○ Short term solution</li> <li>○ Lesser finished water quality than other alternatives</li> </ul>	\$1,467,400	\$683,850
Install a New Membrane Filtration System in Existing Building	<ul style="list-style-type: none"> <li>○ Will meet water capacity needs</li> <li>○ Can use existing building and infrastructure</li> <li>○ Long-term solution</li> <li>○ Improvements occur in area owned by district</li> <li>○ No backwash pond modifications</li> <li>○ Plant operations in one building</li> <li>○ Fewer site and process piping modifications</li> </ul>	<ul style="list-style-type: none"> <li>○ Building space is not adequate</li> <li>○ Requires extended service outages and complex construction phasing</li> <li>○ Most difficult construction of alternatives (excavation, multiple construction zones, multiple slab elevations)</li> <li>○ Clearwell has identified vulnerabilities to contamination</li> </ul>	\$15,031,300	\$602,680

Water Treatment Plant				
Alternative	Advantages	Disadvantages	Capital Cost	Annual O&M Cost
Install a New Membrane Filtration System in New Building <b>(Selected Alternative)</b>	<ul style="list-style-type: none"> <li>○ Will meet water capacity needs</li> <li>○ Can repurpose existing building (shop, storage, etc.)</li> <li>○ Long-term solution</li> <li>○ New building space can be optimized for selected treatment technology</li> <li>○ Minimizes service outages</li> <li>○ Ease of construction</li> </ul>	<ul style="list-style-type: none"> <li>○ Higher capital cost due to new building and new clear well.</li> </ul>	\$19,063,300	\$602,680

During the alternatives evaluation, refurbishing the existing system was the least desirable option. This is because most existing equipment must be upgraded and replaced. Installing new treatment equipment will result in improved operations and is a cost-effective O&M option for the District. Membrane filtration technology is in operation at the District’s other active WTP, the Meridian Lake WTP. District staff is familiar with membrane technology and prefers the operation of membranes over direct filtration.

The other alternatives include the replacement of the Trident package filtration system with membrane filtration. Membrane filtration offers higher quality finished water with relative ease of operation compared to the packaged Trident systems. In addition, membrane filtration has a smaller footprint, can be easily automated, and has greater pathogen removal credit. Installing new equipment in the existing building was estimated to have a lower capital cost than constructing a new process building. However, retrofitting the existing building is not desirable due to constructability and operational challenges. The potential for clearwell contamination in the existing building is another factor that would deter the District from installing new membranes in the existing building. The existing WTP would need to remain in operation during construction, and longer service outages would occur if the new process equipment was constructed in the same footprint as the existing WTP. By constructing a new building, critical treatment processes can be in a single location while the existing water treatment building can be repurposed for other operational and storage needs.

The selected alternative is to install a new treatment system in a new process building, resulting in higher finished water quality, the District reliably meeting water demand, and improving operations. An Opinion of Probable Cost (OPC) for the selected alternative has been included in Appendix B. For the selected alternative, improvements include the following:

**East River Pump Station**

- Decommission existing ERPS
- Construct a new ERPS which includes intake structure improvements, high service pumps, wetwell, surge control, building, electrical and control improvements, and a backup generator

**Raw Water Pipeline**

- Construct a new 12-inch ductile iron raw water transmission main from the ERPS to WTP
- Keep existing raw water transmission line operational for redundancy

### **Water Treatment Plant**

- Decommission existing pretreatment system, Trident filters, clearwell, finished water pumps, and backwash pond
- Construct a new WTP process building with pretreatment processes and chemical storage, membrane filtration system, clearwell, post treatment pH adjustment, and high service pump station
- Administration building connected to the WTP process building with improved laboratory space, instrumentation and controls, and general administration area
- Conversion of the existing WTP building into much needed equipment storage area and maintenance facilities
- Repurpose the existing clearwell for backwash holding, solids removal and associated pump station, and backwash recycle pump station
- Addition of a backup generator

# AFFECTED ENVIRONMENT

## PLANNING AREA

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The District serves the Town of Mt. Crested Butte, Colorado, located in Gunnison County. According to the District’s monitoring plan, the service area has a documented population of 801 full time residents. The District population fluctuates seasonally throughout the year due to tourism and second home owners. In general, the population increases during winter and summer months, while the population drops during the spring and fall to serve the District’s full time residents. The District owns and operates two WTPs. The Mt. Crested Butte WTP is the primary plant and the Meridian Lake WTP is the secondary plant, serving a smaller portion of the service area. The two distributions systems are not connected.

The Town of Mt. Crested Butte has developed a Three Mile Plan that was most recently updated on September 4, 2018. The project components are within the Town’s Three Mile Plan which aims to provide guidance on development and growth boundaries. The Three Mile Plan is included in Appendix A. The Three Mile Plan includes all areas identified for future residential and commercial development, land preservation/open space, and parks or recreational opportunities.

The proposed project has an Area of Potential Effect (APE) that encompasses the extent of construction activities for the project. The APE is provided in Appendix A and includes all improvements for the selected alternative.

## POPULATION AND FLOW PROJECTIONS

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A Preliminary Design Memo, dated July 9, 2019, includes detailed population and flow projections and has been included in Appendix A. In this Memo, various peak day demand conditions and annual growth rates ranging from 1 to 2.5 percent were assessed. Based on historical water use data, a peak demand of 320 gpd/sfd was established for flow projections. Table 2 shows historical water production per SFD.

**Table 2 - Historical Water Production (GPD) per SFD**

Number of SFDs = 2,636								
Year	Avg Day				Peak Day			
	Annual	Summer	Winter	Shoulder	Annual	Summer	Winter	Shoulder
		(April-Sept)	(Dec-March)	(Oct-Nov)		(April-Sept)	(Dec-March)	(Oct-Nov)
2015	136	151	143	80	281	281	238	151
2016	132	155	123	76	293	293	261	138
2017	120	143	114	63	323	323	247	116
2018	106	126	99	59	291	291	195	87

In addition, buildout conditions and a daily water demand of 2.0 MGD were identified in the 2014 Master Plan. A summary of the 20-year projected water demand is included at each growth scenario in Table 3.

**Table 3 - Projected Water Demand for 320 gpd/SFD**

<b>Projected Flow (gpd) at 320 gpd/SFD</b>				
<b>Year</b>	<b>Projected Growth Rate</b>			
	<b>1%</b>	<b>1.5%</b>	<b>2%</b>	<b>2.5%</b>
<b>2018</b>	832,640	832,640	832,640	832,640
<b>2019</b>	840,970	845,130	849,290	853,460
<b>2024</b>	883,870	910,450	937,690	965,610
<b>2029</b>	928,950	980,810	1,035,280	1,092,500
<b>2034</b>	976,340	1,056,610	1,143,040	1,236,060
<b>2038</b>	1,015,980	1,121,450	1,237,260	1,364,380
<b>Year to 1.5 MGD</b>	2078	2058	2048	2042
<b>Year to Buildout (2.0 MGD)</b>	2107	2077	2063	2054

The proposed improvements will expand the WTP’s total capacity to 1.5 MGD with a firm capacity of 1.0 MGD. The District desires to have flexibility to expand to a firm capacity of 1.5 MGD within the 20-year planning horizon. This will be accomplished by including space for additional modules on each membrane rack. Firm capacity is defined by CDPHE as the capacity with the largest treatment unit out of service.



# ENVIRONMENTAL IMPACTS OF THE PROPOSED PROJECT

For each affected environmental resource in the following section, correspondence was initiated with the applicable agency. A summary of correspondence, including letters and emails from each agency, has been included in Appendix C. The agencies include:

- National Resources Conservation Service
- U.S. Army Corps of Engineers
- U.S. Fish & Wildlife Service
- U.S. Forest Service
- Colorado Historical Society
- Tribal Historic Preservation Officers
- CDPHE Air Pollution Control Division

## DIRECT AND SECONDARY IMPACTS

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Construction of the Mt. Crested Butte WTP improvements project may have direct impacts from facility construction and secondary and cumulative impacts from future development within the service area. Secondary impacts are those induced or stimulated by, or as a result of, the proposed action. These can include cumulative, social and land use impacts, among others. Cumulative impacts are the collective incremental impacts of the proposed action regardless of the entity undertaking the action. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. From the characteristics of the proposed project, and descriptive elements of the environmental setting, probable impacts are both direct and secondary.

Potential secondary and cumulative impacts to the environment from new development, such as increased quantity and decreased quality of urban runoff, degradation of wetland and wildlife habitat and increased air pollution and noise are likely to affect the planning area. Some of the more specific impacts are addressed in the following sections.

## SURFACE WATER AND GROUNDWATER QUALITY AND QUANTITY

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This project is not anticipated to have substantial negative direct or secondary impacts to surface water or groundwater quality. The APE includes the COGUUG05a stream segment of East River.

The potential for direct environmental impacts is minimal but could occur during construction activities. Specifically, non-point source pollution from stormwater runoff in the APE during construction or the construction of intake improvements on the East River. Using proper best management practices, this impact will be minimized.

Secondary impacts include changing imperviousness of areas within the APE. The proposed water treatment plant process building will be constructed to the west of the existing WTP building. The

proposed location currently contains a backwash waste pond, gravel paving, and minor landscaping, so runoff will increase in this location. The new ERPS will be constructed on gravel to the north of the existing ERPS. Impacts are considered minimal, as the existing ERPS will be demolished and returned to native landscaping.

## WATER RIGHTS

The District has a water rights portfolio that contains water rights at the East River diversion as well as decreed plans for augmentation should more senior water rights downstream make a call on the river during low flow conditions. Additional water rights information has been included in Appendix A.

## WETLANDS

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The Clean Water Act (CWA) protects the physical, biological, and chemical quality of waters of the U.S. The U.S. Army Corps of Engineers' (USACE) Regulatory Program administers and enforces Section 404 of the CWA. Under Section 404, a USACE permit is required for the discharge of dredged or fill material into wetlands and waters of the U.S. USACE defines waters of the U.S. as all navigable waters and their tributaries, all interstate waters and their tributaries, all wetlands adjacent to these waters, and all impoundments of these waters. According to U.S. Fish and Wildlife Service National Wetlands Inventory Mapper (NWI), the East River is listed as a riverine and the area surrounding the ERPS is listed as palustrine forested and/or palustrine shrub wetland. The water transmission pipeline crosses a separate palustrine forested and/or palustrine shrub wetland. The backwash storage pond is identified as a freshwater pond, however, the Congressional Research Service report titled *EPA and the Army Corps' Rule to Define "Waters of the United States"* outlines exclusions to waters of the United States. It states that treatment ponds are not considered waters of the United States. A wetlands map by the NWI for the APE is included in Appendix C.

Previous correspondence with the USACE in November 2018 included consultation regarding the ERPS and raw water pipeline, resulting in verification from USACE that Nationwide Permit Number 39 was applicable for this project. Subsequent correspondence provides notification to USACE that the project APE has been updated to include the WTP improvements. It is anticipated that Nationwide Permit Number 39 is still applicable to this project. Previous findings and subsequent correspondence with USACE are included in Appendix C.

Correspondence with the USACE regarding the Nationwide Permit discusses the potential impacts to the palustrine scrub-shrub wetlands and East River from indirect discharge of dredged and or/fill material from construction of the pump station facility, two intake structures, and raw water pipeline. These potential impacts to both the wetlands and parts of the East River are considered minimal and are below the general disturbance threshold of 1/10 acre at which point mitigation would be required. Further discussion on the potential impacts to the wetlands and East River can be found in the USACE correspondence included in Appendix C.

Increased delivery of non-point source pollution including temporary sediment loads from construction activity near the ERPS is possible but will be mitigated through best management

practices. Changes in hydrological regimes that could alter the structure and function of wetlands are not anticipated.

## FLOODPLAINS

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An analysis of available floodplain data was performed to determine the East River base flood elevation at the site location and the proposed finished floor elevation for the ERPS. The *MCBWS D WTP Expansion Project – Floodplain Analysis* is attached in Appendix A and details the methodology used for determining approximate base flood elevations adjacent to the pump station. The site is located in a rural area and the East River is not currently mapped by FEMA until it crosses County Road 738 to the southeast of Crested Butte Mountain Resort. One hundred year flow rates at this location were taken from stream gauge data but are considered highly conservative as the gauge is approximately 12 miles downstream from the pump station. Based on this, an approximate 100-year base flood elevation of 9,063 feet was calculated immediately upstream of the proposed ERPS. The existing grade around the ERPS is approximately 9,064 feet. Only one flood event for the East River in 2008 is identified within the flood insurance study for the county. A flood recurrence interval was not provided in the study but is assumed to be close to the 100-year event as the study indicated that river banks were overtopped in some locations near the confluence with the Slate River. Therefore, the ERPS finished floor elevation is 9,066 feet, which provides approximately 2 feet of freeboard above the bank elevations and minimizes flooding risk. The topography of the area, the East River alignment, and the flow analysis all provide confidence that the site will have a low probability of flooding.

The WTP site is not located within the 100-year floodplain.

## TERRESTRIAL AND AQUATIC PLANTS AND WILDLIFE

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Evaluation of possible impact to wildlife in the area was performed using various resources including the US Fish and Wildlife Service's Information and Planning for Consultation (IPaC) system. A Biological Assessment was performed in April 2018, by Western Bionomics, Inc. and has been included in Appendix A. Since the completion of the Biological Assessment, the proposed project now includes the addition of the WTP improvements. Additional correspondence with U.S. Fish and Wildlife Service (USFWS) has taken place to include this additional scope. Because previous correspondence with USFWS included estimated depletions from the Gunnison River Basin at buildout, no additional impacts are anticipated from the additional scope.

An official species list for the APE was generated using the IPaC system and is included in Appendix C. The list includes endangered/threatened species, migratory birds, US Fish and Wildlife Facilities, and NWI Wetlands. Table 4 summarizes the official Threatened and Endangered species list:

**Table 4 - Summary of Threatened and Endangered Species**

Species	Scientific Name	Status*	Has Critical Habitat	Potential Habitat Present
<b>Mammals</b>				
Canada Lynx	<i>Lynx canadensis</i>	T	Final Designated	No
<b>Birds</b>				
Gunnison Sage-grouse	<i>Centrocercus minimus</i>	T	Final Designated	No
<b>Fish</b>				
Bonytail Chub	<i>Scaphirhynchus albus</i>	E	Final Designated	No
Colorado Pikeminnow	<i>Ptychocheilus Lucius</i>	E	Final Designated	No
Greenback Cutthroat Trout	<i>Oncorhynchus clarkia stomias</i>	T		No
Humpback Chub	<i>Gila cypha</i>	E	Final Designated	No
Razorback Sucker	<i>Xyrauchen texanus</i>	E	Final Designated	No

Correspondence with the USFWS took place regarding the ERPS and raw water pipeline portion of the proposed project. A biological opinion was provided by USFWS, dated July 20, 2018, and has been included in Appendix C. The biological opinion found that historic and future water depletions from the District to the Gunnison River may affect the Colorado pikeminnow, razorback sucker, humpback chub, bonytail, and their designated critical habitats. To address impacts from depletions, the District agreed to make a one-time contribution based on its share of the costs of the Recovery Implementation Action Plan (RIPRAP) to fund recovery actions specified in the Gunnison River Programmatic Biological Opinion. The District assumes the RIPRAP will offset depletion impacts and therefore is not likely to jeopardize the continued existence of the identified fish species and is not likely to destroy or adversely modify designated critical habitat. Further correspondence with USFWS has confirmed that the July 20, 2018 Biological Opinion is applicable to this project and no additional consultation is required with USFWS. Email correspondence with USFWS Grand Junction, CO field office Fish and Wildlife Biologist has been included in Appendix C.

**MIGRATORY BIRDS**

The official species list, included in Appendix C, also includes a list migratory birds that are either in the APE or occur on the USFWS Birds of Conservation Concern list, as shown in Table 5.

**Table 5 - Migratory Birds Summary**

Name	Breeding season	Habitat Requirements*	Habitat Match APE?
Bald Eagle	Dec 1 - Aug 31	Forested areas adjacent to large bodies of water	Potentially
Black Rosy-finch	June 15 - Aug 31	Alpine areas, near rock piles and cliffs	No
Black Swift	June 15 - Sept 10	Ledges of cliffs or shallow caves in steep rock faces	No
Brewer's Sparrow	May 15 - Aug 10	Shrublands, coniferous forests	Potentially
Brown-capped Rosy-finch	June 15 - Sept 15	High elevations, cliffs or under rocks	Potentially
Burrowing Owl	Mar 15 - Aug 31	Burrows in open treeless areas in grassland, steppe	Potentially

Name	Breeding season	Habitat Requirements*	Habitat Match APE?
Golden Eagle	Jan 1 - Aug 31	Wide range of habitats, trees, grassland, sagebrush	Potentially
Grace's Warbler	May 20 - July 20	Nests on crown trees such as pine or fir	No, Habitat outside of APE range per Audobon Society
Lesser Yellowlegs	Breeds elsewhere	Boreal Forest and forest/tundra transition habitats	Potentially - but during migration, not breeding
Lewis's Woodpecker	Apr 20 - Sep 30	Pine forest, riparian woodland	Potentially
Long-billed Curlew	Apr 1 - Jul 31	Short grass, mixed prairie, wet pasture, tidal estuaries	Potentially
Mountain Plover	Apr 15 - Aug 15	Open, flat, dry tablelands with low, sparse vegetation	No
Olive-sided Flycatcher	May 20 - Aug 31	Conifer or deciduous trees	Potentially
Pinyon Jay	Feb 15 - July 15	Pinyon - juniper woodland, scrub oak, pine forests	Potentially
Rufous Hummingbird	Breeds elsewhere	Migratory - Mountain Meadows	Potentially, but during migration, not breeding
Virginia's Warbler	May 1 - Jul 31	Pinyon - juniper woodland, pine forests	Potentially
Willet	Breeds elsewhere	Nest in colonies along Atlantic coast	No
Willow Flycatcher	May 20 - Aug 31	Moist, shrubby areas with standing or running water	Potentially

\*Habitat information obtained from USFWS Environmental Conservation Online System and Audobon Society Online Mapping tool and Field Guide

The National Audubon Society's online mapping tool was used to determine if any "important bird areas" were in the project vicinity. The nearest "important bird area" is approximately 15 miles north east and no impact is expected.

The project area contains potential habitat for migratory birds. Potential habitat typically includes trees and shrubs for nesting. Construction activities could temporarily directly impact migratory bird habitat within the project area during construction.

Best Management practices will be followed during and after all construction activities, thereby minimizing direct and indirect impacts on migratory birds. Short term stress impacts due to construction activity can be avoided by altering construction schedules to accommodate breeding seasons if a migratory bird is identified in the project area during construction.

If appropriate measures are implemented during construction of the project, such as surveying for active migratory bird nests prior to vegetation removal and otherwise minimizing disturbances, it is unlikely that the proposed project will adversely affect migratory birds in the project area.

## CULTURAL, HISTORICAL AND ARCHEOLOGICAL RESOURCES

A request was made to the Colorado Historical Society to conduct a file and literature review for the proposed project. The purpose of a file and literature review is to compile information on whether previous cultural resource inventories have been conducted or whether cultural resources have been previously documented within the project area. Those cultural resources eligible, potentially eligible, or listed in the National Register of Historic Places (NRHP) require consideration for potential adverse impacts. Sections within a 1-mile viewshed of the APE were

included in the request. The response letters have been attached for reference in Appendix C. Three sites and eight surveys are in the same section as the proposed project (21896\_s\_sy, 21962\_s\_sy).

On August 8<sup>th</sup>, 2019, a cultural resource survey of the APE was performed by ERO Resources Corporation. The Limited-Results Cultural Resource Survey Form (#1420), dated August 28<sup>th</sup>, 2019, has been included in Appendix C. The Form Results include the following statement as to why there are none or very limited cultural remains in the project area:

*“The project area has undergone extensive disturbance from construction of the existing water treatment plant and associated facilities. Furthermore, the project area is primarily located on steep slope above the East River limiting potential cultural resources. There is subsurface potential in the area of the project near the East River in the floodplain.”*

CDPHE coordinated their National Environmental Policy Act (NEPA) studies with the Colorado State Historical Preservation Office for this project. In a response letter dated December 23, 2019, the Colorado Historical Society found that the proposed project will result in no historic properties affected pursuant to 36 CFR 800.4(d)(1). This letter is included in Appendix C.

#### TRIBAL HISTORIC PRESERVATION OFFICERS

In order to facilitate the early involvement of tribes, correspondence was initiated with four separate Indian Tribes. The U.S Department of Housing and Urban Development’s Tribal Directory Assessment Tool was used to determine which tribes have interests in Gunnison County. Tribal Historic Preservation Officers were notified of the project and given contact information for CDPHE, should any tribe elect to participate in Section 106 review of the referenced project.

#### AIR QUALITY

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The U.S. Environmental Protection Agency (EPA) developed National Ambient Air Quality Standards (NAAQS) for six criteria pollutants. The six criteria pollutants are sulfur dioxide, particulate matter, fine particulate matter, carbon monoxide, ozone, nitrogen dioxide, and lead. Gunnison County is considered in attainment status for all criteria pollutants. Attainment status indicates that ambient concentrations are less than the NAAQS in the area for all criteria pollutants and demonstration with the State Implementation Plan (SIP) or demonstration that emissions of the proposed project are below the minimum thresholds is not required.

There are no known major sources of non-criteria hazardous air pollutant (HAP) emission associated with this project. Should there be indication of excess HAP emission according to Colorado SIP concentrations discovered at any point during the design or construction process, an air pollutant emission notice (APEN) would be submitted in accordance with the SIP.

Under Regulation Number 3 of the Air Quality Control Commission, this project is exempt from a construction air permit. Construction activities may temporarily increase dust emissions in the immediate project vicinity. Any air pollutants generated from construction would be short-term in duration and spread over the project area. Dust control measures including, but not limited to, watering, graveling, vehicle tracking control, best available technologies for the specific activity

are required by the contractor during such activities. A letter was sent to the Colorado Air Pollution Control Division (APCD) for their comment of the proposed project.

The APCD requires land development construction activities that are greater than 25 acres or more than six months in duration to obtain an Air Pollutant Emissions Notice. If needed, a General Construction Permit for Land Development Projects, Permit No. GP03, would be the most applicable and outlines General Operating Conditions as required by the permit. These conditions include control measures for particulate emissions.

## ENVIRONMENTAL JUSTICE

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Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” was issued by the President of the United States on February 11, 1994. As part of the environmental compliance process, agencies are required to identify and address disproportionately high and adverse human health or environmental effects on minority or low-income communities (EO 12898 populations). Federal agencies are directed to ensure that federal programs or activities do not result, either directly or indirectly, in discrimination on the basis of race, color, or national origin. An EJSCREEN Report was generated for the APE using the EPA’s online environmental justice mapping software. This report has been included in Appendix A.

Table 65 below shows the percentage of minority and low-income population in Mt. Crested Butte compared to Gunnison County and the State of Colorado. This was developed using the United States Environmental Protection Agency’s EJ Screen tool.

**Table 6 – Percentage of Minority and Low-Income Populations in Mt Crested Butte**

Parameter	Mt Crested Butte (%)	Gunnison County (%)	State (%)
Minority Population	6	24	31
Low Income Population	44	32	29

The expanded WTP will serve all residents in the service area equally. The specific project site is located in a sparsely populated part of the District with few residential properties in the immediate vicinity. The additional building and construction activities will not significantly impact residents. Any impacts from this project would be borne equally among all populations in the District and no mitigations measures are required. Mt. Crested Butte has a higher low-income population when compared to the state and county. The capital and O&M costs associated with construction and operation of the proposed project may require the District to increase usage rates to its residents. This may have a negative impact on the socio-economic conditions of individuals living within the District.

The expense required for this project will be significant, and an increase in user rates is therefore unable to be fully mitigated. The District is working to obtain a long-term low interest loan from SRF and has recently completed a water and wastewater rate study to best determine financially sustainable user rates while meeting positive debt service ratios and cash reserve targets. In addition to raising monthly base user rates, the District is investigating the possibility of alternative water rate structures that incorporate volume use rates.

## UNAVOIDABLE ADVERSE IMPACTS

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Unavoidable adverse impacts of all construction and development related projects that may not be fully mitigated include:

- Short-term increases in noise and ambient air particulate levels in the immediate vicinity of construction activities
- Short-term modifications of traffic patterns due to construction activities
- Potential for increased pollution in stormwater runoff from construction sites and impervious surfaces throughout the planning area, however, efforts during construction will be made to mitigate this pollution
- Commitment of resources including capital, manpower, and materials
- Potential loss of wildlife habitat due to future development of the service area
- Increased traffic associated with residential and commercial development served by the project

## MITIGATION OF ADVERSE IMPACTS

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Although considered during the planning and design phases, the unavoidable adverse impacts discussed above are not considered to be significant impacts as part of this project. The following mitigation measures will be observed to reduce the adverse human health or environmental impacts of the proposed project:

### REGIONAL WATERSHED PLAN

The District completed a Source Water Assessment Report in 2004 which includes an assessment, susceptibility analysis, and protection plan for District water sources, including ground and surface water. This report has been included in Appendix A.

### COMPREHENSIVE OR MASTER PLAN

The District hired Stantec to complete a Master Plan Update in 2014 which evaluated existing conditions and future growth rates. Since then, the District completed a Facility Assessment in 2018 which assessed all existing water system infrastructure. In addition, the Town of Mt. Crested Butte completed a Community Plan in 2007 which is intended to build on the 1994 Mt. Crested Butte Master Plan.

### URBAN GROWTH BOUNDARY OR OTHER GROWTH MANAGEMENT TOOLS

The Three Mile Plan, included in Appendix A, identifies all areas for Future Development, which includes urban growth boundary and management tools through density zoning and annexation. Exhibit A in the Three Mile Plan identifies areas for potential growth.



## STORMWATER MANAGEMENT PLAN

Best practices for stormwater management will be required for this project. A storm water management plan will be prepared and maintained by the contractor. Mitigation measures may include vehicle tracking control, silt fencing and sediment control logs, rock check dams, dust control measures, materials and spill prevention, and inspection and maintenance of these best practices to prevent point or non-point source pollution into wetlands or water sources.

## HABITAT AND/OR OPEN SPACE PRESERVATION AND PROTECTION

The Three Mile Plan includes all areas identified for future residential and commercial development, land preservation/open space, and parks or recreational opportunities within the District. As stated in the Three Mile Plan, Mt. Crested Butte requires open space designations to mitigate conflicts between different types of activity usually associated with differing land use classification and provides relief from continuous development of a similar nature. Open space designation by Mt. Crested Butte protects and preserves sensitive environmental areas, vistas, scenic corridors, and community amenities.

## WETLAND POLICIES/ORDINANCES

Increased delivery of non-point source pollution including temporary sediment loads from construction activity near the ERPS is possible. Best practices for stormwater management will be required for this project to prevent non-point source pollution to identified wetlands in the project area. Additionally, the existing ERPS and intake pond will be decommissioned, and the land will be reclaimed which will increase local vegetation and potential wetland habitat.

## FLOODPLAIN POLICIES/ORDINANCES

The proposed improvements are located outside of mapped floodplain and all critical infrastructure, such as finished floor in the ERPS, is located above the calculated 100-year base flood elevation.

## EROSION CONTROL AND RE-VEGETATION REQUIREMENTS

Any temporary surface disturbances for the project would minimally impact present vegetation. Most of the work in the APE is on land which has experienced previous surface disturbances. All construction areas would be reseeded to match native vegetation in the area. Weed control on all disturbed areas within the APE shall be implemented for the duration of the project and will continue as part of the Town's regular operation and maintenance. All seed mixes and mulch for reclamation or slope stabilization will be certified, free of any state-listed weed species. If an invasive weed is identified during construction, an integrated weed management approach will be used to assess the best technique depending on the species present. The Town of Mt. Crested Butte, Town Council has formed the Mt. Crested Butte Weed Advisory Board, in accordance with the Colorado "Noxious Weed Act", Title 35, Article 5.5.

## DEVELOPMENT REVIEW/APPROVAL PROCESSES THAT RELATE TO WETLANDS, OPEN SPACE, WILDLIFE, AND STORMWATER

The USFS is completing an internal review of all technical aspects and environmental impacts of the project that occur on Forest Service land. Upon completion of findings, USFS will issue a Special Use Permit for the applicable portion of work. As part of the permit conditions, resource protection measures are included and will be followed throughout the project. A Preconstruction Notification Form will be submitted to the USACE prior to commencement of construction, as required in the Nationwide Permit. A stormwater management plan will be prepared and maintained by the contractor.

## LOCAL OR REGIONAL AIR QUALITY MONITORING

Under Regulation Number 3 of the Air Quality Control Commission, this project is exempt from a construction air permit. APCD requires land development construction activities that are greater than 25 acres or more than six months in duration to obtain an Air Pollutant Emissions Notice from APCD. If needed, a General Construction Permit for Land Development Projects, Permit No. GP03, would be the most applicable and outlines General Operating Conditions as required by the permit. These conditions include control measures for particulate emissions.

## MITIGATION MEASURES REQUESTED BY CONTACT AGENCIES

- Mitigation measures as requested by contact agencies will be followed during all applicable phases of work. (Additional information will be included upon receipt of agency responses)
- Should unidentified archaeological resources be discovered in the course of the project, History Colorado will be contacted, and work will be interrupted until the resources have been fully evaluated.
- Should resources be discovered in the course of the project that reflect evidence of human remains, ceremonial or cultural objects, historic sites such as stone rings, burial mounds, or village or battlefield artifacts, each Tribal Historic Preservation Office will be contacted immediately, and work will be interrupted until the resources have been fully evaluated.

# PUBLIC PARTICIPATION

The District held a public meeting on November 14<sup>th</sup>, 2019, to inform citizens and solicit public input regarding the proposed project. The public meeting included a discussion regarding the SRF loan to assist in funding the project and anticipated impacts to user rates. The general public was invited to the meeting via advertisement in the local newspaper.

An additional public meeting will be held on January 11<sup>th</sup>, to inform citizens and solicit input on the draft Environmental Report and any impacts related to the proposed project. Upon finalization of the Environmental Report, an additional 30 days of opportunity for public input will take place prior to an issuance of a Finding of No Significant Impact (FONSI) from the State. Both opportunities for public participation will be advertised in the local newspaper. Copies of all advertisements and affidavits of publication are included in Appendix A.

# AGENCIES CONTACTED

A request for input on the environmental impacts of this project was sent to various agencies for their review and comment. The information in each letter was specific to each agency and corresponding environmental resource. All agency response letters sent and received are included in Appendix C. The generic letter is shown below:

The Mt. Crested Butte Water and Sanitation District (District) is performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and raw water pipeline improvements, in Gunnison County, Colorado.

This letter represents a formal request for input from your agency regarding an SRF Environmental Review for the District's WTP Improvements Project. The attached Figure 1 shows the proposed Area of Potential Effect (APE) for the project.

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was completed in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Assessment Memorandum included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the District has selected to construct a new WTP building located adjacent to the existing plant, a new pump station, and a new raw water pipeline.

The proposed improvements at the WTP will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of membrane filtration. Raw water will be diverted from the East River and pumped through a new pipeline to an existing pre-sedimentation pond near the WTP. The new pipeline and pump station will be located within existing easements on private and United States Forest Service property.

We look forward to receiving input from your agency regarding this project. Please reply at your earliest convenience, or within 30 days as required by SRF. If you have any questions, or require any further information, please feel free to contact me at 303-951-1036. Thank you in advance for your time and attention in this matter.

# APPENDIX A – REFERENCE DOCUMENTS

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1. Town of Mt. Crested Butte Three Mile Plan, Dated September 4, 2018
2. Area of Potential Effect, Dated August 2019
3. Preliminary Design Memo – Final, Dated July 9, 2019
4. East River Floodplain and Flood BFE Analysis, Dated May 8, 2019
5. Mount Crested Butte Water and Sanitation District Planned Improvements – East River Water Supply System Biological Assessment, Dated April 30, 2018
6. EPA EJSCREEN Report, Dated May 02, 2019
7. Source Water Assessment Report, Dated November 16, 2004
8. Public Notice Advertisements and Affidavits
9. Summary of Water Rights

**TOWN OF MT. CRESTED BUTTE THREE MILE PLAN,  
DATED SEPTEMBER 4, 2018**

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**TOWN OF MT. CRESTED BUTTE  
THREE MILE PLAN  
AS REQUIRED BY C.R.S. §31-12-105**

ORIGINALLY ADOPTED ON JANUARY 10, 1994  
AMENDED ON JANUARY 16, 1996 , SEPTEMBER 16, 1997, DECEMBER 1, 1998, AND  
SEPTEMBER 4, 2018.

1. THREE MILE PLAN FOR MT. CRESTED BUTTE

This plan envisions a community that manages growth to preserve what we appreciate about the Upper East River valley. In order to remain consistent in future planning, the goals and objectives as previously set forth in the Mt. Crested Butte Master Plan are to be recognized and carried forth into any new development or annexation that may occur in the future.

In accordance with requirements set forth in the 1987 amendment to the Colorado Municipal Annexation Act of 1965, C.R.S. §31-12-105, a municipality is required to have a Three Mile Plan adopted before annexation may take place.

The Three Mile Plan is hereby developed to comply with C.R.S. §31-12-105. The Three Mile Plan hereby incorporates the Master Plan, as such is amended, and the Gunnison County Road and Bridge Map, as such is amended, to the extent that it is within the boundaries of the Three Mile Plan.

Public Facilities in the Three-Mile area will be provided as follows:

- I. Power - Gunnison County Electric Association. This includes successors and/or assigns, and future service providers.
- II. Telephone – CenturyLink and cellular providers. This includes successors and/or assigns, and future service providers.
- III. Natural Gas - Atmos Energy is available within the Town and to the south of Town and along Gothic Road in the main pipeline. This includes successors and/or assigns, and future service providers.
- IV. Telecommunications – Network television is available in Mt. Crested Butte because of services provided by the Gunnison County Metropolitan Recreation District. Telecommunications are available in and near Mt. Crested Butte from Spectrum, Direct TV, and Dish Network. This includes successors and/or assigns, and future service providers.
- V. Water and Sewer - Available in the Town from Mt. Crested Butte Water & Sanitation District. Sewer service is extended as per District ordinances. This includes successors and/or assigns, and future service providers.

- VI. Trash Collection - Waste Management and Golden Eagle provide trash collection services on a contract basis within the Town. This includes successors and/or assigns, and future service providers.
- VII. Transportation - Mountain Express bus service is provided between Mt. Crested Butte and Crested Butte and services the residents and visitors of Mt. Crested Butte. Gunnison Valley RTA bus service is provided by the county and services the Gunnison valley. This includes successors and/or assigns, and future service providers.
- VIII. Sidewalks and trails - Any land use change or annexation within the three-mile area shall consider existing trails and new trails as appropriate to connect any future subdivision to the municipality and to public lands.
- IX. Emergency Services –Mt. Crested Butte Police Department, and the Crested Butte Fire Protection District which includes emergency medical services and fire protection. This includes successors and/or assigns, and future service providers.

To the extent that any item mentioned in C.R.S. 31-12-105 (l)(e) is not reflected in the documents, maps and plans included as a part of this Three Mile Plan, the plan should be construed to mean that no such facilities are contemplated to be provided.

The proposed land uses for the Three Mile Plan area consist of the various zoning districts described in the Code of the Town of Mt. Crested Butte, Colorado.

In the event of any conflict between anything in the foregoing elements of the Three Mile Plan and the Town Code, ordinances or regulations, the Town Code, ordinances and regulations shall control. The Town Master Plan and other elements of the above documents shall control with respect to any conflicts with provisions of the Three Mile Plan incorporated from other "non- Town" entities.

## 2. ANNEXATION

Annexation of areas adjacent to cities and towns is often crucial to establishing and maintaining urban order and effective government. Unorganized development and population growth frequently occur just outside municipal boundaries due to less expensive property values and less restrictive zoning laws. Problems associated with uncontrolled development include increased traffic congestion, failure of septic systems, inadequate water supply, inadequate roads, need for additional police protection and inappropriate land planning. Unincorporated outlying areas benefit in many ways from the adjoining municipalities through use of their parks, streets, and utilities without contributing to the cost of providing and maintaining them.

Annexation, properly used, enables urbanized areas to unite with the municipality and benefit from socially and economically related issues. It allows Town administrative personnel to



address needs in a manner consistent with policies of the annexing municipality. Most importantly, it guarantees a municipality responsible control over the future development of the fringe area. Municipal zoning and land use extended to adjacent areas in a logical manner will provide orderly growth and avoid incompatible land uses.

B. GOALS

1. FUTURE DEVELOPMENT AREAS (Exhibit A) - The Town of Mt. Crested Butte has discussed the growth boundaries of the town. There may be areas within the identified areas for potential growth which are unsuitable for certain types of development because of topography, natural hazards, or sensitive natural areas. Any annexation application will be reviewed for suitability of the proposed development in accordance with the Town's Code and land use policies.

A. Areas Identified for Potential Growth:

1. The 10.28 acre parcel of land below Hunter Hill Rd between Timberline and Overlook Condos (shown on Exhibit A as Area A in white shaded area).
2. The area west of the Town boundaries towards the Washington Gulch area (shown on Exhibit A as Area B in white shaded area).
3. The skier domain area (shown on Exhibit A as Area C in white shaded area).
4. Upper Loop Parcel adjacent to the Overlook Subdivision (shown on Exhibit A as Area D).
5. Areas north of the current Town boundaries (shown on Exhibit A as Area E).
6. Areas east of the Parcel C tract of land that was part of the 3 Way Land Trade between CBMR, the U.S. Forest Service, and the Colorado Board of Land Commissioners (shown on Exhibit A as Area F).

B. Areas Proposed for No Residential or Commercial Development:

1. Upper Loop Parcel adjacent to the Overlook Subdivision (shown on Exhibit A as Area D)
2. Areas north of the current Town boundaries (shown on Exhibit A as Areas E)
3. Areas east of the Parcel C tract of land that was part of the 3 Way Land Trade between CBMR, the U.S. Forest Service, and the Colorado Board of Land Commissioners (shown on Exhibit A as Areas F).

With the areas proposed for no residential or commercial development, annexation must provide a unique opportunity for the Town, including land preservation, protection of open space, parks or recreational opportunities, etc.

2. DENSITY- The provisions of the zoning chapter of the Mt. Crested Butte Code can be extended to adjacent areas in a logical manner to encourage orderly growth and

prevent incompatible land uses. Municipal boundaries can be "squared off" and made more orderly and uniform, thus eliminating confusion as to whether a particular parcel should look to the municipality or to the county to obtain services.

The Town of Mt. Crested Butte employs various methods for control of density. The Town regulates the size of lots and the size of buildings relative to lot size by means of the zoning chapter of the Town Code. The zoning chapter stipulates minimum property sizes in various districts.

3. ZONING - Together with setback, open space, height, bulk, and footprint requirements, lot size standards are used as a means of controlling the character of a particular area. The establishment of very large minimum lot sizes is sometimes used to avoid conventional subdivisions. Large lot zoning may also be used where the terrain is very rough and more flexibility is needed for locating building sites. Smaller lot sizes and larger allowable densities create cluster type developments such as those in the base area of Mt. Crested Butte.

In addition to lot size requirements, the Town zoning districts prescribe minimum lot widths and frontages.

- a. Residential - Residential land use in Mt. Crested Butte has been based on the concept that large lot sizes decrease density and thereby create a more desirable residential character. The characteristics are open space buffers between residences, a buffering of low and high density multi-family developments between single family residential and commercial development, and the use of open space and pedestrian corridors to define developments visually.

The Town of Mt. Crested Butte would like to encourage diversity by allowing a mixture of housing choices including smaller lots, clustering and density bonuses or incentives for providing affordable housing where appropriate. Smaller lots and higher density may improve affordable housing opportunities and will reduce the per unit cost of public services. Even with some higher densities, the Town would like to maintain lower densities at the edges of Mt. Crested Butte as a transition to the rural nature of the county outside the town.

1. Reduce the allowable density in subdivisions by clustering building structures within pockets between ridge lines to provide more open space.
2. Develop structures in areas with appropriate soil conditions, slopes, and free of natural hazards.
3. Avoid ridge line development to protect the view shed, hide structures, and limit density.

4. Maintain a set of design guidelines for building construction, which includes building height, colors, lighting, roofs, landscaping, parking, etc.
  5. Provide affordable community housing.
- b. Commercial - Commercial land use in Mt. Crested Butte is based on the concept that clustering of lodging and services within the same area minimizes the impact of the resort aspects of the community on the infrastructure. In Mt. Crested Butte, this area is located at the base of the ski area, the major economic influence on the Town.
1. Develop structures in areas with appropriate soil conditions, slopes, and free of natural hazards.
  2. Avoid ridge line development to protect the view shed, hide structures, and limit density.
  3. Maintain a set of design guidelines for building construction, which includes building height, colors, lighting, roofs, landscaping, parking, etc.
  4. Discourage commercial development, including large, enclosed recreation facilities, in the Gothic corridor.
  5. Require commercial delivery routes to be developed in new commercial developments.
  6. Provide affordable community housing.

c. Open Space

The Town also requires the platting of open space areas as a part of the subdivision process. Coordination of subdivision controls with density restrictions is required in establishing an overall density for subdivisions. Important aspects of the Mt. Crested Butte economy are the recreational amenities and the Town's relationship to surrounding public lands. This is accomplished by the designation of open space. Open space designation has several functions beyond recreational uses and access to public lands. This zoning classification can provide buffering between different types of development. This buffering mitigates conflicts between different types of activity usually associated with differing land use classifications and provides relief from continuous development of a similar nature. Open space

designation also protects and preserves sensitive environmental areas, vistas, scenic corridors, and community amenities.

d. Natural Hazards

Natural hazards in the Mt. Crested Butte area are the result of natural geologic conditions and hydrology processes that, if unrecognized or inadequately planned for, can result in loss of life, damage to structures, and costly maintenance, especially for homes, other buildings, roads, and utilities. In most cases, safe development of such areas will necessitate the modification of natural ongoing processes by high cost engineering practices. Appropriate design standards and well thought out land use profiles can be successful in mitigating some natural hazards, but forethought during annexation can serve to avoid many of the related problems and associate development costs.

e. Wetlands

Wetlands are often found along perennial and intermittent streams and drainages. These wetland areas are critical from both a development and natural resource stand point. Contemporary planning principals advocate the protection of wetlands and natural water bodies by integrating such natural drainage features into the designs for new development. This integration process avoids unnecessary infrastructure development/maintenance expense, bypasses bureaucratic problems associated with Clean Water Act and water rights, and eliminates the potential degradation associated with engineered channeling techniques. The annexation of areas with wetland features should only be done in a manner that provides appropriate protection to these resources.

f. Habitat Corridors

The Town advocates that all annexation proposal must protect both game and non-game wild life habitat areas, migration corridors, breeding areas, food sources, and other related habitat needs. Any proposed annexations should be coordinated in detail with the U.S. Forest Service, Colorado Department of Wildlife, Rocky Mountain Biological Laboratory and other interested stakeholders to identify critical habitat environments. Such coordination should address not only land use configuration impact, but also the long-term preservation of unique sub-alpine/alpine environments and how those environments are critical to the wildlife that inhabit the areas.

3. FINANCIAL REASONS - Annexation may serve to protect and enhance the municipal tax base. It increases the Town's property valuation and may help to avoid an imbalance between taxable resources and municipal obligations; It will obligate

new development to pay its share of the costs already in effect such as police and fire protection.

4. MUNICIPAL SERVICES AND UTILITIES - Annexation is an efficient and economical means of extending municipal services and utilities. Any new annexation to Mt. Crested Butte involves extending existing services to the development at the developers' expense. It would also be a means of controlling ingress and egress to the area. Municipal services recognized in this category include:

- street systems
- water and sanitation systems
- fire and police protection
- emergency services
- garbage collection
- recreational facilities and trails
- natural gas services
- electrical service
- telecommunication services
- transit services

5. SOCIAL AND GOVERNMENTAL REASONS - Annexation may provide the means for citizens in the fringe area to become politically active by participating in policy-making decisions. It increases the municipality's size and population thereby allowing a greater population base when applying for grants, funding, and associated financial and political needs.

6. TRANSPORTATION:

- a. Limit the access points on Gothic County Road to a maximum of two per subdivision and attempt to combine access points for adjacent subdivisions.
- b. Provide appropriate traffic control measures at intersections. Specifically, widen the Gothic County Road and provide acceleration and deceleration lanes at any intersection with the Gothic County Road.
- c. Provide for public transportation by dedicating land for the location of future bus stops, widening roads, and designing proper turn radiuses for sufficient sight distances around corners.
- d. Designate and improve multiple use trails.
- e. Encourage provision of alternative methods of transportation.

7. PARKS, RECREATION, AND OPEN SPACE:

- a. Provide an open space buffer zone between the potentially developed portions of the subdivisions and Gothic Road.
- b. Provide open space between the two towns and preserve unique natural features such as Washington Gulch.
- c. Provide opportunities for active recreation, such as athletic fields and cross country trails, open to the public, or available for contractual use, and consider dedication of land for public recreation facilities.

- d. Prevent the loss of existing public access into lands used for recreational purposes.
  - e. Provide access to new areas for recreational use so citizens and visitors have the opportunity to use these areas.
8. SEWAGE AND WATER
- a. Discourage developments in the 3-mile area of sufficient size and density that would require new central water and sewage treatment facilities.

C. WRITTEN CRITERIA<sup>1</sup>

1. The Town of Mt Crested Butte, while concerned with development in the entire north end of Gunnison Valley, proposes to focus future annexation so as not to conflict with neighboring municipalities or with county land use policies.
2. Mt. Crested Butte will annex no land which either cannot be served by Mt. Crested Butte Water and Sanitation District or cannot show proof that adequate water and sanitation facilities exist.
3. To annex land where it is clearly desirable to configure municipal boundaries for the purpose of greater efficiency or economy in providing municipal services and where such annexation is determined to be in the best interest of the municipality and the annexed property.
4. To annex the territory
  - which is determined to be urban in character;
  - where urbanization is clearly imminent and where such territory is in need of proper land use controls to include zoning and subdivision controls, building regulations, adequate roadway systems and good engineering standards;
  - open land that would be best used as open space or parks within the Town.
5. Annexation will be initiated, financially supported, and promoted by those living within the area proposed to be annexed.
6. The area under consideration for annexation should be a part of or located in the identified zones of potential growth and expansion of the municipality. The general terrain of the area should allow for additional future expansion of utilities.
7. The cost of providing permanent ordinary municipal services should be fully analyzed and determined.
8. A preliminary site and land use plan of the area proposed to be annexed must accompany any annexation petition.

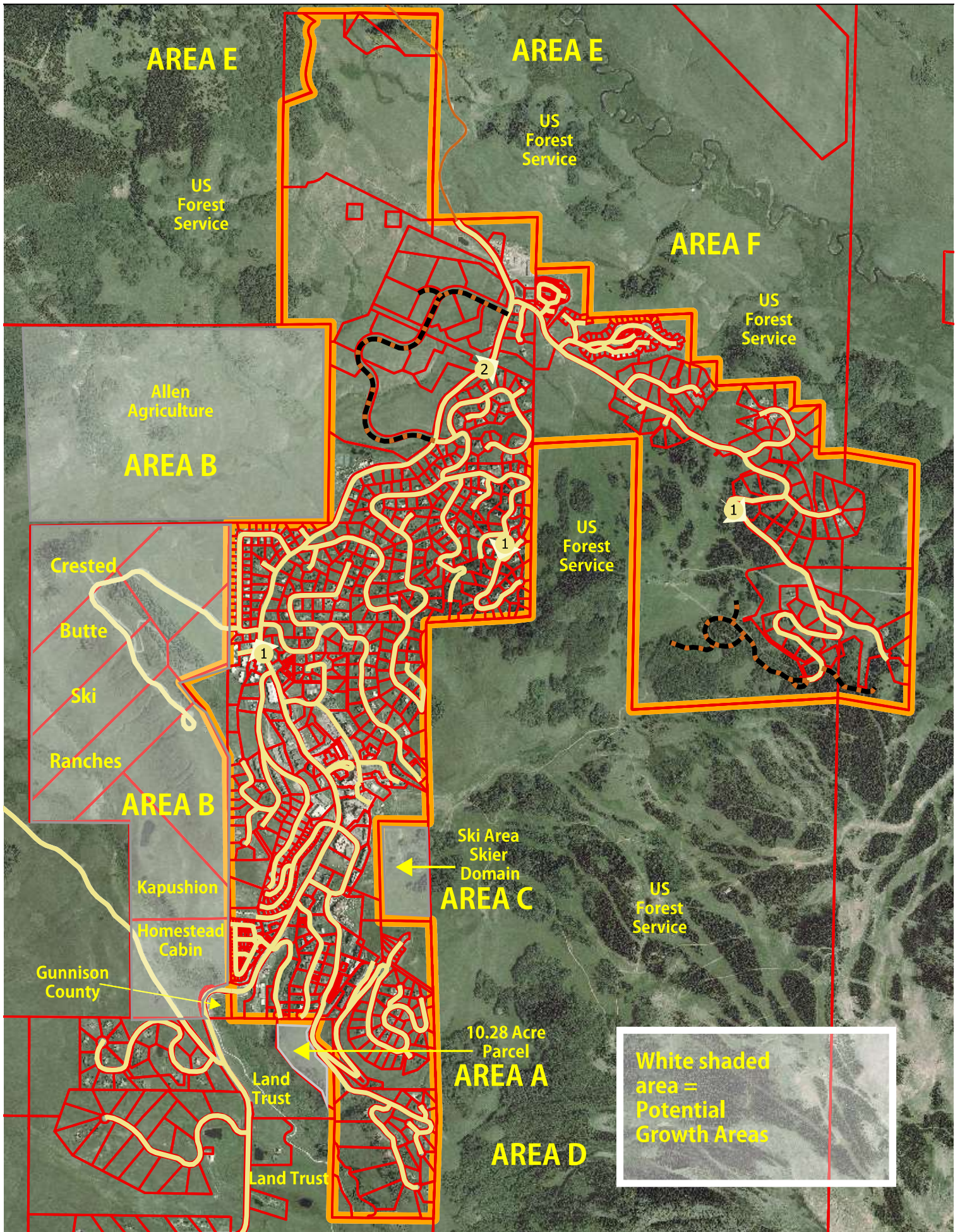
9. The proposed zoning of the annexed territory must be appropriate to the Town's Master Plan.
10. The annexation of any previously subdivided land shall require an annexation agreement which shall provide for compliance with the Town Code.

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<sup>1</sup> See Town of Mt. Crested Butte's Annexation Resolution, No. 1 series 1995 as amended.



# EXHIBIT A



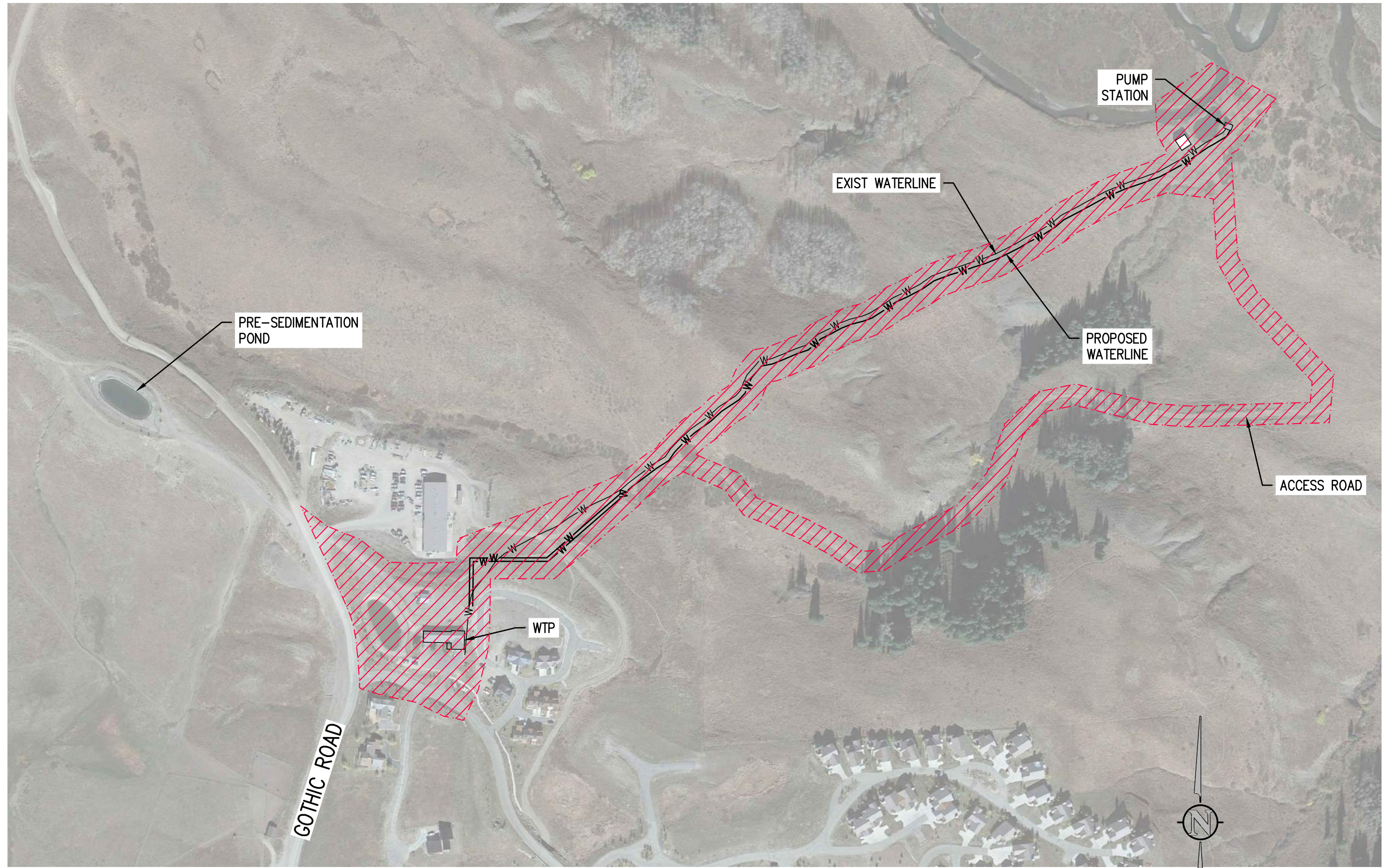


# **AREA OF POTENTIAL EFFECT, DATED AUGUST 2019**

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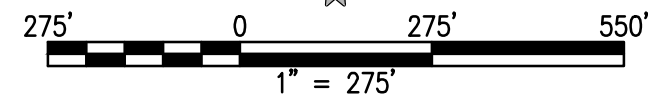


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**LEGEND**

 AREA OF POTENTIAL EFFECT



**FIGURE - AREA OF POTENTIAL EFFECT**  
**MCBWSW WTP EXPANSION PROJECT**  
**AUGUST 2019**



JVA, Inc.  
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**PRELIMINARY DESIGN MEMO – FINAL, DATED JULY  
9, 2019**

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# M E M O

TO:	<u>Mike Fabbre and Kyle Koelliker</u>	DATE:	<u>July 9, 2019</u>
CLIENT:	<u>Mt. Crested Butte Water and Sanitation District</u>	JOB NO.:	<u>1028e</u>
ADDRESS:	<u>100 Gothic Road</u>	PROJECT:	<u>Water Treatment Plant Improvement Project</u>
	<u>Mt. Crested Butte, CO 81225</u>	SUBJECT:	<u>Preliminary Design Memo - Final</u>

The Mt. Crested Butte Water and Sanitation District (District) has initiated the permitting and design for expansion of one of the main water treatment plants to replace aging equipment and infrastructure and provide increased capacity to meet future demand. The project includes three major aspects:

1. A new membrane water treatment plant located adjacent to the existing plant;
2. The replacement of the East River Pump Station (ERPS) which acts as one of several raw water supply sources for the water treatment plant; and
3. Installation of a redundant transmission pipeline from the ERPS to the water treatment plant.

This technical memorandum (memo) summarizes planning conditions, design parameters, and alternatives for the proposed improvements to the water treatment plan, pump station, and pipeline. The District’s overall goal is to ensure that the WTP has adequate redundancy and flexibility to continue to produce high quality treated water that meets both regulatory requirements and the customer needs of the District. Specific objectives include optimizing and expanding pretreatment, repurposing the existing building, the addition of a new treatment building with dedicated chemical room, water quality and operator lab areas and storage. In doing so, ensuring that water can be delivered in an efficient and reliable manner from the ERPS is required.

## BACKGROUND

A Facility Assessment Report of the Mt. Crested Butte Water Treatment Plant (MCB WTP), pump station, and pipeline was performed by HDR in 2017 followed by a Treatment Assessment Memorandum the MCB WTP in 2018. The Treatment Evaluation included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the District has selected to construct a new WTP utilizing membrane filtration technology.

The raw water pump station and pipeline were evaluated and partially designed by Stantec in 2016. The previous evaluations and design were utilized for background and informational purposes. Several planning and design conditions, including site considerations, equipment, and flow information have been changed therefore the pump station and pipeline will undergo a redesign in order to account for these modifications and optimize performance of the new WTP. The United States Forest Service (USFS) permitting, performed by Resource Engineering, will continue.

The MCB WTP receives raw water from three separate sources: the East River, the Malensik Ditch, and several springs from the Crested Butte mountain. The East River supply and the springs combine in a mixing vault prior to entering a 500,000 gallon WTP pre-sedimentation pond and the Malensik Ditch flows by gravity directly into the pond. The raw water from Malensik Ditch and the springs are controlled by manually operated valves which



are adjusted throughout the year depending on water quality from each source. The Malensik Ditch and springs source flow by gravity while the East River source water is pumped to the mixing vault using the existing ERPS and transmission pipeline.

## EAST RIVER PUMP STATION

The ERPS was constructed in the 1970's and has had only minor updates throughout its lifespan. A passive intake structure is used to collect raw river water from the East River which gravity feeds to a PS pre-sedimentation pond adjacent the ERPS. The ERPS pumps raw water to the WTP pre-sedimentation pond located near the existing WTP. The pump station consists of a concrete wet well and three 75 horse-power (HP) constant speed vertical turbine pumps housed within a wood framed structure. The existing capacity of the pump station is 750 GPM, approximately 1.0 MGD. The pumps are operated based on water levels in the WTP pre-sedimentation pond and whenever the WTP filters are running. According to the 2017 Facility Assessment, electrical limitations restrict pump operation to only two pumps at once, limiting redundancy and capacity. Additionally, the ERPS does not currently have a backup power supply and is difficult to access due to the steep access road which is a concern since the ERPS is the primary water source.

## RAW WATER PIPELINE

Raw water is pumped from the ERPS to the MCB WTP pre-sedimentation pond through approximately 4,500 linear feet of 8-inch ductile iron pipe (DIP). The raw water line travels up approximately 560 vertical feet over a hill to the MCB WTP. The pipe alignment runs through an avalanche zone in steep terrain and its condition is unknown. The majority of the pipeline corridor is located on USFS land. Previous evaluations and permitting efforts with the District and Resource Engineering have been underway for several years to permit the site for construction. The access and topography of the area poses a challenge for construction activities.

## WATER TREATMENT PLANT

The existing WTP was built in 1985 and has undergone only minor updates and repairs since construction. According to the 2017 Facility Assessment and 2018 Treatment Evaluation, installed equipment is approaching the end of its useful life and cannot reliably keep up with the increasing water demands in the District.

Raw water flows by gravity from the lined WTP pre-sedimentation pond to the WTP through 12-inch ductile iron pipe. The treatment system includes conventional filtration via two packaged filtration systems followed by ultraviolet (UV) and chlorine tablet disinfection, and finished water pump station. Two potable water storage tanks with volumes of 200,000 gallons and 1.0 million gallons (MG) store finished water prior to distribution. Finished water flows primarily via gravity from the storage tanks to the distribution system with 13 pressure zones. One zone requires a booster station.

Conventional filtration is accomplished through two Trident treatment trains which combine flocculation, sedimentation, and filtration into a packaged unit. The design capacity of each train is 350 gpm (0.5 million gallons per day (MGD)) with a total capacity of 700 gpm (1 MGD). Based on the 2017 Facility Assessment, the capacity of the existing facility has recently been restricted to 500 gpm (0.7 MGD) due to inefficiencies in the control system. Coagulant is fed upstream of the filters to aid in high turbidity and total organic carbon (TOC) removal.

Filtered water from the treatment units flows through the UV system prior to conveyance to the clearwell located beneath the existing building. The UV system and a chlorine tablet feeder are used for disinfection and contact



time is provided in the clearwell. The District targets a chlorine residual range of 1.2 to 1.5 mg/L leaving the treatment facility.

There is an ongoing study regarding metal concentrations in the District's wastewater treatment plant (WWTP) effluent. The study has identified copper as a metal of concern and a pilot study at the WTP has been put in place to evaluate methods to control copper in the distribution system thus reducing the influent copper concentration to the WWTP. The pilot study involves dosing caustic soda in the finished water to increase the pH to a range of 7.5 to 7.8 standard units (s.u.) and limit potential pH swings. A second ongoing pilot test involves dosing phosphoric acid was recently initiated by the District to better understand future control strategy options.

## SOURCE WATER QUALITY

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The WTP receives water from three primary sources: the Malensik Ditch, East River, and several springs located on Crested Butte Mountain Resort that are tributaries to the Slate River. Water from the Malensik Ditch originates from a spring gallery and flows by gravity to the WTP pre-sedimentation pond. Water from the East River is conveyed to the WTP by the ERPS. A combination of four springs, the Upper Keystone 1, the Upper Keystone 1A, Keystone Flats, and Painter Springs, are collected and conveyed by gravity to the WTP where it combines with the east river source prior to conveyance to the WTP pre-sedimentation pond. The East River is the primary source for the WTP and the existing pump station capacity is 1.4 cubic feet per second (cfs) (750 gpm). The District's water rights for the East River allows for utilization of 7.6 cfs (3,400 gpm). In dry years, the WTP's call on the East River is limited to 1.78 cfs (797 gpm) in the summer and 1.1 cfs (493 gpm) in the winter. Flow from the springs fluctuates throughout the year and peaks at approximately 0.9 cfs (400 gpm) during spring runoff, which occurs between April and July. The Malensik Ditch provides up to 0.25 cfs (112 gpm) from July through November. The District has an existing water right for the Malensik Ditch pipeline for 1.5 cfs (670 gpm).

The District owns additional water rights for the Meridian Lake Park (MLP) WTP which were conveyed to the District during the inclusion process. The MLP WTP had 24.64 acre-feet of absolute water rights added in 2018, bringing their total water rights to 217.1 acre-feet. There is an additional 36.5 acre-feet of storage in the Meridian Lake Park Reservoir (MLPR).

Source water quality data to the MCB WTP has been collected from 2016 through 2019. Water quality data was collected from each individual source and combined springs on a bi-monthly from August 2016 through August 2017. In 2018, Alpine Environmental Consultants developed a water quality sampling plan to sample the combined MCB WTP sources weekly, this work is still ongoing.

## DESIGN PARAMETERS

For surface water treatment facilities, Section 1.2.3 of CDPHE's Design Criteria for Potable Water Systems (Design Criteria) requires specific water quality data be collected for new membrane filtration processes, lead and copper treatment, and chlorine dosing modifications. The required water quality parameters are listed in Table 1 below. Total suspended solids (TSS) and turbidity data are also required for the design of the residuals management system.



**Table 1. Water Quality Data Requirements**

Parameter	Membrane Filtration	Lead and Copper Treatment	UV Disinfection	Chlorine Disinfection
Turbidity	X			
TOC	X			X
DOC	X			
Total Iron	X	X	X	X
Total Manganese	X	X	X	X
Lead		X		
Copper		X		
pH		X	X	
Temperature (Deg C)		X	X	
Alkalinity		X	X	
Calcium		X		
Total Dissolved Solids (TDS)		X		
Conductivity		X		
Silica		X		
Orthophosphate		X		
Total Phosphorus		X		
Chloride		X		
Sulfate		X		
Calcium		X	X	
Hydrogen Sulfide				X
Ammonia				X

Water quality data for the blended source water at the MCB WTP is summarized in Table 2. Additional sampling is currently taking place for the missing parameters to meet the BDR requirements.

**Table 2. Blended Source Water Quality Data**

Parameter	Summer Peak (Apr – Sep)	Summer Average (Apr – Sep)	Winter Peak (Oct-Mar)	Winter Avg (Oct-Mar)	MCL/SMCL
Turbidity (NTU)	13.81	3.68	14.47	1.86	N/A
Total Organic Carbon (TOC) (mg/)	2.60	1.22	2.00	0.84	N/A
Dissolved Organic Carbon (DOC) (mg/L)	2.60	1.22	2.00	0.84	N/A
Total Iron (mg/L)	0.28	0.11	0.10	0.06	0.30
Total Manganese (mg/L)	0.009	0.007	0.026	0.009	0.05
Lead (mg/L)	0.002	0.001	ND	ND	0.015
Copper (mg/L)	0.004	0.002	0.019	0.019	1.0
pH	7.88	6.93	9.00	6.99	6.5-8.5
Temperature (Deg C)	16.40	10.73	14.20	7.03	N/A
Alkalinity (mg/L)	85.00	60.24	274.00	74.96	N/A
Calcium (mg/L)	35.00	22.09	44.00	27.92	N/A
TDS (mg/L)			163.00	144.71	500
Conductivity (umhos/cm)	222.00	144.87	273.00	182.50	N/A
Silica (mg/L)					N/A
Orthophosphate (mg/L)					N/A
Total Phosphorus (mg/L)					N/A
Chloride (mg/L)					250
Sulfate (mg/L)	No Data	No Data	43.00	37.00	250
UVA (cm-1)	0.13	0.05	0.04	0.02	N/A
Hardness as CaCO3 (mg/L)	107.00	67.04	136.00	87.31	N/A
Hydrogen Sulfide (mg/L)					N/A
Ammonia (mg/L)					N/A

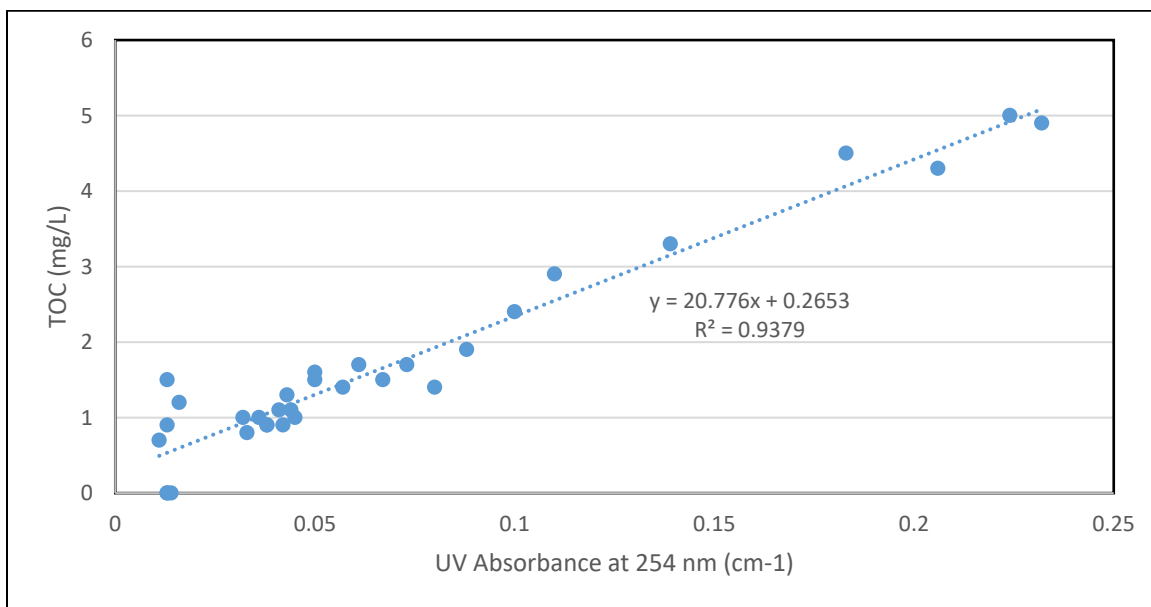


Blended raw water turbidity levels have historically fluctuated from 2 to 10 nephelometric turbidity units (NTU). Recorded data shows that turbidity concentrations are generally higher during summer months; however, data indicates the historical peak occurred during the winter. Excluding the months of spring runoff, average summer and winter turbidity concentrations are approximately 3 NTU and 2 NTU, respectively. During runoff, raw water turbidity averages 6.5 NTU.

Blended raw water pH levels range from 6.5 to 9.0. High variability in pH values were observed in October and November but both winter and summer averages were near 7.0. At pH levels lower than 7.5, most metals will be in a soluble form and in a dissolved state. Therefore, when considering the raw water metals concentrations that were recorded during the sampling period, it is likely that a high fraction of the total metals are dissolved.

Raw water temperature ranged from approximately 1 to 17 degrees Celsius with an annual average of 8 degrees Celsius. Summer raw water temperatures range from 11.5 to 16 degrees Celsius, with peak temperatures occurring in April. Winter temperatures average 7 degrees Celsius but can drop to below 2 degrees Celsius.

UV<sub>254</sub> absorbance (UVA) was monitored weekly starting in 2018. Annual UVA ranged from 0.02 to 0.13 cm<sup>-1</sup> with peak values occurring during the Spring and Fall. Excluding the runoff period in April, summer values showed high variability and range from 0.04 to 0.10, while winter values were consistently below 0.03. UVA measurements show strong correlation with organic carbon concentrations, as shown in Figure 1. When correlated to total organic carbon (TOC) results, an equation can be developed that allows for field monitoring of UVA as a surrogate for TOC. This may be useful after construction of a new water treatment plant as a control strategy as it eliminates the need for weekly lab analysis for TOC and can even be implemented in line for real time feedback control. The historical data for total and dissolved organic carbon demonstrates that most of the organic carbon is present in the dissolved form. TOC concentrations range from 0.6 to 2.6 milligrams per liter (mg/L), with an annual average near 1.0 mg/L. Peak TOC concentrations occurred in the spring and fall, in conjunction with peak UVA values. Winter TOC concentrations showed some variability and range from 0.8 to 1.6 mg/L and summer concentrations range from 1.0 to 2.0 mg/L.



**Figure 1. Relationship between UVA and TOC concentration**

Total and dissolved iron and manganese concentrations were monitored in the source water and the data indicates that both metals were present primarily in the dissolved form. Iron concentrations range from 0.09 to





0.28 mg/L with peak concentrations occurring during spring runoff. All samples were below the secondary maximum contaminant level (SMCL) for iron of 0.30 mg/L. Manganese concentrations range from 0.01 to 0.03 mg/L with peak concentrations occurring during winter months. All samples were below the SMCL for manganese of 0.05 mg/L.

The District will continue to monitor source water quality to confirm the dissolved fraction assumptions for iron, manganese, and organic carbon. Additional sampling is occurring to satisfy the CDPHE criteria for the Basis of Design (BDR) report. These parameters include:

- Silica
- Orthophosphate
- Total Phosphorus
- Chloride
- Sulfate
- Hydrogen Sulfide
- Ammonia

The historical blended source water quality was used to develop design criteria for treatment processes. The design criteria is shown in Table 3. As the District continues to monitor water quality, this design criteria may be adjusted based on the most recent available data.

**Table 3. Source Water Quality Design Criteria**

Parameter	Design Condition	Average Conditions
Turbidity (NTU)	15	2 – 10
TOC (mg/)	3.0	1.0
DOC (mg/L)	3.0	1.0
Fe total (mg/L)	0.3	0.10
Fe dissolved (mg/L)	0.28	0.09
Mn total (mg/L)	0.03	0.01
Mn dissolved (mg/L)	0.03	0.01
Cu, total (mg/L)	0.019	0.012
Cu, dissolved (mg/L)	0.019	0.012
Pb (mg/L)	0.002	0.0015
pH Range	6.5 – 9.0	7.01
Temp Range (Deg C)	1.0 – 17.0	8
Hardness as CaCO3 (mg/L)	40 – 140	
Alkalinity	30 – 275	
Calcium (mg/L)	45	
Sulfate (mg/L)	43	37
TDS (mg/L)	95 – 165	145

## WATER QUALITY FROM ALTERNATIVE SOURCES

The District owns water rights to two sources that supply raw water to the MLP WTP. An interconnect between the MLP WTP and the MCB WTP may be considered in the future to provide redundancy between the District’s water sources. Blended raw water quality data for the MLP WTP were collected weekly from July of 2018 through February of 2019. Metals testing was performed on the individual sources, the Jaklich Ditch and MLP Reservoir, monthly in 2016 and 2017. The historical data for total and dissolved organic carbon demonstrates that most of the organic carbon is present in the dissolved form in the blended raw water. TOC concentrations range from 0.7 to 5.0 milligrams per liter (mg/L), with an annual average near 2.2 mg/L. TOC and DOC was not monitored in the



individual sources. Total iron concentrations range from 0.04 to 0.33 mg/L with the majority of iron coming from the MLP reservoir. Dissolved iron concentrations range from 0.02 to 0.11 mg/L. Total manganese concentrations range from 0.002 to 0.068 mg/L and dissolved manganese concentrations range from 0.001 to 0.041 mg/L. Higher concentrations of both iron and manganese were found in the MLP Reservoir source. Average iron and manganese concentrations in both the Jaklich Ditch and the MLP Reservoir exceeded the historical average total iron and manganese of the blended water sources for the MCB WTP.

The District is considering using water from Long Lake Reservoir as a potential new raw water supply to the MCB WTP. The Long Lake Reservoir is also known as the Meridian Lake Reservoir, which is different from the Meridian Lake Park Reservoir previously mentioned. The Long Lake supply would be the main supply for the future interconnect. Water quality data was also collected every other month from Long Lake. Total iron concentrations range from 0.03 to 0.34 mg/L, with an average of 0.10 mg/L. Total manganese concentrations range from 0.010 to 0.049 mg/L, with an average of 0.026 mg/L. Average iron and manganese concentrations in Long Lake also exceed the historical average total iron and manganese of the blended water sources for the MCBWTP. TOC and DOC concentrations have not been collected from the Long Lake source.

## PLANNING AND WATER DEMAND

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The District serves the Town of Mt. Crested Butte, Colorado, located in Gunnison County. According to the system's monitoring plan, the service area has a documented population of 801 full time residents. The District population fluctuates seasonally throughout the year due to increased tourism and second home owners. In general, the population increases during winter and summer months, while the population drops during the spring and fall to the District's permanent population. Two Water Treatment Plants serve the District's service area, the primary plant is the MCB WTP and the secondary plant, serving a smaller portion of the service area, is the MLP WTP.

## EXISTING AND FUTURE SERVICE CONNECTIONS

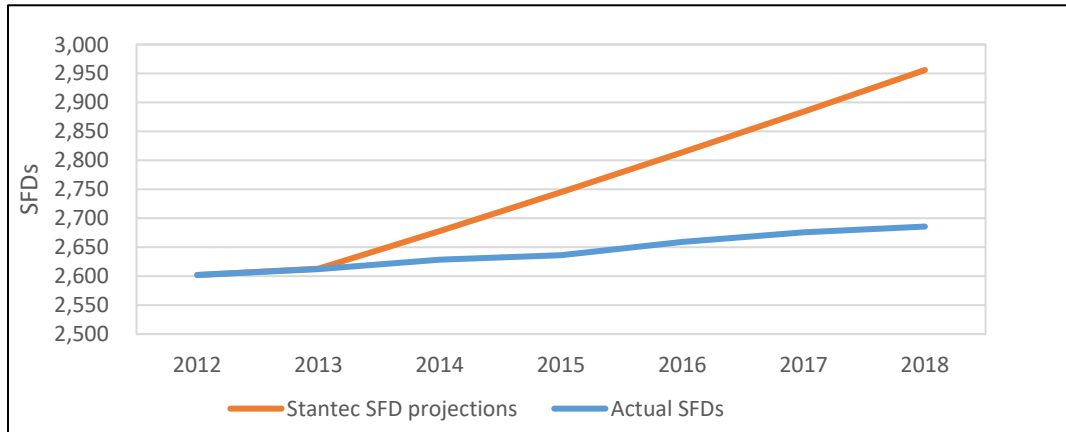
The existing conditions and future growth rates presented in this evaluation were based on Stantec's Water Master Plan Update, completed in October 2014 (2014 Master Plan). The 2014 Master Plan evaluated census data from 2000 to 2010 to determine the increase in population for full time residents and the transient population. This data demonstrated a 44 percent increase in occupied and vacant homes (seasonal, recreational, and second home owners) in the service area over the ten-year period. The 2014 Master Plan also evaluated the District's historical planning documents to aid in the development of an appropriate annual growth factor.

Based on the 2014 Master Plan, the number of single-family dwellings (SFDs) for the MCB system's buildout condition is 6,200. Three future developments were identified in the 2014 Master Plan: Prospect (350 SFDs), Crested Butte Ski Ranches (7 SFDs), and the North Village (1,800 SFDs). The District confirmed that there have been no formal modifications to the projected SFDs for each of these developments; however, the timing is unknown. The 2014 Master Plan used a 2.5 percent annual growth rate for SFDs. From 2013 to 2018, the annual growth rate was 0.5 percent on average.

The 2014 Master Plan reported 2,602 SFDs in the District in 2012. The District provided the number of SFDs added to the system annually from 2012 to 2018. Based on the assumption that the increased number of SFDs to the system in 2012 was already accounted for in the 2014 Master Plan, JVA calculated that the District currently has 2,686 SFDs. The 2014 Master Plan assumed a 2.5 percent annual growth in SFDs, which leads to a discrepancy in



the projections of approximately 270 SFDs. The projected SFD's as estimated in the 2014 Master Plan from 2012 to 2018 are shown in Figure 2.



**Figure 2. Actual SFDs compared to 2014 Master Plan Projected SFDs**

SFD growth scenarios for the 20-year planning horizon and the year of the buildout condition (6,200 SFDs) for four annual growth scenarios (1.0 percent, 1.5 percent, 2.0 percent, and 2.5 percent) were evaluated as part of the demand projections.

Although the 2.5 percent annual growth rate is very conservative, adequate documentation to support a reduction in the projected annual growth rate is not available. The Town of Mount Crested Butte does not project increases in tourism visits, which are considered the critical variable to the District’s future water demand. However, evaluating the growth scenarios provides additional context for determining an appropriate firm capacity for the 20-year planning condition and the range of anticipating timing for the buildout condition.

### HISTORICAL WATER DEMAND

The MCB WTP's average and peak day water demand was developed from the monthly totals and peak day values provided by the District. The WTP finished water meter data represents the total amount of water produced and distributed from the plant to the distribution system. A summary of the WTP water production data from 2015 to 2018 is provided in Table 4. The table shows average annual demand, average demand by season, peak day demand for the year, and the peak day demand by season.

**Table 4. Historical Water Production (2015-2018)**

	Avg Day				Peak Day			
	Annual	Summer (April-Sept)	Winter (Dec-March)	Shoulder (Oct-Nov)	Annual	Summer (April-Sept)	Winter (Dec-March)	Shoulder (Oct-Nov)
<b>2015</b>	359,530	397,350	377,050	211,040	742,000	742,000	628,000	398,000
<b>2016</b>	346,890	409,780	325,280	201,410	772,000	772,000	689,000	365,000
<b>2017</b>	316,610	378,130	299,270	166,740	852,000	852,000	651,000	307,000
<b>2018</b>	279,340	332,880	260,570	156,250	768,000	768,000	513,000	230,000

The data indicates the annual average daily demand has been steadily decreasing from 2015 to 2018. The annual peak day demand rose in 2016 and 2017 but decreased in 2018. The District has reported that water conservation regulations were in effect each year during the historical time period reviewed. The most restrictive conservation



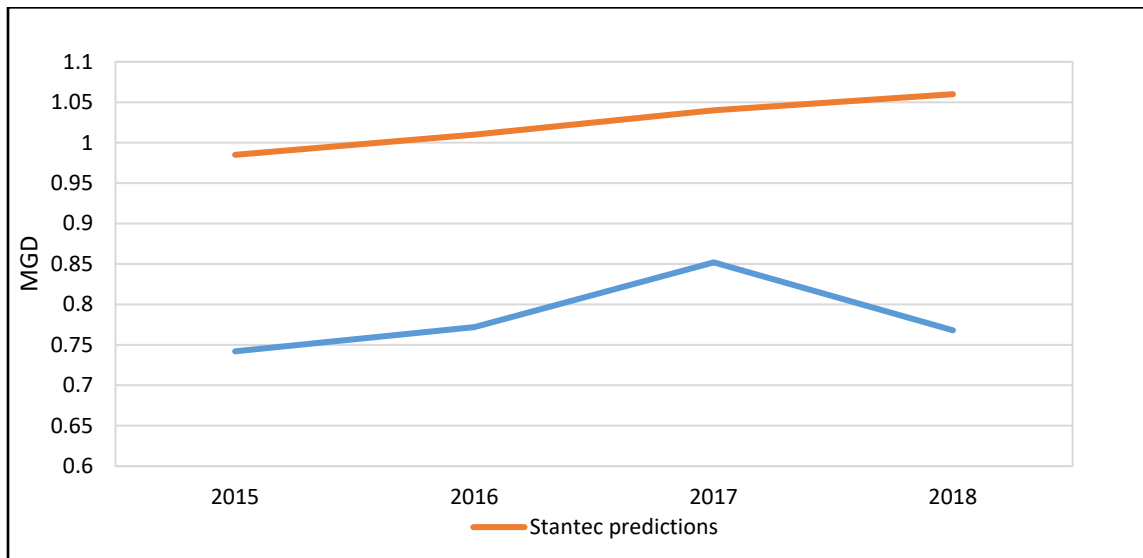
practices occurred in 2018, which included irrigation restrictions. The winter peak day demand has been decreasing after a spike in 2016, while the shoulder season peak day demand has been steadily decreasing. Historical water production per SFD is presented in Table 5.

**Table 5. Historical Water Production per SFD (2015-2018)**

Number of SFDs = 2,636								
Year	Avg Day				Peak Day			
	Annual	Summer	Winter	Shoulder	Annual	Summer	Winter	Shoulder
		(April-Sept)	(Dec-March)	(Oct-Nov)		(April-Sept)	(Dec-March)	(Oct-Nov)
2015	136	151	143	80	281	281	238	151
2016	132	155	123	76	293	293	261	138
2017	120	143	114	63	323	323	247	116
2018	106	126	99	59	291	291	195	87

Historical water demand data used for the 2014 Master Plan, was approximately 350 gpd/SFD. However, the trending in water demand over the past four years indicates that the peak day water demand per SFD has decreased. The highest peak water demand was recorded in 2017 as 318 gpd/SFD. The average peak day per SFD demand is closer to 300 gpd/SFD.

Figure 3 shows the difference between the 2014 Master Plan projections and the actual water demand data from 2015 through 2018.



**Figure 3. Recorded Peak Demand Compared to 2014 Master Plan Projections**

## PROJECTED WATER DEMAND

To evaluate the future water demand for the MCB WTP, different peak day demand conditions and annual growth scenarios were evaluated. Projections were developed for 300 gpd/SFD, 320 gpd/SFD, and 350 gpd/SFD at annual growth scenarios of 1.0 percent, 1.5 percent, 2.0 percent, and 2.5 percent to better understand the range of scenarios feasible for the service area. This method provides the most comprehensive approach to determining the 20-year peak day demand and the timing of the estimated buildout condition as identified in the 2014 Master Plan Master Plan.



Based on the 300 gpd/SFD scenario even at the highest projected growth rate of 2.5 percent, the service area demand will not reach the plant's firm capacity until 2037. Based on the 320 gpd/SFD scenario the service area demand will reach the plant's firm capacity in 2035 based on the 2.5 percent growth rate. Based on the 350 gpd/SFD scenario, the service area demand will reach the plant's firm capacity in 2031 and the demand will reach the plant's design capacity in 2039, based on a growth rate of 2.5 percent.

As noted earlier, the 2.5 percent annual growth rate is very conservative, and the Town of Mount Crested Butte does not appear to project increases in tourism visits. However, adequate supporting documentation for a lower growth rate is not available. Using the revised peak day per SFD demand (320 gpd/SFD) and the 2.5 percent annual growth rate, the peak day 20-year water demand is projected at 1.365 MGD. Peak demand is not anticipated to reach 2.0 MGD for 35 years, which is still understood to be conservative. A summary of the 20 year projected water demand is included at each growth scenario in Table 6 and in Figure 4.

**Table 6. Projected Water Demand at 320 gpd/SFD**

Projected Flow (gpd) at 320 gpd/SFD				
Year	Projected Growth Rate			
	1%	1.5%	2%	2.5%
<b>2018</b>	832,640	832,640	832,640	832,640
<b>2019</b>	840,970	845,130	849,290	853,460
<b>2024</b>	883,870	910,450	937,690	965,610
<b>2029</b>	928,950	980,810	1,035,280	1,092,500
<b>2034</b>	976,340	1,056,610	1,143,040	1,236,060
<b>2038</b>	1,015,980	1,121,450	1,237,260	1,364,380
<b>Year to 1.5 MGD</b>	2078	2058	2048	2042
<b>Year to Buildout (2.0 MGD)</b>	2107	2077	2063	2054

The proposed improvements will expand the plant's design capacity to 1.5 MGD with a firm capacity of 1.0 MGD. The District desires to have flexibility to expand firm capacity to 1.25 MGD within the 20-year planning. This could be accomplished by including space for additional modules on each membrane rack. Firm capacity is defined by the Colorado Department of Public Health and Environment (CDPHE) as the capacity with the largest treatment unit out of service.

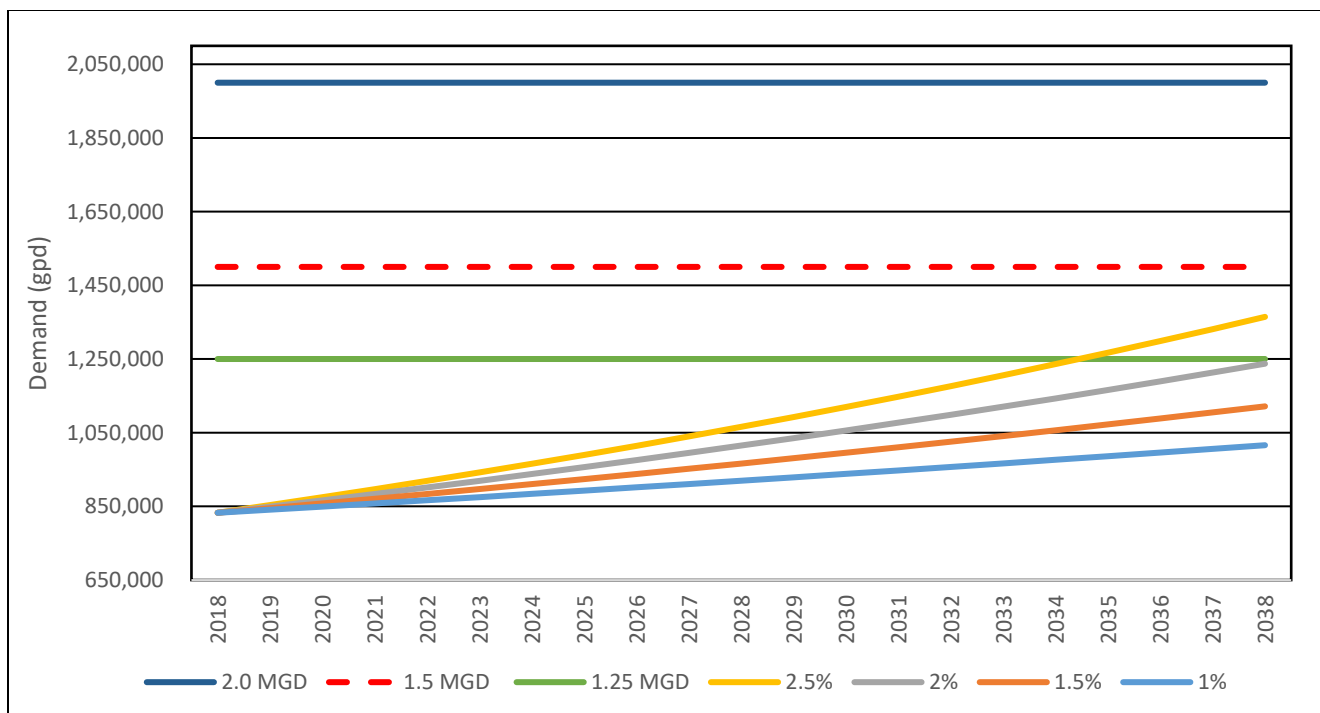


Figure 4. Projected Peak Day Demand (320 gpd/SFD)

## EAST RIVER PUMP STATION PRELIMINARY DESIGN

The existing ERPS has been in service for over 30 years and has reached the end of its useful life. There is no backup power supply and it does not have the capacity to meet future water demands. The recommended improvements to the ERPS include the construction of a new building and three new vertical turbine pumps, with variable frequency drives (VFDs). Recommended improvements also include new East River intake structures, improvements to the existing pump station (PS) pre-sedimentation pond, security improvements, and backup power supply. The proposed pump station will pump source water into a new 12-inch pipeline, the design of which will consider hydraulic surge analysis to protect the pump station infrastructure. Additionally, new instrumentation, controls, and communication will be installed for improved remote monitoring and control.

## FOREST SERVICE PERMITTING

The East River raw water intake location, ERPS, and majority of the existing raw water supply pipeline is located on United States Forest Service (USFS) property. The District obtains its raw water supply from the East River under an approved Special Use Permit (SUP) issued under authority of the Federal Land Policy and Management Act, as amended October 21, 1976. The SUP allows for two diversion structures on the East River, PS pre-sedimentation pond, pump station, and delivery pipelines to convey source water to the MCB WTP. In total, these structures occupy approximately 3.5 acres of National Forest lands. A copy of the District's SUP is provided as Attachment A. Resource Engineering has worked with the District to amend the existing permit to account for the proposed improvements. The final application was submitted, and the District is awaiting final approval.

## EAST RIVER INTAKE AND SETTLING POND

The two existing diversion structures have reached their useful life and do not efficiently convey raw water supply to meet the future water demands. The existing PS pre-sedimentation pond has substantial silt build-up that needs



to be removed and additional modifications are needed to improve accessibility for cleaning, maintenance, and protection from wildlife. The intake structures must be improved to address fish and beaver intrusions.

Recommended improvements to the intake structures include replacing the two existing 30-inch diameter diversion culverts with two 24-inch diameter diversion culverts and associated appurtenances. Self-cleaning intake screens on the intake structures will prevent sediment, debris, and wildlife from entering the settling pond, while reducing maintenance requirements. The two new concrete intake structures will include 24-inch diameter intake pipes, which will gravity feed source water into the settling pond. It is recommended to equip each 24-inch intake pipeline with isolation valves for improved maintenance and operational flexibility.

Recommended improvements to the PS pre-sedimentation pond include regrading for more gradual pond side slopes, additional grading to accommodate backhoe access for maintenance, and security fencing around the pond to prevent wildlife from disturbing the pond. During detailed design, staging must be considered to maintain operation of the existing intake structures and settling pond. Both MCB and Crested Butte Mountain Resorts use the existing intake structures and PS pre-sedimentation pond for water supply.

Wetlands surround the ERPS and settling pond. The proposed improvements will impact less than half an acre of wetlands, so the work will be permitted under an Army Corps of Engineers Nationwide 404 permit.

## EAST RIVER PUMP STATION

The following sections provide design criteria that has been established for the proposed ERPS.

### WETWELL DESIGN

The new wetwell will be designed to follow best practices established by *the American National Standard for Pump Intake Design* by the Hydraulic Institute. The new wetwell will include sufficient pump suction submergence, inlet bay length and width, and hydraulic separation of pump inlets via baffling to prevent vortices, entrained air, or non-uniform distribution of source water supply to each pump. Through proper wetwell design, pump performance and lifecycle costs will be improved.

Additionally, the wetwell will include an access hatch which will allow access to the wetwell in the pump station building for maintenance. Isolation valves on the inlet piping to the wetwell will allow operations staff to pump out the wetwell if required for cleaning or maintenance.

### PUMP DESIGN CRITERIA

The proposed ERPS will be designed with a pumping capacity of 1.5 MGD to meet current water demands. It is recommended to install three vertical turbine pumps with VFDs. Two pumps will operate on a lead-lag basis and the third pump will alternate as a standby. An additional pump can be added to the ERPS at a later time to meet future water demands of 2.0 MGD. During 2.0 MGD operation, three pumps will operate on a lead-lag basis and the fourth pump will alternate as a standby. The pumps have been sized for a future pumping capacity of 2.0 MGD and it is recommended to equip each pump with a variable frequency drive (VFD) to account for the required turndown to meet the current water demands of 1.5 MGD.





Table 7 provides a summary of the preliminary design of the ERPS pumps.

**Table 7. Pump Preliminary Design Criteria**

Parameter	Value
Number of Pumps	3 (4 total for future 2.0MGD operation)
Type	Vertical Turbine
Capacity (each)	0.70 MGD
TDH (each)	670 ft
Horsepower	140 Hp
Phase	3-phase

#### HYDRAULIC SURGE AND HIGH PRESSURE PROTECTION

Hydraulic surge protection protects pumping equipment, valving, appurtenances, and the raw water pipeline from pressure surges due to varying flow velocities within the pipeline. It is important to protect the integrity of the infrastructure and take precautions in the event of hydraulic surge.

The best surge protection approach and design cannot be fully determined until a detailed design of the raw water pipeline is complete. However, the majority of pressure in the pumping system is due to the extreme elevation difference between the ERPS elevation and discharge elevation. Because of this, the surge protection alternative of upsizing the raw water pipe to minimize frictional head can be eliminated due to its minor role in the total operating pressure of the pipeline.

The hydraulic surge analysis of the system will depend on the identification of intermediate highpoints, if any, and the finished profile of the raw water pipeline from the ERPS to the pre-sedimentation pond at the WTP. For the preliminary design, three alternatives have been identified which will be evaluated further during detailed design. The identified alternatives are combination vacuum/air release valves, surge tank, and/or a surge anticipating valve.

If any intermediate highpoints are identified, combination vacuum/air release valves could be placed at these points to prevent a vacuum in the pipeline. A surge anticipating valve could be placed on the discharge end of the pumps to gradually start or stop pumping, preventing high pressure waves from impacting pumping infrastructure. The District has expressed that other methods of surge protection are preferred because control valves are difficult to maintain, and solenoids tend to get build-up when dealing with raw water. A surge tank may be preferred and could be installed inside the ERPS building to mitigate pressure fluctuations in the pipeline. Based on the preliminary design, it is anticipated that a 3-foot diameter, 8-foot tall surge tank may provide sufficient hydraulic surge protection.

The current pump station does not have adequate pressure reduction or isolation for safe operation of the house water or for safe maintenance access. The proposed ERPS will include pressure reducing valving on the house water lines and will include redundant isolation valving on the raw water pipeline immediately leaving the ERPS to provide safe isolation for maintenance access to pumps and all appurtenances in the ERPS. The District would also like to include a shutoff gate valve on the outside of the pump station for emergency shut off.

#### INSTRUMENTATION, CONTROLS, AND COMMUNICATION

The proposed ERPS will be equipped with instrumentation and controls to monitor wetwell water levels, pump status, and critical ERPS building status (access and power status).

The wetwell currently has one low level float and additional low- and high-level floats are desired. A pressure transducer will be installed inside the wetwell along with backup emergency floats for level measurement and





overflow protection which will alarm in the event of high water levels. A flow meter and pressure gauge will be installed on the combined discharge line for monitoring total water pumped. Each pump will be equipped with pressure instrumentation (gauge or transducer) for maintenance and troubleshooting and VFDs to control pumping speeds.

Communication between the ERPS and WTP will allow for remote monitoring and control. This communication will be critical, especially during winter weather when access to the ERPS is difficult. The two alternatives evaluated for communication were fiber optic cable and radio. Fiber optic cable is faster, more reliable, less susceptible to lightning strikes, but is significantly more expensive than radio. However, the fiber optic cable could likely be installed in the same trench as the proposed pipeline which would result in cost savings during construction.

### MAIN POWER SUPPLY AND BACKUP POWER

To accommodate the new ERPS building and pump power requirements, the existing transformer will need to be upsized. However, the existing conduit can be used for the new ERPS. A short length of additional conduit will need to be installed to connect the ERPS to the new transformer. The ERPS will be equipped with a backup generator and automatic transfer switch (ATS) in the event of an extended power outage. The ATS will allow the ERPS to automatically switch to backup power without the need for the physical presence of operations staff.

Two alternatives for the backup power generator were evaluated, natural gas and diesel. Both proposed generators would be 350 kW to power all critical ERPS infrastructure. A diesel generator will require diesel to be hauled via truck. Due to the location of the ERPS and the access roadway, it will be difficult for a truck to deliver diesel to the generator, especially in the winter when there will be limited access to the ERPS. The District must use a snowcat during the winter to access the pump station, and the cat has limited fuel carrying capacity. The District desires to have a minimum of 24 hours of diesel fuel storage. Note, a diesel generator that exceeds 660 gallons must comply with the Colorado Department of Labor and Employment Division of Oil and Public Safety Storage Tank Regulations. The estimated footprint of a diesel generator is 80 square feet.

A natural gas generator will not require hauling but will require installation of a gas pipeline to the ERPS. Metering for this pipeline and a tap fee will also be required. The natural gas generator would have a larger physical footprint at an estimated 120 square feet. To assist in determining which alternative is desired, a summary of preliminary estimated capital costs for the two generators is provided below in Table 8. It should be noted that further investigation will be required to determine the most optimal generator option as Atmos Energy supplies a richer gas mixture that may not be suitable for gas-powered generators.

**Table 8. Estimated Costs for Generator**

Generator Type	Line Item Description	Quantity	Cost
Natural Gas Generator	Natural Gas Generator	1	\$258,900
	Natural Gas Service Line	3,500	\$175,000
	Tapping Fee for Service	1	\$2,000
	3,500 CFH Gas Meter, Gas Shutoff Valve	1	\$5,300
	Automatic Transfer Switch	1	\$9,100
	<b>Natural Gas Generator Total</b>		
Diesel Generator	Diesel Generator	1	\$81,000
	Automatic Transfer Switch	1	\$9,100
	<b>Diesel Generator Total</b>		



## FLOODPLAIN ANALYSIS

A separate floodplain analysis memorandum has been prepared detailing the methodology used for determining approximate base flood elevations adjacent to the pump station. The site is located in a rural area and the East River isn't currently mapped by FEMA until it crosses County Road 738 to the southeast of Crested Butte Mountain Resort. 100-year flow rates at this location were taken from gage data but are considered highly conservative as the gage is approximately 12 miles downstream from the pump station. Based on this, an approximate 100-year base flood elevation of 9,063.0 feet was calculated just upstream of the pump station. The existing grade around the pump station is approximately 9,064 feet. Only one flood event for the East River in 2008 is identified within the flood insurance study for the county. A flood recurrence interval wasn't given but assumed to be close to the 100-year event as it indicated that the banks were overtopped in some locations near the confluence with the Slate River. Therefore, raising the pump station to elevation by a foot to 9,065 feet would place it approximately 2 feet above the bank elevations and minimize flooding risk.

## STRUCTURAL AND ARCHITECTURAL CONSIDERATIONS

The Town of Mt. Crested Butte has adopted the 2012 versions of the International Building Code and International Energy conservation Codes. This has an impact on construction materials and cost as the masonry construction used for the existing Water Treatment Plant building would not meet the requirements of the 2012 International Energy Conservation Code. Masonry construction is an excellent choice for building materials at water treatment facilities due to its durability. In the case of the East River Pump Station the structure is envisioned to consist of cast-in-place concrete construction extending approximately 15 to 20 feet below grade with a masonry building above. Walls would consist of concrete masonry units, air and vapor barrier, insulation, and a 4-inch masonry veneer. The roof could be constructed from precast concrete double tees or wood trusses similar to the existing treatment plant building. In lieu of masonry walls insulated precast concrete walls could be utilized. Difficult access to the building site and regional availability of building materials could also play a role in building material selection and a metal building may also be considered for construction. The building design will incorporate a hoist system to accommodate installation, servicing, and removal of pumps.

## RAW WATER PIPELINE PRELIMINARY DESIGN

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The existing 8-inch DIP pipeline extends approximately 4,500 feet southwest from existing ERPS to the MCB WTP. The pipeline is aligned generally perpendicular to the hillside and the slope of the hillside is relatively flat near the WTP, but several sections of the pipeline were installed in areas where ground slopes exceed 2:1. A second pipeline is desired for redundancy and increased capacity. The proposed pipeline will generally follow the existing 8-inch line at a 15-foot offset to the south. Due to these steep slopes, construction of the pipeline is anticipated to present several challenges with regards to methods and access.

The majority of the existing pipeline is installed on property owned by the federal government and maintained by the USFS. There is an existing 20-foot wide USFS pipeline corridor on this property that is centered on the existing pipeline. Based on the Special Use Permit prepared by Resource Engineering, Inc., a proposed 40-foot pipeline corridor is required from the USFS to encompass both pipelines. The northern side of the proposed pipeline corridor will maintain the current 10-foot offset from the existing pipeline. The easement will be revised for a 130-foot portion and offset 40 feet to the south. The corridor will maintain a 40-foot offset the will extend the length of the easement. This will allow for a 15-foot offset to the south of the center of the proposed 12-inch pipeline for maintenance purposes.



There is currently a large discrepancy between field surveys for the location of the existing 8-inch pipeline. The original 2014 Master Plan survey shows the existing alignment crossing the open lot to the north of the residential properties owned by Crested Butte Mountain Resorts (CBMR). A recent survey performed by SGM shows the existing pipeline crossing the rear portions of vacant residential lots 18, 19 and 20. Both surveys show the existing pipeline outside of the current easements on the CBMR properties. The design team has requested utility potholing to verify the actual location but anticipates relocating a portion of the 8-inch line into the existing easements. As one of the CBMR easements is only 20 feet wide, an additional 10 feet of easement is recommended to match the other 30-foot easements and provide sufficient space for maintenance activities. Approximately 120 feet of the existing 8-inch line within the USFS pipeline corridor will need to be relocated to enter the CBMR property at the existing easement. Resource Engineering indicates that this alignment change may be feasible with a revised permit through the USFS.

#### PIPELINE ALTERNATIVES

Due to the extensive previous permitting and existing easements, alternative alignments were not evaluated during preliminary design. Alternative pipe material, diameter and installation methods were considered.

The existing 8-inch pipeline was originally constructed with DIP due to the high pressures in the line at the pump station. A soil corrosivity analysis was not performed by the project geotechnical engineer during the previous design of the proposed pipeline, but sulfate resistant concrete was recommended in the report. When it is properly encased in polywrap, a DIP pipeline and fittings can be protected from corrosion. However, improper installation or damage to the polywrap will allow for infiltration of sediment laden groundwater and potential corrosion of the pipe material.

In order to address corrosion of metal pipes should existing soil conditions pose a concern, several alternatives are being considered. Zinc coated DIP is now more readily available within Colorado and only slightly more expensive than standard DIP. However, like polywrap, the zinc coating can become damaged during construction and reduce the corrosion resistance of the product. A separate cathodic protection system can also be installed parallel to the alignment to reduce corrosion of metal pipes. HDPE pipe would provide corrosion resistance for the pipeline and fittings as all bends are fused in the field. Due to the steep slopes, field fusing may not be feasible as a relatively flat area would be required for the fusing equipment. C900 PVC with push on joints would provide increased corrosion resistance without the need for leveling an area for a pipe fuser. The fittings for the PVC pipe will still be DIP, but zinc coated fittings that are wrapped with polywrap or tape can be specified to reduce corrosion potential.

Preliminary modeling for the proposed pump station indicates that the pressure within the proposed pipeline will be approximately 250 PSI at the bottom of the hill. Both PVC and HDPE pipe materials are not typically used for high pressure pipelines but offer lower dimension ratio (DR) pipe to accommodate up to 330 PSI. HDPE is more ductile than PVC and able to better handle surge events that could exceed the pressure capacity of the pipe. DIP or steel pipe material is typically used for high pressure pipelines. Installation of steel pipe may not be feasible on the steep slopes due to the need for onsite welding equipment.

Based on these considerations, it is recommended that the pipeline be constructed of DIP to handle the high pressures anticipated. Plastic pipe failures tend to be catastrophic at high pressures compared to the small leaks that may occur within metal pipes. During 30 percent design a corrosivity analysis of the existing soils is recommended to determine if additional cathodic protection is required. Cathodic protection could be achieved by installation of an induced current or anodes can be placed along the alignment that would need to be replaced over time.



The previous design completed by Stantec indicated a need for a 16-inch pipe to meet the projected 2 MGD service area build out in the district. Preliminary modeling for the pipeline indicates that velocities within a 16-inch pipe at this flow rate would be approximately 2.1 ft/s. As the pipe will be conveying raw water, a minimum velocity of 2 ft/s is recommended to reduce sediment build-up within the pipe. As the velocity in the 16-inch line is close to the minimum velocity, a 12-inch line was evaluated as part of this analysis. The velocity in a 12-inch line would be closer to 4 ft/s and would still meet the flow requirements. Friction head losses are minimal between the sizes and as velocity is a function of the diameter, it is recommended that a diameter of 12 inches is used for the pipeline.

The original pipeline was installed using traditional open trench methods based on the age of the line. The geotechnical report from the previous Stantec design indicated that a dense shale layer exists approximately 2 feet below grade near the WTP but becomes more broken and mixed with clays farther down the alignment towards the pump station. Based on the number of blows per foot listed in the geotechnical report, between 18 and 34, it is anticipated that the weathered shale will be rippable with standard construction equipment.

Trenchless pipeline installation has been considered to overcome the steep slopes as the construction staging area for this method would be limited to the top and bottom of the hill. However, it is anticipated that the cost for trenchless construction will be significantly higher than open cut. Horizontal Directional Drilling (HDD) operations drill from the low end to the high end and a drill rig would need to be airlifted down to the pump station as the terrain will likely be unpassable. HDD installation methods require a homogenous soil for drilling, which would require the pipeline depth to be increased to the dense shale layer and necessitate a larger drill rig. Mixed-face trenchless installation is possible with mini-tunnel boring machines, but costs for this type of installation are significantly more expensive and require a larger footprint for launching the machine. Based on this, we recommend open cut installation. Standard construction equipment can be winched down the slope as needed and anchored to prevent overturning during excavation. The specifications will include a requirement that the selected contractor should supply a steep slope work plan identifying equipment, hoisting, rigging, winches, etc. to be used on the project to ensure design standards are met per the Construction Documents.

## WATER TREATMENT PLANT PRELIMINARY DESIGN

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Based on the condition of the existing facility, site constraints, desire for similarity to the District's MLP WTP, a new water treatment plant is recommended for the MCB WTP with a design capacity of 1.5 MGD. The new WTP treatment processes will be housed in a new building located on the site of the existing facility. The existing facility can be retrofitted to support the District's vehicle storage or maintenance activities. The major components of the WTP expansion and improvements include,

- Modifications to the source water site piping and valving
- Chemical pretreatment for TOC removal and space allocated for future iron and manganese removal
- Membrane filtration
- Chlorine disinfection and CT volume
- Finished water pumping
- Residuals management

## WTP PRE-SEDIMENTATION POND

Raw water from the ERPS and the MCB spring sources combine south of the existing WTP building and are conveyed through a 12-inch DIP pipeline to the lined 500,000 gallon WTP pre-sedimentation pond. Raw water



from the Malensik Ditch flows directly into the WTP pre-sedimentation pond. Raw water from the WTP's pre-sedimentation pond flows to the MCB WTP treatment building through a 12-inch DIP line. The WTP pre-sedimentation pond is located to the northwest of the WTP building and was re-built in 2006 to incorporate 12-inch inlet and outlet pipes, capable of conveying up to 1,600 gpm (2.304 MGD). Based on the most recent survey, the WTP pre-sedimentation pond and associated site piping provide adequate capacity for the WTP improvements and therefore and will not be altered as part of this project.

## SITE PIPING

Raw water from the ERPS is pumped through an 8-inch pipe where it combines on the southeast side of the existing WTP building with the springs source water. Water from the Mount Crested Butte springs sources flows through an 8-inch transmission line to the southeast side of the WTP prior to blending with the ERPS source.

The valve garden where the East River and spring sources blend requires simplification as part of this project. The piping and valving associated with this connection is cumbersome and confusing. As part of this project, the integration of the two sources will be streamlined to reduce operational complexity and minimize valves associated with operating this connection. Improvements will be evaluated during the design process and as the ERPS pipeline alignment progresses.

Backwash water from the Trident treatment units is piped to the 500,000 gallon backwash pond through approximately 115-feet of 18-inch DIP pipe. The most recent survey of the backwash pond indicates that an 8-inch drain line to the an existing manhole located to the southwest of the existing WTP treatment building ties to the District's sanitary sewer collection system. This drain line allows operations staff to manually control flow that enters the collection system from the backwash pond. The backwash pond is also equipped with a 4-inch decant line which decants flow from the backwash pond either to the 12-inch DIP line that flows to the pre-sedimentation or into the 12-inch line that flows from the pre-sedimentation to the WTP. The decant lines are at different levels within the backwash pond.

## CHEMICAL PRETREATMENT

Chemical pretreatment aids in removal of dissolved constituents in the District's source water that would otherwise not be removed by the membrane filtration system. Based on the District's source water quality, the parameters that were investigated for pretreatment included,

- total organic carbon (TOC)
- iron
- manganese

TOC is a measurement of the total amount of carbon in organic compounds in water. Natural and synthetic compounds can contribute to the TOC concentration. The most common method of TOC removal employed for systems with membrane filtration is coagulation. Through the coagulation process, the positive charge of the coagulant neutralizes the negative charge of dissolved and suspended particles in the water. When this reaction occurs, the particles bind together, or coagulate to form a particulate that can readily be removed through sedimentation and/or filtration.

TOC in the finished water can lead to the formation of disinfection by products (DBPs) which are produced by the reaction of free chlorine with natural organic material (NOM). (The amount of NOM can be approximated by the amount of TOC present.) The portion of the NOM that forms DBPs is generally the dissolved portion (dissolved



organic carbon, DOC). Reduction of TOC prior to membrane filtration decreases the formation of DBPs and produces a higher quality finished water.

Historical source water quality data for the WTP demonstrates elevated levels of TOC during spring runoff, at a maximum of 2.6 mg/L, all of which was present as DOC. The proposed treatment solution to reduce TOC and DOC is coagulation and filtration. In coagulation, a positively charged coagulant is added to raw water through a rapid mix process. The coagulant alters or destabilizes negatively charged particulate, dissolved, and colloidal contaminants creating flocculants. The larger particles formed through flocculation can be removed using sedimentation or a physical barrier process, such as membrane filtration. For removal using membrane filtration specific coagulants that form tight flocs (or pin flocs) are preferred and selected as coagulant aids. Larger flocs are problematic for membranes and can lead to excessive backwashing and in extreme cases membrane binding.

Iron and manganese can be removed through various pretreatment methods. Oxidation and precipitation are the most common method to remove iron and manganese from drinking water. Iron and manganese have historically not breached the secondary maximum contaminant levels (SMCL), 0.3 mg/L and 0.05 mg/L, respectively. However, the peak source water iron concentration has reached 0.28 mg/L which is close to the SMCL. Additionally, the peak iron and manganese concentrations in the Long Lake source are higher than those observed from the blended MCB raw water sources (0.34 mg/L and 0.049 mg/L, respectively). Future integration of the Long Lake source at the MCB WTP may warrant additional pretreatment to remove iron and manganese.

Iron occurs in one of two oxidation states in water: reduced soluble divalent ferrous iron ( $\text{Fe}^{+2}$ ) or oxidized insoluble trivalent ferric iron ( $\text{Fe}^{+3}$ ). Ferric hydroxide ( $\text{Fe}(\text{OH})_3$ ) is the direct result of ferrous iron oxidation and precipitation. The ferrous form is often associated with bicarbonates and is therefore colorless or referred to as “clear” iron. The oxidized form or ( $\text{Fe}(\text{OH})_3$ ) is a precipitant and oftentimes a filterable particulate.

Manganese exhibits multiple valence states. One of the more important ones for water treatment is the manganese in the +2 oxidation (Mn II) state as an ion in solution. This form, when oxidized in water systems, forms manganic dioxide, which is responsible for the poor aesthetic quality of water which gives the brown or blackish color and other undesirable effects such as piping deposits in the distribution systems. To address this, manganese (II) can be oxidized to insoluble manganic dioxide ( $\text{MnO}_2$ ) and removed subsequently by a clarification process.

Oxidation to more insoluble forms can be achieved by a combination of the right water quality conditions using aeration, permanganate compounds, chlorine dioxide, or ozone. Chlorine and ozone are not recommended as chemical storage and application is more challenging than aeration and permanganates.

### **TOC Jar Testing**

JVA developed a testing plan and bench-scale testing (i.e. jar testing) was performed at the MCB WTP on April 23 and 24, 2019, to gain preliminary insight into the performance of three coagulants,

- FilterX
- SumaChlor
- Aluminum sulfate (Alum).

SumalChlor and FilterX were chosen for jar testing because they are two proprietary polyaluminum chlorides (PACs) that are frequently used in membrane filtration applications. PACs are a range of inorganic polymers which are characterized by their percent alumina ( $\text{Al}_2\text{O}_3$ ) and their basicity. aluminum chlorhydrate (ACH) is a special species of PAC which has the highest concentration of alumina and basicity available. PACs are advantageous as compared to alum or iron salts due to the chemical properties; they are pre-neutralized and have a higher charge





density than traditional coagulants and coagulate dissolved constituents through charge neutralization. Flocs formed by coagulation using PACs typically are tight/ pin flocs which are desirable in membrane applications.

Aluminum sulfate (alum) was also selected for jar testing as it is a readily available coagulant and is common in coagulant applications for municipal drinking water systems. This coagulant is often very cost effective as compared to proprietary coagulants. However, there are drawbacks to this chemical particularly for membrane filtration applications. Alum flocs are typically larger and less dense than PAC flocs, which can negatively impact membrane filters and in extreme cases lead to membrane blinding. Additionally, alum consumes alkalinity and decreases pH, pH adjustment would likely be recommended with this pretreatment approach.

Jar testing consists of using a bench-scale mixing apparatus and 1 liter sample beakers to observe floc formation and measure water quality parameters. The water quality parameters measured included:

- pH;
- temperature;
- TOC (lab analysis);
- DOC (lab analysis); and
- UV absorbance at 254 nanometers (UVA).

The sampling testing procedure included the following steps:

1. one (1) liter sample;
2. addition of chemical coagulation;
3. contact mix;
4. 0.1 mg/L addition of 2.5% caustic soda to adjust the pH; and
5. samples were filtered using a 0.45 micron filter to determine DOC.

The following conditions were used for all bench scale tests:

- five minute mixing contact time;
- raw water sample initial pH measured at 6.05;
  - for the coagulants tested, an initial scenario was performed without pH adjustment and no floc was formed during the time periods even with high concentrations of coagulant;
  - subsequent samples and results provided below demonstrated floc formation with pH adjustment;
- coagulation chemical doses increased at a rate of 5 mg/L; and
- after coagulation chemical doses, 0.1 mg/L of 2.5% caustic soda was added to control pH during mixing contact time after one minute.

Raw water TOC concentrations during jar testing were higher than those observed in the historical blended source water data. Initial UVA measurements correlated to a TOC concentration of 4.44 mg/L. Lab analysis reported a TOC concentration of 4.3 mg/L. DOC concentration from the laboratory analysis was 3.7 mg/L.

Based on input from the proprietary chemical manufacturers (SumaChlor and FilterX) the pH for optimal coagulation ranges from 7 to 8 s.u. range. The optimum pH range for alum coagulation is 6.3 to 6.8 and is heavily dependent on temperature. For subsequent trials, pH was adjusted consistently across all samples by adding 0.1 mg/L of 2.5 percent caustic solution to each sample after approximately one minute of mixing. Floc was observed



to immediately form for both FilterX and SumalChlor. Alum formed a floc as well but the required contact time was longer. Table 9 shows an overview of coagulant jar testing results.

**Table 9. Jar Testing Summary**

Alternative	Mixing Contact Time	Chemical Doses Tested and Sent for TOC/DOC Analysis (mg/L)	pH	Floc Formation	TOC (mg/L)	DOC (mg/L)	Observations
FilterX	5 min	5	4.36	No	4.0	4.0	No floc formation
	5 min	10	4.31	Yes	3.7	3.8	Immediate floc formation following pH adjustment; fast settling; slightly fluffy floc
	5 min	20	4.12	Yes	2.8	2.7	Immediate floc formation following pH adjustment; fast settling; slightly fluffy floc
SumalChlor	5 min	5	4.51	No	4.3	3.9	No floc formation
	5 min	10	4.32	Yes	3.6	3.6	Immediate floc formation following pH adjustment; fast settling; slightly fluffy floc
	5 min	20	4.27	Yes	2.8	2.7	Immediate floc formation following pH adjustment; fast settling; slightly fluffy floc
Alum	5 min	12.9	5.92	No	4.3	3.9	No floc formation
	5 min	38.7	5.96	Yes	3.5	2.2	Slight floc formation, smaller floc particles, long reaction time required for floc, slow settling
	5 min	77.4	6.01	Yes	3.5	1.5	Slight floc formation, smaller floc particles, long reaction time required for floc, slow settling

Based on observational and analytical results, FilterX and SumalChlor performed similarly. Both coagulants formed an immediate floc following a slight pH increase and both flocs settled quickly at similar rates. Neither chemical formed a floc at the low dose point of 5 mg/L. Alum floc observation required the full five-minute mixing time. Additionally, the settling rate for alum was longer than either FilterX or SumalChlor. One observation of note is that both the, FilterX and SumalChlor increased the UVA following chemical dosing for both pre- and post-filtration



samples and absorbance increased with an increased dose. Alum decreased UVA as expected in sampling. In theory, the FilterX and SumalChlor should also decrease UVA.



Figure 5. ACH Bench Testing

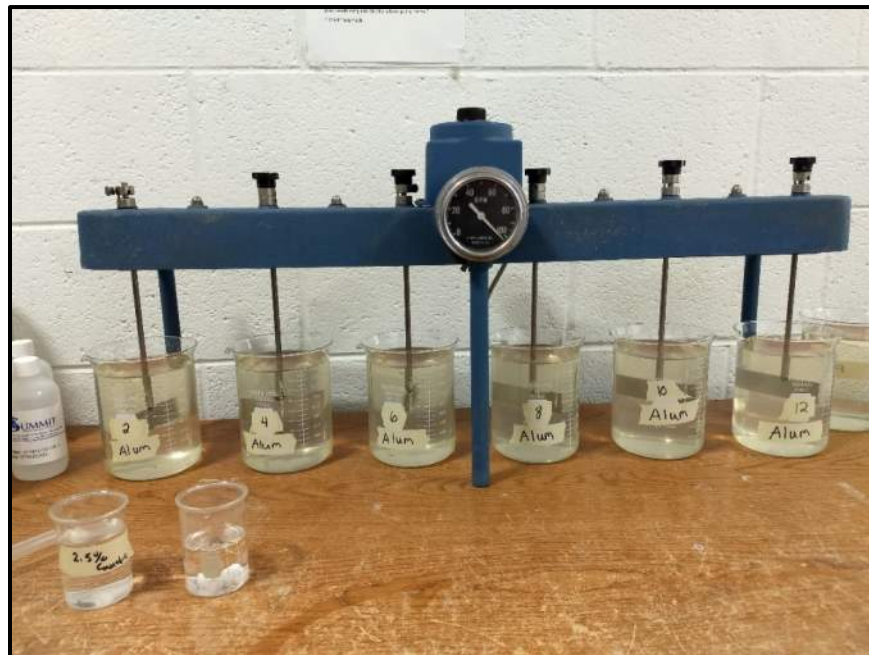


Figure 6. Alum Bench Testing

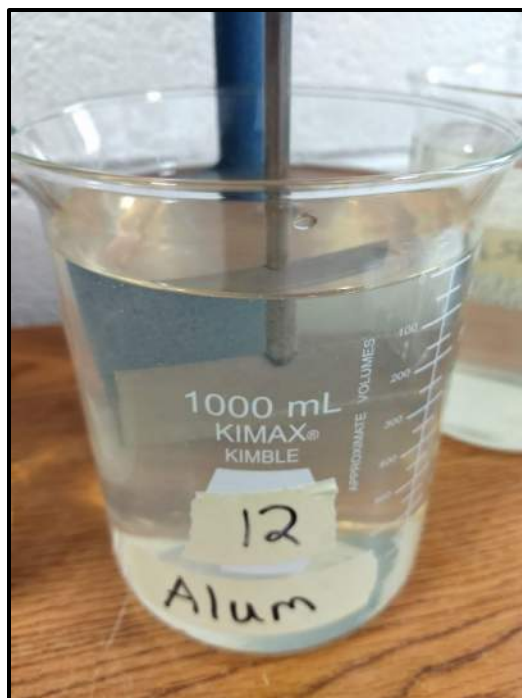


Figure 7. Floc Formation with Alum dosing 77.4 mg/L and pH adjustment

Results from the jar testing were inconsistent with the anticipated results so follow up investigations were conducted to better understand the coagulant chemistry and plan appropriately for preliminary design. The low removal efficiencies for both FilterX and SumalChlor were of particular concern. After discussions with the manufacturer, it is likely that the jar testing coagulant dose was not high enough to optimize floc formation and ultimately TOC/DOC removal. At higher doses of these coagulants more TOC/DOC removal is anticipated.

SumalChlor and FilterX are proprietary chemicals which means that standard dosing relationships are challenging to develop independently. However, since the chemicals are similar in chemical makeup, it is assumed for preliminary evaluation purposes that the dosing relationship should be comparable. Discussions with the SumalChlor manufacturer indicate that dosing is heavily dependent on source water quality and factors determining dosing include turbidity, pH, temperature, and the electro-chemistry of the organic matter. However, SumalChlor is used at a similar facility with comparable water quality characteristics and has been used as a surrogate to approximate the preliminary dosing required for the preliminary design. The ratio of SumalChlor to TOC at this facility is 5.7 mg/L SumalChlor to 1 mg/L TOC. At 4.44 mg/L source water TOC the theoretical target dose is 25 mg/L. For preliminary planning purposes, this relationship has been used to develop anticipated sizing. During the design phase, follow up jar testing is recommended to confirm dosing.

#### **TOC Pretreatment Preliminary Design Calculations**

A desktop evaluation was completed to determine the projected chemical system sizing to achieve removal of TOC.

Based on the preliminary jar testing results, performance of FilterX and SumalChlor were most effective and very similar. For preliminary design sizing calculations, the relationship between SumalChlor and TOC is used to approximate dosing. However, the FilterX relationship is anticipated to be similar. More thorough dosing information will be discussed with the selected chemical manufacturer and potentially follow up jar testing will be conducted during the design process to confirm the preliminary calculations.



The recommended ratio to remove 1 mg/L of TOC is 5.7 mg/L of SumalChlor. At the TOC design conditions of 2.6 mg/L TOC, the required dose to effectively remove the source water TOC is approximately 15 mg/L SumalChlor. The pretreatment systems will be sized for buildout conditions as chemical metering equipment has a significant turndown ratio and is anticipated to be able to meet current operations with similar equipment. However, during design this assumption will be confirmed. The preliminary design criteria is presented in Table 10.

**Table 10. Coagulant System Design Criteria at 2.0 MGD WTP Capacity**

Parameter	Value
Dose	15 mg/L
Chemical Feed Rate	0.93 gph
15 day Chemical Storage	335 gallons
Mixing	Inline mixing required

The advantages and disadvantages of each of the coagulants evaluated are summarized in Table 11.

**Table 11. Coagulant Alternatives – Advantages and Disadvantages**

Alternative	Advantages	Disadvantages
FilterX	<ul style="list-style-type: none"> <li>Consistent with operation at Meridian Lake Park WTP</li> <li>Minimal contact time required for coagulation</li> <li>Pin floc formation, reduces membrane binding</li> <li>Suitable for use with most membrane systems</li> <li>Less pH depression than Alum</li> <li>Reduced chemical sludge volumes as compared to alum</li> <li>Better performance in cold water as compared to Alum</li> </ul>	<ul style="list-style-type: none"> <li>High chemical cost relative to alum</li> <li>Optimizing dosing can be more challenging for proprietary chemicals</li> <li>Current supplier for the MLP WTP located in California</li> </ul>
SumalChlor	<ul style="list-style-type: none"> <li>Minimal contact time required for coagulation</li> <li>Suitable for use with most membrane systems</li> <li>Less pH depression than Alum</li> <li>Reduced chemical sludge volumes as compared to alum</li> <li>Better performance in cold water as compared to Alum</li> <li>Pin floc formation, reduces membrane binding</li> <li>Least freight sensitive due to high alumina concentration (ACH)</li> </ul>	<ul style="list-style-type: none"> <li>High chemical cost relative to alum</li> <li>Optimizing dosing can be more challenging for proprietary chemicals</li> </ul>
Alum	<ul style="list-style-type: none"> <li>Least expensive chemical</li> <li>Showed best TOC removal during jar testing</li> </ul>	<ul style="list-style-type: none"> <li>Longer contact time required</li> <li>High chemical doses require larger storage and dosing equipment</li> <li>Consumes alkalinity and impacts pH</li> <li>Often employed with a sedimentation step</li> <li>Larger floc formation can impact membrane run time and backwashing frequency</li> </ul>

Based on the preliminary evaluation, either SumalChlor or FilterX are recommended for use at the new MCB WTP. Further evaluation and optimization surrounding these chemicals will be conducted during future design phases.

**Iron and Manganese Pretreatment Preliminary Design Calculations**

Jar tests for the reduction of iron and manganese were not completed, however published literature provides industry accepted dosing rates to reduce the constituents of concern. According to the stoichiometry, the potassium permanganate dose required for oxidation is 0.94 mg/mg iron and 1.92 mg/mg manganese; these



values are typically approximated at 1 mg/L and 2 mg/L, respectively. In practice, the actual amount of permanganate used for the oxidation may be higher than the published values. The oxidation time varies and should be confirmed through jar testing. The CDPHE requires 30 minutes of contact time unless results indicating a lower contact time are provided for the specific source water. For preliminary design purposes the conservative 30 minute contact time requirement was used. Table 12 shows the preliminary criteria for iron and manganese removal at buildout conditions.

**Table 12. Permanganate Pretreatment System Design Criteria at 2.0 MGD WTP Capacity**

Parameter	Value
Concentration of Solution	3%
Dose	11.3 mg/L
Chemical Feed Rate	0.93 gph
Contact Volume Required	42,000 gallons
15 day Chemical Storage	335 gallons
Contact Tank Mixing	Required (or inline mixer)

Based on a review of the source water concentrations for iron and manganese, chemical pretreatment is not recommended with the new MCB WTP at this phase of the project. However, space will be provided in the new building to allow for implementation of an iron and manganese removal process in the future if appropriate.

## MEMBRANE FILTRATION

The existing water treatment plant filtration system operates at maximum conditions during peak water production days, which increases risk to the system during peak demand conditions. Additionally, the system is aged and requires significant maintenance activities and operator attention. Previous evaluations from HDR and Stantec have evaluated approaches to expand, replace, and improve the existing filtration system. The District determined that installing membrane filtration is the preferred option. Membrane filtration has numerous benefits over conventional filtration including smaller footprint, improved finished water quality, and increased pathogen removal credit.

There are two main types of membrane filtration systems: pressurized and submerged. Submerged membranes are typically only cost effective at large treatment facilities (minimum of 5 MGD) with poor source water quality and high solids concentrations. Submerged membranes require larger capital cost associated with construction, footprint, and ancillary equipment and typically require more challenging operation and maintenance. Therefore, pressurized membranes are the preferred membrane choice for the MCB WTP.

Pressurized membranes are mounted in a housing and feedwater is normally pumped through the membranes via an on skid feed pump. Housing is typically a cartridge to allow for cartridge replacement and repair. Pressurized membrane technology is relatively consistent across manufacturers and most manufacturers can provide customizable skids depending on the owner's preferences for ancillary equipment, capacity, and operational flexibility. The preliminary design criteria for the membrane system is shown in Table 13. It is important to note the number of skids and overall system is flexible based on preference and manufacturer recommendations as design proceeds. The District expressed the desire for 3 membrane skids with extra blank spaces for additional membranes in the future. The initial capacity of the skids will be 347 gpm (0.5 MGD) with additional cartridge space to accommodate 69.4 gpm (0.1 MGD) per skid, which can be added in the future.



**Table 13. Membrane System Design Criteria**

Design Criteria	Value
Design Capacity	1,042 gpm
Buildout Design Capacity – Future <sup>1</sup>	1,389 gpm
Membrane System Type	Skid mounted (all equipment on skid)
Number of Membrane Skids	3 (future skid to be provided at later date)
Initial Capacity per Skid	347 gpm
Max Capacity per Skid	417 gpm

<sup>1</sup>WTP design will include provisions for future skid installation to accommodate buildout design capacity.

Preliminary quotes were solicited from membrane manufacturers using the source water quality data and preliminary design criteria. Quotes were received from Evoqua, FilterTech, Pall, WesTech, and Suez on April 22, 2019. Quotes were evaluated for completeness, system reliability and effectiveness, manufacturer technical capability, and customer service. In addition to preliminary quotes, District staff attended site visits for all of the manufacturers excluding the Pall system, due to their familiarity with this system. These visits allowed operations staff an opportunity to observe the equipment at full-scale operation and get input from facility staff regarding equipment operation and manufacturer customer service. Table 14 below shows the advantages and disadvantages of membrane manufacturers based on the quote evaluation and site visits.

**Table 14. Membrane Manufacturer Comparison**

Alternative	Advantages	Disadvantages
Evoqua	<ul style="list-style-type: none"> <li>Experienced manufacturer with numerous installations in Colorado and nationally</li> <li>Experienced technical staff</li> <li>Reported to have good customer service</li> <li>Average price</li> <li>Uses raw water for backwashing and no backwash pump is required</li> </ul>	<ul style="list-style-type: none"> <li>Inconsistent with the MLP WTP system</li> <li>Potential for higher costs for specialized packages</li> </ul>
Suez	<ul style="list-style-type: none"> <li>Experienced manufacturer with numerous installations in Colorado and nationally</li> <li>Experienced technical staff</li> <li>Reported to have good customer service</li> <li>Average price</li> </ul>	<ul style="list-style-type: none"> <li>Inconsistent with the MLP WTP system</li> <li>Potential for higher costs for specialized packages</li> </ul>
WesTech	<ul style="list-style-type: none"> <li>Experienced manufacturer with numerous installations nationally</li> <li>Strong desire to have an installation in Colorado</li> <li>Experienced technical staff (although maybe less membrane focused than others)</li> <li>Anticipate good customer service for first Colorado install</li> <li>Competitive pricing</li> <li>Flexibility on membrane supplier</li> </ul>	<ul style="list-style-type: none"> <li>No installations in Colorado</li> <li>Membranes are produced by other vendors</li> <li>Inconsistent with the MLP WTP</li> </ul>
FilterTech	<ul style="list-style-type: none"> <li>Small manufacturer with headquarters in Grand Junction</li> <li>Hands on customer service</li> <li>Lowest price</li> </ul>	<ul style="list-style-type: none"> <li>Limited experience compared to other manufacturers at this scale</li> <li>Fewer technical resources on staff</li> <li>Inconsistent with the MLP WTP</li> <li>Equipment appeared less robust as compared to others during plant tour</li> </ul>





Alternative	Advantages	Disadvantages
Pall	<ul style="list-style-type: none"> <li>• Experienced manufacturer with numerous installations in Colorado and nationally</li> <li>• Pall system installed at MLP WTP</li> </ul>	<ul style="list-style-type: none"> <li>• Most expensive</li> <li>• Recent negative customer service experiences</li> </ul>

## CORROSION CONTROL STRATEGY

In 2017, HDR conducted a study for the District to evaluate concerns at the wastewater treatment plant (WWTP) for elevated levels of copper in the effluent after a new draft discharge permit was issued. The WWTP has a copper effluent limitation of 11 micrograms per liter (ug/L) and copper concentrations from the WWTP effluent range from 9.8 to 17.6 ug/L. It was theorized in the study that the copper in the WWTP effluent are likely due to slight corrosivity of the water leaving the WTP and entering the distribution system causing copper to release from plumbing fixtures and distribution pipes.

Historical data from the WTP showed finished water pH and alkalinity variability throughout the year. The average pH of water leaving the WTP typically between 7.1 and 7.9, which is low enough to induce copper corrosion in the Mt Crested Butte distribution system, particularly at the concentrations of the WWTP discharge permit. Copper concentrations in the distribution system ranged from 70 to 116 ug/L. The maximum contaminant level (MCL) set forth by the Environmental Protection Agency (EPA) for copper in drinking water is 1,300 ug/L. Although the copper concentrations are well below the drinking water MCL, copper levels within the distribution system are preventing the WWTP from meeting discharge limitations.

The HDR study reports that improved pH control may reduce the corrosivity of the finish water with respect to copper. However, it is important to note that the decrease in copper concentrations to control for the WWTP effluent limits are significantly lower than drinking water standards. pH adjustment may not be able to control concertation of copper at that magnitude in the finished water.

The District conducted a pilot study to evaluate the use of pH control on copper concentrations. The pilot study was focused on adjusting the finished water pH to 7.5-7.8 and avoiding pH swings larger than 0.5 in an effort to prevent copper corrosion and reduce copper concentrations in the distribution system. The District has decided to move forward with the addition of caustic to the finished water for copper control after seeing the favorable results of the pilot study. Caustic addition to finished water with a redundant system will also be incorporated into the design of the MCB WTP. The District is now using the pilot study to investigate the effects of the addition of phosphoric acid to finished water for copper control and a chemical addition system for phosphoric acid may need to be considered during design.

## DISINFECTION AND CLEARWELL

An 80,000 gallon baffled clearwell is located below the existing filter treatment building, which is currently used to provide chlorine contact time (CT) volume for disinfection credits. The building is currently slated to be repurposed into a new vehicle storage area and/or maintenance area. Preliminary evaluations have indicated several options for providing CT volume including reusing the existing clearwell. However, there are several unknowns associated with reusing the existing clearwell and evaluations and inspections for structural integrity, load bearing capability of the slab, and existing penetration water tightness are required. In addition, the garage floor would require coating and annual maintenance and inspection to prevent contamination. Due to the challenges associated with reusing the existing clearwell, constructing a new clearwell could prove a more feasible option. The existing clearwell will be evaluated as an alternative to be repurposed for backwash waste storage.



Based on the preliminary information, three alternatives to provide chlorine contact volume were evaluated:

1. Constructing an above grade steel clearwell (as proposed in the 2018 HDR Report)
2. Constructing a below grade clearwell under the new WTP building
3. Reusing the existing clearwell

Required chlorine CT was evaluated for the 1.5 MGD design condition as well as the 2.0 MGD buildout condition. The intent of the design is to provide sufficient volume for build-out conditions and avoid future expansion of ancillary treatment equipment. Per the Long Term 2 Enhanced Surface Water Treatment Rule, water systems are required to achieve 3-log and 4-log removal of *Giardia* and virus, respectively. The membrane filtration system achieves 3-log removal for *Giardia*. Chlorine is required for the remaining 4-log virus inactivation credit. Therefore, the clearwell will be sized to provide adequate volume to account for 4-log inactivation of virus.

In addition to disinfection at the WTP, public water systems are required to provide a disinfection residual in the finished water leaving the plant to inhibit microbial regrowth in the distribution system. The District currently targets a residual of 1.2 mg/L to 1.5 mg/L. The new design will target a chlorine residual of 1.0 mg/L leaving the WTP. Based on information from the District, chlorine residual at the farthest downstream customer is reported at 0.8 mg/L. This indicates that a reduction in chlorine residual may be appropriate and may reduce the risk of DBP formation in the distribution system. The District may choose to seasonally adjust chlorine residual based on peak versus shoulder season demands.

Several options were considered to minimize the clearwell volume while meeting virus inactivation requirements. Installing additional baffles in the clearwell or inlet and outlet diffusers would improve overall disinfection and minimize the required volume. An unbaffled clearwell has a baffling factor of 0.1 while a baffled clearwell with inlet and outlet diffusers and inter basin baffles can achieve a baffling factor of 0.5. An analysis of clearwell volumes was performed using baffling factors from 0.1 to 0.5 at the buildout capacity of 2.0 MGD. Review of historical raw water temperature data indicated that the low water temperature was 1.0 degrees Celsius and the maximum raw water pH value was 9.0. These values were used to determine the minimum clearwell volume required to achieve a 4-log virus inactivation using various baffling factors while targeting a chlorine residual concentration of 1.0 mg/L. The results of this analysis are summarized in Table 15 and calculations are provided in Attachment B. The volume required for an unbaffled clearwell is approximately 162,000 gallons, while the volume required for a well baffled clearwell is approximately 33,000 gallons. Adding inlet and outlet diffusers would most likely produce a baffling factor of 0.3, which translates to a 54,000 gallon clearwell required for the 2.0 MGD buildout capacity. To achieve redundancy, a second clearwell or a way to isolate portions of the clearwell is recommended. The District prefers also to have the capability to drain the clearwell.

**Table 15. Clearwell Volumes**

Baffling Factor	Clearwell Volume	
	1.5 MGD	2.0 MGD
0.1	120,900	162,000
0.3	40,300	54,000
0.5	25,000	33,000

The existing clearwell, which is 9.0 feet deep, has a maximum operating depth of 7.5 feet equating to an operating volume of approximately 80,000 gallons. The baffling layout allows for the clearwell to achieve a baffling factor of 0.3. Based on the volume requirements in Table 15, the baffled, existing clearwell can meet the requirements at both the design and buildout scenario without modifications if the maximum volume is utilized. The existing clearwell system does not provide redundancy or a way to isolate portions of the clearwell.



Each of the alternatives are summarized and compared in Table 16 and Table 17. Reusing the existing clearwell is anticipated to be the lowest capital cost option as it requires the lowest amount of additional construction. However, the long-term O&M costs have the potential to become high in the event that the clearwell needs to be repaired or if the finished water is contaminated from the workspace above. There are also unknown factors associated with integrity of the clearwell. A new below grade clearwell located beneath the new treatment building would have the highest capital cost but also has the smallest footprint. No additional pumping is anticipated and operations would be similar to what they are currently at the existing MCB WTP. A new above grade clearwell is anticipated to be less expensive than a below grade clearwell but has the potential for a large footprint and may require pumping from the treatment building. Additionally, the above grade clearwell could potentially be affected by large temperature swings associated with snow loading, ice damming and melting in the winter and sun exposure in the summer. Based on these considerations, it is recommended that a new clearwell be located beneath the new treatment building to minimize the site footprint, limit the effect of weather events on operation and maintenance, decrease potential for contamination, and maintain congruency with current operations.

**Table 16. Clearwell Alternatives**

Alternative	Minimum Baffling Factor Required	Maximum Contact Volume (gal)	Minimum Contact Volume (gal)	Capital Cost
Reuse Existing Clearwell	0.3	80,000	37,000	\$
New Below Grade Clearwell	0.1-0.3	162,000	33,000	\$\$\$
Above Grade Clearwell	0.1	155,000	51,000	\$\$

**Table 17. Clearwell Alternatives – Advantages and Disadvantages**

Alternative	Advantages	Disadvantages
Reuse Existing Clearwell	<ul style="list-style-type: none"> <li>Consistent with current operation</li> <li>Lowest construction cost</li> </ul>	<ul style="list-style-type: none"> <li>Baffling Factor must be increased</li> <li>Clearwell and slab must be assessed for structural integrity</li> <li>All penetrations into slab must be watertight</li> <li>Potential for contamination is high if the existing building is reused as a shop space.</li> </ul>
New Below Grade Clearwell	<ul style="list-style-type: none"> <li>Comparable to current operation</li> <li>Reduced contact volume</li> <li>Smallest site footprint</li> </ul>	<ul style="list-style-type: none"> <li>Highest construction cost</li> </ul>
Above Ground Clearwell	<ul style="list-style-type: none"> <li>Easy to access and maintain</li> </ul>	<ul style="list-style-type: none"> <li>Potential for large footprint</li> <li>May require pumping from filters, depending on location</li> <li>Potential O&amp;M effects from maintenance</li> </ul>

Primary disinfection is provided by a calcium hypochlorite tablet disinfection system which could be reused. The design parameters for the tablet chlorination system are provided in Table 18. The unit includes an integrated solution tank with level control, chlorinator, centrifugal pump with a variable frequency drive and a flow meter. This system was installed in 2016 and can be reused in the new treatment building, as it has enough capacity to feed 1.0 mg/L at the buildout capacity of 2.0 MGD. A temporary disinfection system will be required during construction. A control loop will be added to flow pace the chlorine feed system based on the produced water flow rate and chlorine concentration from analyzer information in the clearwell.





**Table 18. Calcium Hypochlorite Tablet Disinfection System Design Parameters**

Parameter	Value
Quantity	1
Manufacturer	Accu-Tab
Model	3150
Design Feed Rate	1.04 lbs/hr
Minimum Feed Rate	1 lbs/hr
Maximum Feed Rate	12 lbs/hr
Source Water Chlorine Demand (Design)	1.0 mg/L
Source Water Chlorine Demand (Minimum)	0.8 mg/L
Source Water Chlorine Demand (Maximum)	1.5 mg/L
Required Chlorine Residuals	1.0 mg/L

As an alternative to reusing the existing tablet chlorination system for primary disinfection, liquid sodium hypochlorite could be used as an alternative. The use of sodium hypochlorite will be required for membrane filtration to perform monthly CIP (clean-in-place) cycles and daily chemical rinses of the membranes. Given that sodium hypochlorite degrades over time, monthly delivery is required unless an on-site generation system is installed. Many mountain communities use onsite generation systems in leu of monthly deliveries, which may not be possible during winter months. Sodium hypochlorite could be used to replace the existing calcium hypochlorite tablet feeder system as the primary disinfection approach. The tablet feeder could remain onsite as a redundant system. The disinfection system design and selection will be further evaluated during the 30 percent design phase.

Filtrate from the existing Trident system flows through a UV disinfection system prior to chlorine injection. The existing UV system was designed to provide additional log inactivation for *Giardia*. Given that the proposed membrane filtration system can achieve adequate removal of *Giardia*, the UV system will not be required for the WTP improvements and can be abandoned.

## FINISHED WATER PUMPING

The existing WTP is equipped with three constant speed vertical turbine finished water pumps. The finish water pumps are located above the clearwell and lift water from the clearwell to two potable water storage tanks located approximately 1 mile south of the WTP through a 12-inch transmission line. The finished water pumps were installed when the WTP was originally built. The pumps were replaced in 2014 and the motors were serviced in 2018. The maximum pumping capacity is approximately 1,100 gpm (1.6 MGD) and the firm pumping capacity is 734 gpm (1.1 MGD).

The finish water pumps will be upgraded to provide finished water to the distribution system and storage tanks. The finished water pumps will operate similarly to their current operation by pumping finished water to the storage tanks based on storage tank level and water level in the clearwell. A potential pump configuration could be to install three 0.50 MGD pumps with space to add a fourth pump in the future to meet the buildout capacity of 2.0 MGD. A summary of the potential preliminary design criteria for this configuration is provided in Table 19.



**Table 19. Finish Water Pumps Design Criteria**

Parameter	Value
Potential Pump Configuration	3+1
Pump Type	Vertical Turbine
Individual Pump Capacity	0.50 MGD
Design Flow Rate (pump system)	1.5 MGD
Total Dynamic Head	280 feet
Motor Horsepower (each)	66 HP

## RESIDUALS MANAGEMENT

Backwash water from the existing treatment trains is gravity fed through an 18-inch PVC line to the 500,000 backwash pond located to the north west of the existing WTP building. The backwash pond was relocated in 2015 and includes a drain to sanitary sewer and a decant line that feeds back into the pre-sedimentation inlet line. There are no flow meters or pond liner installed. According to the 2017 Facility Assessment Memo, the backwash pond has never been dredged and there is a significant sludge layer taking up volume in the pond.

The existing residuals management infrastructure was evaluated to determine the capacity of the existing system. The existing treatment units are backwashed based on a turbidity threshold of the finished water and produce between 1.7 and 2.6 MG of backwash water per year. Flush water, which has a low solids concentration, is also directed to the backwash pond and the existing WTP produces between 4.7 and 6.6 MG of flush water per year.

Membrane filter backwash cycles typically occur based on operation time versus finish water turbidity levels. To determine the approximate volume of backwash generated from membrane filtration, it was assumed that membrane filters will generate a daily backwash volume of approximately 5 percent of forward flow. At the buildout capacity of 2.0 MGD, this equates to up to 100,000 gallons of backwash waste per day, or 36.5 MG of backwash waste per year assuming the maximum forward flow capacity is maintained for 365 days of the year. Decant from the backwash pond can be recycled back to the head of WTP at a rate of 10 percent of the instantaneous forward flow. Therefore, at the buildout capacity of 2.0 MGD, up to 200,000 gallons of water can be recycled per day, which exceeds the estimated maximum backwash production. However, this is a conservative estimation since it is extremely unlikely for the WTP to operate at the maximum capacity for 365 days of the year.

The solids present in the backwash stream were estimated based on totaling the turbidity contributions from the source water. Raw water total suspended solids (TSS) concentrations, which is used to estimate solids generation rates, were not available at the time of this evaluation, but are being collected and will be used during the 30 percent design. Therefore, it was assumed that the ratio of TSS to NTU relationship was 1.25, which is a typical value seen in raw surface water based on guidance from MWH’s “Water Treatment Principals and Design”. In estimating solids generation, the source water turbidity was assumed to be completely removed, with all solids entering the backwash waste. This is a conservative assumption as the membranes are not 100 percent effective and there will be minor solids carryover in the filtrate. Using both average and maximum turbidity values, the membrane filters can generate an average of 2.9 pounds of dry solids per day, with a maximum daily dry sludge production of 15.6 pounds, assuming that all solids that are produced in the plant are captured in the backwash waste stream. This equates to an average annual production of 1,100 pounds of dry sludge per year.



**Table 20. Backwash Pond Sizing Alternatives**

Residual Storage Time	2% Sludge Volume (gal)	Pond Volume (gal)	Footprint (SF)
1-year	32,000	160,000	2,400
3-years	96,000	480,000	7,200
5-years	159,000	795,000	11,800

Based on the sludge production estimations, the existing backwash storage pond does have enough volume to accommodate backwash from a membrane filter plant if the pond is dredged every 2 years. In addition, decant from the pond would be pumped back to the head of the WTP at a continuous rate. Flow meters would be placed on the decant line to ensure that only 10 percent of forward flow is recycled.

Another option for residuals management would be to use the existing 80,000 clearwell for backwash water storage. The clearwell could be equipped with a sump pump to convey the residuals from the bottom of the clearwell to sanitary sewer and the decant could be recycled to the head of the plant. The benefit of this process is that it eliminates the needs for the construction of a new pond. The existing baffles would need to be removed to promote settling. The drawback of this option is that there is potential of sending high TSS water to the head of the plant. In addition, if the WTP residuals were to ever become contaminated with high metals or other radionuclides, which is common in surface waters after large fires, these constituents will end up impacting the WWTP. Table 21 below shows the advantages and disadvantages associated with each alternative.

**Table 21. Residuals Alternatives – Advantages and Disadvantages**

Alternative	Advantages	Disadvantages
Reuse Existing Backwash Pond	<ul style="list-style-type: none"> <li>Consistent with current operation</li> <li>Lowest capital cost</li> <li>Operational flexibility</li> </ul>	<ul style="list-style-type: none"> <li>Pumping may be required, based on location of new treatment building</li> <li>Requires dredging every 2 years</li> <li>High annual O&amp;M cost</li> </ul>
New Backwash Pond	<ul style="list-style-type: none"> <li>Low O&amp;M</li> <li>Operation flexibility</li> </ul>	<ul style="list-style-type: none"> <li>Highest capital cost</li> <li>Large footprint</li> <li>May require pumping</li> </ul>
Reuse Existing Clearwell	<ul style="list-style-type: none"> <li>Smallest footprint</li> </ul>	<ul style="list-style-type: none"> <li>Requires daily</li> <li>Potential for impacting WWTP operation</li> <li>Operationally intensive</li> <li>High O&amp;M</li> </ul>

## INSTRUMENTATION AND CONTROLS

Instrumentation and Control for the new WTP will be developed in greater detail as the process design processes. In general, the water treatment plant will be fully automated. The new facility will have a Supervisory Control and Data Acquisition (SCADA) to control processes locally and monitor remote operations such as the East River Pump Station. The District’s preference is for Allen Bradley equipment; however, other alternatives will be considered as cost saving opportunities during the design. The District desires to have video capabilities at the WTP and ERPS. The District would also like the MCB WTP to be the main communication hub. Currently, the MLP WTP is the main hub for communications and the radio repeater station and remote terminal units (RTU) are all located at the MLP WTP.

The proposed membrane filtration skids are packaged systems. Each unit has an individual PLC which will connect to the master PLC for the membrane system. The facility will be using standard industry control practices incorporating raw and finished flow monitoring for chemical feed



## STRUCTURAL AND ARCHITECTURAL CONSIDERATIONS

The Town of Mt Crested Butte has adopted the 2012 versions of the International Building Code and International Energy conservation Codes. This has an impact on construction materials and cost as the masonry construction used for the Water Treatment Plant building do not meet the requirements of the 2012 International Energy Conservation Code. The current approach for the WTP repurposes the existing building for maintenance and vehicle storage while constructing a new facility for the water treatment plant processes. As the design proceeds to 30 percent, options for repurposing the existing facility and the sizing of the new water treatment plant building will be further evaluated.

For the new water treatment plant building, masonry construction is likely to be employed. Masonry construction is an excellent choice for building materials at water treatment facilities due to its durability. Walls would consist of concrete masonry units, air and vapor barrier, insulation, and a 4-inch masonry veneer. The roof could be constructed from precast concrete double tees or wood trusses similar to the existing treatment plant building.

The architectural design of the new water treatment plant building will be further developed after preliminary design. However due to the proximity to residential neighborhoods, the exterior finishes are considered a priority for this structure. Based on initial conversations with District staff, key design considerations for the new structure include the following

- Aesthetically pleasing and fits in the community
- Functional workspace: lab (state certified lab not required), kitchen, breakroom, SCADA room, and office space
- Chemical Systems: Appropriate chemical storage, spill prevention, containment, and bulk chemical delivery
- Access Drive: A u-shaped driveway is preferred to connect Prospect and Gothic Road to provide easy access for deliveries
- Heat: Use of natural gas with boilers and potentially solar water heat panels should be investigated
- High Efficiency: windows, LEDs, in-floor heat, PV solar panels, and robust insulation
- Fire suppression to be provided
- Snow: snow storage, roof shedding, and winter maintenance are a high priority
- Natural light: light wells and windows to take advantage of view for offices and break room

## EMERGENCY POWER PRELIMINARY DESIGN SUMMARY

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The CDPHE design criteria states that treatment facilities must have provisions for standby power or alternate water supply so that water may be treated and/or pumped to the distribution system during power outages to meet the average day demand. The average day demand on the system from 2015 to 2018 was 326,000 gpd. The design criteria specifies for any pumping in the distribution system, that if the loss of primary power results in the inability to meet minimum service conditions a power supply must be provided from a standby or auxiliary source. Minimum service conditions require the provider to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. The normal working pressure in the distribution system must be at least 35 psi and should be approximately 60 to 80 psi. If standby power is provided by onsite generators or engines, the fuel storage and fuel line must be designed to protect the water supply from contamination. A minimum of 24 hours of operation capacity is required. Also, carbon monoxide detectors must be provided when generators are housed within pump stations. A diesel generator is the recommended back-up



power supply for the WTP and the pump station. Specific sizing of the generators will be included in later design phases.

## SUMMARY OF PROJECT PRELIMINARY DESIGN PARAMETERS

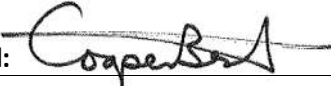
Based on the evaluation discussed above, the project components recommended improvements and major design components are shown in Table 22.

**Table 22. Design Recommendation Summary**

Process	Design Recommendation
<b>East River Pump Station</b>	
East River Intake and Pre-Sedimentation Pond	<ul style="list-style-type: none"> <li>• 24-inch diameter diversion culverts</li> <li>• Self-cleaning intake screens</li> </ul>
Wetwell Design	<ul style="list-style-type: none"> <li>• Sufficient pump suction submergence</li> <li>• Sufficient bay length and width</li> <li>• Hydraulic separation of pump inlets</li> <li>• Access hatch</li> <li>• Inlet pipe isolation valve</li> <li>• Pressure transducer &amp; overflow protection</li> <li>• Sump pump</li> </ul>
Pump Design	<ul style="list-style-type: none"> <li>• 3 vertical turbine pumps. 0.70 MGD each, 660 ft hydraulic head</li> <li>• Hydraulic Surge and High-Pressure Protection</li> </ul>
Instrumentation, Controls, and Communication	<ul style="list-style-type: none"> <li>• Wetwell overflow alarm and ultrasonic level transmitter</li> <li>• Pump flowmeter and pressure instrumentation</li> <li>• Flowmeter on combined discharge line</li> <li>• Surge tank pressure transducer or float (if applicable)</li> </ul>
Main Power Supply and Back-up Power	<ul style="list-style-type: none"> <li>• Upgrade existing transformer</li> <li>• Diesel generator</li> </ul>
<b>Raw Water Pipeline</b>	
Pipeline	<ul style="list-style-type: none"> <li>• Within 40ft USFS pipeline corridor</li> <li>• 12-inch DIP</li> <li>• Use open cut installation</li> </ul>
<b>Water Treatment Plant</b>	
Pre-Sedimentation Pond	<ul style="list-style-type: none"> <li>• No improvements needed</li> </ul>
Site Piping	<ul style="list-style-type: none"> <li>• Improvements to the source water blending configuration</li> <li>• Site piping and improvements as dictated by design</li> </ul>
Chemical Pretreatment	<ul style="list-style-type: none"> <li>• TOC removal through coagulation using SumalChlor or FilterEx</li> <li>• Space provisions for future iron and manganese chemical oxidation</li> </ul>
Membrane Filtration	<ul style="list-style-type: none"> <li>• 1,042 gpm skid mounted system</li> <li>• Skid system includes all components integral to membrane system function</li> <li>• Backwash system</li> <li>• CIP system</li> <li>• Disinfection credit: 3-log <i>Giardia</i> removal</li> </ul>
Copper Control Strategy	<ul style="list-style-type: none"> <li>• Revise design criteria based on results of HDR pilot testing</li> </ul>



Process	Design Recommendation
Disinfection and Clearwell	<ul style="list-style-type: none"> <li>• New 155,000 gallon below grade clearwell</li> <li>• Evaluate primary disinfection source during 30 percent design</li> <li>• Disinfection CT Target: 4-log virus inactivation</li> <li>• Residual target at 1.0 mg/L</li> </ul>
Finished Water Pumping	<ul style="list-style-type: none"> <li>• Finished water pumping design capacity: 1.5 MGD</li> <li>• Constant speed motors</li> <li>• Operation based on storage tank levels and membrane operation</li> <li>• Total dynamic head: 280 feet</li> </ul>
Residuals Management	<ul style="list-style-type: none"> <li>• Will continue to evaluate through 30 percent design</li> </ul>
Instrumentation and Controls	<ul style="list-style-type: none"> <li>• Ethernet to SCADA</li> <li>• Allen Bradley components</li> <li>• Improvements specified during design</li> </ul>
Emergency Power	<ul style="list-style-type: none"> <li>• Diesel generator</li> </ul>

Signed:   
 Cooper D. Best, P.E.

Copies to: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Attachment A – USFS Special Use Permit

Attachment B – Disinfection CT Calculations

# ATTACHMENT A

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# CATEGORICAL EXCLUSION REVIEW AND DECISION MEMO

Grand Mesa, Uncompahgre and Gunnison National Forests  
Gunnison Ranger District  
Gunnison, Colorado

**Date:** December 3, 2018

**Authorized Officer:** Matthew M. McCombs, Gunnison District Ranger

**Name of Project or Authorization:** Mt. Crested Butte Water & Sanitation District: Pump Station Replacement

**Location of Project:** Township 13S, Range 86W, Section 13, 6<sup>th</sup>PM.

## Project Description

The Gunnison Ranger District is proposing to authorize the Mt. Crested Butte Water and Sanitation District (Mt. CB District) to perform work to upgrade their aging infrastructure/facilities through major improvements and/or replacement. The work is necessary for the Mt. CB District to continue to provide a reliable water supply to their customers.

The planned improvements include:

1. **Diversion Culverts.** Replacement of the two, 30 inch diameter diversion culverts with two 24 inch diameter diversion culverts and associated appurtenances.
2. **Pump Forebay/Pre-Sedimentation Pond.** Replace the 0.2 acre pump forebay /pre- sedimentation pond with a new, 8 foot diameter concrete water distribution vault designed to stabilize flows entering the Mt. CB District's pump house. Construct a fence around the pond.
3. **Pump Station.** Replace the existing pump house structure in its entirety with a modernized pump station and associated facilities.
4. **Delivery Pipeline.** Construct a new, 16 inch diameter pipeline (approximately 2,600 feet) from the pump station that will deliver East River diversions to the Mt. CB District's pre-sedimentation pond that is located on the watershed divide separating the East River and Washington Gulch, near the Mt. CB District's existing water treatment plant. The pipeline will parallel the existing 8 inch diameter pipeline which is proposed to remain in place in order to provide redundancy in the water system should one pipe fail for any reason.
5. **Construction of the driveway access and parking area.** A new access road will be constructed to the new pumphouse. The parking area will be built to serve two vehicles that must visit the site periodically for operations and maintenance purposes. It will be sized for no more than at 1/10 of an acre. Two to four inches of imported gravel topping material may be used on the driveway and parking area.

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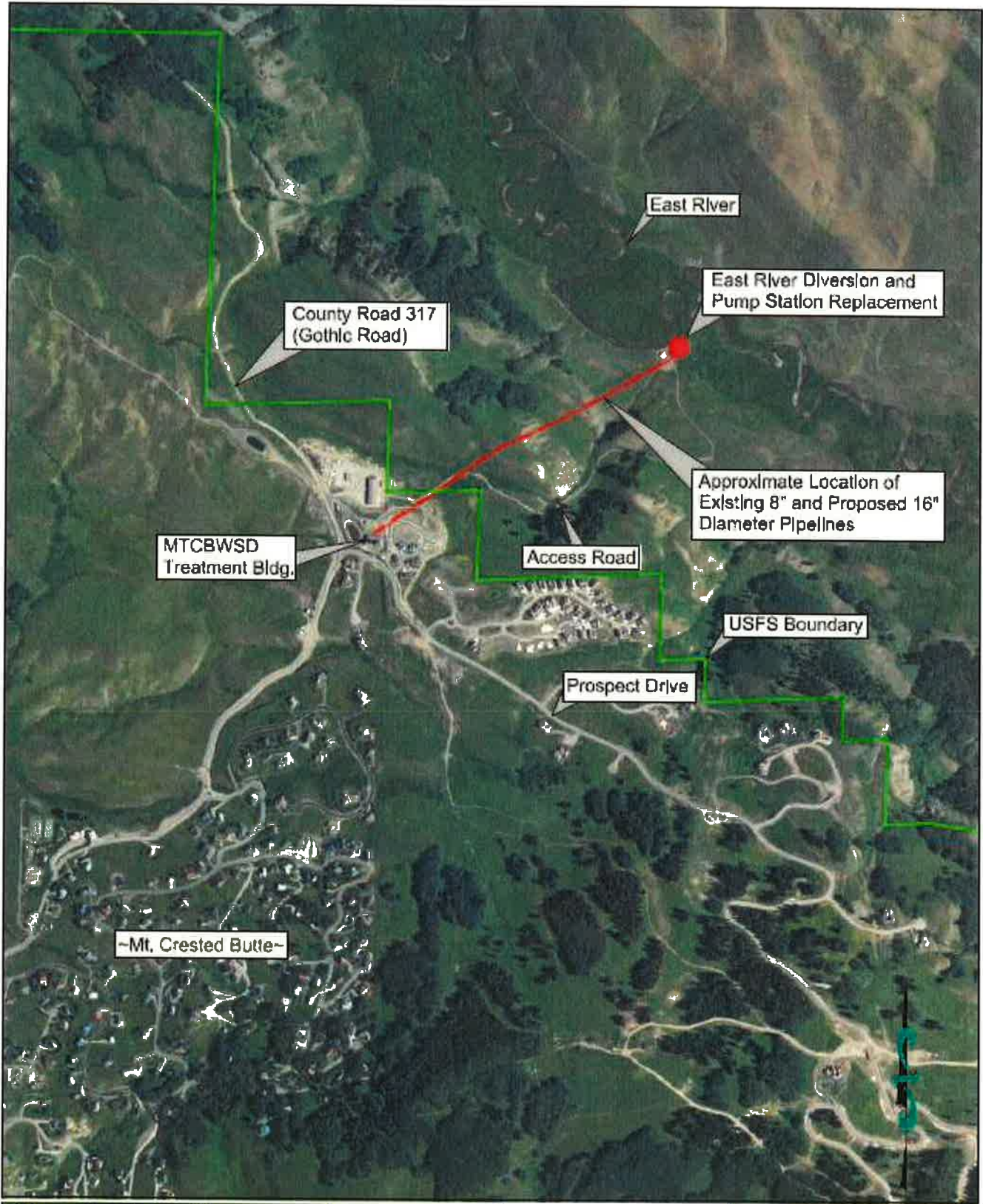
## BACKGROUND

The Applicant, Mt. CB District, provides municipal water supply and sewer service to the Town of Mt. Crested Butte, Colorado. The Mt. CB District was established in 1963 under the State of Colorado Special District provisions and currently, serves approximately 6,500 residential and commercial customers located within the Town and the nearby Meridian Lake Park subdivision. The Mt. CB District's primary source of water supply, the East River Water Supply System, is located on National Forest lands and operates under an approved Special Use Permit (SUP; No. GUN 1062, signed 11/1/2016) issued under authority of the Federal Land Policy and Management Act, as amended October 21, 1976. The SUP allows for two (2) diversion structures from the East River, a pump forebay/pre-sedimentation pond, pumping station, and delivery pipelines that together, occupy approximately 3.5 acres of National Forest lands.

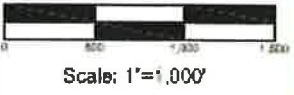
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A vicinity map of the described improvements is provided in **Figure 1**, below. More detailed description of the project can be found in the SF 299 application and engineering plans located in the project record.





**Figure 1: Planned Improvements,  
Mt. Crested Butte Water & Sanitation District,  
East River Water Supply System**  
Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands  
P#: 185-4-18.8  
Date: 11/16/15



**RESOURCE  
ENGINEERING, INC.**  
200 Colorado Avenue  
Goreville, CO 81601  
(970) 945-1777 Fax: 945-1137 Permie

During the construction process, several vehicles and various types of heavy equipment will be required on-site. Equipment expected to be used includes: excavator, loader, skid steer loaders, grader, backhoes, bulldozer, trencher, dumptruck, crane, concrete mixer, and compactors.

**Conservation Measures:**

- Equipment will be cleaned and free of noxious weeds prior to mobilization onto the Gunnison National Forest Lands.
- The project site is infested with Canada thistle (*Cirsium arvense*) and scentless chamomile (*Matricaria perforata*). It is required of the applicant to spray weeds prior to any ground disturbing activities. Weeds should also be treated post-construction. It is the responsibility of the Mt. CB District to treat the weed populations annually on occupied Gunnison Forest National Lands beyond construction.
- All materials brought into the project areas should be weed free.
- Disturbed areas will be seeded upon project completion. A native seed mix will be used and must be approved by a U.S. Forest Service (USFS) botanical specialist prior to application.
- Best Management Practices will be implemented throughout the project site to control erosion and potential sedimentation. Monitoring throughout implementation will be conducted by the Gunnison Ranger District staff Hydrologist.

This activity is categorically excluded under 36 CFR 220.6(e)(3) Approval, modification, or continuation of minor special uses of NFS lands that require less than five contiguous acres of land, because it is consistent with the types of activities described.

**Evaluation of Extraordinary Circumstances**

The following table documents environmental compliance for projects categorically excluded under NEPA.

<b>Evaluation of Extraordinary Circumstances for the Proposal (36 CFR 220.6(a))</b>				
<b>Resource Conditions</b> (36 CFR 220.6(b)(1))	<b>Resource Condition Present?<sup>1</sup></b>		<b>Evaluation<sup>1</sup></b> (36 CFR 220.6(b)(2))	<b>References</b> Required for CE categories under 36 CFR 220.6(e).
	Yes	No		
Federally listed threatened or endangered terrestrial wildlife species or their designated critical habitat, species proposed for Federal listing or proposed critical habitat or FS sensitive species. 36 CFR 220.6(b)(1)(i)		X	There would be no affect to threatened, endangered or proposed species protected under the Endangered Species Act, and no impacts to Forest Service sensitive species (terrestrial wildlife) or GMUG management indicator species.	Wildlife/Botany review was prepared by Wildlife Biologist Suzie Parker.
Federally listed threatened or endangered aquatic species or their designated critical habitat, species proposed for Federal listing or proposed critical habitat or FS sensitive species. 36 CFR 220.6(b)(1)(i)	X		A Biological Assessment (BA) was prepared. Under Cumulative Effects there is a "May affect, likely to adversely affect," the Endangered Colorado River Fishes (Bonytail Chub, Humpback Chub, Colorado Pikeminnow, and Razorback Sucker) due to consumptive water depletions. Mt. CB District has conducted formal consultation and entered into a required Recovery Agreement with the U.S. Fish and Wildlife Service (USFWS) to mitigate the effects.	BA, Biological Opinion (BO), Section 7 Consultation  Fisheries Biologist, Melvin Woody, reviewed the BA and worked with this Mt. CB District throughout their process of consulting with the USFWS.
Federally listed threatened or endangered plant species or their designated critical habitat,		X	There would be no affect to threatened, endangered or proposed species protected under the Endangered Species Act, and no	Wildlife/Botany review was prepared by Wildlife Biologist Suzie Parker.

### Evaluation of Extraordinary Circumstances for the Proposal (36 CFR 220.6(a))

Resource Conditions (36 CFR 220.6(b)(1))	Resource Condition Present? <sup>1</sup>		Evaluation <sup>1</sup> (36 CFR 220.6(b)(2))	References Required for CE categories under 36 CFR 220.6(e).
	Yes	No		
species proposed for Federal listing or proposed critical habitat or FS sensitive species. 36 CFR 220.6(b)(1)( i)			impacts to Forest Service sensitive species (plants) or GMUG management indicator species.	
Floodplains, wetlands or municipal watersheds. 36 CFR 220.6(b)(1)( ii)	X		The U.S. Army Corps of Engineers (USCOE) will issue authorization under Nationwide Permit (NWP) 39 once all submittals from the applicant are reviewed and accepted. Based upon analysis 640 sq. ft. of wetlands will be permanently filled as a result of the planned improvements and an additional 15 sq. ft. will be temporarily impacted as a result of pipeline replacement. These impacts are considered minimal are below the general disturbance threshold of 1/10 acre (4,356 sq. ft.) at which point mitigation would be required.	The company RESOURCE utilized the WER delineations to quantify the extent of probable impacts that the Mt CB District's planned improvements would have on area wetlands and waters of the United States. This was accomplished by overlaying the delineations with the Mt. CB District's proposed site improvements.
Congressionally designated areas <sup>2</sup> such as wilderness, wilderness study areas, or national recreation areas. 36 CFR 220.6(b)(1)( iii)		X	No Congressionally designated areas will be affected directly or indirectly by this action.	Reviewed by Hydrologist Ashley Hom using GIS.
Colorado Roadless Areas <sup>3</sup> or potential wilderness areas. 36 CFR 220.6(b)(1)( iv), 36 CFR Part 294		X	CRAs/IRAs will not be affected directly or indirectly by this action.	Reviewed by Hydrologist Ashley Hom using GIS.
Research natural areas <sup>2</sup> . 36 CFR 220.6(b)(1) (v)		X	RNAs will not be affected by this action.	Reviewed by Hydrologist Ashley Hom using GIS.
American Indians and Alaska Native religious or cultural sites. 36 CFR 220.6(b)(1) (vi)		X	No traditional cultural properties, religious or cultural sites have been identified that would be affected by implementation of this action.	The District Ranger has determined tribal consultation is not needed for this project.
Archaeological sites, or historic properties or areas. 36 CFR 220.6(b) (b)(1)( vii)		X	No archeological sites or sites eligible for National Historic Register listing will be affected directly or indirectly by this action.	Archeologist Justin Lawrence was consulted and determined no

<sup>1</sup> The mere presence of one or more of these resource conditions does not preclude the use of a categorical exclusion. It is the existence of a cause effect relationship between a proposed action and the potential effect on these resource conditions, and if such a relationship exists, the degree of the potential effect of a proposed action these resource conditions that determines whether extraordinary circumstances exist.

<sup>2</sup> If present, verify authorities. Additional requirements may exist.

<sup>3</sup> Roadless consultation with RO is required except for limited circumstances. Submit completed forms to NEPA coordinator.

#### Scoping Efforts

This action was listed as a proposal on the Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG) Schedule of Proposed Actions. This proposal was scoped with the proponents requesting the action, the USCOE and USFWS, and internally with the district engineering, wildlife, botany, fisheries, hydrology, and heritage specialists. Given the scope and complexity of the project, the authorizing official determined that this level of scoping was appropriate.



### Findings Required by Other Laws

This project complies with the Forest Service Manual, Forest Service Handbook policy, and GMUG National Forest Land and Resource Management Plan.

### Endangered Species Act

This project required Section 7 consultation. The USFWS in Grand Junction have confirmed that they received the MT. CB District's signed recovery agreement and payment and that they have issued a final BO concerning this project. They sent copy of the Final BO to the Forest Supervisor on July 20, 2018.

### Clean Water Act

Mt. CB District has submitted a pre-construction notification requesting authorization under Nationwide Permit 39 to the USCOE on September 16, 2016 (see project record). In cooperation with the USCOE, the USFS consulted with the USFWS under Section 7 of the Endangered Species Act. USCOE will review the BO for completeness and if accepted, would allow the Mt. CB District to proceed under a NWP 39.

### Implementation

Implementation is anticipated to occur during the summer of 2019; however, the project may be implemented upon issuance of an amended SUP and receipt of the NWP 39.

### Opportunity for Administrative Review or Appeal

This decision is not subject to further review or appeal per 36 CFR 214.4(c).

### For Additional Information Contact:

For additional information concerning this decision, contact: Ashley Hom, Hydrologist, at (970) 642-4406 or [ashleyhom@usda.gov](mailto:ashleyhom@usda.gov)

### Decision and Finding

I am approving the proposed action as described above. I have considered the above listed resource conditions and have determined there are no extraordinary circumstances related to the proposed action that warrant further analysis or documentation in either an environmental assessment or environmental impact statement. None of the extraordinary circumstances described in 36 CFR 220.6 (b) exist.

  
Signature \_\_\_\_\_  
Matthew M. McCombs  
District Ranger

Date 12/10/2018

*In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident. Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English. To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).*

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APPLICATION FOR TRANSPORTATION AND  
UTILITY SYSTEMS AND FACILITIES  
ON FEDERAL LANDS

FORM APPROVED  
OMB Control Number: 0596-0082  
Expiration Date: 1/31/2017

FOR AGENCY USE ONLY

NOTE: Before completing and filing the application, the applicant should completely review this package and schedule a preapplication meeting with representatives of the agency responsible for processing the application. Each agency may have specific and unique requirements to be met in preparing and processing the application. Many times, with the help of the agency representative, the application can be completed at the preapplication meeting.

Application Number

Date Filed

1. Name and address of applicant (include zip code)

Mr. Todd Fessenden, Manager  
Mt. Crested Butte Water & Sanitation District  
PO Box 5740  
Mt. Crested Butte CO 81225-5740

2. Name, title, and address of authorized agent if different from item 1 (include zip code)

R. Scott Fifer, P.H.  
Resource Engineering, Inc.  
909 Colorado Avenue  
Glenwood Springs CO 81601

3. Telephone (area code)

Applicant  
970-349-7575  
Authorized Agent  
970-945-6777

4. As applicant are you? (check one)

- a.  Individual
- b.  Corporation\*
- c.  Partnership/Association\*
- d.  State Government/State Agency
- e.  Local Government
- f.  Federal Agency

\* If checked, complete supplemental page

5. Specify what application is for: (check one)

- a.  New authorization
- b.  Renewing existing authorization No.
- c.  Amend existing authorization No.
- d.  Assign existing authorization No.
- e.  Existing use for which no authorization has been received \*
- f.  Other\*

\* If checked, provide details under item 7

6. If an individual, or partnership are you a citizen(s) of the United States?  Yes  No

7. Project description (describe in detail): (a) Type of system or facility, (e.g., canal, pipeline, road); (b) related structures and facilities; (c) physical specifications (Length, width, grading, etc.); (d) term of years needed; (e) time of year of use or operation; (f) Volume or amount of product to be transported; (g) duration and timing of construction; and (h) temporary work areas needed for construction (Attach additional sheets, if additional space is needed.)

Amend existing authorization No. GUN1062. See attached

8. Attach a map covering area and show location of project proposal

9. State or Local government approval:  Attached  Applied for  Not Required

10. Nonreturnable application fee:  Attached  Not required

11. Does project cross international boundary or affect international waterways?  Yes  No (if "yes," indicate on map)

12. Give statement of your technical and financial capability to construct, operate, maintain, and terminate system for which authorization is being requested.

See attached

13a. Describe other reasonable alternative routes and modes considered

See attached

b. Why were these alternatives not selected?

See attached

c. Give explanation as to why it is necessary to cross Federal Lands

See attached

14. List authorizations and pending applications filed for similar projects which may provide information to the authorizing agency (Specify number, date, code, or name)

Applicant has no knowledge of similar pending applications.

15. Provide statement of need for project, including the economic feasibility and items such as (a) cost of proposal (construction, operation, and maintenance); (b) estimated cost of next best alternative, and (c) expected public benefits.

See attached

16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.

See attached

17. Describe likely environmental effects that the proposed project will have on (a) air quality; (b) visual impact; (c) surface and ground water quality and quantity; (d) the control or structural change on any stream or other body of water; (e) existing noise levels; and (f) the surface of the land, including vegetation, permafrost, soil, and soil stability.

See attached

18. Describe the probable effects that the proposed project will have on (a) populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species; and (b) marine mammals, including hunting, capturing, collecting, or killing these animals.

See attached

19. State whether any hazardous material, as defined in this paragraph, will be used, produced, transported or stored on or within the right-of-way or any of the right-of-way facilities, or used in the construction, operation, maintenance or termination of the right-of-way or any of its facilities. "Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.

To the best of Applicant's knowledge, there will be no hazardous materials used or transported as part of the planned improvements outlined in this application.

20. Name all the Department(s)/Agency(ies) where this application is being filed.

U.S. Forest Service, USDA

I HEREBY CERTIFY, That I am of legal age and authorized to do business in the State and that I have personally examined the information contained in the application and believe that the information submitted is correct to the best of my knowledge.

Signature of Applicant



Date

11/1/16

Title 18, U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

GENERAL INFORMATION  
ALASKA NATIONAL INTEREST LANDS

This application will be used when applying for a right-of-way, permit, license, lease, or certificate for the use of Federal lands which lie within conservation system units and National Recreation or Conservation Areas as defined in the Alaska National Interest Lands Conservation Act. Conservation system units include the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers System, National Trails System, National Wilderness Preservation System, and National Forest Monuments.

Transportation and utility systems and facility uses for which the application may be used are:

1. Canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other systems for the transportation of water.
2. Pipelines and other systems for the transportation of liquids other than water, including oil, natural gas, synthetic liquid and gaseous fuels, and any refined product produced therefrom.
3. Pipelines, slurry and emulsion systems, and conveyor belts for transportation of solid materials.
4. Systems for the transmission and distribution of electric energy.
5. Systems for transmission or reception of radio, television, telephone, telegraph, and other electronic signals, and other means of communications.
6. Improved right-of-way for snow machines, air cushion vehicles, and all-terrain vehicles.
7. Roads, highways, railroads, tunnels, tramways, airports, landing strips, docks, and other systems of general transportation.

This application must be filed simultaneously with each Federal department or agency requiring authorization to establish and operate your proposal.

In Alaska, the following agencies will help the applicant file an application and identify the other agencies the applicant should contact and possibly file with:

Department of Agriculture  
Regional Forester, Forest Service (USFS)  
Federal Office Building,  
P.O. Box 21628  
Juneau, Alaska 99802-1628  
Telephone: (907) 586-7847 (or a local Forest Service Office)

Department of the Interior  
Bureau of Indian Affairs (BIA)  
Juneau Area Office  
Federal Building Annex  
9109 Mendenhall Mall Road, Suite 5  
Juneau, Alaska 99802  
Telephone: (907) 586-7177

Department of the Interior  
Bureau of Land Management  
222 West 7th Avenue  
P.O. Box 13  
Anchorage, Alaska 99513-7599  
Telephone: (907) 271-5477 (or a local BLM Office)

U.S. Fish & Wildlife Service (FWS)  
Office of the Regional Director  
1011 East Tudor Road  
Anchorage, Alaska 99503  
Telephone: (907) 786-3440

National Park Service (NPA)  
Alaska Regional Office, 2225  
Gambell St., Rm. 107  
Anchorage, Alaska 99502-2892  
Telephone: (907) 786-3440

Note - Filings with any Interior agency may be filed with any office noted above or with the Office of the Secretary of the Interior, Regional Environmental Office, P.O. Box 120, 1675 C Street, Anchorage, Alaska 9513.

Department of Transportation  
Federal Aviation Administration  
Alaska Region AAL-4, 222 West 7th Ave., Box 14  
Anchorage, Alaska 99513-7587  
Telephone: (907) 271-5285

NOTE - The Department of Transportation has established the above central filing point for agencies within that Department. Affected agencies are: Federal Aviation Administration (FAA), Coast Guard (USCG), Federal Highway Administration (FHWA), Federal Railroad Administration (FRA).

OTHER THAN ALASKA NATIONAL INTEREST LANDS

Use of this form is not limited to National Interest Conservation Lands of Alaska.

Individual department/agencies may authorize the use of this form by applicants for transportation and utility systems and facilities on other Federal lands outside those areas described above.

For proposals located outside of Alaska, applications will be filed at the local agency office or at a location specified by the responsible Federal agency.

SPECIFIC INSTRUCTIONS  
(Items not listed are self-explanatory)

- 7 Attach preliminary site and facility construction plans. The responsible agency will provide instructions whenever specific plans are required.
- 8 Generally, the map must show the section(s), township(s), and range(s) within which the project is to be located. Show the proposed location of the project on the map as accurately as possible. Some agencies require detailed survey maps. The responsible agency will provide additional instructions.
- 9, 10, and 12 The responsible agency will provide additional instructions.
- 13 Providing information on alternate routes and modes in as much detail as possible, discussing why certain routes or modes were rejected and why it is necessary to cross Federal lands will assist the agency(ies) in processing your application and reaching a final decision. Include only reasonable alternate routes and modes as related to current technology and economics.
- 14 The responsible agency will provide instructions.
- 15 Generally, a simple statement of the purpose of the proposal will be sufficient. However, major proposals located in critical or sensitive areas may require a full analysis with additional specific information. The responsible agency will provide additional instructions.
- 16 through 19 Providing this information in as much detail as possible will assist the Federal agency(ies) in processing the application and reaching a decision. When completing these items, you should use a sound judgment in furnishing relevant information. For example, if the project is not near a stream or other body of water, do not address this subject. The responsible agency will provide additional instructions.

Application must be signed by the applicant or applicant's authorized representative.

EFFECT OF NOT PROVIDING INFORMATION: Disclosure of the information is voluntary. If all the information is not provided, the application may be rejected.

DATA COLLECTION STATEMENT

The Federal agencies collect this information from applicants requesting right-of-way, permit, license, lease, or certification for the use of Federal lands. The Federal agencies use this information to evaluate the applicant's proposal. The public is obligated to submit this form if they wish to obtain permission to use Federal lands.

**SUPPLEMENTAL**

NOTE: The responsible agency(ies) will provide instructions	CHECK APPROPRIATE BLOCK	
	ATTACHED	FILED*
<b>I - PRIVATE CORPORATIONS</b>		
a. Articles of Incorporation	<input type="checkbox"/>	<input type="checkbox"/>
b. Corporation Bylaws	<input type="checkbox"/>	<input type="checkbox"/>
c. A certification from the State showing the corporation is in good standing and is entitled to operate within the State	<input type="checkbox"/>	<input type="checkbox"/>
d. Copy of resolution authorizing filing	<input type="checkbox"/>	<input type="checkbox"/>
e. The name and address of each shareholder owning 3 percent or more of the shares, together with the number and percentage of any class of voting shares of the entity which such shareholder is authorized to vote and the name and address of each affiliate of the entity together with, in the case of an affiliate controlled by the entity, the number of shares and the percentage of any class of voting stock of that affiliate owned, directly or indirectly, by that entity, and in the case of an affiliate which controls that entity, the number of shares and the percentage of any class of voting stock of that entity owned, directly or indirectly, by the affiliate.	<input type="checkbox"/>	<input type="checkbox"/>
f. If application is for an oil or gas pipeline, describe any related right-of-way or temporary use permit applications, and identify previous applications.	<input type="checkbox"/>	<input type="checkbox"/>
g. If application is for an oil and gas pipeline, identify all Federal lands by agency impacted by proposal.	<input type="checkbox"/>	<input type="checkbox"/>
<b>II - PUBLIC CORPORATIONS</b>		
a. Copy of law forming corporation	<input type="checkbox"/>	<input type="checkbox"/>
b. Proof of organization	<input type="checkbox"/>	<input type="checkbox"/>
c. Copy of Bylaws	<input type="checkbox"/>	<input type="checkbox"/>
d. Copy of resolution authorizing filing	<input type="checkbox"/>	<input type="checkbox"/>
e. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	<input type="checkbox"/>	<input type="checkbox"/>
<b>III - PARTNERSHIP OR OTHER UNINCORPORATED ENTITY</b>		
a. Articles of association, if any	<input type="checkbox"/>	<input type="checkbox"/>
b. If one partner is authorized to sign, resolution authorizing action is	<input type="checkbox"/>	<input type="checkbox"/>
c. Name and address of each participant, partner, association, or other	<input type="checkbox"/>	<input type="checkbox"/>
d. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	<input type="checkbox"/>	<input type="checkbox"/>

\*If the required information is already filed with the agency processing this application and is current, check block entitled "Filed." Provide the file identification information (e.g., number, date, code, name). If not on file or current, attach the requested information.



## NOTICES

Note: This applies to the Department of Agriculture/Forest Service (FS)

This information is needed by the Forest Service to evaluate the requests to use National Forest System lands and manage those lands to protect natural resources, administer the use, and ensure public health and safety. This information is required to obtain or retain a benefit. The authority for that requirement is provided by the Organic Act of 1897 and the Federal Land Policy and Management Act of 1976, which authorize the secretary of Agriculture to promulgate rules and regulations for authorizing and managing National Forest System lands. These statutes, along with the Term Permit Act, National Forest Ski Area Permit Act, Granger-Thye Act, Mineral Leasing Act, Alaska Term Permit Act, Act of September 3, 1954, Wilderness Act, National Forest Roads and Trails Act, Act of November 16, 1973, Archeological Resources Protection Act, and Alaska National Interest Lands Conservation Act, authorize the Secretary of Agriculture to issue authorizations or the use and occupancy of National Forest System lands. The Secretary of Agriculture's regulations at 36 CFR Part 251, Subpart B, establish procedures for issuing those authorizations.

### BURDEN AND NONDISCRIMINATION STATEMENTS

*According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 8 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.*

*The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720- 2600 (voice and TDD).*

*To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.*

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

# Application for Transportation and Utility Systems and Facilities on Federal Lands

## Supplemental Information – Standard Form 299 (6/99) Mt. Crested Butte Water and Sanitation District, Authorization ID: GUN1062

### No. 7. Project description (describe in detail):

#### Background.

The Applicant, Mt. Crested Butte Water and Sanitation District (District), provides municipal water supply and sewer service to the Town of Mt. Crested Butte, Colorado. The District was established in 1963 under the State of Colorado Special District provisions and today, serves approximately 6,500 residential and commercial customers located within the Town and the nearby Meridian Lake Park subdivision. The District's primary source of water supply, the East River Water Supply System, is located on National Forest lands and operates under an approved Special Use Permit (SUP) issued under authority of the Federal Land Policy and Management Act, as amended October 21, 1976. The SUP allows for two (2) diversion structures from the East River, a pump forebay/pre-sedimentation pond, pumping station, and delivery pipelines that together, occupy approximately 3.5 acres of National Forest lands.<sup>1</sup> A copy of the District's SUP is contained in **Attachment 1**.

#### Project Description.

An engineering review of the District's East River water diversion and delivery system indicates that the water facilities are aging and in need of major improvements and/or replacement. As a result, the District requests approval from the U.S. Forest Service (USFS) to make several improvements to its East River Water Supply System. The planned improvements include:

- **Diversion Culverts.** Replacement of the two, 30 inch diameter diversion culverts with two, 24 inch diameter diversion culverts and associated appurtenances.<sup>2</sup>
- **Pump Forebay/Pre-Sedimentation Pond.** Replace the 0.2 acre pump forebay /pre-sedimentation pond with a new, 8 foot diameter concrete water distribution vault designed to stabilize flows entering the District's pump house.
- **Pump Station.** Replace the existing pump house structure in its entirety with a new, state-of-the-art pump station and associated facilities.
- **Delivery Pipeline.** Construct a new, 16 inch diameter pipeline from the pump station that will deliver East River diversions to the District's pre-sedimentation pond that is located on the watershed divide separating the East River and Washington Gulch, near the District's existing water treatment plant.

**7. (a). Type of system or facility.** A vicinity map of the described improvements is provided in **Figure 1**, attached. Each of the proposed improvements are described in more detail below.

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<sup>1</sup> Other water delivery facilities not directly related to the East River diversion and delivery system are also included in the District's Special Use Permit.

<sup>2</sup> The District's existing SUP describes the two diversion pipelines as 18 inches in diameter. This is incorrect, the two existing pipelines are 30 inches in diameter.

1. **Diversion Culverts.** One of two metal pipelines that divert water from the East River to the District's pumping forebay pond has become blocked and is inoperable. This structure provides redundancy in the District's water diversion system and without it, there is risk that domestic water shortages could occur should the second diversion facility also become inoperable. In addition, during the winter period the second diversion pipeline experiences icing at its inlet which requires frequent removal.

To mitigate these problems, the District proposes to replace the two existing 30 inch diameter metal pipelines with two 24 inch diameter high density plastic pipelines. The lower profile allows the pipelines to remain submerged during winter conditions which will reduce the probability of winter icing. The conversion from metal to plastic pipe at the diversion inlets will also help reduce winter icing. The District's water engineers have calculated that a 24 inch diameter pipe has sufficient capacity to meet the District's projected peak day demands at build-out. The location of the planned diversion culverts and related improvements are shown in **Figure 2**.

2. **Pump Forebay/Pre-Sedimentation Pond.** The Colorado Department of Public Health and Environment (CDPHE) has requested the District erect a security fence around the perimeter of the 0.2 surface acre pond.<sup>3</sup> The purpose of the fence is to provide safety for the public and water quality protection by preventing animals from directly entering the domestic water source. In review of this situation, the District's engineers have determined that the function of the pond could be replaced through construction of an 8 foot diameter concrete vault located in proximity to the existing pond. Pre-sedimentation is not necessary at this location as the District has constructed a pre-sedimentation pond on lands located on the watershed divide separating the East River and Washington Gulch (closer to the District's treatment plant). The District's existing pump house and associated pond are shown in **Photograph 1**.

As an alternative to constructing a metal fence around the perimeter of the pond, the District proposes to fill-in the 0.2 surface acre pond and replace its function with the described 8 foot diameter concrete vault. Originally, this action was believed to require the issuance of nationwide Section 404 permit from the U.S. Army Corps of Engineers (COE) due to the loss of 0.2 acres of "waters of the U.S.". However, by letter dated January 29, 2016, the COE determined that the settling pond is not considered jurisdictional because it is an artificial pond created for purposes of providing a settling basin. The COE does not consider these type of facilities as "waters of the U.S.". A copy of the COE's January 29<sup>th</sup> letter is attached in **Attachment 2**.

The source of fill to reclaim the pond is proposed to originate from a steep, eroding streambank located approximately 200 feet upstream from the pond. In this area, the bank is at a slope of approximately 1.2:1 (40%) and is absent of vegetation. Under this plan, the steep bank would be laid back to a slope of 2.5:1 or less (20%) and revegetated. The soil and bedrock materials removed during this streambank mitigation could be used to partially fill the pond as described above. The location of the eroding streambank is shown in **Figure 3**. A photograph of the site is shown in **Photograph 2**.

3. **Pump Station.** The District's existing pump station must be improved to receive new pumping equipment and connection to a new pipeline delivery system (see no. 4 below).

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<sup>3</sup> Typical security fences consist of 6 foot chain link topped by an additional two feet of barbed wire.

During inspection of the facility, however, Engineers for the District discovered that the concrete slab supporting the existing building is no longer structurally sound. Accordingly, the pump station must be replaced in its entirety.

As a result of the identified structural deficiency, the District proposes to dismantle and remove the existing pump station and replace it with a new, state-of-the-art facility. It is proposed that the new building be relocated just east of the existing location. This new location will place the new building outside of the 100 year floodplain of the East River.<sup>4</sup> The building dimensions will be 24' x 32'-8". The location of the existing and planned pump station is shown in **Figure 2**.

- 4. Delivery Pipeline.** The District proposed to construct a new, 16 inch diameter water Delivery pipeline extending approximately 2,600 feet from the new pumping station to pre-sedimentation pond/water treatment facility located on the watershed divide separating the East River from Washington Gulch. The pipeline will parallel the existing 8 inch diameter pipeline which is proposed to remain in place in order to provide redundancy in the water system should one pipe fail for any reason. The new, 16 inch diameter pipeline will have capacity to meet the District's calculated peak day demand at build-out.

As shown in **Exhibit A-3 of Attachment 1**, (the USDA Special Use Permit OMB No. 0596-0082) the existing 8 inch diameter pipeline has a described 20 ft. wide Water Line Corridor (10 feet of each side of center). Construction of the new, 16 inch diameter pipeline will require the recognized pipeline corridor to be expanded. The terrain is steep and the District's construction standards require a minimum pipeline depth of seven feet. In order to construct and maintain the pipeline at current Occupational Health and Safety Standards (OSHA) standards, the District is asking for a forty (40) foot corridor that will include both pipelines. On the north side of the existing pipeline, the ten (10) foot corridor will remain as described in the existing Special Use Permit. The proposed pipeline is anticipated to be constructed at a fifteen (15) foot offset from the existing pipe. An additional fifteen (15) foot of dedicated corridor on the south side of the proposed pipeline will allow for future maintenance and repair access to OSHA standards. The enclosed **Figure 4** shows the layout view of the existing and proposed corridor.

**7. (b). Related structures and facilities.** All of the structures described in 7. (a) above are considered related structures that comprise the District's East River Water Supply System.

**7. (c). Physical specifications.** The proposed improvements include:

- Approximately 170 lineal feet of 24 inch diameter high density plastic pipelines leading from the East River intakes to a proposed 8 ft. diameter concrete water distribution vault.
- Approximately 170 lineal feet of 24 inch diameter high density plastic pipelines from the concrete water distribution vault to the pump station wet wells.
- A new pump station with dimensions of 24' x 32'-8".
- 2,600 feet of 16 inch diameter water delivery pipeline.
- Remove and dispose of existing diversion structures and pump station.

**7. (d). Term of years needed.** The District's East River water supply plan is based upon a 35 to 50 year planning horizon.

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<sup>4</sup> The existing pump house is located within the defined 100 year flood plain.

**7. (e). Time of year of use of operation.** The District will use the improved facilities on a continuous, year-round basis.

**7. (f). Volume or amount of product to be transported.** At build-out, the District will transport up to 1,400 acre feet of water annually through its East River Water Supply System.

**7. (g). Duration and timing of construction.** June 2018 through October 15, 2019.

**7. (h). Temporary work areas needed for construction.** The Applicant has completed an analysis of the maximum disturbed area required during the construction of the described improvements. In total, approximately 3.5 acres of land will be disturbed as summarized below and shown in **Figure 6**, attached.

- Diversion and pump station. Approximately 1.75 acres extending from the East River to, and surrounding, the proposed pump station.
- Pipeline delivery system. Approximately 1.75 acres

During the construction process, several vehicles and various types of heavy equipment will be required on-site. The following list provides a summary of anticipated on-site equipment.

#### **Estimated Construction Equipment List**

<b>Type</b>	<b>Number</b>
<b><u>Earthmoving Equipment</u></b>	
Excavators	1
Loaders	1
Skid Steer Loaders	2
Grader	1
Backhoe	2
Bulldozer	1
Trencher	1
<b><u>Construction Vehicles</u></b>	
Dump Truck	2
Construction Vehicle / Pickup	5
<b><u>Material Handling Equipment</u></b>	
Crane	1
<b><u>Construction Equipment</u></b>	
Concrete Mixer	1
Compactors	2

## **No. 12. Technical and Financial Capability**

As summarized below, the Mt. Crested Butte Water and Sanitation District (District), is technically and financially capable of constructing and operating the described improvements.

1. The Applicant, Mt. Crested Butte Water and Sanitation District (District), provides municipal water supply and sewer service to the Town of Mt. Crested Butte Town and the nearby Meridian Lake Park subdivision, Colorado. The District was established in 1963 under the State of Colorado Special District provisions and today, serves approximately 6,500 residential and commercial customers located within the service area.
2. The District is a taxing entity with a reliable annual income and a 2014 audit net position of \$19,000,000. Presently, the District generates approximately \$2,000,000 in revenue annually.
3. The District is staffed by full time professionals including a District Manager, Finance/Administration Manager, 10 operators with appropriate State licenses and is supported by a consulting team consisting of water resource engineers, hydrologist and attorneys.

## **No. 13. Project Alternatives**

### **13. (a). Describe other reasonable alternative routes and modes considered.**

**Diversion System.** The District examined a second alternative that would divert water from the East River at a location approximately 450 feet above the existing diversion system. The design included a new, 24 inch diameter high density plastic pipeline leading to a new, 8 foot diameter concrete water distribution vault. The alternative diversion system is shown in **Figure 5**.

**Pump Station.** The District briefly considered an alternative to rebuild its pump station in place.

**Pipeline Delivery System.** The District briefly considered an alternative that would replace the existing 8-inch diameter pipeline with the proposed 16 inch diameter pipeline.

### **13. (b). Why were these alternatives not selected?**

**Diversion System.** The alternative design cost more money to construct and did not provide a measureable advantage in the diversion and delivery of water. The total cost of the alternative design was estimated to be \$408,500, which is approximately \$60,000 more than the preferred alternative. This alternative also required disturbance to approximately 180 feet of jurisdictional wetlands.

**Pump Station.** The alternative to construct the Pump Station in place was removed from consideration as it would cause disruption in the District's ability to divert and deliver domestic water supplies to its water treatment facility. The diversion and delivery system would have to be interrupted during the construction phase. The preferred alternative will allow the District to construct a new pumping facility while the old system remains on-line. Following completion of the new building, the operation can be transferred to the new facility in an orderly fashion.

**Pipeline Delivery System.** The alternative to replace the 8 inch diameter pipeline, rather than leave it in place (preferred alternative), is not favored because the District would lose the

opportunity to obtain a redundant water delivery system. The East River is the District's only source of physical and legal water supplies sufficient to meet its existing and future water demands. Maintaining two delivery pipelines from the East River provides safety (system redundancy) should something happen to one of the planned pipelines.

**13. (c.). Why is it necessary to cross Federal Lands?**

The East River water source is considered a key component of the District's domestic water supply. Streamflows are robust year-round and provide the District with a reliable physical and legal water supply to meet existing and future water demands. Alternative water supplies, located on nearby private lands, are insufficient to meet the District's demands. The East River valley floor located in proximity to the District's water treatment facility consists entirely of National Forest lands; leaving no alternative but to cross federal lands.

**15. Provide a statement of need for the project.**

The District provides municipal water supply and sewer service to the Town of Mt. Crested Butte, Colorado. The District serves approximately 6,500 residential and commercial customers within the Town including all of the base facilities associated with the Crested Butte Ski Resort. The District's primary source of water supply, the East River Water Supply System, is located on National Forest lands and operates under an approved Special Use Permit (SUP). An engineering review of the District's East River water diversion and delivery system indicates that the water facilities are aging and in need of major improvements and/or replacement. As a result, the District requests approval from the U.S. Forest Service (USFS) to make several improvements to its East River Water Supply System. Such request is necessary to remain in compliance with Condition III. B. of the District's SUP. This condition requires the SUP holder to maintain the authorized improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety (page 2, **Attachment 1**).

The Crested Butte Mountain Resort (CBMR) and surrounding community provide economic benefit to Gunnison County and the State of Colorado. CBMR has become a major Colorado ski and recreation destination, attracting hundreds of thousands of visitors annually. Providing a reliable, state-of-the-art water supply system is imperative for maintain a high quality, healthy water supply for residents and visitors.

The improvements described in this application are anticipated to cost approximately \$2.0M. As outlined in response to No. 12 above, the District has ability to fund these anticipated costs.

**16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.**

See response to 15. above.

**17. Describe likely environmental effects that the proposed project will have on:**

**17. (a.). Air quality.** The proposed improvements will not directly impact air quality. Minor dust is expected during the reclamation of the existing pond and the construction of the proposed pump house and water delivery pipeline. Dust mitigation, if necessary, can be provided at the pond and pump house site by construction of a temporary sprinkler system from the East River.

**17. (b.). Visual Impact.** The proposed project will improve the visual quality of the valley floor. Removal of the pond, as proposed, will eliminate the need to construct a six to eight foot metal

safety fence around the pond's perimeter as requested by the CDPHE. The existing pump house will be removed and replaced with a new structure that will be painted in neutral colors to blend with the environment. The diversion culverts and pipeline will be constructed underground and not visible. All disturbed areas will be reclaimed with native vegetation as approved by the U.S. Forest Service.

**17. (c.). Surface and ground water quality and quantity.** The planned improvements will not adversely impact the water quality of the East River. BMP's will be implemented throughout the project site to control erosion and potential sedimentation. Disturbed areas will be revegetated to standards required by the U.S. Forest Service.

The District diverts domestic water supplies from the East River to meet its existing and future water demands. Presently, the District's greatest water demands occur in July when diversions average 1.2 cubic feet per second (cfs). Peak day diversions during July are 1.8 cfs. At build-out conditions, the District's engineers project that the District's East River diversions will average approximately 3.4 cfs during July with peak day demands of 5.0 cfs. Currently, the District diverts approximately 525 acre feet (AF) annually; at build-out, diversions are projected to total 1,400 AF annually.

**17. (d.). Control or structural change on any stream or water body.** There will be minor structural change to the diversion structures from the East River. The two existing 30 inch diameter culverts will be replaced with two 24 inch diameter culverts. A concrete foundation will be constructed at the inlet of each pipe for stability and erosion protection. The planned invert elevation of each pipe will be at the same elevation as the bottom of the channel and according, the diversion structures will not be visible. The existing 0.2 surface acre pre sedimentation/pump forebay pond will be partially filled and revegetated.

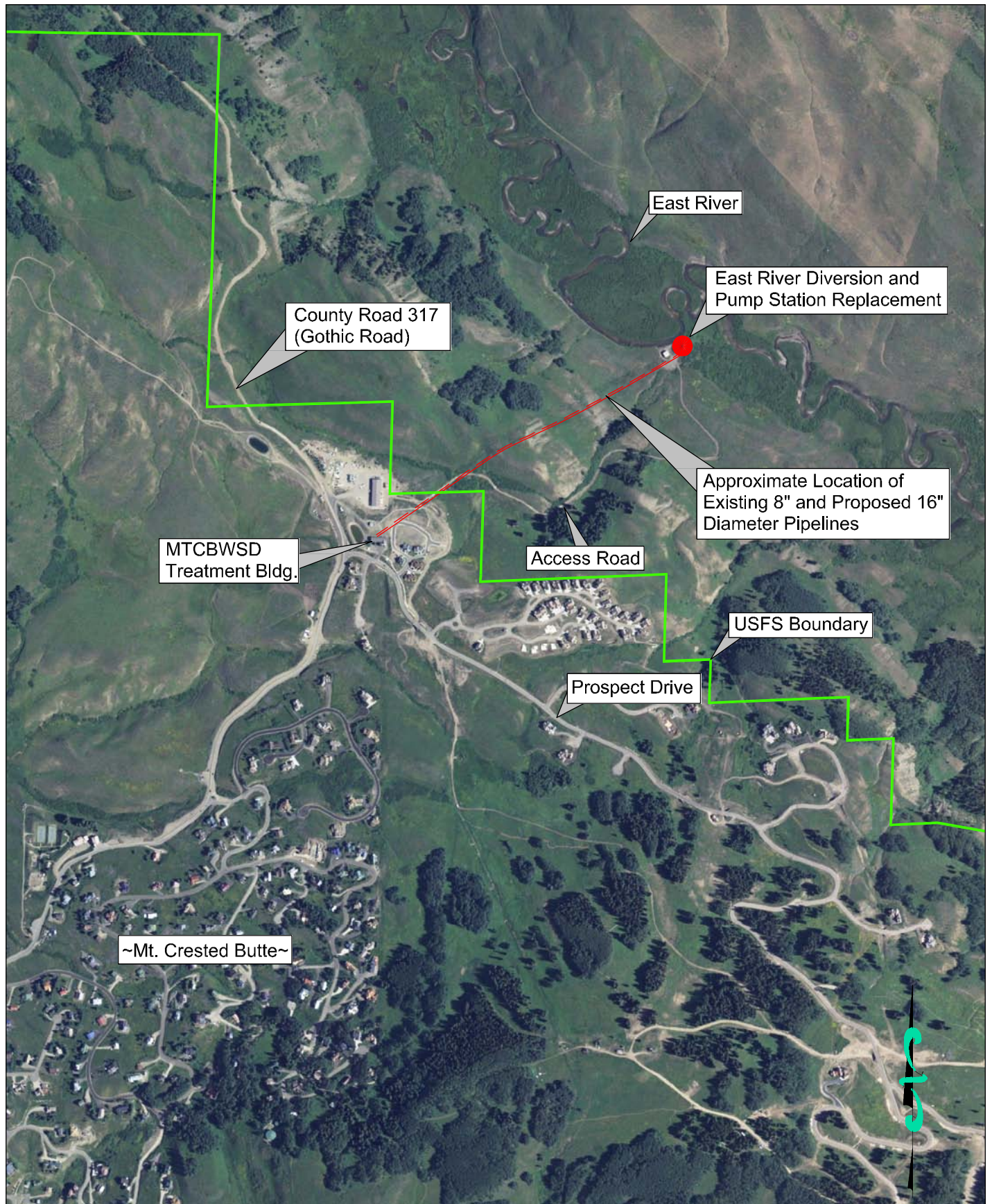
**17. (e.). Existing noise levels.** The planned improvements will not impact existing noise levels once constructed. There will be some increase in noise locally during construction due to heavy machinery. However, the project site is located in an isolated area of the East River valley bottom, well away from residential development.

**17. (f.). Surface of the land, including vegetation.** Once constructed, the planned improvements will not adversely impact the surface of the land and surrounding soils and vegetation. The land surface will be disturbed during construction, however, as detailed above, the land will be reclaimed and revegetated to prevent future erosion and stream sedimentation.

**18. Describe likely environmental effects that the project will have on fish and other species:**

The District's domestic water rights decreed at its East River Pump Station are relatively junior in priority and subject to downstream calls from senior water rights during low flow conditions. Downstream senior rights include instream flow rights held by the Colorado Water Conservation Board (CWCB) in amounts of 25.0 cfs during the period May through September and 15.0 cfs during the period October through March. All but 1.5 cfs of the District's water rights are junior in priority to the CWCB rights and are subject to curtailment when East River streamflows drop below the decreed instream flow levels. For this reason, the District's diversions during low streamflow conditions are potentially limited and therefore, not expected to have a significant impact on area wildlife or fish populations and related aquatic species in the East River.





**Figure 1: Planned Improvements,  
Mt. Crested Butte Water & Sanitation District,  
East River Water Supply System**  
Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

File: 165-4.16.6  
Date: 11/18/15



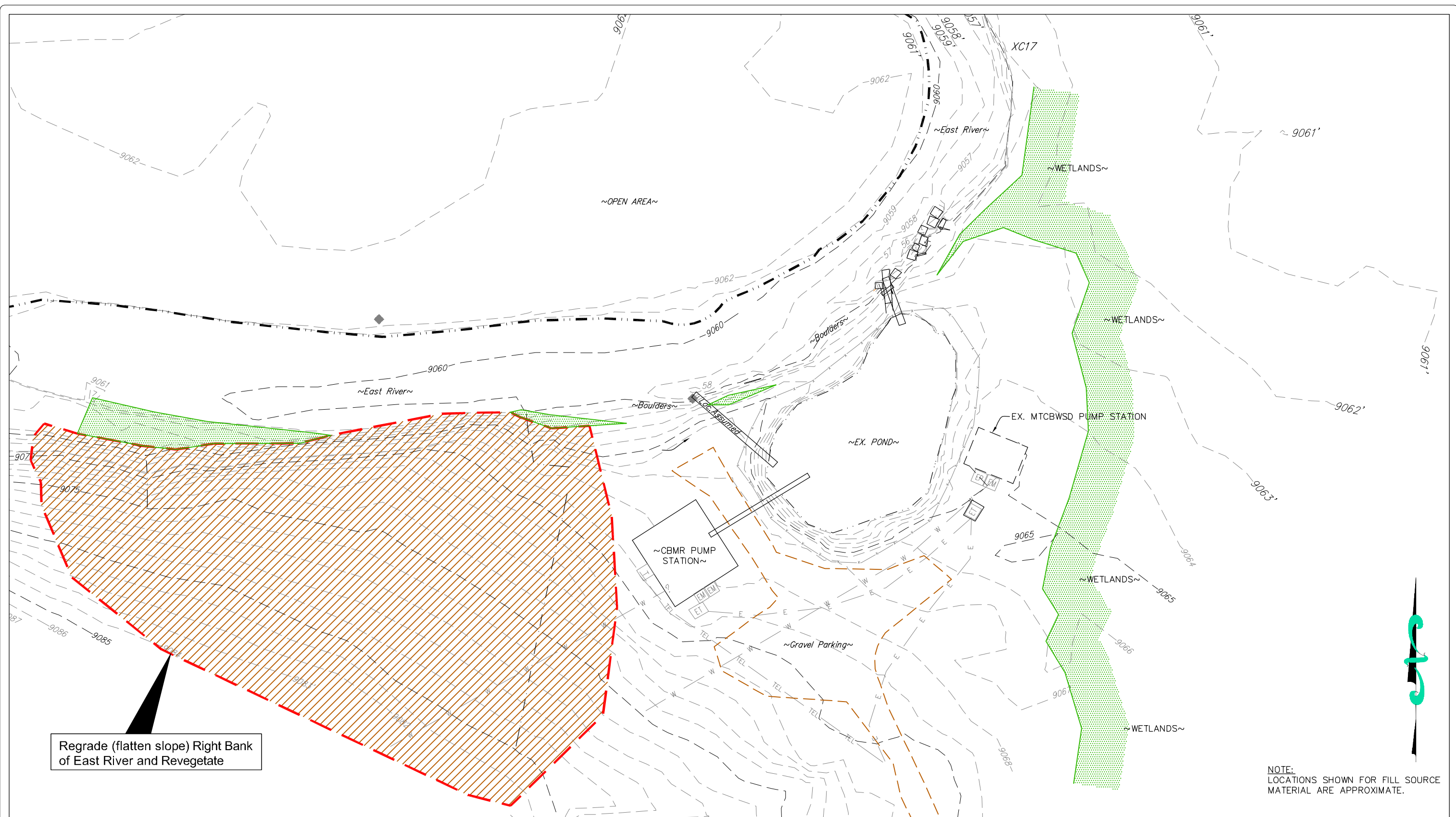
Scale: 1"=1,000'

**RESOURCE  
ENGINEERING, INC.**

808 Colorado Avenue  
Glenwood Springs, CO 81601  
(970) 945-6777 Voice 945-1137 Facsimile







Regrade (flatten slope) Right Bank of East River and Revegetate

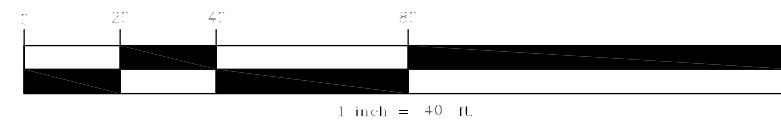
NOTE:  
LOCATIONS SHOWN FOR FILL SOURCE MATERIAL ARE APPROXIMATE.

**Figure 3: Source of Fill Material for Existing Pump Forebay / Pre-Sedimentation Pond**

Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

File: 165-4.16.6  
Date: 11/18/15

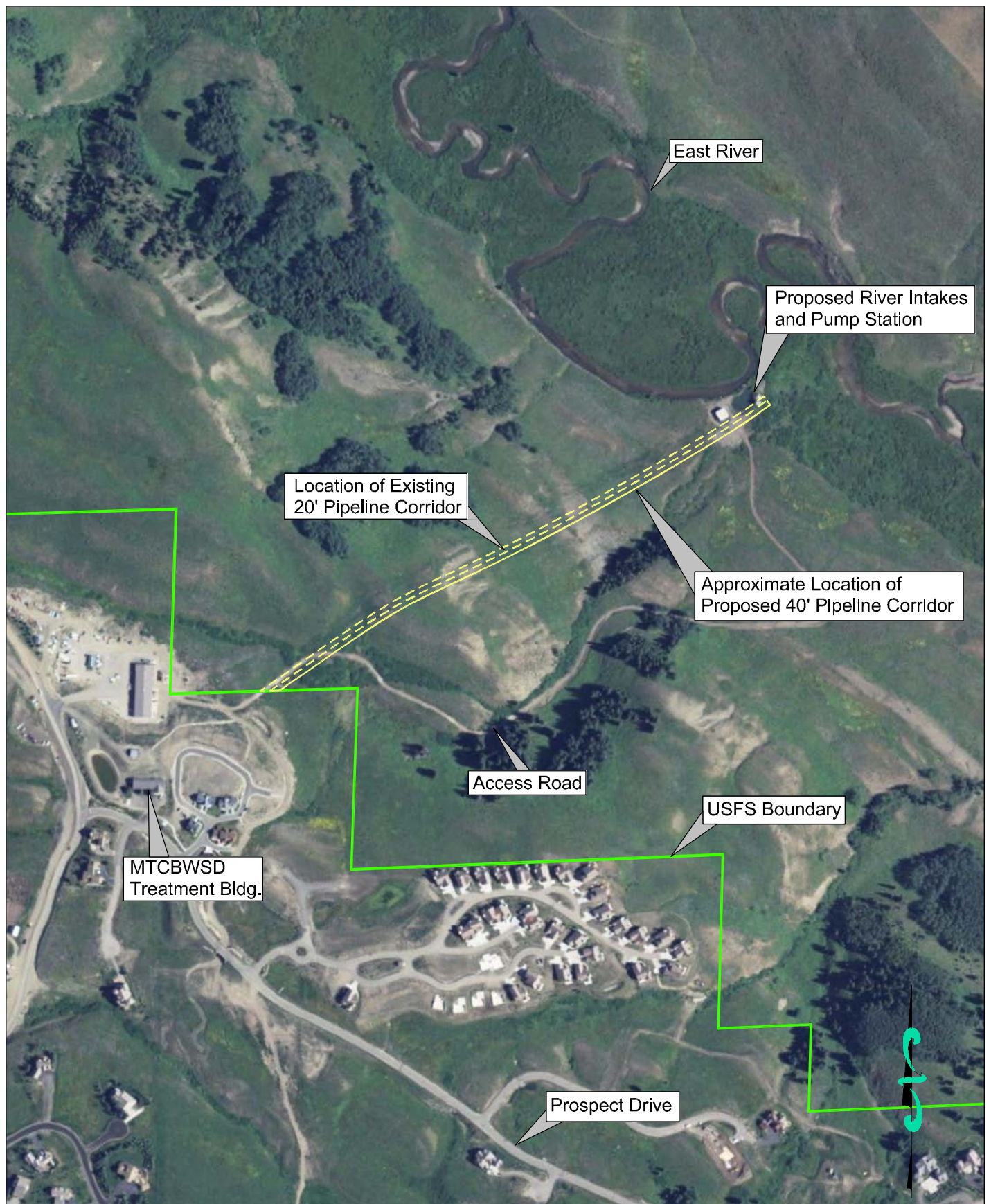
GRAPHIC SCALE



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**Figure 4: Pipeline Corridor Location,  
East River Water Supply System**

Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

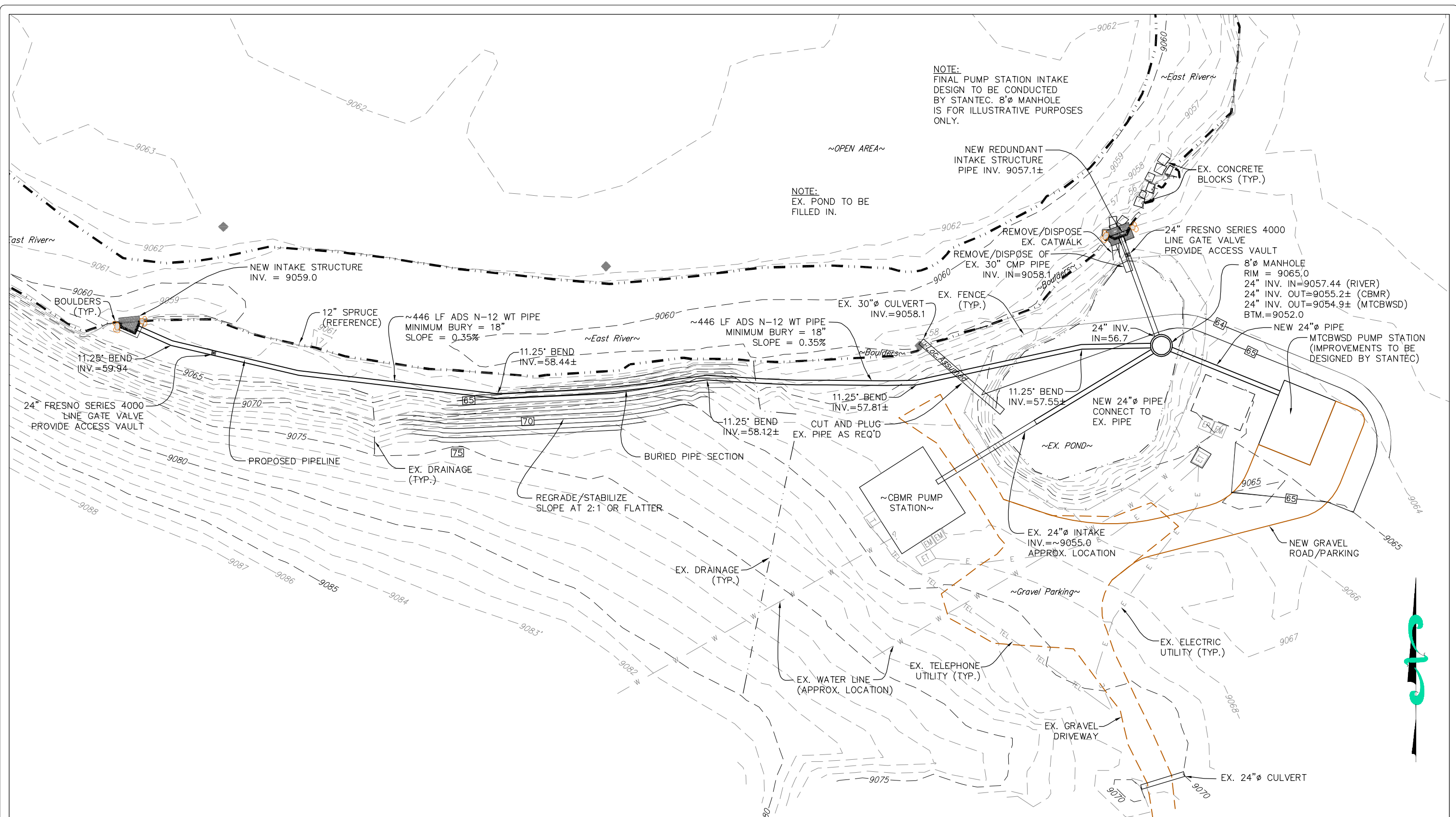
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Date: 11/18/15



Scale: 1"=500'

**RESOURCE  
ENGINEERING, INC.**

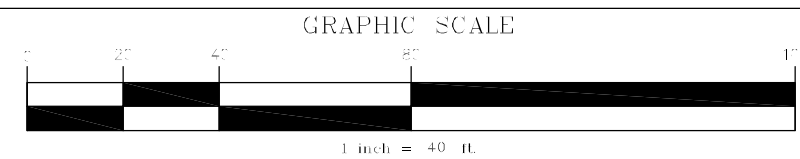
808 Colorado Avenue  
Glenwood Springs, CO 81601  
(970) 945-6777 Voice 945-1137 Facsimile



NOTE:  
FINAL PUMP STATION INTAKE  
DESIGN TO BE CONDUCTED  
BY STANTEC. 8'Ø MANHOLE  
IS FOR ILLUSTRATIVE PURPOSES  
ONLY.

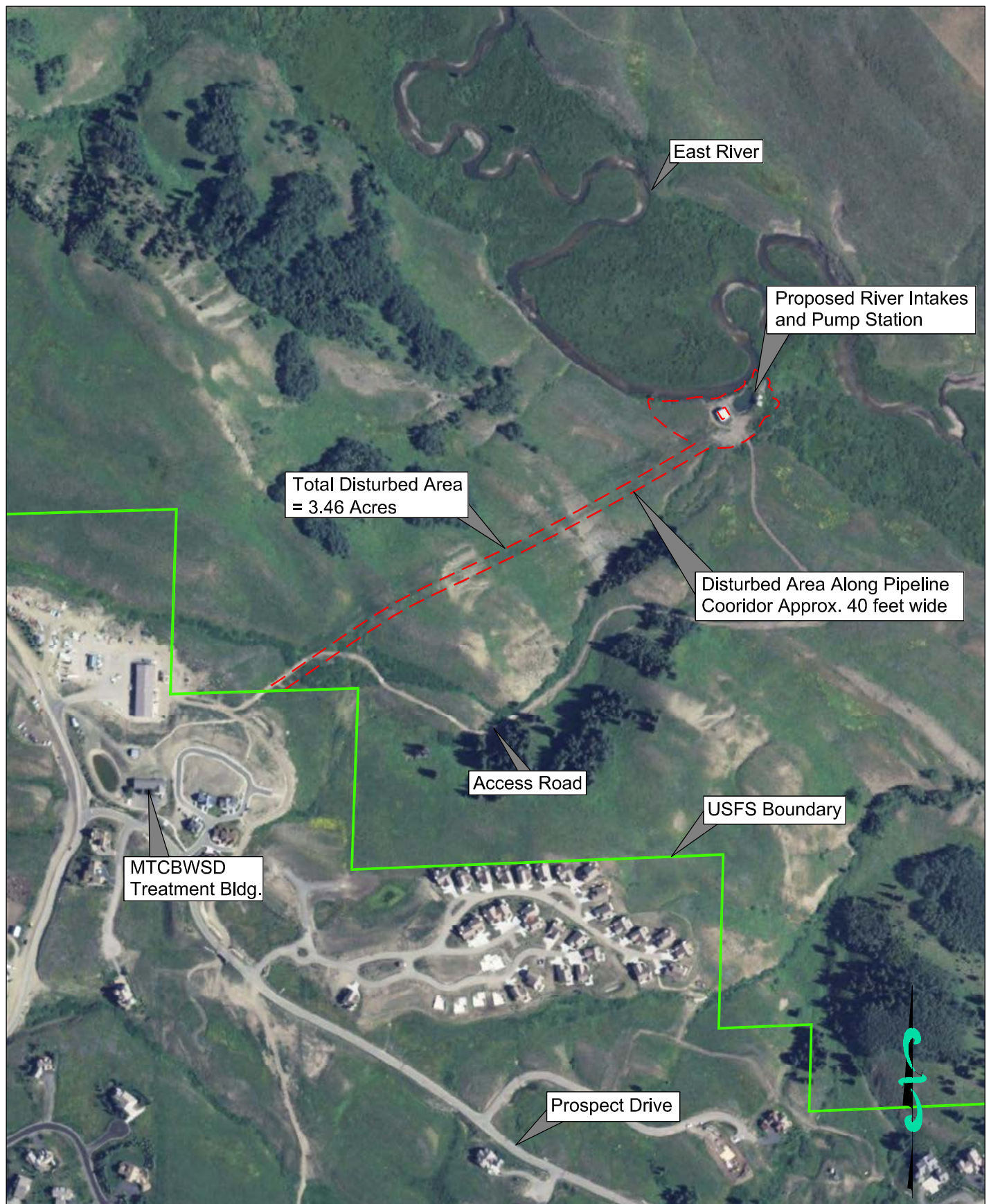
NOTE:  
EX. POND TO BE  
FILLED IN.

**Figure 5: Alternative Considered, Upstream East River Diversion Structure**  
 Mt. Crested Butte Water & Sanitation District  
 USFS Application for Utility Systems on Federal Lands  
 File: 165-4.16.6  
 Date: 11/18/15



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**Figure 6: Disturbed Area Map,  
East River Water Supply System**

Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

File: 165-4.16.6  
Date: 09/23/16



Scale: 1"=500'

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Photograph 1. District pump house and pump forebay/  
pre-sedimentation pond.



Photograph 2. Streambank mitigation alternative. Area with  
green oval shows proposed fill source for pond.



## East River Water Supply System Photographs

Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

File: 165-4.16.6  
Date: 11/18/15

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(970) 945-6777 Voice 945-1137 Facsimile

# **ATTACHMENT 1**

**Special Use Permit - Mt. Crested Butte Water and Sanitation District,  
Authorization ID: GUN1062**



Authorization ID: GUN1062  
Contact ID: MTCBH20  
Expiration Date: 12/31/2034  
Use Code: 915, 931, 935, 923, 753, 914, 921, 222

FS-2700-4 (10/09)  
OMB No. 0596-0082

**U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
SPECIAL USE PERMIT  
Authority: FEDERAL LAND POLICY AND MGMT ACT, AS AMENDED October 21, 1976**

**MT CRESTED BUTTE WATER & SANITATION DISTRICT, PO BOX 5740, CRESTED BUTTE CO, UNITED STATES, 81225** (hereinafter "the holder") is authorized to use or occupy National Forest System lands in the Grand Mesa, Uncompahgre, and Gunnison National Forests or Gunnison Ranger District unit of the National Forest System, subject to the terms and conditions of this special use permit (the permit).

This permit covers approximately 15.21 acres or 5.04 miles in the

**T.13S., R.86W., 6<sup>th</sup> PM**  
**Section 13: S1/2**  
**Section 15: SW1/4**  
**Section 24: SW1/4**  
**Section 25: N1/2**

("the permit area"), as shown on the maps attached as Appendix A1, A2, A3, A4. This permit issued for the purpose of:

**Operation and maintenance of a water collection and distribution system to serve the Mt. Crested Butte vicinity. Permitted facilities are shown on maps, Exhibits A1, A2, A3 and A4**

**Approximately 15,259 feet of waterline, permitted area 20 feet wide (10 feet each side of center)**  
**Water diversion on the East River (2) each 18 inch diameter X 20 feet long culverts**  
**East River pump house, 16 feet, 8 inches X 22 feet, 8 inches**  
**East River fenced collection pond, approximately 75 feet X 110 feet**  
**Four concrete collection boxes, 10 feet X 10 feet**  
**One 200,000 gallon storage tank with concrete foundation, 38 feet diameter X 24 feet high**  
**One 1,000,000 gallon storage tank with concrete foundation, 80 feet diameter X 36 feet high**  
**Approximately 11,360 feet of access road, permitted area 30 feet wide (15 feet each side of center): NFSR 317.1A, CBMR 9, CBMR 117, CBMR 122**  
**Meridian Lake Park infiltration gallery, approximately 180 feet of 4 inch perforated pipe, bedded in gravel**

**TERMS AND CONDITIONS**

**I. GENERAL TERMS**

**A. AUTHORITY.** This permit is issued pursuant to FEDERAL LAND POLICY AND MGMT ACT, AS AMENDED October 21, 1976 and 36 CFR Part 251, Subpart B, as amended, and is subject to their provisions.

**B. AUTHORIZED OFFICER.** The authorized officer is the Forest or Grassland Supervisor or a subordinate officer with delegated authority.

**C. TERM.** This permit shall expire at midnight on **12/31/2034**, 20 years from the date of issuance.

**D. RENEWAL.** This permit is not renewable. Prior to expiration of this permit, the holder may apply for a new permit that would renew the use and occupancy authorized by this permit. Applications for a new permit must be submitted at least 6 months prior to expiration of this permit. Renewal of the use and occupancy authorized by this permit shall be at the sole discretion of the authorized officer. At a minimum, before renewing the use and occupancy authorized by this permit, the authorized officer shall require that (1) the use and occupancy to be authorized by the new permit is consistent with the standards and guidelines in the applicable land management plan; (2) the type of use and occupancy to be authorized by the new permit is the same as the type of use and occupancy authorized by this permit; and (3) the holder is in compliance with all the terms of this permit. The authorized officer may prescribe new terms and conditions when a new

permit is issued.

**E. AMENDMENT.** This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms that may be required by law, regulation, directive, the applicable forest land and resource management plan, or projects and activities implementing a land management plan pursuant to 36 CFR Part 215.

**F. COMPLIANCE WITH LAWS, REGULATIONS, AND OTHER LEGAL REQUIREMENTS.** In exercising the rights and privileges granted by this permit, the holder shall comply with all present and future federal laws and regulations and all present and future state, county, and municipal laws, regulations, and other legal requirements that apply to the permit area, to the extent they do not conflict with federal law, regulation, or policy. The Forest Service assumes no responsibility for enforcing laws, regulations, and other legal requirements that fall under the jurisdiction of other governmental entities.

**G. NON-EXCLUSIVE USE.** The use or occupancy authorized by this permit is not exclusive. The Forest Service reserves the right of access to the permit area, including a continuing right of physical entry to the permit area for inspection, monitoring, or any other purpose consistent with any right or obligation of the United States under any law or regulation. The Forest Service reserves the right to allow others to use the permit area in any way that is not inconsistent with the holder's rights and privileges under this permit, after consultation with all parties involved. Except for any restrictions that the holder and the authorized officer agree are necessary to protect the installation and operation of authorized temporary improvements, the lands and waters covered by this permit shall remain open to the public for all lawful purposes.

**H. ASSIGNABILITY.** This permit is not assignable or transferable.

#### **I. TRANSFER OF TITLE TO THE IMPROVEMENTS.**

1. Notification of Transfer. The holder shall notify the authorized officer when a transfer of title to all or part of the authorized improvements is contemplated.

2. Transfer of Title. Any transfer of title to the improvements covered by this permit shall result in termination of the permit. The party who acquires title to the improvements must submit an application for a permit. The Forest Service is not obligated to issue a new permit to the party who acquires title to the improvements. The authorized officer shall determine that the applicant meets requirements under applicable federal regulations.

#### **II. IMPROVEMENTS**

**A. LIMITATIONS ON USE.** Nothing in this permit gives or implies permission to build or maintain any structure or facility or to conduct any activity, unless specifically authorized by this permit. Any use not specifically authorized by this permit must be proposed in accordance with 36 CFR 251.54. Approval of such a proposal through issuance of a new permit or permit amendment is at the sole discretion of the authorized officer.

**B. PLANS.** All plans for development, layout, construction, reconstruction, or alteration of improvements in the permit area, as well as revisions to those plans must be prepared by a professional engineer, architect, landscape architect, or other qualified professional based on federal employment standards acceptable to the authorized officer. These plans and plan revisions must have written approval from the authorized officer before they are implemented. The authorized officer may require the holder to furnish as-built plans, maps, or surveys upon completion of the work.

**B. CONSTRUCTION.** Any construction authorized by this permit shall commence by N/A and shall be completed by N/A.

#### **III. OPERATIONS.**

**A. PERIOD OF USE.** Use or occupancy of the permit area shall be exercised at least 365 days each year.

**B. CONDITION OF OPERATIONS.** The holder shall maintain the authorized improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this permit. Standards are subject to periodic change by the authorized officer when deemed necessary to meet statutory, regulatory, or policy requirements or to protect national forest resources. The holder shall comply with inspection requirements deemed appropriate by the authorized officer.

**D. INSPECTION BY THE FOREST SERVICE.** The Forest Service shall monitor the holder's operations and reserves the

right to inspect the permit area and transmission facilities at any time for compliance with the terms of this permit. The holder's obligations under this permit are not contingent upon any duty of the Forest Service to inspect the permit area or transmission facilities. A failure by the Forest Service or other governmental officials to inspect is not a justification for noncompliance with any of the terms and conditions of this permit.

#### **IV. RIGHTS AND LIABILITIES**

**A. LEGAL EFFECT OF THE PERMIT.** This permit, which is revocable and terminable, is not a contract or a lease, but rather a federal license. The benefits and requirements conferred by this authorization are reviewable solely under the procedures set forth in 36 CFR Part 251, Subpart C, and 5 U.S.C. 704. This permit does not constitute a contract for purposes of the Contract Disputes Act, 41 U.S.C. 601. The permit is not real property, does not convey any interest in real property, and may not be used as collateral for a loan.

**B. VALID OUTSTANDING RIGHTS.** This permit is subject to all valid outstanding rights. Valid outstanding rights include those derived under mining and mineral leasing laws of the United States. The United States is not liable to the holder for the exercise of any such right.

**C. ABSENCE OF THIRD-PARTY BENEFICIARY RIGHTS.** The parties to this permit do not intend to confer any rights on any third party as a beneficiary under this permit.

**D. SERVICES NOT PROVIDED.** This permit does not provide for the furnishing of road or trail maintenance, water, fire protection, search and rescue, or any other such service by a government agency, utility, association, or individual.

**E. RISK OF LOSS.** The holder assumes all risk of loss associated with use or occupancy of the permit area, including but not limited to theft, vandalism, fire and any fire-fighting activities (including prescribed burns), avalanches, rising waters, winds, falling limbs or trees, and other forces of nature. If authorized temporary improvements in the permit area are destroyed or substantially damaged, the authorized officer shall conduct an analysis to determine whether the improvements can be safely occupied in the future and whether rebuilding should be allowed. If rebuilding is not allowed, the permit shall terminate.

**F. DAMAGE TO UNITED STATES PROPERTY.** The holder has an affirmative duty to protect from damage the land, property, and other interests of the United States. Damage includes but is not limited to fire suppression costs, damage to government-owned improvements covered by this permit, and all costs and damages associated with or resulting from the release or threatened release of a hazardous material occurring during or as a result of activities of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees on, or related to, the lands, property, and other interests covered by this permit. For purposes of clause IV.F and section V, "hazardous material" shall mean (a) any hazardous substance under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (c) any petroleum product or its derivative, including fuel oil, and waste oils; and (d) any hazardous substance, extremely hazardous substance, toxic substance, hazardous waste, ignitable, reactive or corrosive materials, pollutant, contaminant, element, compound, mixture, solution or substance that may pose a present or potential hazard to human health or the environment under any applicable environmental laws.

1. The holder shall avoid damaging or contaminating the environment, including but not limited to the soil, vegetation (such as trees, shrubs, and grass), surface water, and groundwater, during the holder's use or occupancy of the permit area. If the environment or any government property covered by this permit becomes damaged during the holder's use or occupancy of the permit area, the holder shall immediately repair the damage or replace the damaged items to the satisfaction of the authorized officer and at no expense to the United States.

2. The holder shall be liable for all injury, loss, or damage, including fire suppression, prevention and control of the spread of invasive species, or other costs in connection with rehabilitation or restoration of natural resources associated with the use or occupancy authorized by this permit. Compensation shall include but not be limited to the value of resources damaged or destroyed, the costs of restoration, cleanup, or other mitigation, fire suppression or other types of abatement costs, and all administrative, legal (including attorney's fees), and other costs. Such costs may be deducted from a performance bond required under clause IV.I.

3. The holder shall be liable for damage caused by use of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees to all roads and trails of the United States to the same extent as provided under clause IV.F.1, except that liability shall not include reasonable and ordinary wear and tear

**G. HEALTH, SAFETY, AND ENVIRONMENTAL PROTECTION.** The holder shall promptly abate as completely as

possible and in compliance with all applicable laws and regulations any activity or condition arising out of or relating to the authorized use or occupancy that causes or threatens to cause a hazard to public health or the safety of the holder's employees or agents or harm to the environment (including areas of vegetation or timber, fish or other wildlife populations, their habitats, or any other natural resources). The holder shall prevent impacts to the environment and cultural resources by implementing actions identified in the operating plan to prevent establishment and spread of invasive species. The holder shall immediately notify the authorized officer of all serious accidents that occur in connection with such activities. The responsibility to protect the health and safety of all persons affected by the use or occupancy authorized by this permit is solely that of the holder. The Forest Service has no duty under the terms of this permit to inspect the permit area or operations and activities of the holder for hazardous conditions or compliance with health and safety standards.

**H. INDEMNIFICATION OF THE UNITED STATES.** The holder shall indemnify, defend, and hold harmless the United States for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the holder in connection with the use or occupancy authorized by this permit. This indemnification provision includes but is not limited to acts and omissions of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees in connection with the use or occupancy authorized by this permit which result in (1) violations of any laws and regulations which are now or which may in the future become applicable, and including but not limited to those environmental laws listed in clause V.A of this permit; (2) judgments, claims, demands, penalties, or fees assessed against the United States; (3) costs, expenses, and damages incurred by the United States; or (4) the release or threatened release of any solid waste, hazardous waste, hazardous materials, pollutant, contaminant, oil in any form, or petroleum product into the environment. The authorized officer may prescribe terms that allow the holder to replace, repair, restore, or otherwise undertake necessary curative actions to mitigate damages in addition to or as an alternative to monetary indemnification.

**I. BONDING.** The authorized officer may require the holder to furnish a surety bond or other security for any of the obligations imposed by the terms and conditions of this permit or any applicable law, regulation, or order.

**J. INSURANCE.** The holder shall furnish proof of insurance, such as a certificate of insurance, to the authorized officer prior to issuance of this permit and each year thereafter that this permit is in effect. The Forest Service reserves the right to review and approve the insurance policy prior to issuance. The holder shall send an authenticated copy of any insurance policy obtained pursuant to this clause to the authorized officer immediately upon issuance of the policy. Any insurance policies obtained by the holder pursuant to this clause shall name the United States as an additional insured, and the additional insured provision shall provide for insurance coverage for the United States as required under this clause. Such policies also shall specify that the insurance company shall give 30 days prior written notice to the authorized officer of cancellation of or any modification to the policies. The certificate of insurance, the authenticated copy of the insurance policy, and written notice of cancellation or modification of insurance policies should be sent to Gunnison Ranger District, 216 N. Colorado St., Gunnison, CO 81230. Minimum amounts of coverage and other insurance requirements are subject to change at the sole discretion of the authorized officer on the anniversary date of this permit.

1. The holder shall have in force liability insurance covering losses, including those arising from strict liability, associated with the use or occupancy authorized by this permit arising from personal injury or death and third-party property damage in the minimum amount of \$1,000,000.00 as a combined single limit per occurrence.

2. Depending on the holder's operations, the Forest Service may require the holder to demonstrate the availability of funds to address any release or threatened release of hazardous materials that may occur in connection with the holder's use or occupancy. Any requirements imposed would be established on a case-by-case basis by the authorized officer based on the degree of environmental risk from the holder's operations. The storage and use of normal maintenance supplies in nominal amounts generally would not trigger financial assurance requirements.

## **V. RESOURCE PROTECTION**

**A. COMPLIANCE WITH ENVIRONMENTAL LAWS.** The holder shall in connection with the use or occupancy authorized by this permit comply with all applicable federal, state, and local environmental laws and regulations, including but not limited to those established pursuant to the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901 et seq., the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq., the Oil Pollution Act, as amended, 33 U.S.C. 2701 et seq., the Clean Air Act, as amended, 42 U.S.C. 7401 et seq., CERCLA, as amended, 42 U.S.C. 9601 et seq., the Toxic Substances Control Act, as amended, 15 U.S.C. 2601 et seq., the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, 7 U.S.C. 136 et seq., and the Safe Drinking Water Act, as amended, 42 U.S.C. 300f et seq.

**B. VANDALISM.** The holder shall take reasonable measures to prevent and discourage vandalism and disorderly conduct and when necessary shall contact the appropriate law enforcement officer.

**C. PESTICIDE USE.** Pesticides may not be used outside of buildings to control undesirable woody and herbaceous vegetation (including aquatic plants), insects, rodents, fish, and other pests and weeds without prior written approval from the authorized officer. A request for approval of planned uses of pesticides shall be submitted annually by the holder on the due date established by the authorized officer. The report shall cover a 12-month period of planned use beginning 3 months after the reporting date. Information essential for review shall be provided in the form specified. Exceptions to this schedule may be allowed, subject to emergency request and approval, only when unexpected outbreaks of pests or weeds require control measures that were not anticipated at the time an annual report was submitted. Only those materials registered by the U.S. Environmental Protection Agency for the specific purpose planned shall be considered for use on National Forest System lands. Label instructions and all applicable laws and regulations shall be strictly followed in the application of pesticides and disposal of excess materials and containers.

**D. ARCHAEOLOGICAL-PALEONTOLOGICAL DISCOVERIES.** The holder shall immediately notify the authorized officer of all antiquities or other objects of historic or scientific interest, including but not limited to historic or prehistoric ruins, fossils, or artifacts discovered in connection with the use and occupancy authorized by this permit. The holder shall leave these discoveries intact and in place until directed otherwise by the authorized officer. Protective and mitigative measures specified by the authorized officer shall be the responsibility of the holder.

**E. NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION.** In accordance with 25 U.S.C. 3002(d) and 43 CFR 10.4, if the holder inadvertently discovers human remains, funerary objects, sacred objects, or objects of cultural patrimony on National Forest System lands, the holder shall immediately cease work in the area of the discovery and shall make a reasonable effort to protect and secure the items. The holder shall immediately notify the authorized officer by telephone of the discovery and shall follow up with written confirmation of the discovery. The activity that resulted in the inadvertent discovery may not resume until 30 days after the authorized officer certifies receipt of the written confirmation, if resumption of the activity is otherwise lawful, or at any time if a binding written agreement has been executed between the Forest Service and the affiliated Indian tribes that adopts a recovery plan for the human remains and objects.

**F. PROTECTION OF HABITAT OF THREATENED, ENDANGERED, AND SENSITIVE SPECIES.** The location of sites within the permit area needing special measures for protection of plants or animals listed as threatened or endangered under the Endangered Species Act (ESA) of 1973, 16 U.S.C. 1531 et seq., as amended, or identified as sensitive or otherwise requiring special protection by the Regional Forester under Forest Service Manual (FSM) 2670, pursuant to consultation conducted under section 7 of the ESA, may be shown on the ground or on a separate map. The map shall be attached to this permit as an appendix. The holder shall take any protective and mitigative measures specified by the authorized officer. If protective and mitigative measures prove inadequate, if other sites within the permit area containing threatened, endangered, or sensitive species or species otherwise requiring special protection are discovered, or if new species are listed as threatened or endangered under the ESA or identified as sensitive or otherwise requiring special protection by the Regional Forester under the FSM, the authorized officer may specify additional protective and mitigative measures. Discovery of these sites by the holder or the Forest Service shall be promptly reported to the other party.

**G. CONSENT TO STORE HAZARDOUS MATERIALS.** The holder shall not store any hazardous materials at the site without prior written approval from the authorized officer. This approval shall not be unreasonably withheld. If the authorized officer provides approval, this permit shall include, or in the case of approval provided after this permit is issued, shall be amended to include specific terms addressing the storage of hazardous materials, including the specific type of materials to be stored, the volume, the type of storage, and a spill plan. Such terms shall be proposed by the holder and are subject to approval by the authorized officer.

#### **H. CLEANUP AND REMEDIATION**

1. The holder shall immediately notify all appropriate response authorities, including the National Response Center and the authorized officer or the authorized officer's designated representative, of any oil discharge or of the release of a hazardous material in the permit area in an amount greater than or equal to its reportable quantity, in accordance with 33 CFR Part 153, Subpart B, and 40 CFR Part 302. For the purposes of this requirement, "oil" is as defined by section 311(a)(1) of the Clean Water Act, 33 U.S.C. 1321(a)(1). The holder shall immediately notify the authorized officer or the authorized officer's designated representative of any release or threatened release of any hazardous material in or near the permit area which may be harmful to public health or welfare or which may adversely affect natural resources on federal lands.

2. Except with respect to any federally permitted release as that term is defined under Section 101(10) of CERCLA, 42

U.S.C. 9601(10), the holder shall clean up or otherwise remediate any release, threat of release, or discharge of hazardous materials that occurs either in the permit area or in connection with the holder's activities in the permit area, regardless of whether those activities are authorized under this permit. The holder shall perform cleanup or remediation immediately upon discovery of the release, threat of release, or discharge of hazardous materials. The holder shall perform the cleanup or remediation to the satisfaction of the authorized officer and at no expense to the United States. Upon revocation or termination of this permit, the holder shall deliver the site to the Forest Service free and clear of contamination.

**I. CERTIFICATION UPON REVOCATION OR TERMINATION.** If the holder uses or stores hazardous materials at the site, upon revocation or termination of this permit the holder shall provide the Forest Service with a report certified by a professional or professionals acceptable to the Forest Service that the permit area is uncontaminated by the presence of hazardous materials and that there has not been a release or discharge of hazardous materials upon the permit area, into surface water at or near the permit area, or into groundwater below the permit area during the term of the permit. This certification requirement may be waived by the authorized officer when the Forest Service determines that the risks posed by the hazardous material are minimal. If a release or discharge has occurred, the professional or professionals shall document and certify that the release or discharge has been fully remediated and that the permit area is in compliance with all federal, state, and local laws and regulations:

## **VI. LAND USE FEE AND ACCOUNTING ISSUES**

**A. LAND USE FEES.** The holder shall pay an initial annual land use fee of \$1205.92 for the period from January 1 to December 31, and thereafter on January 1, shall pay an annual land use fee of \$. The annual land use fee shall be adjusted annually using the Implicit Price Deflator- Gross Domestic Product (IDP-GDP).

**B. MODIFICATION OF THE LAND USE FEE.** The land use fee may be revised whenever necessary to reflect the market value of the authorized use or occupancy or when the fee system used to calculate the land use fee is modified or replaced.

### **C. FEE PAYMENT ISSUES.**

1. Crediting of Payments. Payments shall be credited on the date received by the deposit facility, except that if a payment is received on a non-workday, the payment shall not be credited until the next workday.

2. Disputed Fees. Fees are due and payable by the due date. Disputed fees must be paid in full. Adjustments will be made if dictated by an administrative appeal decision, a court decision, or settlement terms.

#### 3. Late Payments

(a) Interest. Pursuant to 31 U.S.C. 3717 et seq., interest shall be charged on any fee amount not paid within 30 days from the date it became due. The rate of interest assessed shall be the higher of the Prompt Payment Act rate or the rate of the current value of funds to the Treasury (i.e., the Treasury tax and loan account rate), as prescribed and published annually or quarterly by the Secretary of the Treasury in the Federal Register and the Treasury Fiscal Requirements Manual Bulletins. Interest on the principal shall accrue from the date the fee amount is due.

(b) Administrative Costs. If the account becomes delinquent, administrative costs to cover processing and handling the delinquency shall be assessed.

(c) Penalties. A penalty of 6% per annum shall be assessed on the total amount that is more than 90 days delinquent and shall accrue from the same date on which interest charges begin to accrue.

(d) Termination for Nonpayment. This permit shall terminate without the necessity of prior notice and opportunity to comply when any permit fee payment is 90 calendar days from the due date in arrears. The holder shall remain responsible for the delinquent fees.

4. Administrative Offset and Credit Reporting. Delinquent fees and other charges associated with the permit shall be subject to all rights and remedies afforded the United States pursuant to 31 U.S.C. 3711 et seq. and common law. Delinquencies are subject to any or all of the following:

(a) Administrative offset of payments due the holder from the Forest Service.

(b) If in excess of 60 days, referral to the Department of the Treasury for appropriate collection action as provided by 31

U.S.C. 3711(g)(1).

(c) Offset by the Secretary of the Treasury of any amount due the holder, as provided by 31 U.S.C. 3720 et seq.

(d) Disclosure to consumer or commercial credit reporting agencies.

## **VII. REVOCATION, SUSPENSION, AND TERMINATION**

**A. REVOCATION AND SUSPENSION.** The authorized officer may revoke or suspend this permit in whole or in part:

1. For noncompliance with federal, state, or local law.
2. For noncompliance with the terms of this permit.
3. For abandonment or other failure of the holder to exercise the privileges granted.
4. With the consent of the holder.
5. For specific and compelling reasons in the public interest.

Prior to revocation or suspension, other than immediate suspension under clause VI.B, the authorized officer shall give the holder written notice of the grounds for revocation or suspension. In the case of revocation or suspension based on clause VII.A.1, 2, or 3, the authorized officer shall give the holder a reasonable time, typically not to exceed 90 days, to cure any noncompliance.

**B. IMMEDIATE SUSPENSION.** The authorized officer may immediately suspend this permit in whole or in part when necessary to protect public health or safety or the environment. The suspension decision shall be in writing. The holder may request an on-site review with the authorized officer's supervisor of the adverse conditions prompting the suspension. The authorized officer's supervisor shall grant this request within 48 hours. Following the on-site review, the authorized officer's supervisor shall promptly affirm, modify, or cancel the suspension.

**C. APPEALS AND REMEDIES.** Written decisions by the authorized officer relating to administration of this permit are subject to administrative appeal pursuant to 36 CFR Part 251, Subpart C, as amended. Revocation or suspension of this permit shall not give rise to any claim for damages by the holder against the Forest Service.

**D. TERMINATION.** This permit shall terminate when by its terms a fixed or agreed upon condition, event, or time occurs without any action by the authorized officer. Examples include but are not limited to expiration of the permit by its terms on a specified date and termination upon change of control of the business entity. Termination of this permit shall not require notice, a decision document, or any environmental analysis or other documentation. Termination of this permit is not subject to administrative appeal and shall not give rise to any claim for damages by the holder against the Forest Service.

**E. RIGHTS AND RESPONSIBILITIES UPON REVOCATION OR TERMINATION WITHOUT RENEWAL.** Upon revocation or termination of this permit without renewal of the authorized use, the holder shall remove all structures and improvements, except those owned by the United States, within a reasonable period prescribed by the authorized officer and shall restore the site to the satisfaction of the authorized officer. If the holder fails to remove all structures and improvements within the prescribed period, they shall become the property of the United States and may be sold, destroyed, or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all costs associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

## **VIII. MISCELLANEOUS PROVISIONS**

**A. MEMBERS OF CONGRESS.** No member of or delegate to Congress or resident commissioner shall benefit from this permit either directly or indirectly, except to the extent the authorized use provides a general benefit to a corporation.

**B. CURRENT ADDRESSES.** The holder and the Forest Service shall keep each other informed of current mailing addresses, including those necessary for billing and payment of land use fees.

**C. SUPERSEDED PERMIT.** This permit supersedes a special use permit designated Mt Crested Butte Water and Sanitation District, GUN412202 dated 6/20/1967, GUN412201 dated 8/18/1980 and GUN412203 dated 8/14/1991.

**D. SUPERIOR CLAUSES.** If there is a conflict between any of the preceding printed clauses and any of the following clauses, the preceding printed clauses shall control.

**E. Operation and Maintenance Plan (R2-C102).** An Operation and Maintenance Plan, described as Exhibit B, is attached hereto and made a part hereof.

**F. Noxious Weed/Exotic Plant Prevention and Control (R2-D103).**

1. The holder shall be responsible for the prevention and control of noxious weeds and/or exotic plants of concern on the area authorized by this authorization and shall provide prevention and control measures prescribed by the Forest Service. Noxious weeds and exotic plants of concern are defined as those species recognized by Gunnison County and/or Gunnison National Forest in which the authorized use is located.
2. When determined to be necessary by the authorized officer, the holder shall develop a site-specific plan for noxious weed and exotic plant prevention and control. Such plan shall be subject to Forest Service approval. Upon Forest Service approval, the noxious weed and exotic plant prevention and control plan shall become a part of this authorization, and its provisions shall be enforceable under the terms of this authorization.
3. The holder shall also be responsible for prevention and control of noxious weed and exotic plant infestations which are not within the authorized area, but which are determined by the Forest Service to have originated within the authorized area.

**G. Use of Certified Noxious Weed Free Hay, Straw or Mulch (R2-X107).** Only hay, grain, straw, cubes or mulch certified as noxious weed free or noxious weed seed free by an authorized State Department of Agriculture official or designated county official may be used. Each individual bale or container must be tagged or marked as a certified weed free product and reference a written certification, if one exists.

The following are exempted from this requirement:

1. Pelletized feed or grain products.
2. Persons with a permit specifically authorizing the prohibited act.
3. Transporting straw, hay or mulch on Federal, State, and County roads that are not National Forest System roads and trails.

**H. Drinking Water Systems (B-38).**

**DRINKING WATER SYSTEMS.** The holder, as the water supplier and owner or operator of the drinking water system for the facilities authorized by this permit, is responsible for compliance with all applicable Federal, State, and local drinking water laws and regulations governing operation and maintenance of a public drinking water system, including but not limited to developing, operating, and maintaining the system and conducting drinking water testing and taking appropriate corrective and follow-up actions in accordance with federal, state, and any other applicable requirements. For purposes of this permit, public water systems are defined in accordance with the Safe Drinking Water Act, as amended (42 U.S.C. 300f *et seq.*), and the National Primary Drinking Water Regulations, 40 CFR Part 141, or state regulations, if more stringent. The holder shall retain all drinking water system records as required by applicable laws and regulations. The holder agrees to make the records available to the Forest Service and to any other regulatory agency authorized to review Forest Service activities.

**I. Surveys, Land Corners (D4).**

The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges permitted by this authorization, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.



J. Removal and Planting of Vegetation and Other Resources (D-5).

**REMOVAL AND PLANTING OF VEGETATION AND OTHER RESOURCES.** This permit does not authorize the cutting of timber or other vegetation. Trees or shrubbery may be removed or destroyed only after the authorized officer or the authorized officer's designated representative has approved in writing and marked or otherwise identified what may be removed or destroyed. Timber cut or destroyed shall be paid for at current stumpage rates for similar timber in the Gunnison National Forest. The Forest Service reserves the right to dispose of the merchantable timber to those other than the holder at no stumpage cost to the holder. Unmerchantable material shall be disposed of as directed by the authorized officer. Trees, shrubs, and other plants may be planted within the permit area with prior written approval of the authorized officer.

K. Ground Surface Protection and Restoration (D-9).

**GROUND SURFACE PROTECTION AND RESTORATION.** The holder shall prevent and control soil erosion and gullyng on National Forest System lands in and adjacent to the permit area resulting from construction, operation, maintenance, and termination of the authorized use. The holder shall construct authorized improvements so as to avoid accumulation of excessive amounts of water in the permit area and encroachment on streams. The holder shall revegetate or otherwise stabilize (for example, by constructing a retaining wall) all ground where the soil has been exposed as a result of the holder's construction, maintenance, operation, or termination of the authorized use.

L. Water Facilities and Water Rights (D-25).

**WATER FACILITIES AND WATER RIGHTS.** This permit does not confer any water rights on the holder. Any necessary water rights must be acquired by the holder in accordance with State law. Any expenses for acquiring water rights shall be the responsibility of the holder. The United States reserves the right to place any conditions on installation, operation, maintenance, and removal of facilities to pump, divert, store, or convey water on National Forest System lands covered by this permit that are necessary to protect public property, public safety, and natural resources on National Forest System lands in compliance with applicable law. The holder waives any claims against the United States for compensation in connection with imposition of any conditions on installation, operation, maintenance, and removal of water facilities under this permit.

M. Improvement Relocation (X33). This authorization is granted with the express understanding that should future location of United States Government-owned improvements or road rights-of-way require the relocation of the holder's improvements, such relocation will be done by, and at the expense of, the holder within a reasonable time as specified by the authorized officer.

This permit is accepted subject to the conditions set out above.

MT CRESTED BUTTE WATER & SANITATION DISTRICT U.S. DEPARTMENT OF AGRICULTURE  
Forest Service

By: Frank L. Glick  
(Holder Signature)

By: Scott Armentrout  
SCOTT ARMENROUT  
Forest Supervisor

Frank L. Glick  
Name and Title

Date: 9 Sep 14

Date: 9/19/14

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**EXHIBIT A - 1**  
**Mt. Crested Butte Water and Sanitation District**  
**Spring Development/Water Transmission/Water Storage Tank**  
**Special Use Permit**  
**Gunnison Ranger District**

**Storage Tanks**  
 4308164 N, 329938 E  
 UTM NAD 83, Zone 13 N

**Water Line**  
 Approximately 7635 X 20 feet wide,  
 (10 feet each side of center)

**Access Road**  
 Approximately 8054 X 30 feet wide,  
 (15 feet each side of center)

**Collection Tank No. 3**  
 4307818 N, 330972 E  
 UTM NAD 83, Zone 13 N

CBMR 122

CBMR 117






CBMR 9

**Collection Tank No. 2**  
 4307354 N, 330727 E  
 UTM NAD 83, Zone 13 N

8" C.I.

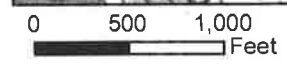
**Collection Tank No. 1**  
 4307119 N, 330766 E  
 UTM NAD 83, Zone 13

**Legend**

-  Storage Tanks
-  Spring Collection Box
-  8" Cast Iron (C.I.)
-  Access Road
-  Private Land

**ATTENTION**

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JRM 7/16/13

**T.13S., R.86W., 6th P.M.**  
**Section 24: SW 1/4**  
**Section 25: N 1/2**

Gothic, CO Quadrangle

**EXHIBIT A - 2**  
**Mt. Crested Butte Water and Sanitation District**  
**Domestic Water Pipeline**  
**Special Use Permit**  
**Gunnison Ranger District**

**Permit Area**  
 Approximately 4446 X 20 feet wide,  
 (10 feet each side of center)  
 6" 359  
 8" 195  
 10" 3079  
 12" 813

**Origin, From Storage Tanks**  
 4308177 N, 329921 E  
 UTM NAD 83, Zone 13 N

**Distribution Line/Valve**

12"

10"

**Pipeline Intersection**

6"

**Air Relief Valve**  
 4307910 N, 329880 E  
 UTM NAD 83, Zone 13 N

10"

8"

**Distribution Line/Valve**

10"

**Distribution Line/Valve**



**Legend**

- Valve/Meter
- Ductile Iron Pipeline
- Private Land

**ATTENTION**

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T.13S., R.86W., 6th P.M.  
 Section 24: SW 1/4  
 Section 25: NW 1/4

JRM 7/17/13

Gothic, CO Quadrangle

**EXHIBIT A - 3**  
**Mt. Crested Butte Water and Sanitation District**  
**Water Line and Collection Pond**  
**Special Use Permit**  
**Gunnison Ranger District**

Beginning of Permit Area  
 4310130 N 329829 E  
 UTM NAD 83, Zone 13 N

Water Line  
 Approximately 2157 X 20 feet wide,  
 (10 feet each side of center)

Access Road  
 Approximately 3306 X 30 feet wide,  
 (15 feet each side of center)

Beginning of Permit Area  
 Pump House, Collection Pond and Fence  
 4309946 N, 330893 E  
 UTM NAD 83, Zone 13 N

End of Permit Area

12" Corrugated Polyethylene

8" D.I.

NFSR 317.1A

End of Permit Area  
 4309626 N, 330329 E  
 UTM NAD 83, Zone 13 N



**Legend**

- Private Land
- Pipeline Markers
- 12" Corrugated Polyethylene
- 8" Ductile Iron
- Access Road
- Forest Boundary

**ATTENTION**

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T.13S., R.86W., 6th P.M.  
 Section 13: S 1/2

SDJ 7/12/14

Gothic, CO Quadrangle



**EXHIBIT A - 4**  
**Mt. Crested Butte Water and Sanitation District**  
**Spring Development/Water Transmission**  
**Special Use Permit**  
**Gunnison Ranger District**

**Meridian Lake Park**  
**Permit Area**  
 Approximately 1021 X 20 feet wide,  
 (10 feet each side of center)

**End of Permit Area**  
 4309992 N, 326525 E  
 UTM NAD 83, Zone 13 N




**Collection Box**  
 4309992 N, 326686 E  
 UTM NAD 83, Zone 13 N

8" PVC

**Beginning of Permit Area**  
**Infiltration Gallery/ Collection Enclosure**  
 4309877 N, 326781 E  
 UTM NAD 83, Zone 13 N



**Legend**

-  Spring Collection Box
-  8" PVC
-  Private Land

**ATTENTION**

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T.13S., R.86W., 6th P.M.  
 Section 15: SW1/4

JRM 7/16/13

Gothic, CO Quadrangle

## EXHIBIT B

Authorization ID: GUN1062

Contact ID: Mt. Crested Butte Water And Sanitation


### Operation and Maintenance Plan

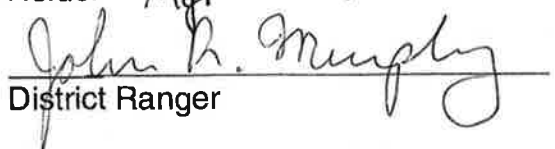
These stipulations are hereby made a part of the Special Use Permit dated 9/19/11, 2014, issued to Mt. Crested Butte Water and Sanitation District for the purpose of maintaining a water collection and transmission system that includes approximately 15,259 feet of pipeline, four collection boxes, a diversion, collection pond and pump house on the East River and two storage tanks. The water system delivers domestic water in the Mt. Crested Butte vicinity.


1. Permittee shall submit any proposal for ground disturbing maintenance or reconstruction to the Forest Service for approval prior to conducting the work.
2. Permittee shall perform any permit related installation/maintenance on both permitted facilities and permit area, in a manner which reasonably causes the least amount of disturbance to the permit area.
3. Permittee will remove all trash and debris generated by the use of the permit area immediately.
4. Permittee shall not cut or remove any trees from within the permit area without having received the prior written approval of the USFS; USFS may withhold its approval for any reasonable purpose.
5. Permittee shall not otherwise construct any additional improvements within the permit area, without prior written approval of the USFS.
6. Permittee shall fully repair all damage, other than ordinary wear and tear, caused in exercising the privileges granted by this permit
7. Permittee shall take all reasonable precautions to prevent pollution of air, soil, and water during reconstruction activities. In the event that the Permittee's operations or servicing of equipment result in pollution to soil or water, permittee shall conduct cleanup to restore the polluted site to the satisfaction of the Forest Service.
8. Permittee shall maintain all equipment operating in good repair and free of abnormal leakage of lubricants, fuel, coolants, and hydraulic fluid.

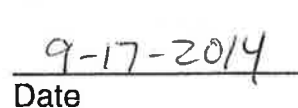
Permittee shall not service tractors, trucks, or other equipment on National Forest System lands where servicing is likely to result in pollution to soil or water. Permittee shall furnish oil-absorbing mats, approved by the Forest Service, for use under all stationary equipment or equipment being serviced to prevent leaking or spilled petroleum-based products from contaminating soil and water resources. Permittee shall remove from National Forest System lands all contaminated soil, vegetation, debris, vehicle oil filters (drained of free-flowing oil), batteries, oily rags, and waste oil resulting from use, servicing, repair, or abandonment of equipment.

9. Storage of oil and petroleum products is not authorized in the permitted area. Permittee shall notify appropriate agencies, including Authorized Officer, of all reportable (40 CFR 110) spills of oil or petroleum products on or in the vicinity of the permit area that are caused by permittee's employees or contractors, directly or indirectly, as a result of permittee's operations. Permittee will take whatever initial action that may be safely accomplished to contain all spills.
10. Routine access routes are indicated on the permit maps. Work will be performed with hand tools unless otherwise requested by the permittee and authorized by the Forest Service.
11. This O&M Plan may be reviewed annually by the Holder and the Forest Service. In addition to the authority of the Authorized Officer to unilaterally revise or modify this operation and maintenance plan, this operation and maintenance plan may also be amended by mutual agreement signed and dated by the Holder and the District Ranger.

  
Holder *Mgr*

  
District Ranger

  
Date

  
Date



# **ATTACHMENT 2**

U.S. Army Corps of Engineers, Letter Dated January 29, 2016



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT  
1325 J STREET  
SACRAMENTO CA 95814-2922

January 29, 2016

Regulatory Division SPK-2015-01106

Mr. Todd Fessenden  
District Manager, Mt. Crested Butte Water & Sanitation District  
Post Office Box 5740  
Crested Butte, Colorado 81225

Dear Mr. Fessenden:

We are responding to your December 23, 2015, request, submitted by Western Ecological Resources Incorporated, for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for two separate survey sites associated with the Mt. Crested Butte Pump Station Replacement Project. Survey site #1 is approximately 3.6 acres and is located one mile northeast of the Town of Mount Crested Butte on the East River within the NW ¼ of the SE ¼ of Section 13, Township 13 South, Range 86 West, Sixth Principal Meridian, at Latitude 38.92219°, Longitude -106.95087°, Gunnison County, Colorado. Survey site #2 is approximately 3.8 acres and is located ¾ of a mile northeast of the Town of Mount Crested Butte within the SE ¼ of the SW ¼ of Section 13, Township 13 South, Range 86 West, Sixth Principal Meridian, at Latitude -106.95653°, Longitude 38.91965°, Gunnison County, Colorado

Based on available information, we concur with the amount and location of wetlands and other water bodies on the site as depicted on the enclosed December 2015 maps titled **Figure 2. Wetland Map Pump Station Project Area** (for survey site #1) and **Figure 3. Wetland Map Pipeline Project Area** (for survey site #2) prepared by Western Ecological Resource Incorporated. The approximately 2.46 acres of wetlands and other water bodies present within both survey areas are potential waters of the United States regulated under Section 404 of the Clean Water Act. Within the December 23, 2015 submittal, reference is made to the November 13, 1986 Federal Register, Part 328.3 (c) (page 41217) artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing. The Corps of Engineers generally does not consider these types of aquatic resources waters of the U.S. except on a case-by-case basis. The Mount Crested Butte Water and Sanitation District's pump station forebay (i.e., settling pond) is connected to the East River, but was constructed in uplands and does not contribute relatively permanent flows to the East River. As such, the pump station forebay depicted in Figure 2. Wetland Map is not considered jurisdictional.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization for the activity. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary. You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular sites identified in this request. A Notification of Appeal Process and Request for Appeal form is enclosed to notify you of your options with this determination.

We have assigned identification number SPK-2015-01106 to this determination. Please refer to this number in any correspondence concerning this project. If you have any questions, please contact Ben Wilson at the Colorado West Regulatory Branch, 400 Rood Avenue, Room 224, Grand Junction, Colorado 81501, by email at *Benjamin.R.Wilson@usace.army.mil*, or telephone at 970-243-1199 ext#12. We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*. For more information regarding our program, please visit our website at *www.spk.usace.army.mil/Missions/Regulatory.aspx*.

Sincerely,



Susan Bachini Nall  
Chief, Colorado West Branch  
Regulatory Division

Enclosures:

1. Figure 2. Wetland Map Pump Station Project Area dated December 2015
2. Figure 3. Wetland Map Pipeline Project Area dated December 2015
3. Notification of Appeal Form

cc: (w/ encl 1)

Ms. Rea Orthner, Ecologist, Western Ecological Resources Incorporated, 711 Walnut Street, Boulder, Colorado 80302

Mr. Russ Forrest, Planning Director Gunnison County, 221 N. Wisconsin Street, Suite D, Gunnison, Colorado 81230

# ATTACHMENT B

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**MCBWSD WTP EXPANSION  
 FIRM CAPACITY CHLORINE CONTACT TIME CALCULATION FOR EXISTING CLEARWELL, MAX VOLUME**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations - 0.3 BF**

Flow	1.50 MGD
	1,042 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	80,000	0.3	24,000	1,042	23.04	1.0	23.04	8.0	1.0	294.2	0.235	11.60	7.945
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.235		7.945	
Credit										3		0	
<b>Total</b>										<b>3.23</b>		<b>7.94</b>	
Required										3.0		Required	4.0

**Contact Time Calculations - 0.5 BF**

Flow	1.50 MGD
	1,042 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	80,000	0.5	40,000	1,042	38.40	1.0	38.40	8.0	1.0	294.2	0.392	11.60	13.241
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.392		13.241	
Credit										3		0	
<b>Total</b>										<b>3.39</b>		<b>13.24</b>	
Required										3.0		Required	4.0

**Assumptions**

<b>1 Pipeline from Filters to Clearwell</b>	
Pipe Length	0.00 ft
Diameter	1.00 ft

<b>3 Pipeline from Clearwell to Storage Tank(s)</b>	
Pipe Length	0 ft
Diameter	0 ft

<b>2 Clearwell</b>	
Length	43 ft
Width	33.33 ft
Interior Height	9 ft
Height to Overflow	3.5 ft
Water Height	7.5 ft
Water Volume	80,000 gal

Notes  
 --



**MCBWSD WTP EXPANSION**  
**FIRM CAPACITY CHLORINE CONTACT TIME CALCULATION FOR EXISTING CLEARWELL, EX. OPERATING DEPTH**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations - 0.3 BF**

Flow	1.50 MGD
	1,042 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	37,000	0.3	11,100	1,042	10.66	1.0	10.66	8.0	1.0	294.2	0.109	11.60	3.674
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.109		3.674	
Credit										3		0	
<b>Total</b>										<b>3.11</b>		<b>3.67</b>	
Required										3.0		4.0	

**Contact Time Calculations - 0.5 BF**

Flow	1.50 MGD
	1,042 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	37,000	0.5	18,500	1,042	17.76	1.0	17.76	8.0	1.0	294.2	0.181	11.60	6.124
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.181		6.124	
Credit										3		0	
<b>Total</b>										<b>3.18</b>		<b>6.12</b>	
Required										3.0		4.0	

**Assumptions**

<b>1 Pipeline from Filters to Clearwell</b>	
Pipe Length	0.00 ft
Diameter	1.00 ft

<b>3 Pipeline from Clearwell to Storage Tank(s)</b>	
Pipe Length	0 ft
Diameter	0 ft

<b>2 Clearwell</b>	
Length	43 ft
Width	33.33 ft
Interior Height	9 ft
Height to Overflow	3.5 ft
Water Height	7.5 ft
Water Volume	37,000 gal

Notes  
 --





**MCBWSD WTP EXPANSION  
 BUILDOUT CAPACITY CHLORINE CONTACT TIME CALCULATION, MAX VOLUME**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations - 0.3 BF**

Flow	2.00	MGD
	1,389	gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,389	0.00	1.0	0.0	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	80,000	0.3	24,000	1,389	17.28	1.0	17.3	8.0	1.0	294.2	0.176	11.60	5.959
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,389	0.00	1.0	0.0	8.0	1.0	294.2	0.000	11.60	0.000
										Subtotal	0.176	Subtotal	5.959
										Credit	3	Credit	0
										<b>Total</b>	<b>3.18</b>	<b>Total</b>	<b>5.96</b>
										Required	3.0	Required	4.0

**Contact Time Calculations - 0.5 BF**

Flow	2.00	MGD
	1,389	gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	80,000	0.5	40,000	1,389	28.80	1.0	28.80	8.0	1.0	294.2	0.294	11.60	9.931
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
										Subtotal	0.294	Subtotal	9.931
										Credit	3	Credit	0
										<b>Total</b>	<b>3.29</b>	<b>Total</b>	<b>9.93</b>
										Required	3.0	Required	4.0

**Assumptions**

<b>1</b>	<b>Pipeline from Filters to Clearwell</b>		
	Pipe Length	0.00	ft
	Diameter	1.00	ft

<b>3</b>	<b>Pipeline from Clearwell to Storage Tank(s)</b>		
	Pipe Length	0	ft
	Diameter	0	ft

<b>2</b>	<b>Clearwell</b>		
	Length	43	ft
	Width	33.33	ft
	Interior Height	9	ft
	Height to Overflow	3.5	ft
	Water Height	7.5	ft
	Water Volume	80,000	gal

Notes  
 --



**MCBWSW WTP EXPANSION  
 BUILDOUT CAPACITY CHLORINE CONTACT TIME CALCULATION, EX. OPERATING DEPTH**

Reference:  
 CDPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%20202009.pdf>

**Instructions**

User Input

**Contact Time Calculations - 0.3 BF**

Flow		2.00	MGD											
		1,389	gpm											
Section	Volume	Baffle Factor	Effective Volume	Flow	Detention Time	Free Chlorine Residual	CT <sub>CALC</sub>	pH	Temp	Giardia		Virus		
	(gal)		(gal)	(gpm)	(min)	(mg/L)	(min*mg/L)		(deg C)	CT <sub>99.9</sub>	Inactivation	CT <sub>99.9</sub>	Inactivation	
										(min*mg/L)	(Log)	(min*mg/L)	(Log)	
1	Pipeline from Filters to Clearwell	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2	Clearwell	37,000	0.3	11,100	1,389	7.99	1.0	7.99	8.0	1.0	294.2	0.081	11.60	2.756
3	Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal											0.081		Subtotal	2.756
Credit											3		Credit	0
<b>Total</b>											<b>3.08</b>		<b>Total</b>	<b>2.76</b>
Required											3.0		Required	4.0

**Contact Time Calculations - 0.5 BF**

Flow		2.00	MGD											
		1,389	gpm											
Section	Volume	Baffle Factor	Effective Volume	Flow	Detention Time	Free Chlorine Residual	CT <sub>CALC</sub>	pH	Temp	Giardia		Virus		
	(gal)		(gal)	(gpm)	(min)	(mg/L)	(min*mg/L)		(deg C)	CT <sub>99.9</sub>	Inactivation	CT <sub>99.9</sub>	Inactivation	
										(min*mg/L)	(Log)	(min*mg/L)	(Log)	
1	Pipeline from Filters to Clearwell	0	0.0	0	1,389	0.00	1	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2	Clearwell	37,000	0.5	18,500	1,389	13.32	1	13.32	8.0	1.0	294.2	0.136	11.60	4.593
3	Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,389	0.00	1	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal											0.136		Subtotal	4.593
Credit											3		Credit	0
<b>Total</b>											<b>3.14</b>		<b>Total</b>	<b>4.59</b>
Required											3.0		Required	4.0

**Assumptions**

1 Pipeline from Filters to Clearwell		
Pipe Length	0.00	ft
Diameter	1.00	ft

3 Pipeline from Clearwell to Storage Tank(s)		
Pipe Length	0	ft
Diameter	0	ft

2 Clearwell		
Length	43	ft
Width	33.33	ft
Interior Height	9	ft
Height to Overflow	3.5	ft
Water Height	7.5	ft
Water Volume	37,000	gal

Notes  
 --



**MCBWSD WTP EXPANSION  
 FIRM CAPACITY CHLORINE CONTACT TIME CALCULATION, MINIMUM BAFFLING**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations**

Flow	1.50 MGD
	1,042 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	120,833	0.1	12,083	1,042	11.60	1.0	11.60	8.0	1.0	294.2	0.118	11.60	4.000
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.118		Subtotal	4.000
Credit										3		Credit	0
<b>Total</b>										<b>3.12</b>		<b>Total</b>	<b>4.00</b>
Required										3.0		Required	4.0

**Assumptions**

1 Pipeline from Filters to Clearwell

Pipe Length	0.00 ft
Diameter	1.00 ft

3 Pipeline from Clearwell to Storage Tank(s)

Pipe Length	0 ft
Diameter	0 ft

2 Clearwell

Length	ft
Width	ft
Interior Height	ft
Height to Overflow	ft
Water Height	ft
Water Volume	120,833 gal

Notes  
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**MCBWSD WTP EXPANSION  
 BUILDOUT CAPACITY CHLORINE CONTACT TIME CALCULATION, MINIMUM BAFFLING**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations**

Flow	2.00 MGD
	1,389 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	161,111	0.1	16,111	1,389	11.60	1.0	11.60	8.0	1.0	294.2	0.118	11.60	4.000
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.118		Subtotal	4.000
Credit										3		Credit	0
<b>Total</b>										<b>3.12</b>		<b>Total</b>	<b>4.00</b>
Required										3.0		Required	4.0

**Assumptions**

1 Pipeline from Filters to Clearwell

Pipe Length	0.00 ft
Diameter	1.00 ft

3 Pipeline from Clearwell to Storage Tank(s)

Pipe Length	0 ft
Diameter	0 ft

2 Clearwell

Length	ft
Width	ft
Interior Height	ft
Height to Overflow	ft
Water Height	ft
Water Volume	161,111 gal

Notes  
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**MCBWSD WTP EXPANSION  
 FIRM CAPACITY CHLORINE CONTACT TIME CALCULATION, AVERAGE BAFFLING**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations**

Flow	1.50 MGD
	1,042 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	40,278	0.3	12,083	1,042	11.60	1.0	11.60	8.0	1.0	294.2	0.118	11.60	4.000
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.118		Subtotal	4.000
Credit										3		Credit	0
<b>Total</b>										<b>3.12</b>		<b>Total</b>	<b>4.00</b>
Required										3.0		Required	4.0

**Assumptions**

1 Pipeline from Filters to Clearwell

Pipe Length	0	ft
Diameter	1	ft

3 Pipeline from Clearwell to Storage Tank(s)

Pipe Length	0	ft
Diameter	0	ft

2 Clearwell

Length	ft
Width	ft
Interior Height	ft
Height to Overflow	ft
Water Height	ft
Water Volume	40,278 gal

Notes  
 --



**MCBWSD WTP EXPANSION  
 BUILDOUT CAPACITY CHLORINE CONTACT TIME CALCULATION, AVERAGE BAFFLING**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations**

Flow	2.00 MGD
	1,389 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	53,704	0.3	16,111	1,389	11.60	1.0	11.60	8.0	1.0	294.2	0.118	11.60	4.000
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.118		Subtotal	4.000
Credit										3		Credit	0
<b>Total</b>										<b>3.12</b>		<b>Total</b>	<b>4.00</b>
Required										3.0		Required	4.0

**Assumptions**

**1 Pipeline from Filters to Clearwell**

Pipe Length	0.00 ft
Diameter	1.00 ft

**3 Pipeline from Clearwell to Storage Tank(s)**

Pipe Length	ft
Diameter	ft

**2 Clearwell**

Length	ft
Width	ft
Interior Height	ft
Height to Overflow	ft
Water Height	ft
Water Volume	53,704 gal

Notes  
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**MCBWSD WTP EXPANSION  
 FIRM CAPACITY CHLORINE CONTACT TIME CALCULATION, MAXIMUM BAFFLING**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations**

Flow	1.50 MGD
	1,042 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell	24,167	0.5	12,083	1,042	11.60	1.0	11.60	8.0	1.0	294.2	0.118	11.60	4.000
3 Pipeline from Clearwell to Storage Tank(s)	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.118		Subtotal	4.000
Credit										3		Credit	0
<b>Total</b>										<b>3.12</b>		<b>Total</b>	<b>4.00</b>
Required										3.0		Required	4.0

**Assumptions**

**1 Pipeline from Filters to Clearwell**

Pipe Length	0.00 ft
Diameter	1.00 ft

**3 Pipeline from Clearwell to Storage Tank(s)**

Pipe Length	0 ft
Diameter	0 ft

**2 Clearwell**

Length	ft
Width	ft
Interior Height	ft
Height to Overflow	ft
Water Height	ft
Water Volume	24,167 gal

Notes  
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**MCBWSD WTP EXPANSION  
 BUILDOUT CAPACITY CHLORINE CONTACT TIME CALCULATION, MAXIMUM BAFFLING**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations**

Flow	2.00 MGD
	1,389 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell-HDR Volume	32,222	0.5	16,111	1,389	11.60	1.0	11.60	8.0	1.0	294.2	0.118	11.60	4.000
3 Pipeline from Clearwell to Storage Tank	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.118		Subtotal	4.000
Credit										3		Credit	0
<b>Total</b>										<b>3.12</b>		<b>Total</b>	<b>4.00</b>
Required										3.0		Required	4.0

**Assumptions**

1 Pipeline from Filters to Clearwell

Pipe Length	0.00 ft
Diameter	1.00 ft

3 Pipeline from Clearwell to Storage Tank

Pipe Length	0 ft
Diameter	0 ft

2 Clearwell-HDR Volume

Length	ft
Width	ft
Interior Height	ft
Height to Overflow	ft
Water Height	ft
Water Volume	32,222 gal

Notes  
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**MCBWSD WTP EXPANSION  
 FIRM CAPACITY CHLORINE CONTACT TIME CALCULATION, HDR DESIGN**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations**

Flow	1.50 MGD
	1,042 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell-HDR Volume	250,000	0.1	25,000	1,042	24.00	1.0	24.00	8.0	1.0	294.2	0.245	11.60	8.276
3 Pipeline from Clearwell to Storage Tank	0	0.0	0	1,042	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
										Subtotal	0.245	Subtotal	8.276
										Credit	3	Credit	0
										<b>Total</b>	<b>3.24</b>	<b>Total</b>	<b>8.28</b>
										Required	3.0	Required	4.0

**Assumptions**

1 Pipeline from Filters to Clearwell

Pipe Length	0.00 ft
Diameter	1.00 ft

4 Pipeline from Clearwell to Storage Tank

Pipe Length	0 ft
Diameter	0 ft

2 Clearwell-HDR Volume

Length	ft
Width	ft
Interior Height	ft
Height to Overflow	ft
Water Height	ft
Water Volume	250,000 gal

Notes  
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**MCBWSD WTP EXPANSION  
 BUILDOUT CAPACITY CHLORINE CONTACT TIME CALCULATION, HDR DESIGN**

Reference:  
 ODPHE Log Inactivation Brochure (2009)  
<https://www.colorado.gov/pacific/sites/default/files/WQ-ENG-AppendixA%20Log%20Inactivation%20Brochure%202009.pdf>

**Instructions**

User Input

**Contact Time Calculations**

Flow	2.00 MGD
	1,389 gpm

Section	Volume (gal)	Baffle Factor	Effective Volume (gal)	Flow (gpm)	Detention Time (min)	Free Chlorine Residual (mg/L)	CT <sub>CALC</sub> (min*mg/L)	pH	Temp (deg C)	Giardia		Virus	
										CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)	CT <sub>99.9</sub> (min*mg/L)	Inactivation (Log)
1 Pipeline from Filters to Clearwell	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
2 Clearwell-HDR Volume	250,000	0.1	25,000	1,389	18.00	1.0	18.00	8.0	1.0	294.2	0.184	11.60	6.207
3 Pipeline from Clearwell to Storage Tank	0	0.0	0	1,389	0.00	1.0	0.00	8.0	1.0	294.2	0.000	11.60	0.000
Subtotal										0.184		Subtotal	6.207
Credit										3		Credit	0
<b>Total</b>										<b>3.18</b>		<b>Total</b>	<b>6.21</b>
Required										3.0		Required	4.0

**Assumptions**

1 Pipeline from Filters to Clearwell

Pipe Length	0.00 ft
Diameter	1.00 ft

3 Pipeline from Clearwell to Storage Tank

Pipe Length	0 ft
Diameter	0 ft

2 Clearwell-HDR Volume

Length	ft
Width	ft
Interior Height	ft
Height to Overflow	ft
Water Height	ft
Water Volume	250,000 gal

Notes  
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**EAST RIVER FLOODPLAIN AND FLOOD BFE  
ANALYSIS, DATED MAY 8, 2019**

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## M E M O

TO:	<u>Mike Fabbre, District Manager</u>	DATE:	<u>May 8, 2019</u>
	<u>Mt. Crested Butte Water and Sanitation</u>		
FIRM:	<u>District</u>	JOB NO.:	<u>1028e</u>
ADDRESS:	<u>100 Gothic Road</u>	PROJECT:	<u>MCBWSW WTP Expansion Project</u>
	<u>Mt. Crested Butte, CO 81225</u>	SUBJECT:	<u>East River Floodplain and Flood BFE Analysis</u>

In conjunction with the proposed new pump station for the Mt Crested Butte Water Treatment Facility, JVA has evaluated the available data to determine the East River base flood elevation (BFE) at the site location and the proposed finished floor elevation for the pump station. Resource Engineering Inc stated in the Application for Transportation and Utility System Facilities on Federal Lands Supplemental Information that the existing pump station is within the 100-year floodplain, at 9064.00 ft, and that the proposed pump station, as part of their design, would be above the 100-year flood elevation if the station floor was set at 9066.00 ft. There were no calculations or supporting documents found to verify the defined 100-year flood elevation as determined by Resource Engineering. Furthermore, the Federal Emergency Management Agency (FEMA) mapping services has the area mapped as Zone X, Area of minimal flood hazard, and therefore do not provide a BFE for the site area.


In order to determine the BFE at the site, peak annual flow data from the closest downstream flow gage on the East River was download from U.S. Geological Survey (USGS) water data site, and a cross-section including the East River, the site area, and the floodplain was pulled from survey data. The closest flow gage on East River that provides recent and past flow data is USGS 09112200 EAST RIVER BELOW CEMENT CREEK NR CRESTED BUTTE, CO. This flow gage is located approximately 11 miles south of the site. Brush Creek, Farris Creek, Slate River, Cement Creek, and other smaller tributary areas all discharge into the East River between the site and the flow gage. The past 20 years of flow gage data was reviewed to determine what flow to use for the analysis. The largest peak flow measured, that was not an outlier measurement, was 3,220 cfs. With no other adequate data sources available near the site to provide peak flow data, 3,220 cfs was used for the BFE analysis at the site. By using the flow gage data that includes flows from contributing tributaries downstream of the site, the peak annual flow value used will be conservative. The Gunnison County, Colorado Flood Insurance Study was also referenced to confirm the measured East River peak flow used in the analysis was adequate. From the Reports Summary of Discharges, a flow rate of 3,220 cfs is larger than the 1-percent annual chance peak discharge at the East River's confluence with Slate River which was reported at 2,780 cfs.

In order to determine the BFE at the pump station site a cross-section line was created that extends from the site across the East River and into the open area floodplain running perpendicular to the existing contours. The existing survey available did not include the entirety of the visual floodplain area and assumption were made on the edge location and elevation based on aerial data. The slope of the stream was determined to be approximately 1.2% by using the survey data at the intersection of the stream with the cross-section line. It was determined that the FlowMaster program was adequate to calculate the BFE due to the conservative flow values being used. The site is located just upstream of an oxbow bend that would be difficult to accurately model with HEC-RAS 1d. Based on the flat bench area to the north and steep mountain slope to the south of the river, it is anticipated that larger flow events will overtop to the north prior to impacting the pump station. The cross-section elevation data, the slope of



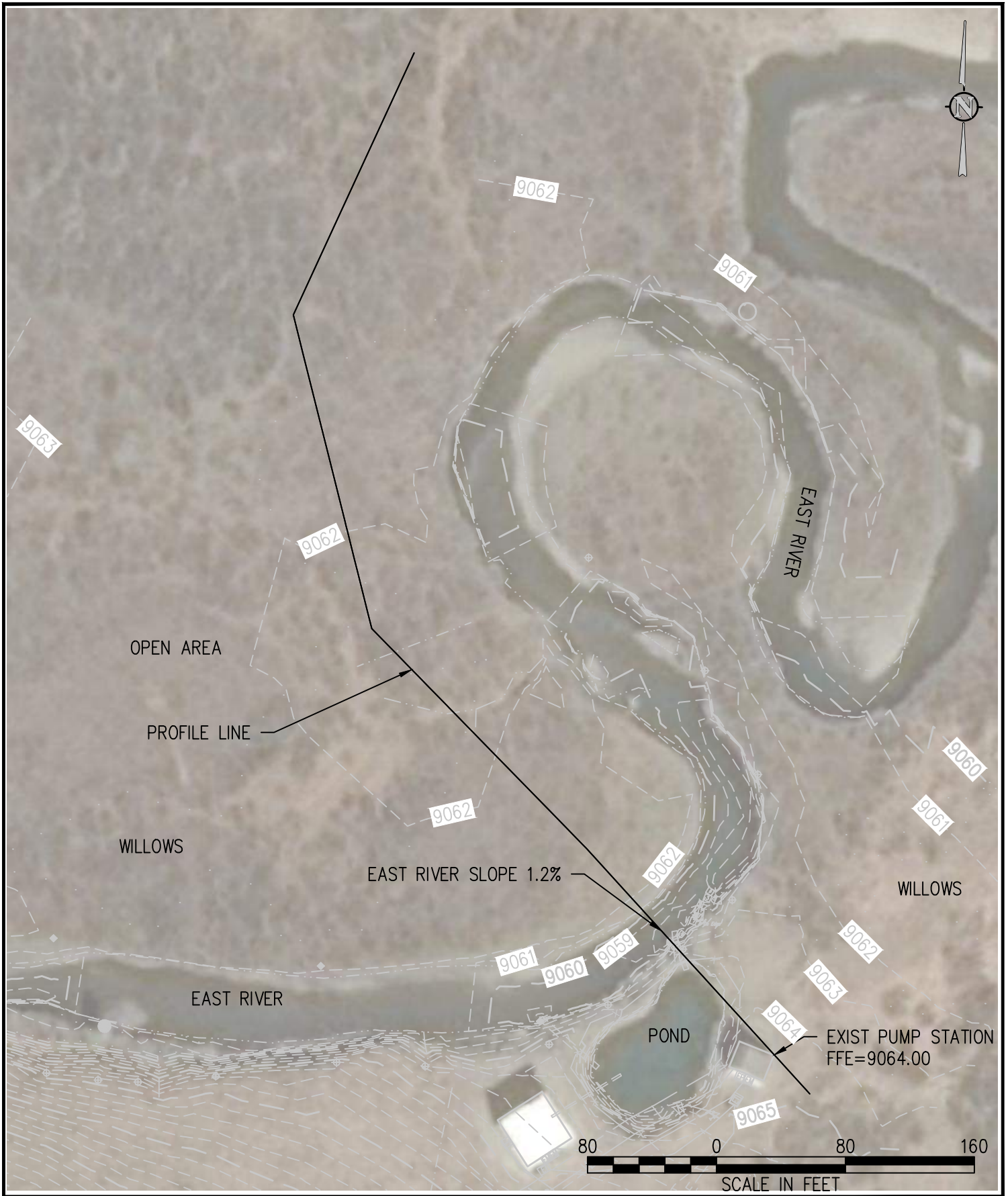
the East River and the peak annual flow data were entered into FlowMaster and the BFE calculated was 9063.03 ft. Therefore, allowing for 1-foot of freeboard the proposed pump station should have a minimum final floor elevation of 9064.03 ft. This elevation is close to existing grade, but could be raised an additional foot to match the elevation of the existing pump station which provides a factor of safety. The additional foot of elevation will also provide positive grading away from the pump station entry and floor area.

There are several contributing factors that provide confidence that the site will have a low probability of flooding based on the topography of the area, the River alignment, and the flow analysis. The site is located on a terrace on the south side of the River with most of the floodplain north of the site in the flat bench area. Flows will be distributed in the bench area spreading on the north side of the River and continue downstream breaching the oxbow during higher flow events before reaching the pump station site on the terrace.

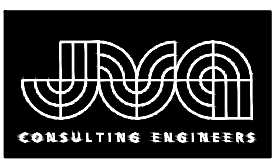
**Signed:**   
\_\_\_\_\_  
**Laurie Laos, JVA, Inc.**

**Copies to:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

- Attachments:  
Site Plan View Cross-Section Location Figure  
USGS 09112200 East River Flow Meter Annual Peak Flow Data Graph  
USGS 09112200 East River Flow Meter Location Figure  
FlowMaster East River Analysis Results with Cross-Section Profile  
FEMA Firmette at Site



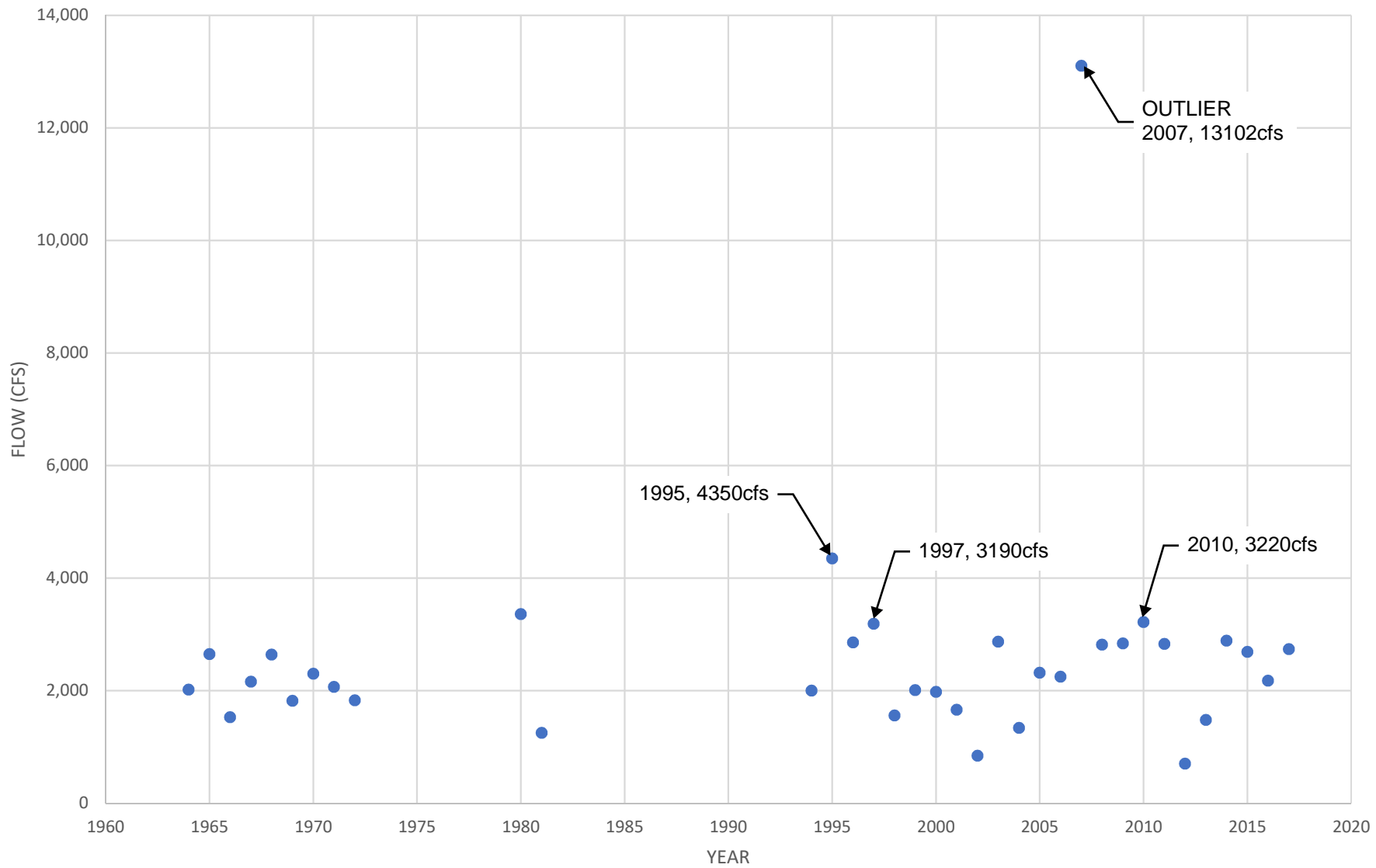
**FIGURE 1 - PUMP SITE PLAN VIEW**  
**MCBWSD WTP EXPANSION PROJECT**  
**4/24/2019**



JVA, Inc.  
 1319 Spruce Street  
 Boulder, CO 80302  
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ANNUAL PEAK FLOW DATA FROM  
USGS 09112200 EAST RIVER VELOW CEMENT CREEK NR CRESTED BUTTE, CO



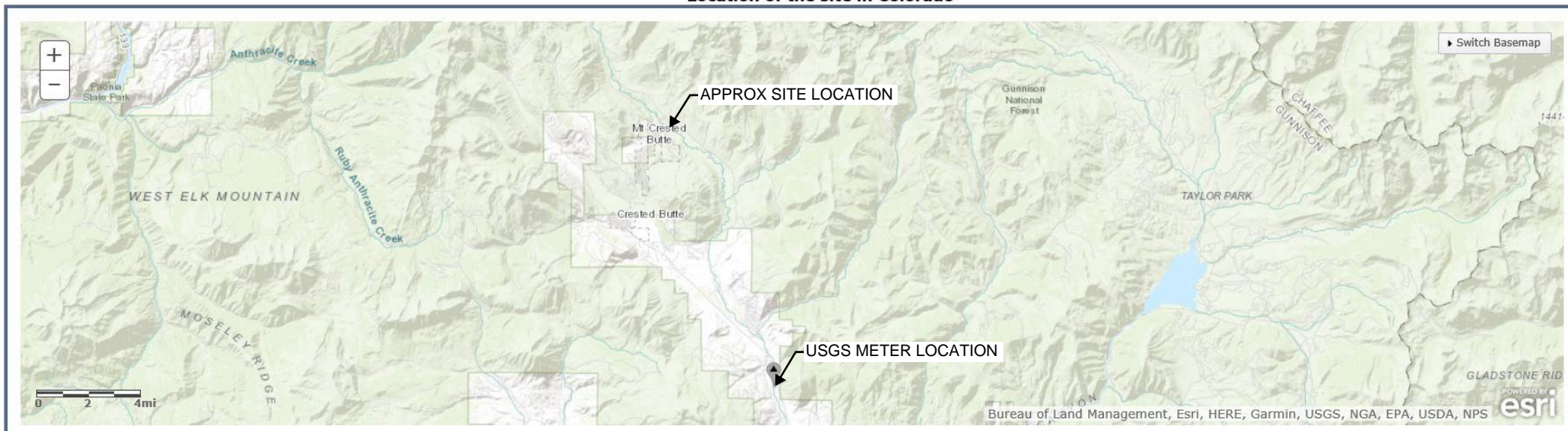
# Site Map for the Nation

USGS 09112200 EAST RIVER BELOW CEMENT CREEK NR CRESTED BUTTE, CO

Available data for this site

Gunnison County, Colorado  
Hydrologic Unit Code 14020001  
Latitude 38°47'03", Longitude 106°52'13" NAD27  
Drainage area 239 square miles  
Gage datum 8,440 feet above NGVD29

## Location of the site in Colorado



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## East River Cross-Section Profile

---

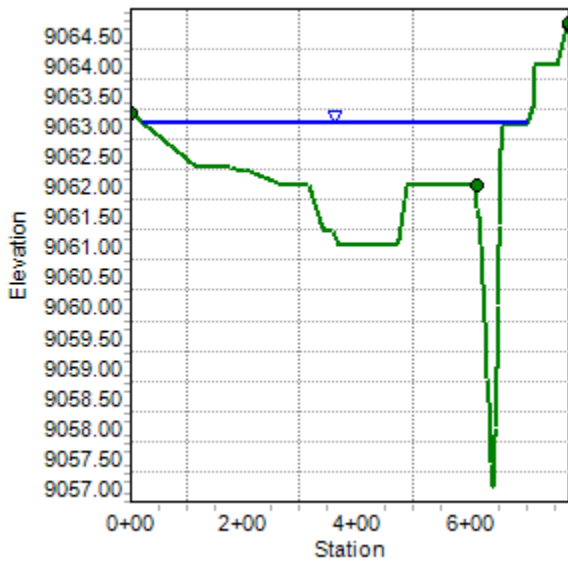
### Project Description

Friction Method                      Manning Formula  
Solve For                                Normal Depth

### Input Data

Channel Slope	0.01200	ft/ft
Normal Depth	6.03	ft
Discharge	3220.00	ft <sup>3</sup> /s

### Cross Section Image





---

## East River Cross-Section Flow Analysis

---

### Input Data

Station (ft)	Elevation (ft)
4+69	9061.01
4+70	9061.03
4+74	9061.11
4+90	9062.00
5+25	9062.00
5+37	9062.00
5+67	9062.00
5+70	9062.00
5+74	9062.00
5+77	9062.00
6+12	9062.00
6+14	9061.62
6+16	9061.46
6+21	9061.00
6+29	9059.13
6+30	9059.00
6+31	9058.79
6+36	9058.00
6+38	9057.40
6+41	9057.00
6+44	9057.00
6+46	9057.87
6+46	9058.00
6+46	9058.00
6+47	9058.29
6+47	9059.00
6+49	9059.00
6+50	9060.01
6+50	9060.00
6+52	9061.00
6+53	9061.34
6+54	9062.00
6+55	9062.59
6+56	9063.00
6+60	9063.00
7+03	9063.00
7+04	9063.08

## East River Cross-Section Flow Analysis

### Input Data

Station (ft)	Elevation (ft)
7+05	9063.10
7+11	9063.29
7+15	9064.00
7+17	9064.00
7+22	9064.00
7+22	9064.00
7+27	9064.00
7+33	9064.00
7+34	9064.00
7+44	9064.00
7+48	9064.00
7+53	9064.00
7+71	9064.65
7+73	9064.67
7+76	9064.69

### Roughness Segment Definitions

Start Station & Elevation	End Station & Elevation	Roughness Coefficient
(0+00, 9063.20)	(6+12, 9062.00)	0.045
(6+12, 9062.00)	(7+73, 9064.67)	0.050
(7+73, 9064.67)	(7+76, 9064.69)	0.060

### Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

### Results

Normal Depth 6.03 ft

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## East River Cross-Section Flow Analysis

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### Results

Elevation Range	9057.00 to 9064.69 ft	
Flow Area	808.84	ft <sup>2</sup>
Wetted Perimeter	684.01	ft
Hydraulic Radius	1.18	ft
Top Width	681.55	ft
Normal Depth	6.03	ft
Critical Depth	5.65	ft
Critical Slope	0.03080	ft/ft
Velocity	3.98	ft/s
Velocity Head	0.25	ft
Specific Energy	6.28	ft
Froude Number	0.64	
Flow Type	Subcritical	

### GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

### GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	6.03	ft
Critical Depth	5.65	ft
Channel Slope	0.01200	ft/ft
Critical Slope	0.03080	ft/ft



# National Flood Hazard Layer FIRMette



38°55'32.09"N



USGS The National Map: Orthoimagery. Data refreshed October, 2017. 1:6,000 38°55'4.10"N

## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D

OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

OTHER FEATURES		Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature

MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **4/17/2019 at 11:19:10 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

106°57'22.73"W

106°56'45.27"W

**MOUNT CRESTED BUTTE WATER AND SANITATION  
DISTRICT PLANNED IMPROVEMENTS – EAST RIVER  
WATER SUPPLY SYSTEM BIOLOGICAL ASSESSMENT,  
DATED APRIL 30, 2018**

---



# MOUNT CRESTED BUTTE WATER AND SANITATION DISTRICT PLANNED IMPROVEMENTS – EAST RIVER WATER SUPPLY SYSTEM

## BIOLOGICAL ASSESSMENT

Gunnison County, Colorado

April 30, 2018

Prepared For:

*MT. CRESTED BUTTE WATER AND SANITATION DISTRICT*

&

*USDA FOREST SERVICE*

Prepared By:

**WESTERN BIONOMICS INC.**

*Natural Resource Management Services*

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# MOUNT CRESTED BUTTE

## WATER AND SANITATION DISTRICT

### PLANNED IMPROVEMENTS – EAST RIVER WATER SUPPLY SYSTEM

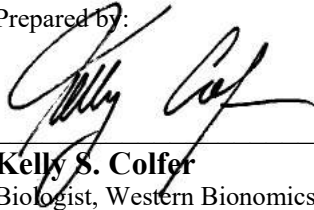
## BIOLOGICAL ASSESSMENT

Gunnison County, Colorado

April 30, 2018

## SIGNATURE PAGE

Prepared by:



---

**Kelly S. Colfer**  
Biologist, Western Bionomics Inc.

Date: April 30, 2018

Reviewed by:

---

**Melvin Woody**  
Aquatic Biologist  
Gunnison, Grand Mesa, and Uncompahgre National Forests

Date: \_\_\_\_\_

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# 1. INTRODUCTION

Mount Crested Butte Water and Sanitation District (District) provides municipal water supply and sewer service to the Town of Mt. Crested Butte, Colorado. The District was established in 1963 under the State of Colorado Special District provisions and currently serves approximately 6,500 residential and commercial customers located within the Town and the nearby Meridian Lake Park subdivision. The District's primary source of water supply, the East River Water Supply System, is located on National Forest lands and operates under an approved Special Use Permit (SUP) issued under authority of the Federal Land Policy and Management Act, as amended October 21, 1976. The SUP allows for two (2) diversion structures from the East River, a pump forebay/presedimentation pond, pumping station, and delivery pipelines that together occupy approximately 3.5 acres of National Forest lands.<sup>1</sup>

An engineering review of the District's East River water diversion and delivery system indicates that the water facilities are aging and in need of major improvements and/or replacement. As a result, the District has requested approval from the U.S. Forest Service (USFS) to make several improvements to its East River Water Supply System. This document is the Biological Assessment for the project, and discloses the effects of the proposed work on species listed by the United States Fish & Wildlife Service (FWS) as threatened, endangered, or proposed for such listing.

Representative drawings are included with the application for transportation and utility systems and facilities on federal lands, which is found in Appendix B.

## *1.1 ENDANGERED SPECIES ACT*

Forest Service policy requires a review of programs and activities to determine their potential effect on threatened, endangered, and proposed species. Under the Endangered Species Act, the effects analysis report is called a Biological Assessment (BA) and must be prepared for federal actions that are "major construction activities" to evaluate the potential effects of the proposal on listed or proposed species and critical habitats.

This biological assessment conforms to legal requirements set forth under section 7 of the Endangered Species Act (ESA) (19 U.S.C. 1536 (c), 50 CFR 402.12 (f) and 402.14). Section 7(a) (1) of the ESA requires federal agencies to use their authorities to further the conservation of listed species. Section 7(a) (2) requires that federal agencies ensure any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of federally-listed species, or destroy or adversely modify designated critical habitat.

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<sup>1</sup> Other water delivery facilities not directly related to the East River diversion and delivery system are also included in the District's Special Use Permit.

## 2. PROJECT DESCRIPTION

An engineering review of the District's East River water diversion and delivery system indicates that the water facilities are aging and in need of major improvements and/or replacement. As a result, the District requests approval from the U.S. Forest Service (USFS) to make several improvements to its East River Water Supply System. The planned improvements include:

- **Diversion Culverts.** Replacement of the two, 30 inch diameter diversion culverts with two, 24 inch diameter diversion culverts and associated appurtenances.
- **Pump Forebay/Pre-Sedimentation Pond.** Regrade the 0.2 acre pump forebay /presedimentation pond. An 8 foot chain link fence will be constructed around the pond for water quality protection.
- **Pump Station.** Replace the existing pump house structure in its entirety with a new, state-of-the-art pump station and associated facilities.
- **Delivery Pipeline.** Construct a new, 16 inch diameter pipeline from the pump station that will deliver East River diversions to the District's pre-sedimentation pond that is located on the watershed divide separating the East River and Washington Gulch, near the District's existing water treatment plant.

Detailed descriptions of the proposed work (Application for Transportation and Utility Systems and Facilities on Federal Lands) are included in the Appendix.

### 2.1 PROJECT PURPOSE AND NEED

The existing Mount Crested Butte water supply facilities are aging and require major improvements to continue to provide service. A list of existing problems is included below:

- **Diversion Culverts.** One of two metal pipelines that divert water from the East River to the District's pumping forebay pond has become blocked and is inoperable. This structure provides redundancy in the District's water diversion system and without it, there is risk that domestic water shortages could occur should the second diversion facility also become inoperable. In addition, during the winter period the second diversion pipeline experiences icing at its inlet which requires frequent removal.
- **Pump Forebay/Pre-Sedimentation Pond.** The Colorado Department of Public Health and Environment (CDPHE) has requested the District erect a security fence around the perimeter of the 0.2 surface acre pond. The purpose of the fence is to provide safety for the public and water quality protection by preventing animals from directly entering the domestic water source. Additionally, the District plans to remove sediment from the pond and regrade portions of the pond for improved efficiency.
- **Pump Station.** During inspection of the existing pump station, engineers for the District discovered that the concrete slab supporting the existing building is no longer structurally sound. Accordingly, the pump station must be replaced in its entirety.
- **Delivery Pipeline.** The District proposed to construct a new, 16" diameter water delivery pipeline extending approximately 2,600 feet from the new pumping station to pre-sedimentation



pond/water treatment facility located on the watershed divide separating the East River from Washington Gulch. The pipeline will parallel the existing 8” diameter pipeline which is proposed to remain in place in order to provide redundancy in the water system should one pipe fail for any reason. The new, 16” diameter pipeline will have capacity to meet the District’s calculated peak day demand at build-out.

The Crested Butte Mountain Resort (CBMR) and surrounding community provide economic benefit to Gunnison County and the State of Colorado. CBMR has become a major Colorado ski and recreation destination, attracting hundreds of thousands of visitors annually. Providing a reliable, state-of-the-art water supply system is imperative for maintain a high quality, healthy water supply for residents and visitors.

The proposed improvements to the East River Water Supply System are necessary in order for the District to remain in compliance with Condition III.B of the District’s SUP. This condition requires the SUP holder to maintain the authorized improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety.

## 2.2 ANALYSIS AREA

The analysis area for this project varies, depending on the species under evaluation, and includes the disturbance footprint and the broader “zone of influence” associated with construction and use of the project. The zone of influence varies dependent on individual species’ response to disturbance.

## 2.3 TIERING

This document tiers to several previously completed Species Conservation Assessments, NEPA documents, plans, and biological opinions. Specifically incorporated by reference are following documents:

- 1) Biological Evaluation for Ken Williams Proposed Sites (USDA-FS 2015).
- 2) Crested Butte Pumphouse Wildlife and Plants (USDA-FS 2017)
- 3) Southern Rockies Lynx Amendment EIS (2008a), Record of Decision (2008b), and Biological Assessment (2008c)
- 4) Final Gunnison River Programmatic Biological Opinion (USDI FWS 2009)

# 3. ENVIRONMENTAL BASELINE

The project area ranges from 9550’ – 9750’ in elevation and is dominated by 3 plant communities (USDA-FS 2015): riparian willow (*Salix wolfii*-*S. planifolia*/*Carex aquatilis* plant community), mountain forbland (*Ligusticum porteri*/*Thalictrum fendleri* plant community), and disturbed meadows (*Poa pratensis*, *Bromus inermis*, *Fragaria virginiana*, *Poetntilla spp*, and *Taraxacum officinale*). There are no threatened or endangered plant species located in the project area (USDA-FS 2015). Similarly, there is no habitat for federally threatened or endangered terrestrial wildlife species (USDA-FS 2015).

Two 30 inch diameter metal pipelines currently divert water from the East River to the District’s pumping forebay pond. One of these pipelines has become blocked and is inoperable. A pump station provides

pressure to deliver water from the forebay pond, via the 2600' x 8" delivery pipeline, to the pre-sedimentation pond/water treatment facility located on the watershed divide separating the East River from Washington Gulch.

## 4. CONSULTATION HISTORY

### 4.1 UPPER COLORADO RIVER BASIN

The Upper Colorado River Basin is defined by the Colorado River and its tributaries above Lee's Ferry in northern Arizona, and includes the Gunnison River. Implementation of the Endangered Species Act in the upper Colorado River Basin began with the listing of the Colorado pikeminnow and humpback chub as endangered in the 1970s; the bonytail was listed in 1980 and the razorback sucker was listed in 1991. In 1988 the US Secretary of the Interior, the Governors of Wyoming, Colorado, and Utah, and the Administrator of the Western Area Power Administration cosigned a cooperative agreement to implement the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (USFWS 1987). The goal of the Recovery Program is to recover the listed species while providing for new and existing water development in the Upper Colorado River Basin. All participants agreed to cooperatively work toward the successful implementation of a recovery program that will provide for recovery of the endangered fish species, consistent with Federal law and all applicable State laws and systems for water resource development and use.

To further define and clarify processes outlined in the Recovery Program (USFWS 1987), a *Section 7 Consultation, Sufficient Progress, and Historic Projects Agreement* (Section 7 Agreement) and a *Recovery Implementation Program Recovery Action Plan* (RIPRAP) were developed (USFWS 1993, amended 2000). The Section 7 Agreement established a framework for conducting section 7 consultations on depletion impacts related to new projects and impacts associated with existing projects in the upper basin. Procedures outlined in the Section 7 Agreement are used to determine if sufficient progress is being accomplished in the recovery of endangered fishes to enable the Recovery Program to serve as a reasonable and prudent alternative to avoid the likelihood of jeopardy and/or adverse modification of critical habitat (or serve as conservation measures) and to provide ESA compliance for new and existing projects.

The RIPRAP outlines specific recovery actions, including such measures as acquiring and managing aquatic habitat and water, re-operating existing reservoirs to provide instream flows for fishes, constructing fish passage facilities, controlling non-native fishes, and propagating and stocking listed fish species. It also stipulates which entity is responsible for taking action, when these actions would be undertaken, and how they would be funded. The RIPRAP was finalized on October 15, 1993, and has been reviewed and updated annually.

### 4.2 GUNNISON RIVER

To address the flow needs for the endangered fish in the Gunnison and Colorado Rivers, the FWS issued the Final Gunnison River Basin Programmatic Biological Opinion on December 4, 2009, (Gunnison River PBO; USDI-FWS 2009). The FWS determined that projects that fit under the umbrella of the Gunnison River PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts to the Gunnison River basin. For projects involving water depletions less

than 100 AF/year to fit under the umbrella of the Gunnison River PBO, the Federal agency requesting consultation must document the project location, the amount of the water depletion, identify if the depletion is new or historic, and provide the information to the Service when consultation is initiated.

For projects depleting more than 100 AF/year go fit under the umbrella of the Gunnison River PBO, the proponent must execute a Recovery Agreement prior to conclusion of section 7 consultation. A fee to fund recovery actions will be submitted as described in the proposed action for new depletion projects greater than 100 AF/year.

### 4.3 MOUNT CRESTED BUTTE WATER AND SANITATION DISTRICT

There has been no prior consultation between the project proponent and FWS relative to the East River water supply system.

## 5. SPECIES CONSIDERED

Federally threatened and endangered species that may occur or could potentially be affected by activities in the Project Area were retrieved from the United States Fish & Wildlife Service’s “*Information for Planning and Conservation*” (IPaC) website. Species included in the IPaC Species List for the Project (USFWS 2018) are displayed in Table 1. A pre-field review was conducted of available information to assemble occurrence records, evaluate habitat needs and ecological requirements, and determine whether field reconnaissance was needed to complete the analysis. Sources of information included Forest Service records and files, the Colorado Natural Heritage Program database, Colorado Parks and Wildlife (CPW) information, and published research.

No further analysis is needed for species that are not known or suspected to occur in the project area, or and for which no suitable habitat is present or potentially affected by the proposed projects. The following table (Table 1) documents the rationale for excluding a species. If suitable but unoccupied habitat is present, additional survey is required, unless presence is assumed and potential effects evaluated.

<b>Table 1. IPAC LIST OF THREATENED, ENDANGERED, AND PROPOSED WILDLIFE SPECIES FOR THE PROJECT AREA <sup>1</sup>.</b>				
<b>SPECIES</b>	<b>STATUS <sup>2</sup></b>	<b>TYPICAL HABITAT <sup>3</sup></b>	<b>SUITABLE HABITAT PRESENT OR AFFECTED?</b>	<b>RATIONAL IF NOT CARRIED FORWARD FOR ANALYSIS</b>
<b>MAMMALS</b>				
Canada Lynx ( <i>Lynx canadensis</i> )	T	A, C, D, E, G	No	The proposed action will not impact vegetation suitable as lynx habitat (USDA-FS 2017), nor will it affect designated critical habitat. Therefore the project will have no effect on the Canada lynx.
North American Wolverine ( <i>Gulo gulo luscus</i> )	P	O	No	The proposed action is not likely to jeopardize the continued existence of

<b>Table 1. IPAC LIST OF THREATENED, ENDANGERED, AND PROPOSED WILDLIFE SPECIES FOR THE PROJECT AREA <sup>1</sup>.</b>				
<b>SPECIES</b>	<b>STATUS <sup>2</sup></b>	<b>TYPICAL HABITAT <sup>3</sup></b>	<b>SUITABLE HABITAT PRESENT OR AFFECTED?</b>	<b>RATIONAL IF NOT CARRIED FORWARD FOR ANALYSIS</b>
				North American wolverine, as there is currently no wolverine population in the State of Colorado (Broderdorp, USFWS, personal communication September 13, 2016). The available scientific and commercial information does not indicate that other potential stressors such as land management, recreation, infrastructure development, and transportation corridors pose a threat to the DPS (USDI Fish and Wildlife Service 2013a,b).
<b>BIRDS</b>				
Gunnison Sage-Grouse ( <i>Centrocercus minimus</i> )	T	H	No	The proposed action is located outside of mapped habitat for this species (CPW 2017). Therefore the project will have no effect on the Gunnison sage-grouse.
<b>FISH</b>				
Colorado pikeminnow ( <i>Ptychocheilus lucius</i> )	E	J	Yes	Carried forward
Razorback Sucker ( <i>Xyrauchen texanus</i> )	E	J	Yes	
Humpback Chub ( <i>Gila cypha</i> )	E	J	Yes	
Bonytail Chub ( <i>Gila elegans</i> )	E	J	Yes	
Greenback Cutthroat Trout ( <i>Oncorhynchus clarki stomias</i> )	T	E	Yes	There are no lineage GB or greenback cutthroat trout populations known to exist in the East River downstream of the project area, nor in the Slate or Gunnison Rivers to which the East is tributary (Melvin Woody, Grand Mesa, Uncompahgre & Gunnison National Forests Aquatic Biologist, personal communication 4/17/2018). Therefore, the project would have no effect on the greenback cutthroat trout.

<sup>1</sup> USDI-FWS. April 10, 2018. Mount Crested Butte Water and Sanitation District, East River Water Supply System Improvements, List of threatened and endangered species.

<sup>2</sup> Status: T=Threatened ; E=Endangered; P=Proposed

<sup>3</sup> Habitat Key: A=Aspen; B=Cliff/Rock/Scree; C=Cottonwood/Riparian; D=Conifer Forest; E=Headwaters/Willow Riparian; F=Lakes/Rivers; G=Marsh/Wetlands/Beaver Complexes/Fens; H=Rangelands/Sage; I=Creek w/ Limestone drips; J=Colorado River; Green River, Lower Yampa & White Rivers; K=Alpine snow willow communities >12,400' MSL; L=Mountain parks; M=Piñon Juniper; N=Soils derived from Pierre, Niobrara, and Troublesome formations; O=High elevations with deep, persistent, and reliable spring snow cover.

In 2017, Suzie Parker (Gunnison Ranger District Wildlife Biologist) determined that the proposed project would have no effect to threatened, endangered or proposed *terrestrial* wildlife or plant species protected under the Endangered Species Act (USDA-FS 2017). Canada lynx, North American wolverine, and Gunnison sage-grouse were dropped from detailed analysis because their current distribution does not include the analysis area, and/or habitat required during their life history is not found within the project area. The effects of the proposed projects on Colorado pikeminnow, razorback sucker, humpback chub, bonytail chub are analyzed in detail below.

## 6. EVALUATED SPECIES INFORMATION

### 6.1 UPPER COLORADO RIVER ENDANGERED FISH

The Upper Colorado River Basin is home to 14 native fish species, including the endangered humpback chub, bonytail chub, Colorado pikeminnow, and razorback sucker. These endangered fish are found only in the Colorado River system.

The FWS has determined that water depletions are among the current activities with the greatest impact on all four of these endangered fish. Activities resulting in water depletion in the Gunnison River Basin may jeopardize the continued existence of the four endangered fish. The proposed project is expected to increase consumptive water use and create additional depletions to the Gunnison River basin. Therefore the impacts of the project on the four big river fish are carried forward for analysis.

#### 6.1.1 Colorado pikeminnow (*Ptychocheilus lucius*)

The Colorado pikeminnow currently occupies about 1,030 river miles in the Colorado River system (25 percent of its original range) and is presently found only in the Upper Basin above Glen Canyon Dam. It inhabits about 350 miles of the main stem Green River from its mouth to the mouth of the Yampa River. Its range also extends 160 miles up the Yampa River and 104 miles up the White River, the two major tributaries of the Green River. In the main stem Colorado River, it is currently found from Lake Powell extending about 201 miles upstream to Palisade, Colorado, and in the lower 33 miles of the Gunnison River, a tributary to the main stem Colorado River (Tyus et al. 1982).

#### 6.1.2 Razorback Sucker (*Xyrauchen texanus*)

The only substantial population of razorback suckers remaining is in Lake Mojave on the Nevada/Arizona border, and consists of mostly old adults (McCarthy and Minckley 1987). This population is not successfully recruiting. Limited numbers of razorbacks do persist in other locations in the lower Colorado River, but they are considered rare or incidental and may be continuing to decline. In the Upper Basin, above Glen Canyon Dam, razorback suckers are found in limited numbers in both lentic and lotic environments. The largest population of razorback in the Upper Basin is found in the Upper Green River and lower Yampa River (Tyus 1987). In the Colorado River, most razorback suckers occur in the Grand Valley area near Grand Junction, but they have declined drastically since 1974 (Osmundson and Kaeding 1991).

### **6.1.3 Humpback Chub (*Gila cypha*)**

The greatest concentrations of humpback chub occur in the Grand Canyon portion of the Colorado and Little Colorado Rivers and Westwater/Blackrocks region of the Colorado River. Smaller populations and incidental catches are reported from the Yampa River; Desolation, Gray, and Whirlpool canyons of the Green River; and Cataract Canyon of the Colorado River (USDI FWS 2002a).

### **6.1.4 Bonytail Chub (*Gila elegans*)**

Historically the bonytail occurred throughout the Colorado River main stem and its major tributaries, including the Gila and Salt Rivers in the lower basin and the Green, Yampa, White, Gunnison, and San Juan rivers in the upper basin. Recent collections indicate the fish is extremely rare and is extirpated from much of its former range, although individual fish are still occasionally collected from the upper and lower basins. Supplemental stocking from hatchery fish and maintaining stocks in hatcheries may be necessary to preclude this species from becoming extinct. The recovery goal for bonytail is to “prevent immediate extinction” (USDI FWS 2002b).

## ***6.2 GUNNISON RIVER ENDANGERED FISH RECOVERY CRITERIA***

Activities resulting in water depletion in the Gunnison River Basin may jeopardize the continued existence of the four endangered fish. Therefore, analysis of the proposed projects’ impact on the Gunnison River basin is appropriate.

The Gunnison River Basin PBO determined that implementation of the Recovery Program and other recovery action items will serve as reasonable and prudent measures for minimizing the take from water depletions. New projects proposed in critical habitat that directly impact endangered fish and critical habitat require separate section 7 consultation. Individual section 7 consultation is required on all specific Federal actions pursuant to the ESA, to determine if they fit under the umbrella of the Gunnison River Basin PBO. The following criteria must be met at the time of individual project consultation to rely on the Recovery Program and be considered under the umbrella of this programmatic consultation:

1. A Recovery Agreement must be offered and signed for individual projects depleting more than 100 af/yr, prior to conclusion of section 7 consultation.
2. For projects involving water depletions less than 100 af/year, the Federal agency must document the project location, the amount of the water depletion, identify if the depletion is new or historic, and provide the information to the Service when consultation is initiated.
3. A fee to fund recovery actions will be submitted as described in the proposed action for new depletion projects greater than 100 af/year. The current fee is \$21.17 (Creed Clayton, USFWS, personal communication 3/21/2018). The fees fund Recovery Program activities.
4. Re-initiation stipulations will be included in all individual consultations under the umbrella of the Gunnison PBO.
5. The FWS and project proponents will request that discretionary Federal control be retained for all consultations under the Gunnison River Basin PBO.

Individual consultations that meet the 5 criteria listed above would avoid the likelihood of jeopardy and/or adverse modification of critical habitat from depletion impacts. Projects that

don't meet the criteria will require consultation outside of the Recovery Program. Information documenting the Mount Crested Butte Water and Sanitation project's compliance with the above criteria is provided in the following sections.

### 6.3 MT. CRESTED BUTTE WATER AND SANITATION DISTRICT – HISTORIC AND NEW WATER USE & DEPLETIONS

The Recovery Program for the 4 endangered fish began in 1988. The Recovery Program is intended to implement actions that are needed to recover the endangered fishes and avoid jeopardy and adverse modification of critical habitat. Included in the Recovery Program is a requirement for proponents of projects that cause new water depletions of greater than 100 af/year to make monetary contributions to the Recovery Program.

Water depletions to the Colorado River Basin that occurred prior to the implementation of the Recovery Action Plan (January 22, 1988) are considered "Historic Depletions." Water Depletions that began after that date are considered "New Depletions." In order to separate "New" from "Historic" depletions, water use in by the District was analyzed by Resource Engineering Inc. (2018). At the current time, the District estimates their total depletions to the Gunnison River Basin to be 65.6 af/yr (Table 2). Prior to 1988, the District estimates their depletions were 33.4 af/yr (Table 3). Therefore, currently, the District's average annual depletions to the Gunnison River Basin are 32.2 AF (Table 4).

MONTH	DIVERSIONS			DEPLETIONS		
	DOMESTIC	IRRIGATION	TOTAL	DOMESTIC	IRRIGATION	TOTAL
	(1)	(2)	(3)	(4)	(5)	(6)
January	31.2	0.0	31.2	1.6	0.0	1.6
February	32.3	0.0	32.3	1.6	0.0	1.6
March	36.4	0.0	36.4	1.8	0.0	1.8
April	24.1	0.0	24.1	1.2	0.0	1.2
May	22.8	0.0	22.8	1.1	0.0	1.1
June	32.0	12.3	44.3	1.6	9.8	11.4
July	34.0	24.1	58.1	1.7	19.3	21.0
August	34.0	15.6	49.6	1.7	12.5	14.2
September	30.0	8.1	38.1	1.5	6.5	8.0
October	20.5	0.0	20.5	1.0	0.0	1.0
November	20.1	0.0	20.1	1.0	0.0	1.0
December	31.9	0.0	31.9	1.6	0.0	1.6
Totals	349.3	60.2	409.4	17.5	48.1	65.6

- (1). Treated water delivered for domestic use from the Mt. CB Water Treatment Plant (WTP) and the MLP WTP.
- (2). That portion of the treated water supply allocated to irrigation use. Calculations were based upon a total irrigated acreage of approximately 40 acres and irrigation demand of 1.5 acre-feet per acre. Irrigated acreage was based upon prior studies using aerial photo analysis and field verification.
- (3). = Col. (1) + Col. (2).
- (4). = Col. (1) x 5%. Wastewater is treated by a central wastewater treatment facility resulting in a consumptive use of 5% of diversion. This assumption is consistent with the District's decreed water right plan for augmentation.
- (5). = Col. (2) x 0.8. Irrigation is considered 80% consumptive. Irrigation consumption is equivalent to 1.2 acre-feet per acre irrigated.
- (6). = Col. (4) + Col. (5).



<b>Table 3. MT. CRESTED BUTTE WATER AND SANITATION DISTRICT.</b>						
<b>SUMMARY, WATER USE 1988</b>						
<b>(All Values in Acre Feet (AF))</b>						
<b>MONTH</b>	<b>DIVERSIONS</b>			<b>DEPLETIONS</b>		
	<b>DOMESTIC</b>	<b>IRRIGATION</b>	<b>TOTAL</b>	<b>DOMESTIC</b>	<b>IRRIGATION</b>	<b>TOTAL</b>
	(1)	(2)	(3)	(4)	(5)	(6)
January	15.9	0.0	15.9	0.8	0.0	0.8
February	16.4	0.0	16.4	0.8	0.0	0.8
March	18.5	0.0	18.5	0.9	0.0	0.9
April	12.3	0.0	12.3	0.6	0.0	0.6
May	11.6	0.0	11.6	0.6	0.0	0.6
June	16.3	6.3	22.5	0.8	5.0	5.8
July	17.3	12.3	29.6	0.9	9.8	10.7
August	17.3	8.0	25.3	0.9	6.4	7.2
September	15.3	4.1	19.4	0.8	3.3	4.1
October	10.4	0.0	10.4	0.5	0.0	0.5
November	10.2	0.0	10.2	0.5	0.0	0.5
December	16.2	0.0	16.2	0.8	0.0	0.8
<b>Totals</b>	<b>177.8</b>	<b>30.6</b>	<b>208.4</b>	<b>8.9</b>	<b>24.5</b>	<b>33.4</b>

(1) through (6). Values shown are calculated at 50.9% of those shown in Table 1.

Source: Stantec, Water Master Plan Update 2011/2012. Stantec developed a detailed Summary of annual development within the MCBWSD over the period 1970 through 2013. The development was expressed in "Single Family Equivalents" (SFEs). In 1988 there were 1,373 SFEs of development. Presently (2017/2018), there are approximately 2,700 SFEs.

<b>Table 4. MT. CRESTED BUTTE WATER AND SANITATION DISTRICT.</b>					
<b>SUMMARY, WATER DEPLETION ANALYSIS</b>					
<b>(All Values in Acre Feet (AF))</b>					
<b>YEAR</b>		<b>DIVERSIONS</b>	<b>DEPLETIONS</b>	<b>SECTION 7 CONSULTATION *</b>	
(1)	1988	208.4	33.4	33.4	<b>Historic Depletion</b>
(2)	2017	409.4	65.6	32.2	<b>New Depletion (through present)</b>
(3)	Build-Out	1023.6	164.0	130.6	<b>New Depletion (at build-out)</b>

\*

**Historic Depletion** = Depletions by MCBWSD prior to 1988.

**New Depletion (through present)** = 2017 Depletion (2) - 1988 Depletion (1).

**New Depletion (at build-out)** = Build-Out Depletion (3) - 1988 Depletion (1).

The District estimates that under current conditions their service area is approximately 33% of its full build-out population. In order to efficiently address both current and projected future growth of their service area, it is the District's desire to consult at this time with the anticipated full build-out water use and depletion. The full build-out scenario, therefore, will be addressed in the Effects section (Section 7) of this document.

## 7. EFFECTS OF THE PROPOSED ACTION ON THE SPECIES EVALUATED

### 7.1 DIRECT AND INDIRECT EFFECTS

At full build-out of the service area, the District estimates that the total depletion to the Gunnison River Basin will be 164 AF (Table 5), which equates to 130.6 AF of new depletions (Table 4). It is the District's desire to consult on the full build-out depletion amount.

MONTH	DIVERSIONS			DEPLETIONS		
	DOMESTIC	IRRIGATION	TOTAL	DOMESTIC	IRRIGATION	TOTAL
	(1)	(2)	(3)	(4)	(5)	(6)
January	78.0	0.0	78.0	3.9	0.0	3.9
February	80.7	0.0	80.7	4.0	0.0	4.0
March	90.9	0.0	90.9	4.5	0.0	4.5
April	60.3	0.0	60.3	3.0	0.0	3.0
May	57.0	0.0	57.0	2.9	0.0	2.9
June	80.0	30.8	110.8	4.0	24.6	28.6
July	85.0	60.2	145.2	4.3	48.2	52.4
August	85.0	39.1	124.1	4.3	31.3	35.5
September	75.0	20.3	95.3	3.8	16.2	20.0
October	51.3	0.0	51.3	2.6	0.0	2.6
November	50.3	0.0	50.3	2.5	0.0	2.5
December	79.7	0.0	79.7	4.0	0.0	4.0
<b>Totals</b>	<b>873.2</b>	<b>150.4</b>	<b>1023.6</b>	<b>43.7</b>	<b>120.3</b>	<b>164.0</b>

(1) through (6). Values shown are calculated as Table 1 value x 2.5.

Source: CB2020 Study completed in 2000. Study provided detailed growth estimates for Mt. Crested Butte and other nearby Towns. Based upon study results, at full build-out, Mt. Crested Butte will have approximately 6,200 SFEs. Present SFE counts within the MCBWSD are estimated at approximately 2,700 SFE's, or approximately 40% of build-out.

### 7.2 CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, local, or private actions that are reasonably certain to occur in the project area. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Endangered Species Act. The Forest Service is not aware of any future non-Federal actions beyond this proposed project that are reasonably certain to occur in the action area.

### 7.3 DETERMINATION

The District anticipates that the proposed project will foster continued growth within its service area and thus, consumptive water use will increase in the future. The total increased water usage would result in an increased depletion of water within the Gunnison River Basin. The FWS has determined that water depletions are among the current activities with the greatest impact on all four of these endangered fish. Activities resulting in water depletion in the Gunnison River Basin may jeopardize the continued existence of the four endangered fish.

Therefore, the existing “New” depletions that have occurred since 1988, in combination with the proposed future depletions that are expected as the District’s service area grows, **WOULD ADVERSELY AFFECT** the four Big River endangered fish (Colorado pikeminnow, Razorback Sucker, Humpback Chub, and Bonytail Chub).

The Recovery Implementation Program serves as the reasonable and prudent alternative to avoid jeopardy to the endangered fishes from impacts of water depletions. The FWS has determined that projects that fit under the umbrella of the Gunnison River PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts to the Gunnison River basin.

Since the full build-out depletions will be greater than 100 AF, in order for the project to fit under the umbrella of the Gunnison PBO, the District will enter into a Recovery agreement with the US Fish and Wildlife Service, and will pay the fee to fund recovery actions. The Recovery agreement will include re-initiation stipulations. Consultation on this project may be reinitiated if the following conditions occur:

- 1) The amount or extent of take specified in the incidental take statement for the Gunnison PBO is exceeded.
- 2) New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in the Gunnison PBO.
- 3) The identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the Gunnison PBO.
- 4) The Service lists new species or designates new or additional critical habitat, where the level or pattern of depletions covered under the Gunnison PBO may have an adverse impact on the newly listed species or habitat.

Therefore, the requirements have been met for the Action Alternative to fit under the umbrella of the Gunnison River PBO.

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## **APPENDIX A – IPAC LIST**



# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Western Colorado Ecological Services Field Office

445 West Gunnison Avenue, Suite 240

Grand Junction, CO 81501-5711

Phone: (970) 243-2778 Fax: (970) 245-6933

<http://www.fws.gov/mountain-prairie/es/Colorado/>

<http://www.fws.gov/platterriver/>

In Reply Refer To:

April 10, 2018

Consultation Code: 06E24100-2018-SLI-0295

Event Code: 06E24100-2018-E-00646

Project Name: Mount Crested Butte Water and Sanitation District, East River Water Supply System Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered



species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
  - Wetlands
-

# Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Western Colorado Ecological Services Field Office**

445 West Gunnison Avenue, Suite 240

Grand Junction, CO 81501-5711

(970) 243-2778

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## Project Summary

Consultation Code: 06E24100-2018-SLI-0295

Event Code: 06E24100-2018-E-00646

Project Name: Mount Crested Butte Water and Sanitation District, East River Water Supply System Improvements

Project Type: WATER SUPPLY / DELIVERY

Project Description: An engineering review of the District's East River water diversion and delivery system indicates that the water facilities are aging and in need of major improvements and/or replacement. As a result, the District requests approval from the U.S. Forest Service (USFS) to make several improvements to its East River Water Supply System. The planned improvements include:

- Diversion Culverts. Replacement of the two, 30 inch diameter diversion culverts with two, 24 inch diameter diversion culverts and associated appurtenances.
- Pump Forebay/Pre-Sedimentation Pond. Replace the 0.2 acre pump forebay /presedimentation pond with a new, 8 foot diameter concrete water distribution vault designed to stabilize flows entering the District's pump house.
- Pump Station. Replace the existing pump house structure in its entirety with a new, stateof-the-art pump station and associated facilities.
- Delivery Pipeline. Construct a new, 16 inch diameter pipeline from the pump station that will deliver East River diversions to the District's pre-sedimentation pond that is located on the watershed divide separating the East River and Washington Gulch, near the District's existing water treatment plant.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.92071331030105N106.95454391284716W>

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Counties: Gunnison, CO

## Endangered Species Act Species

There is a total of 8 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 4 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

### Mammals

NAME	STATUS
Canada Lynx <i>Lynx canadensis</i> Population: Wherever Found in Contiguous U.S. There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3652">https://ecos.fws.gov/ecp/species/3652</a>	Threatened
North American Wolverine <i>Gulo gulo luscus</i> No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/5123">https://ecos.fws.gov/ecp/species/5123</a>	Proposed Threatened

### Birds

NAME	STATUS
Gunnison Sage-grouse <i>Centrocercus minimus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6040">https://ecos.fws.gov/ecp/species/6040</a>	Threatened

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## Fishes

NAME	STATUS
<p><b>Bonytail Chub</b> <i>Gila elegans</i></p> <p>There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>Water depletions in the upper Colorado River basin adversely affect this species and its critical habitat. This species does not need to be considered if the project is outside of its occupied habitat and does not deplete water from the basin.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/1377">https://ecos.fws.gov/ecp/species/1377</a></p>	Endangered
<p><b>Colorado Pikeminnow (=squawfish)</b> <i>Ptychocheilus lucius</i></p> <p>Population: Wherever found, except where listed as an experimental population</p> <p>There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>Water depletions in the upper Colorado River basin adversely affect this species and its critical habitat. This species does not need to be considered if the project is outside of its occupied habitat and does not deplete water from the basin.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/3531">https://ecos.fws.gov/ecp/species/3531</a></p>	Endangered
<p><b>Greenback Cutthroat Trout</b> <i>Oncorhynchus clarkii stomias</i></p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/2775">https://ecos.fws.gov/ecp/species/2775</a></p>	Threatened
<p><b>Humpback Chub</b> <i>Gila cypha</i></p> <p>There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>Water depletions in the upper Colorado River basin adversely affect this species and its critical habitat. This species does not need to be considered if the project is outside of its occupied habitat and does not deplete water from the basin.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/3930">https://ecos.fws.gov/ecp/species/3930</a></p>	Endangered
<p><b>Razorback Sucker</b> <i>Xyrauchen texanus</i></p> <p>There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>Water depletions in the upper Colorado River basin adversely affect this species and its critical habitat. This species does not need to be considered if the project is outside of its occupied habitat and does not deplete water from the basin.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/530">https://ecos.fws.gov/ecp/species/530</a></p>	Endangered

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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# Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain timeframe) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain timeframe). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a>	Breeds Dec 1 to Aug 31

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NAME	BREEDING SEASON
<b>Black Rosy-finch <i>Leucosticte atrata</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9460">https://ecos.fws.gov/ecp/species/9460</a>	Breeds Jun 15 to Aug 31
<b>Black Swift <i>Cypseloides niger</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8878">https://ecos.fws.gov/ecp/species/8878</a>	Breeds Jun 15 to Sep 10
<b>Brewer's Sparrow <i>Spizella breweri</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9291">https://ecos.fws.gov/ecp/species/9291</a>	Breeds May 15 to Aug 10
<b>Brown-capped Rosy-finch <i>Leucosticte australis</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 15 to Sep 15
<b>Burrowing Owl <i>Athene cunicularia</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/9737">https://ecos.fws.gov/ecp/species/9737</a>	Breeds Mar 15 to Aug 31
<b>Golden Eagle <i>Aquila chrysaetos</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>	Breeds Jan 1 to Aug 31
<b>Grace's Warbler <i>Dendroica graciae</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 20 to Jul 20
<b>Lesser Yellowlegs <i>Tringa flavipes</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a>	Breeds elsewhere
<b>Lewis's Woodpecker <i>Melanerpes lewis</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9408">https://ecos.fws.gov/ecp/species/9408</a>	Breeds Apr 20 to Sep 30
<b>Long-billed Curlew <i>Numenius americanus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a>	Breeds Apr 1 to Jul 31

NAME	BREEDING SEASON
<p>Mountain Plover <i>Charadrius montanus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/3638">https://ecos.fws.gov/ecp/species/3638</a></p>	Breeds Apr 15 to Aug 15
<p>Olive-sided Flycatcher <i>Contopus cooperi</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/3914">https://ecos.fws.gov/ecp/species/3914</a></p>	Breeds May 20 to Aug 31
<p>Pinyon Jay <i>Gymnorhinus cyanocephalus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9420">https://ecos.fws.gov/ecp/species/9420</a></p>	Breeds Feb 15 to Jul 15
<p>Rufous Hummingbird <i>selasphorus rufus</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/8002">https://ecos.fws.gov/ecp/species/8002</a></p>	Breeds elsewhere
<p>Virginia's Warbler <i>Vermivora virginiae</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9441">https://ecos.fws.gov/ecp/species/9441</a></p>	Breeds May 1 to Jul 31
<p>Willet <i>Tringa semipalmata</i>  This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p>Willow Flycatcher <i>Empidonax traillii</i>  This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA  <a href="https://ecos.fws.gov/ecp/species/3482">https://ecos.fws.gov/ecp/species/3482</a></p>	Breeds May 20 to Aug 31

## Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to





Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

## Migratory Birds FAQ

### **Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

### **What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the counties which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

### **What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird

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of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable that the bird breeds in your project's counties at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

### **What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the BGEPA should such impacts occur.

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# Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

## FRESHWATER FORESTED/SHRUB WETLAND

- [PSSB](#)
- [PSSC](#)

## FRESHWATER POND

- [PABG](#)

## RIVERINE

- [R3UBH](#)
-

**APPENDIX B - APPLICATION FOR  
TRANSPORTATION AND UTILITY SYSTEMS  
AND FACILITIES ON FEDERAL LANDS**

APPLICATION FOR TRANSPORTATION AND  
UTILITY SYSTEMS AND FACILITIES  
ON FEDERAL LANDS

FORM APPROVED  
OMB Control Number: 0596-0082  
Expiration Date: 1/31/2017

FOR AGENCY USE ONLY

NOTE: Before completing and filing the application, the applicant should completely review this package and schedule a preapplication meeting with representatives of the agency responsible for processing the application. Each agency may have specific and unique requirements to be met in preparing and processing the application. Many times, with the help of the agency representative, the application can be completed at the preapplication meeting.

Application Number

Date Filed

1. Name and address of applicant (include zip code)

Mr. Todd Fessenden, Manager  
Mt. Crested Butte Water & Sanitation District  
PO Box 5740  
Mt. Crested Butte CO 81225-5740

2. Name, title, and address of authorized agent if different from item 1 (include zip code)

R. Scott Fifer, P.H.  
Resource Engineering, Inc.  
909 Colorado Avenue  
Glenwood Springs CO 81601

3. Telephone (area code)

Applicant  
970-349-7575  
Authorized Agent  
970-945-6777

4. As applicant are you? (check one)

- a.  Individual
- b.  Corporation\*
- c.  Partnership/Association\*
- d.  State Government/State Agency
- e.  Local Government
- f.  Federal Agency

\* If checked, complete supplemental page

5. Specify what application is for: (check one)

- a.  New authorization
- b.  Renewing existing authorization No.
- c.  Amend existing authorization No.
- d.  Assign existing authorization No.
- e.  Existing use for which no authorization has been received \*
- f.  Other\*

\* If checked, provide details under item 7

6. If an individual, or partnership are you a citizen(s) of the United States?  Yes  No

7. Project description (describe in detail): (a) Type of system or facility, (e.g., canal, pipeline, road); (b) related structures and facilities; (c) physical specifications (Length, width, grading, etc.); (d) term of years needed; (e) time of year of use or operation; (f) Volume or amount of product to be transported; (g) duration and timing of construction; and (h) temporary work areas needed for construction (Attach additional sheets, if additional space is needed.)

Amend existing authorization No. GUN1062. See attached

8. Attach a map covering area and show location of project proposal

9. State or Local government approval:  Attached  Applied for  Not Required

10. Nonreturnable application fee:  Attached  Not required

11. Does project cross international boundary or affect international waterways?  Yes  No (if "yes," indicate on map)

12. Give statement of your technical and financial capability to construct, operate, maintain, and terminate system for which authorization is being requested.

See attached

13a. Describe other reasonable alternative routes and modes considered

See attached

b. Why were these alternatives not selected?

See attached

c. Give explanation as to why it is necessary to cross Federal Lands

See attached

14. List authorizations and pending applications filed for similar projects which may provide information to the authorizing agency (Specify number, date, code, or name)

Applicant has no knowledge of similar pending applications.

15. Provide statement of need for project, including the economic feasibility and items such as (a) cost of proposal (construction, operation, and maintenance); (b) estimated cost of next best alternative, and (c) expected public benefits.

See attached

16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.

See attached

17. Describe likely environmental effects that the proposed project will have on (a) air quality; (b) visual impact; (c) surface and ground water quality and quantity; (d) the control or structural change on any stream or other body of water; (e) existing noise levels; and (f) the surface of the land, including vegetation, permafrost, soil, and soil stability.

See attached

18. Describe the probable effects that the proposed project will have on (a) populations of fish, plantlife, wildlife, and marine life, including threatened and endangered species; and (b) marine mammals, including hunting, capturing, collecting, or killing these animals.

See attached

19. State whether any hazardous material, as defined in this paragraph, will be used, produced, transported or stored on or within the right-of-way or any of the right-of-way facilities, or used in the construction, operation, maintenance or termination of the right-of-way or any of its facilities. "Hazardous material" means any substance, pollutant or contaminant that is listed as hazardous under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. 9601 et seq., and its regulations. The definition of hazardous substances under CERCLA includes any "hazardous waste" as defined in the Resource Conservation and Recovery Act of 1976 (RCRA), as amended, 42 U.S.C. 6901 et seq., and its regulations. The term hazardous materials also includes any nuclear or byproduct material as defined by the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011 et seq. The term does not include petroleum, including crude oil or any fraction thereof that is not otherwise specifically listed or designated as a hazardous substance under CERCLA Section 101(14), 42 U.S.C. 9601(14), nor does the term include natural gas.

To the best of Applicant's knowledge, there will be no hazardous materials used or transported as part of the planned improvements outlined in this application.

20. Name all the Department(s)/Agency(ies) where this application is being filed.

U.S. Forest Service, USDA

I HEREBY CERTIFY, That I am of legal age and authorized to do business in the State and that I have personally examined the information contained in the application and believe that the information submitted is correct to the best of my knowledge.

Signature of Applicant



Date

11/1/16

Title 18, U.S.C. Section 1001, makes it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious, or fraudulent statements or representations as to any matter within its jurisdiction.

GENERAL INFORMATION  
ALASKA NATIONAL INTEREST LANDS

This application will be used when applying for a right-of-way, permit, license, lease, or certificate for the use of Federal lands which lie within conservation system units and National Recreation or Conservation Areas as defined in the Alaska National Interest Lands Conservation Act. Conservation system units include the National Park System, National Wildlife Refuge System, National Wild and Scenic Rivers System, National Trails System, National Wilderness Preservation System, and National Forest Monuments.

Transportation and utility systems and facility uses for which the application may be used are:

1. Canals, ditches, flumes, laterals, pipes, pipelines, tunnels, and other systems for the transportation of water.
2. Pipelines and other systems for the transportation of liquids other than water, including oil, natural gas, synthetic liquid and gaseous fuels, and any refined product produced therefrom.
3. Pipelines, slurry and emulsion systems, and conveyor belts for transportation of solid materials.
4. Systems for the transmission and distribution of electric energy.
5. Systems for transmission or reception of radio, television, telephone, telegraph, and other electronic signals, and other means of communications.
6. Improved right-of-way for snow machines, air cushion vehicles, and all-terrain vehicles.
7. Roads, highways, railroads, tunnels, tramways, airports, landing strips, docks, and other systems of general transportation.

This application must be filed simultaneously with each Federal department or agency requiring authorization to establish and operate your proposal.

In Alaska, the following agencies will help the applicant file an application and identify the other agencies the applicant should contact and possibly file with:

Department of Agriculture  
Regional Forester, Forest Service (USFS)  
Federal Office Building,  
P.O. Box 21628  
Juneau, Alaska 99802-1628  
Telephone: (907) 586-7847 (or a local Forest Service Office)

Department of the Interior  
Bureau of Indian Affairs (BIA)  
Juneau Area Office  
Federal Building Annex  
9109 Mendenhall Mall Road, Suite 5  
Juneau, Alaska 99802  
Telephone: (907) 586-7177

Department of the Interior  
Bureau of Land Management  
222 West 7th Avenue  
P.O. Box 13  
Anchorage, Alaska 99513-7599  
Telephone: (907) 271-5477 (or a local BLM Office)

U.S. Fish & Wildlife Service (FWS)  
Office of the Regional Director  
1011 East Tudor Road  
Anchorage, Alaska 99503  
Telephone: (907) 786-3440

National Park Service (NPA)  
Alaska Regional Office, 2225  
Gambell St., Rm. 107  
Anchorage, Alaska 99502-2892  
Telephone: (907) 786-3440

Note - Filings with any Interior agency may be filed with any office noted above or with the Office of the Secretary of the Interior, Regional Environmental Office, P.O. Box 120, 1675 C Street, Anchorage, Alaska 9513.

Department of Transportation  
Federal Aviation Administration  
Alaska Region AAL-4, 222 West 7th Ave., Box 14  
Anchorage, Alaska 99513-7587  
Telephone: (907) 271-5285

NOTE - The Department of Transportation has established the above central filing point for agencies within that Department. Affected agencies are: Federal Aviation Administration (FAA), Coast Guard (USCG), Federal Highway Administration (FHWA), Federal Railroad Administration (FRA).

OTHER THAN ALASKA NATIONAL INTEREST LANDS

Use of this form is not limited to National Interest Conservation Lands of Alaska.

Individual department/agencies may authorize the use of this form by applicants for transportation and utility systems and facilities on other Federal lands outside those areas described above.

For proposals located outside of Alaska, applications will be filed at the local agency office or at a location specified by the responsible Federal agency.

SPECIFIC INSTRUCTIONS  
(Items not listed are self-explanatory)

- 7 Attach preliminary site and facility construction plans. The responsible agency will provide instructions whenever specific plans are required.
- 8 Generally, the map must show the section(s), township(s), and range(s) within which the project is to be located. Show the proposed location of the project on the map as accurately as possible. Some agencies require detailed survey maps. The responsible agency will provide additional instructions.
- 9, 10, and 12 The responsible agency will provide additional instructions.
- 13 Providing information on alternate routes and modes in as much detail as possible, discussing why certain routes or modes were rejected and why it is necessary to cross Federal lands will assist the agency(ies) in processing your application and reaching a final decision. Include only reasonable alternate routes and modes as related to current technology and economics.
- 14 The responsible agency will provide instructions.
- 15 Generally, a simple statement of the purpose of the proposal will be sufficient. However, major proposals located in critical or sensitive areas may require a full analysis with additional specific information. The responsible agency will provide additional instructions.
- 16 through 19 Providing this information in as much detail as possible will assist the Federal agency(ies) in processing the application and reaching a decision. When completing these items, you should use a sound judgment in furnishing relevant information. For example, if the project is not near a stream or other body of water, do not address this subject. The responsible agency will provide additional instructions.

Application must be signed by the applicant or applicant's authorized representative.

EFFECT OF NOT PROVIDING INFORMATION: Disclosure of the information is voluntary. If all the information is not provided, the application may be rejected.

DATA COLLECTION STATEMENT

The Federal agencies collect this information from applicants requesting right-of-way, permit, license, lease, or certification for the use of Federal lands. The Federal agencies use this information to evaluate the applicant's proposal. The public is obligated to submit this form if they wish to obtain permission to use Federal lands.

**SUPPLEMENTAL**

NOTE: The responsible agency(ies) will provide instructions	CHECK APPROPRIATE BLOCK	
	ATTACHED	FILED*
<b>I - PRIVATE CORPORATIONS</b>		
a. Articles of Incorporation	<input type="checkbox"/>	<input type="checkbox"/>
b. Corporation Bylaws	<input type="checkbox"/>	<input type="checkbox"/>
c. A certification from the State showing the corporation is in good standing and is entitled to operate within the State	<input type="checkbox"/>	<input type="checkbox"/>
d. Copy of resolution authorizing filing	<input type="checkbox"/>	<input type="checkbox"/>
e. The name and address of each shareholder owning 3 percent or more of the shares, together with the number and percentage of any class of voting shares of the entity which such shareholder is authorized to vote and the name and address of each affiliate of the entity together with, in the case of an affiliate controlled by the entity, the number of shares and the percentage of any class of voting stock of that affiliate owned, directly or indirectly, by that entity, and in the case of an affiliate which controls that entity, the number of shares and the percentage of any class of voting stock of that entity owned, directly or indirectly, by the affiliate.	<input type="checkbox"/>	<input type="checkbox"/>
f. If application is for an oil or gas pipeline, describe any related right-of-way or temporary use permit applications, and identify previous applications.	<input type="checkbox"/>	<input type="checkbox"/>
g. If application is for an oil and gas pipeline, identify all Federal lands by agency impacted by proposal.	<input type="checkbox"/>	<input type="checkbox"/>
<b>II - PUBLIC CORPORATIONS</b>		
a. Copy of law forming corporation	<input type="checkbox"/>	<input type="checkbox"/>
b. Proof of organization	<input type="checkbox"/>	<input type="checkbox"/>
c. Copy of Bylaws	<input type="checkbox"/>	<input type="checkbox"/>
d. Copy of resolution authorizing filing	<input type="checkbox"/>	<input type="checkbox"/>
e. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	<input type="checkbox"/>	<input type="checkbox"/>
<b>III - PARTNERSHIP OR OTHER UNINCORPORATED ENTITY</b>		
a. Articles of association, if any	<input type="checkbox"/>	<input type="checkbox"/>
b. If one partner is authorized to sign, resolution authorizing action is	<input type="checkbox"/>	<input type="checkbox"/>
c. Name and address of each participant, partner, association, or other	<input type="checkbox"/>	<input type="checkbox"/>
d. If application is for an oil or gas pipeline, provide information required by item "I - f" and "I - g" above.	<input type="checkbox"/>	<input type="checkbox"/>

\*If the required information is already filed with the agency processing this application and is current, check block entitled "Filed." Provide the file identification information (e.g., number, date, code, name). If not on file or current, attach the requested information.

## NOTICES

Note: This applies to the Department of Agriculture/Forest Service (FS)

This information is needed by the Forest Service to evaluate the requests to use National Forest System lands and manage those lands to protect natural resources, administer the use, and ensure public health and safety. This information is required to obtain or retain a benefit. The authority for that requirement is provided by the Organic Act of 1897 and the Federal Land Policy and Management Act of 1976, which authorize the secretary of Agriculture to promulgate rules and regulations for authorizing and managing National Forest System lands. These statutes, along with the Term Permit Act, National Forest Ski Area Permit Act, Granger-Thye Act, Mineral Leasing Act, Alaska Term Permit Act, Act of September 3, 1954, Wilderness Act, National Forest Roads and Trails Act, Act of November 16, 1973, Archeological Resources Protection Act, and Alaska National Interest Lands Conservation Act, authorize the Secretary of Agriculture to issue authorizations or the use and occupancy of National Forest System lands. The Secretary of Agriculture's regulations at 36 CFR Part 251, Subpart B, establish procedures for issuing those authorizations.

### BURDEN AND NONDISCRIMINATION STATEMENTS

*According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 8 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.*

*The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720- 2600 (voice and TDD).*

*To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.*

The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.



# Application for Transportation and Utility Systems and Facilities on Federal Lands

## Supplemental Information – Standard Form 299 (6/99) Mt. Crested Butte Water and Sanitation District, Authorization ID: GUN1062

### No. 7. Project description (describe in detail):

#### Background.

The Applicant, Mt. Crested Butte Water and Sanitation District (District), provides municipal water supply and sewer service to the Town of Mt. Crested Butte, Colorado. The District was established in 1963 under the State of Colorado Special District provisions and today, serves approximately 6,500 residential and commercial customers located within the Town and the nearby Meridian Lake Park subdivision. The District's primary source of water supply, the East River Water Supply System, is located on National Forest lands and operates under an approved Special Use Permit (SUP) issued under authority of the Federal Land Policy and Management Act, as amended October 21, 1976. The SUP allows for two (2) diversion structures from the East River, a pump forebay/pre-sedimentation pond, pumping station, and delivery pipelines that together, occupy approximately 3.5 acres of National Forest lands.<sup>1</sup> A copy of the District's SUP is contained in **Attachment 1**.

#### Project Description.

An engineering review of the District's East River water diversion and delivery system indicates that the water facilities are aging and in need of major improvements and/or replacement. As a result, the District requests approval from the U.S. Forest Service (USFS) to make several improvements to its East River Water Supply System. The planned improvements include:

- **Diversion Culverts.** Replacement of the two, 30 inch diameter diversion culverts with two, 24 inch diameter diversion culverts and associated appurtenances.<sup>2</sup>
- **Pump Forebay/Pre-Sedimentation Pond.** Replace the 0.2 acre pump forebay /pre-sedimentation pond with a new, 8 foot diameter concrete water distribution vault designed to stabilize flows entering the District's pump house.
- **Pump Station.** Replace the existing pump house structure in its entirety with a new, state-of-the-art pump station and associated facilities.
- **Delivery Pipeline.** Construct a new, 16 inch diameter pipeline from the pump station that will deliver East River diversions to the District's pre-sedimentation pond that is located on the watershed divide separating the East River and Washington Gulch, near the District's existing water treatment plant.

**7. (a). Type of system or facility.** A vicinity map of the described improvements is provided in **Figure 1**, attached. Each of the proposed improvements are described in more detail below.

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<sup>1</sup> Other water delivery facilities not directly related to the East River diversion and delivery system are also included in the District's Special Use Permit.

<sup>2</sup> The District's existing SUP describes the two diversion pipelines as 18 inches in diameter. This is incorrect, the two existing pipelines are 30 inches in diameter.

1. **Diversion Culverts.** One of two metal pipelines that divert water from the East River to the District's pumping forebay pond has become blocked and is inoperable. This structure provides redundancy in the District's water diversion system and without it, there is risk that domestic water shortages could occur should the second diversion facility also become inoperable. In addition, during the winter period the second diversion pipeline experiences icing at its inlet which requires frequent removal.

To mitigate these problems, the District proposes to replace the two existing 30 inch diameter metal pipelines with two 24 inch diameter high density plastic pipelines. The lower profile allows the pipelines to remain submerged during winter conditions which will reduce the probability of winter icing. The conversion from metal to plastic pipe at the diversion inlets will also help reduce winter icing. The District's water engineers have calculated that a 24 inch diameter pipe has sufficient capacity to meet the District's projected peak day demands at build-out. The location of the planned diversion culverts and related improvements are shown in **Figure 2**.

2. **Pump Forebay/Pre-Sedimentation Pond.** The Colorado Department of Public Health and Environment (CDPHE) has requested the District erect a security fence around the perimeter of the 0.2 surface acre pond.<sup>3</sup> The purpose of the fence is to provide safety for the public and water quality protection by preventing animals from directly entering the domestic water source. In review of this situation, the District's engineers have determined that the function of the pond could be replaced through construction of an 8 foot diameter concrete vault located in proximity to the existing pond. Pre-sedimentation is not necessary at this location as the District has constructed a pre-sedimentation pond on lands located on the watershed divide separating the East River and Washington Gulch (closer to the District's treatment plant). The District's existing pump house and associated pond are shown in **Photograph 1**.

As an alternative to constructing a metal fence around the perimeter of the pond, the District proposes to fill-in the 0.2 surface acre pond and replace its function with the described 8 foot diameter concrete vault. Originally, this action was believed to require the issuance of nationwide Section 404 permit from the U.S. Army Corps of Engineers (COE) due to the loss of 0.2 acres of "waters of the U.S.". However, by letter dated January 29, 2016, the COE determined that the settling pond is not considered jurisdictional because it is an artificial pond created for purposes of providing a settling basin. The COE does not consider these type of facilities as "waters of the U.S.". A copy of the COE's January 29<sup>th</sup> letter is attached in **Attachment 2**.

The source of fill to reclaim the pond is proposed to originate from a steep, eroding streambank located approximately 200 feet upstream from the pond. In this area, the bank is at a slope of approximately 1.2:1 (40%) and is absent of vegetation. Under this plan, the steep bank would be laid back to a slope of 2.5:1 or less (20%) and revegetated. The soil and bedrock materials removed during this streambank mitigation could be used to partially fill the pond as described above. The location of the eroding streambank is shown in **Figure 3**. A photograph of the site is shown in **Photograph 2**.

3. **Pump Station.** The District's existing pump station must be improved to receive new pumping equipment and connection to a new pipeline delivery system (see no. 4 below).

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<sup>3</sup> Typical security fences consist of 6 foot chain link topped by an additional two feet of barbed wire.

During inspection of the facility, however, Engineers for the District discovered that the concrete slab supporting the existing building is no longer structurally sound. Accordingly, the pump station must be replaced in its entirety.

As a result of the identified structural deficiency, the District proposes to dismantle and remove the existing pump station and replace it with a new, state-of-the-art facility. It is proposed that the new building be relocated just east of the existing location. This new location will place the new building outside of the 100 year floodplain of the East River.<sup>4</sup> The building dimensions will be 24' x 32'-8". The location of the existing and planned pump station is shown in **Figure 2**.

- 4. Delivery Pipeline.** The District proposed to construct a new, 16 inch diameter water Delivery pipeline extending approximately 2,600 feet from the new pumping station to pre-sedimentation pond/water treatment facility located on the watershed divide separating the East River from Washington Gulch. The pipeline will parallel the existing 8 inch diameter pipeline which is proposed to remain in place in order to provide redundancy in the water system should one pipe fail for any reason. The new, 16 inch diameter pipeline will have capacity to meet the District's calculated peak day demand at build-out.

As shown in **Exhibit A-3 of Attachment 1**, (the USDA Special Use Permit OMB No. 0596-0082) the existing 8 inch diameter pipeline has a described 20 ft. wide Water Line Corridor (10 feet of each side of center). Construction of the new, 16 inch diameter pipeline will require the recognized pipeline corridor to be expanded. The terrain is steep and the District's construction standards require a minimum pipeline depth of seven feet. In order to construct and maintain the pipeline at current Occupational Health and Safety Standards (OSHA) standards, the District is asking for a forty (40) foot corridor that will include both pipelines. On the north side of the existing pipeline, the ten (10) foot corridor will remain as described in the existing Special Use Permit. The proposed pipeline is anticipated to be constructed at a fifteen (15) foot offset from the existing pipe. An additional fifteen (15) foot of dedicated corridor on the south side of the proposed pipeline will allow for future maintenance and repair access to OSHA standards. The enclosed **Figure 4** shows the layout view of the existing and proposed corridor.

**7. (b). Related structures and facilities.** All of the structures described in 7. (a) above are considered related structures that comprise the District's East River Water Supply System.

**7. (c). Physical specifications.** The proposed improvements include:

- Approximately 170 lineal feet of 24 inch diameter high density plastic pipelines leading from the East River intakes to a proposed 8 ft. diameter concrete water distribution vault.
- Approximately 170 lineal feet of 24 inch diameter high density plastic pipelines from the concrete water distribution vault to the pump station wet wells.
- A new pump station with dimensions of 24' x 32'-8".
- 2,600 feet of 16 inch diameter water delivery pipeline.
- Remove and dispose of existing diversion structures and pump station.

**7. (d). Term of years needed.** The District's East River water supply plan is based upon a 35 to 50 year planning horizon.

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<sup>4</sup> The existing pump house is located within the defined 100 year flood plain.

**7. (e). Time of year of use of operation.** The District will use the improved facilities on a continuous, year-round basis.

**7. (f). Volume or amount of product to be transported.** At build-out, the District will transport up to 1,400 acre feet of water annually through its East River Water Supply System.

**7. (g). Duration and timing of construction.** June 2018 through October 15, 2019.

**7. (h). Temporary work areas needed for construction.** The Applicant has completed an analysis of the maximum disturbed area required during the construction of the described improvements. In total, approximately 3.5 acres of land will be disturbed as summarized below and shown in **Figure 6**, attached.

- Diversion and pump station. Approximately 1.75 acres extending from the East River to, and surrounding, the proposed pump station.
- Pipeline delivery system. Approximately 1.75 acres

During the construction process, several vehicles and various types of heavy equipment will be required on-site. The following list provides a summary of anticipated on-site equipment.

#### **Estimated Construction Equipment List**

<b>Type</b>	<b>Number</b>
<b><u>Earthmoving Equipment</u></b>	
Excavators	1
Loaders	1
Skid Steer Loaders	2
Grader	1
Backhoe	2
Bulldozer	1
Trencher	1
<b><u>Construction Vehicles</u></b>	
Dump Truck	2
Construction Vehicle / Pickup	5
<b><u>Material Handling Equipment</u></b>	
Crane	1
<b><u>Construction Equipment</u></b>	
Concrete Mixer	1
Compactors	2

## **No. 12. Technical and Financial Capability**

As summarized below, the Mt. Crested Butte Water and Sanitation District (District), is technically and financially capable of constructing and operating the described improvements.

1. The Applicant, Mt. Crested Butte Water and Sanitation District (District), provides municipal water supply and sewer service to the Town of Mt. Crested Butte Town and the nearby Meridian Lake Park subdivision, Colorado. The District was established in 1963 under the State of Colorado Special District provisions and today, serves approximately 6,500 residential and commercial customers located within the service area.
2. The District is a taxing entity with a reliable annual income and a 2014 audit net position of \$19,000,000. Presently, the District generates approximately \$2,000,000 in revenue annually.
3. The District is staffed by full time professionals including a District Manager, Finance/Administration Manager, 10 operators with appropriate State licenses and is supported by a consulting team consisting of water resource engineers, hydrologist and attorneys.

## **No. 13. Project Alternatives**

### **13. (a). Describe other reasonable alternative routes and modes considered.**

**Diversion System.** The District examined a second alternative that would divert water from the East River at a location approximately 450 feet above the existing diversion system. The design included a new, 24 inch diameter high density plastic pipeline leading to a new, 8 foot diameter concrete water distribution vault. The alternative diversion system is shown in **Figure 5**.

**Pump Station.** The District briefly considered an alternative to rebuild its pump station in place.

**Pipeline Delivery System.** The District briefly considered an alternative that would replace the existing 8-inch diameter pipeline with the proposed 16 inch diameter pipeline.

### **13. (b). Why were these alternatives not selected?**

**Diversion System.** The alternative design cost more money to construct and did not provide a measureable advantage in the diversion and delivery of water. The total cost of the alternative design was estimated to be \$408,500, which is approximately \$60,000 more than the preferred alternative. This alternative also required disturbance to approximately 180 feet of jurisdictional wetlands.

**Pump Station.** The alternative to construct the Pump Station in place was removed from consideration as it would cause disruption in the District's ability to divert and deliver domestic water supplies to its water treatment facility. The diversion and delivery system would have to be interrupted during the construction phase. The preferred alternative will allow the District to construct a new pumping facility while the old system remains on-line. Following completion of the new building, the operation can be transferred to the new facility in an orderly fashion.

**Pipeline Delivery System.** The alternative to replace the 8 inch diameter pipeline, rather than leave it in place (preferred alternative), is not favored because the District would lose the

opportunity to obtain a redundant water delivery system. The East River is the District's only source of physical and legal water supplies sufficient to meet its existing and future water demands. Maintaining two delivery pipelines from the East River provides safety (system redundancy) should something happen to one of the planned pipelines.

**13. (c). Why is it necessary to cross Federal Lands?**

The East River water source is considered a key component of the District's domestic water supply. Streamflows are robust year-round and provide the District with a reliable physical and legal water supply to meet existing and future water demands. Alternative water supplies, located on nearby private lands, are insufficient to meet the District's demands. The East River valley floor located in proximity to the District's water treatment facility consists entirely of National Forest lands; leaving no alternative but to cross federal lands.

**15. Provide a statement of need for the project.**

The District provides municipal water supply and sewer service to the Town of Mt. Crested Butte, Colorado. The District serves approximately 6,500 residential and commercial customers within the Town including all of the base facilities associated with the Crested Butte Ski Resort. The District's primary source of water supply, the East River Water Supply System, is located on National Forest lands and operates under an approved Special Use Permit (SUP). An engineering review of the District's East River water diversion and delivery system indicates that the water facilities are aging and in need of major improvements and/or replacement. As a result, the District requests approval from the U.S. Forest Service (USFS) to make several improvements to its East River Water Supply System. Such request is necessary to remain in compliance with Condition III. B. of the District's SUP. This condition requires the SUP holder to maintain the authorized improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety (page 2, **Attachment 1**).

The Crested Butte Mountain Resort (CBMR) and surrounding community provide economic benefit to Gunnison County and the State of Colorado. CBMR has become a major Colorado ski and recreation destination, attracting hundreds of thousands of visitors annually. Providing a reliable, state-of-the-art water supply system is imperative for maintain a high quality, healthy water supply for residents and visitors.

The improvements described in this application are anticipated to cost approximately \$2.0M. As outlined in response to No. 12 above, the District has ability to fund these anticipated costs.

**16. Describe probable effects on the population in the area, including the social and economic aspects, and the rural lifestyles.**

See response to 15. above.

**17. Describe likely environmental effects that the proposed project will have on:**

**17. (a.). Air quality.** The proposed improvements will not directly impact air quality. Minor dust is expected during the reclamation of the existing pond and the construction of the proposed pump house and water delivery pipeline. Dust mitigation, if necessary, can be provided at the pond and pump house site by construction of a temporary sprinkler system from the East River.

**17. (b.). Visual Impact.** The proposed project will improve the visual quality of the valley floor. Removal of the pond, as proposed, will eliminate the need to construct a six to eight foot metal

safety fence around the pond's perimeter as requested by the CDPHE. The existing pump house will be removed and replaced with a new structure that will be painted in neutral colors to blend with the environment. The diversion culverts and pipeline will be constructed underground and not visible. All disturbed areas will be reclaimed with native vegetation as approved by the U.S. Forest Service.

**17. (c.). Surface and ground water quality and quantity.** The planned improvements will not adversely impact the water quality of the East River. BMP's will be implemented throughout the project site to control erosion and potential sedimentation. Disturbed areas will be revegetated to standards required by the U.S. Forest Service.

The District diverts domestic water supplies from the East River to meet its existing and future water demands. Presently, the District's greatest water demands occur in July when diversions average 1.2 cubic feet per second (cfs). Peak day diversions during July are 1.8 cfs. At build-out conditions, the District's engineers project that the District's East River diversions will average approximately 3.4 cfs during July with peak day demands of 5.0 cfs. Currently, the District diverts approximately 525 acre feet (AF) annually; at build-out, diversions are projected to total 1,400 AF annually.

**17. (d.). Control or structural change on any stream or water body.** There will be minor structural change to the diversion structures from the East River. The two existing 30 inch diameter culverts will be replaced with two 24 inch diameter culverts. A concrete foundation will be constructed at the inlet of each pipe for stability and erosion protection. The planned invert elevation of each pipe will be at the same elevation as the bottom of the channel and according, the diversion structures will not be visible. The existing 0.2 surface acre pre sedimentation/pump forebay pond will be partially filled and revegetated.

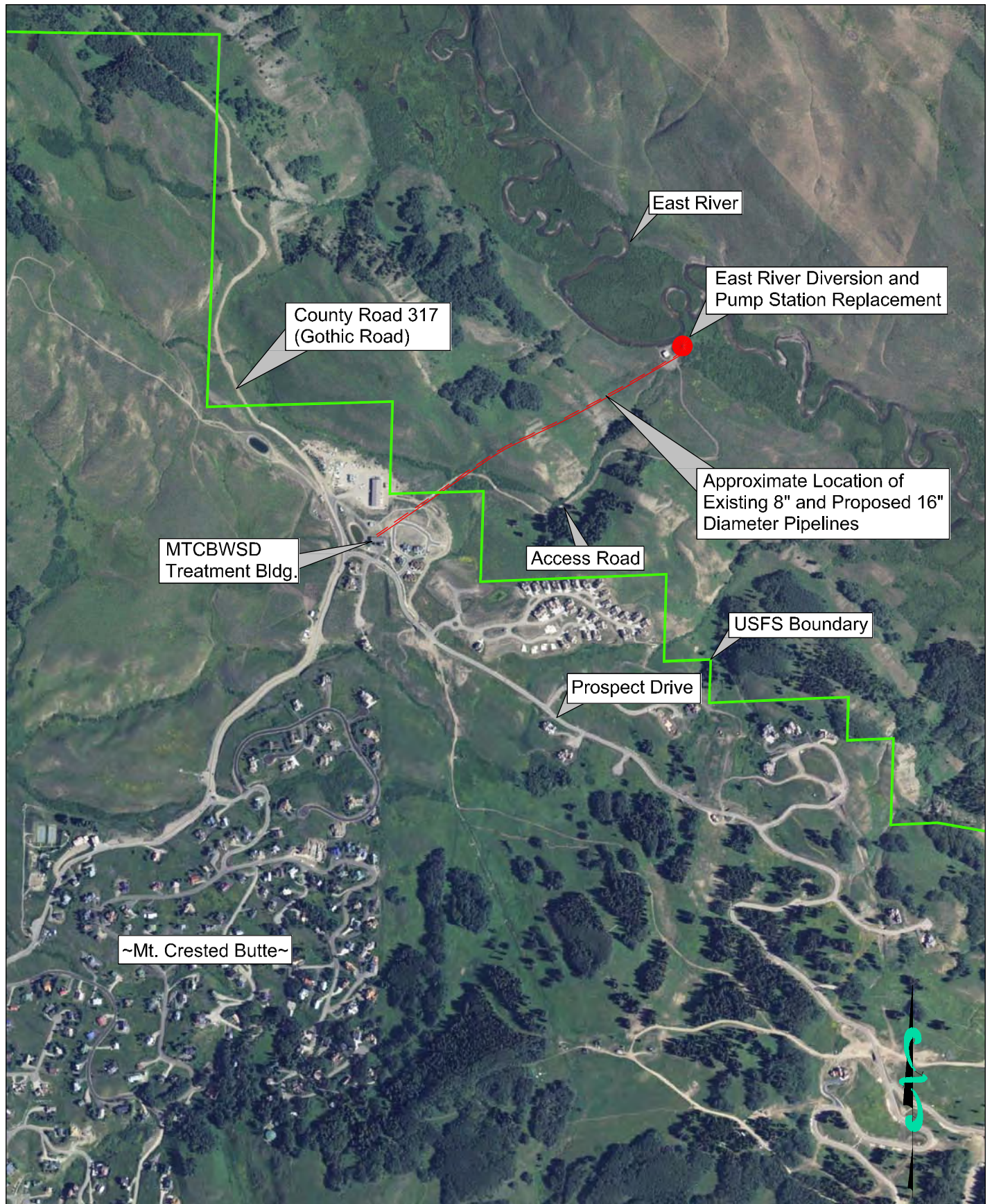
**17. (e.). Existing noise levels.** The planned improvements will not impact existing noise levels once constructed. There will be some increase in noise locally during construction due to heavy machinery. However, the project site is located in an isolated area of the East River valley bottom, well away from residential development.

**17. (f.). Surface of the land, including vegetation.** Once constructed, the planned improvements will not adversely impact the surface of the land and surrounding soils and vegetation. The land surface will be disturbed during construction, however, as detailed above, the land will be reclaimed and revegetated to prevent future erosion and stream sedimentation.

**18. Describe likely environmental effects that the project will have on fish and other species:**

The District's domestic water rights decreed at its East River Pump Station are relatively junior in priority and subject to downstream calls from senior water rights during low flow conditions. Downstream senior rights include instream flow rights held by the Colorado Water Conservation Board (CWCB) in amounts of 25.0 cfs during the period May through September and 15.0 cfs during the period October through March. All but 1.5 cfs of the District's water rights are junior in priority to the CWCB rights and are subject to curtailment when East River streamflows drop below the decreed instream flow levels. For this reason, the District's diversions during low streamflow conditions are potentially limited and therefore, not expected to have a significant impact on area wildlife or fish populations and related aquatic species in the East River.





**Figure 1: Planned Improvements,  
Mt. Crested Butte Water & Sanitation District,  
East River Water Supply System**  
Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

File: 165-4.16.6  
Date: 11/18/15



Scale: 1"=1,000'

**RESOURCE  
ENGINEERING, INC.**


808 Colorado Avenue  
Glenwood Springs, CO 81601  
(970) 945-6777 Voice 945-1137 Facsimile



① Remove Existing 30" CMP Pipe, Replace with 24" Pipe.

② Partially fill in and reclaim existing 4,875 square feet (0.112 Acre) pump forebay / pre-sedimentation pond.  
The historic pond site will be revegetated.

③ Existing Pump Station to be replaced with new Pump Station.

 = 2015 Wetland Delineation by Western Ecological Resource, Inc.

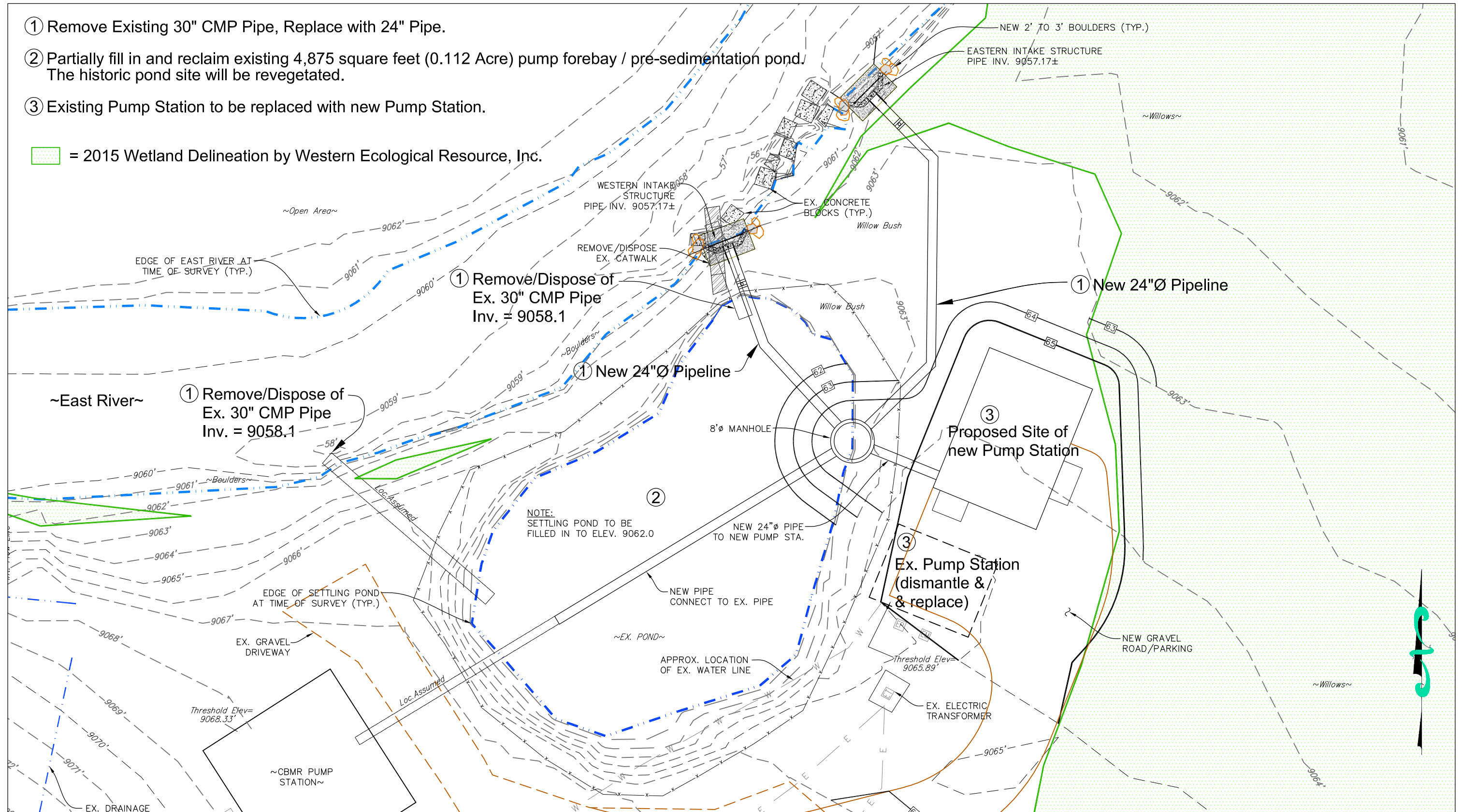
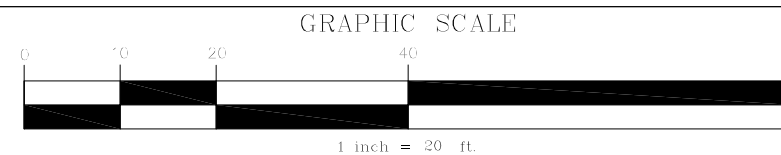


Figure 2: Project Features Map, East River Water Supply System

File: 165-4.16.6  
Date: 09/23/16

Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

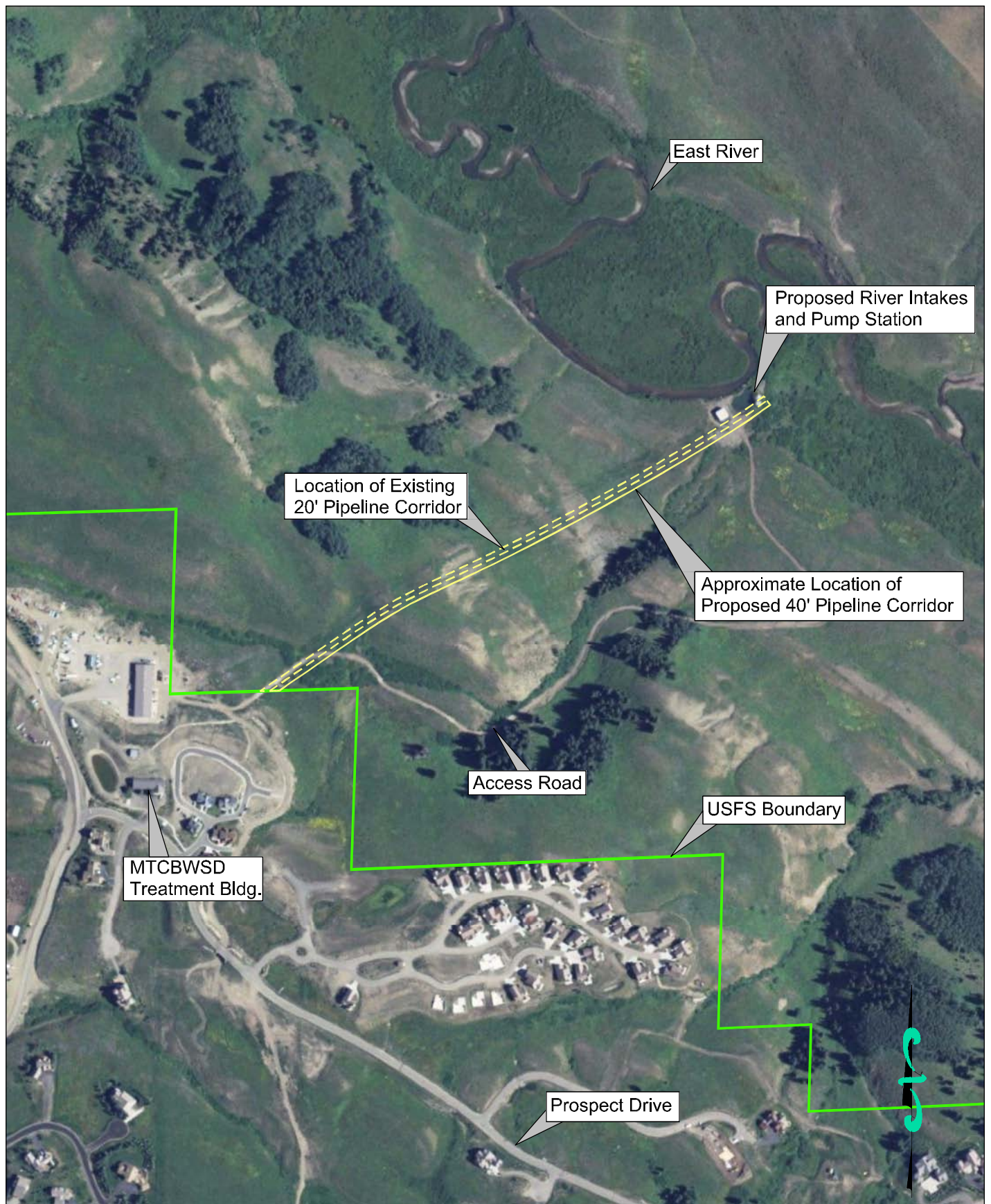


**RESOURCE**  
ENGINEERING, INC.

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Glenwood Springs, CO 81601  
(970) 945-6777 Voice 945-1137 Facsimile







**Figure 4: Pipeline Corridor Location,  
East River Water Supply System**

Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

File: 165-4.16.6  
Date: 11/18/15



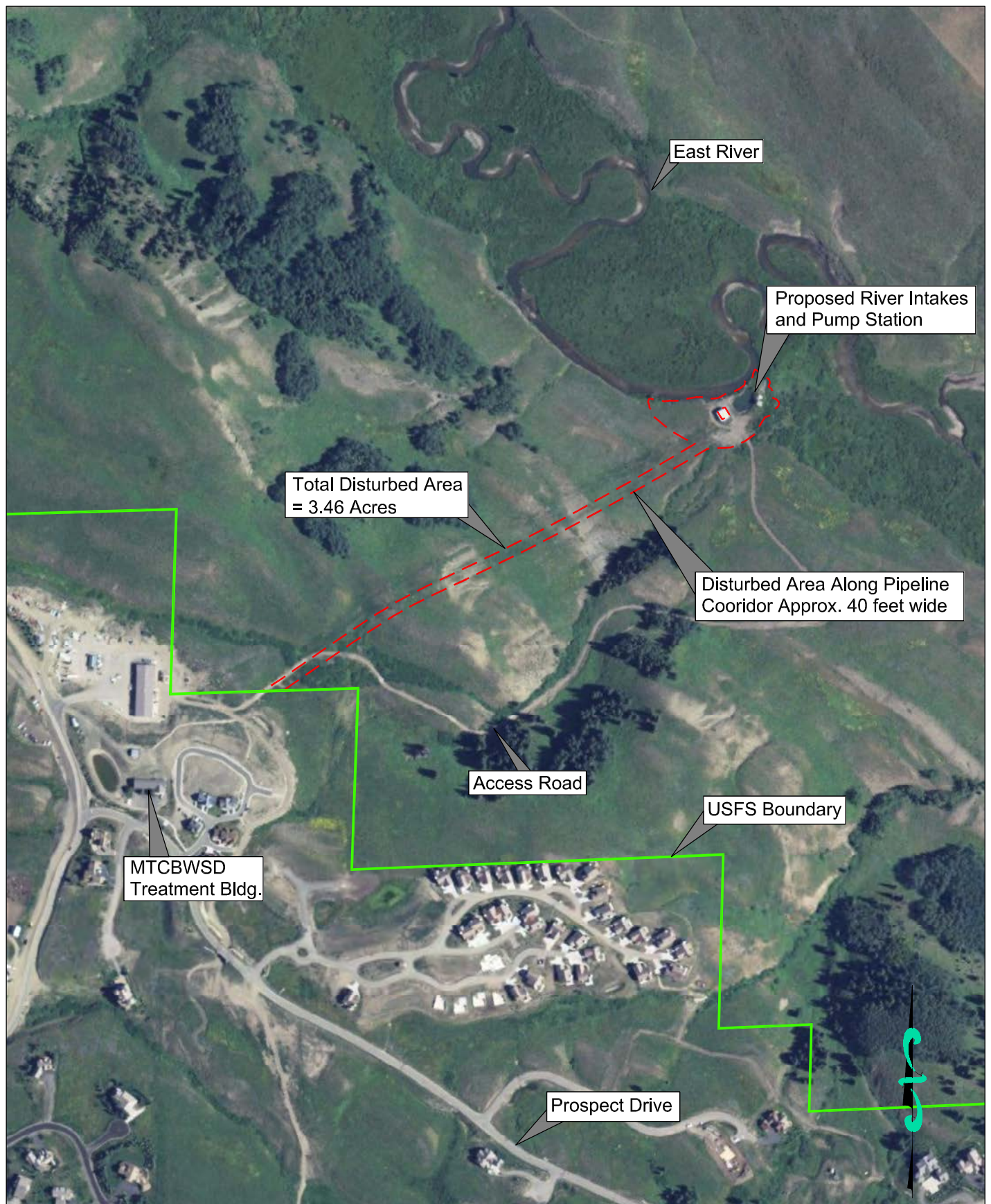
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**Figure 6: Disturbed Area Map,  
East River Water Supply System**

Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

File: 165-4.16.6  
Date: 09/23/16



Scale: 1"=500'

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Photograph 1. District pump house and pump forebay/  
pre-sedimentation pond.



Photograph 2. Streambank mitigation alternative. Area with  
green oval shows proposed fill source for pond.



## East River Water Supply System Photographs

Mt. Crested Butte Water & Sanitation District  
USFS Application for Utility Systems on Federal Lands

File: 165-4.16.6  
Date: 11/18/15

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# **ATTACHMENT 1**

**Special Use Permit - Mt. Crested Butte Water and Sanitation District,  
Authorization ID: GUN1062**

Authorization ID: GUN1062  
Contact ID: MTCBH20  
Expiration Date: 12/31/2034  
Use Code: 915, 931, 935, 923, 753, 914, 921, 222

FS-2700-4 (10/09)  
OMB No. 0596-0082

**U.S. DEPARTMENT OF AGRICULTURE  
FOREST SERVICE  
SPECIAL USE PERMIT  
Authority: FEDERAL LAND POLICY AND MGMT ACT, AS AMENDED October 21, 1976**

**MT CRESTED BUTTE WATER & SANITATION DISTRICT, PO BOX 5740, CRESTED BUTTE CO, UNITED STATES, 81225** (hereinafter "the holder") is authorized to use or occupy National Forest System lands in the Grand Mesa, Uncompahgre, and Gunnison National Forests or Gunnison Ranger District unit of the National Forest System, subject to the terms and conditions of this special use permit (the permit).

This permit covers approximately 15.21 acres or 5.04 miles in the

**T.13S., R.86W., 6<sup>th</sup> PM**  
Section 13: S1/2  
Section 15: SW1/4  
Section 24: SW1/4  
Section 25: N1/2

("the permit area"), as shown on the maps attached as Appendix A1, A2, A3, A4. This permit issued for the purpose of:

**Operation and maintenance of a water collection and distribution system to serve the Mt. Crested Butte vicinity. Permitted facilities are shown on maps, Exhibits A1, A2, A3 and A4**

**Approximately 15,259 feet of waterline, permitted area 20 feet wide (10 feet each side of center)  
Water diversion on the East River (2) each 18 inch diameter X 20 feet long culverts  
East River pump house, 16 feet, 8 inches X 22 feet, 8 inches  
East River fenced collection pond, approximately 75 feet X 110 feet  
Four concrete collection boxes, 10 feet X 10 feet  
One 200,000 gallon storage tank with concrete foundation, 38 feet diameter X 24 feet high  
One 1,000,000 gallon storage tank with concrete foundation, 80 feet diameter X 36 feet high  
Approximately 11,360 feet of access road, permitted area 30 feet wide (15 feet each side of center): NFSR 317.1A, CBMR 9, CBMR 117, CBMR 122  
Meridian Lake Park infiltration gallery, approximately 180 feet of 4 inch perforated pipe, bedded in gravel**

**TERMS AND CONDITIONS**

**I. GENERAL TERMS**

**A. AUTHORITY.** This permit is issued pursuant to FEDERAL LAND POLICY AND MGMT ACT, AS AMENDED October 21, 1976 and 36 CFR Part 251, Subpart B, as amended, and is subject to their provisions.

**B. AUTHORIZED OFFICER.** The authorized officer is the Forest or Grassland Supervisor or a subordinate officer with delegated authority.

**C. TERM.** This permit shall expire at midnight on **12/31/2034**, 20 years from the date of issuance.

**D. RENEWAL.** This permit is not renewable. Prior to expiration of this permit, the holder may apply for a new permit that would renew the use and occupancy authorized by this permit. Applications for a new permit must be submitted at least 6 months prior to expiration of this permit. Renewal of the use and occupancy authorized by this permit shall be at the sole discretion of the authorized officer. At a minimum, before renewing the use and occupancy authorized by this permit, the authorized officer shall require that (1) the use and occupancy to be authorized by the new permit is consistent with the standards and guidelines in the applicable land management plan; (2) the type of use and occupancy to be authorized by the new permit is the same as the type of use and occupancy authorized by this permit; and (3) the holder is in compliance with all the terms of this permit. The authorized officer may prescribe new terms and conditions when a new



permit is issued.

**E. AMENDMENT.** This permit may be amended in whole or in part by the Forest Service when, at the discretion of the authorized officer, such action is deemed necessary or desirable to incorporate new terms that may be required by law, regulation, directive, the applicable forest land and resource management plan, or projects and activities implementing a land management plan pursuant to 36 CFR Part 215.

**F. COMPLIANCE WITH LAWS, REGULATIONS, AND OTHER LEGAL REQUIREMENTS.** In exercising the rights and privileges granted by this permit, the holder shall comply with all present and future federal laws and regulations and all present and future state, county, and municipal laws, regulations, and other legal requirements that apply to the permit area, to the extent they do not conflict with federal law, regulation, or policy. The Forest Service assumes no responsibility for enforcing laws, regulations, and other legal requirements that fall under the jurisdiction of other governmental entities.

**G. NON-EXCLUSIVE USE.** The use or occupancy authorized by this permit is not exclusive. The Forest Service reserves the right of access to the permit area, including a continuing right of physical entry to the permit area for inspection, monitoring, or any other purpose consistent with any right or obligation of the United States under any law or regulation. The Forest Service reserves the right to allow others to use the permit area in any way that is not inconsistent with the holder's rights and privileges under this permit, after consultation with all parties involved. Except for any restrictions that the holder and the authorized officer agree are necessary to protect the installation and operation of authorized temporary improvements, the lands and waters covered by this permit shall remain open to the public for all lawful purposes.

**H. ASSIGNABILITY.** This permit is not assignable or transferable.

#### **I. TRANSFER OF TITLE TO THE IMPROVEMENTS.**

1. Notification of Transfer. The holder shall notify the authorized officer when a transfer of title to all or part of the authorized improvements is contemplated.

2. Transfer of Title. Any transfer of title to the improvements covered by this permit shall result in termination of the permit. The party who acquires title to the improvements must submit an application for a permit. The Forest Service is not obligated to issue a new permit to the party who acquires title to the improvements. The authorized officer shall determine that the applicant meets requirements under applicable federal regulations.

#### **II. IMPROVEMENTS**

**A. LIMITATIONS ON USE.** Nothing in this permit gives or implies permission to build or maintain any structure or facility or to conduct any activity, unless specifically authorized by this permit. Any use not specifically authorized by this permit must be proposed in accordance with 36 CFR 251.54. Approval of such a proposal through issuance of a new permit or permit amendment is at the sole discretion of the authorized officer.

**B. PLANS.** All plans for development, layout, construction, reconstruction, or alteration of improvements in the permit area, as well as revisions to those plans must be prepared by a professional engineer, architect, landscape architect, or other qualified professional based on federal employment standards acceptable to the authorized officer. These plans and plan revisions must have written approval from the authorized officer before they are implemented. The authorized officer may require the holder to furnish as-built plans, maps, or surveys upon completion of the work.

**B. CONSTRUCTION.** Any construction authorized by this permit shall commence by N/A and shall be completed by N/A.

#### **III. OPERATIONS.**

**A. PERIOD OF USE.** Use or occupancy of the permit area shall be exercised at least 365 days each year.

**B. CONDITION OF OPERATIONS.** The holder shall maintain the authorized improvements and permit area to standards of repair, orderliness, neatness, sanitation, and safety acceptable to the authorized officer and consistent with other provisions of this permit. Standards are subject to periodic change by the authorized officer when deemed necessary to meet statutory, regulatory, or policy requirements or to protect national forest resources. The holder shall comply with inspection requirements deemed appropriate by the authorized officer.

**D. INSPECTION BY THE FOREST SERVICE.** The Forest Service shall monitor the holder's operations and reserves the

right to inspect the permit area and transmission facilities at any time for compliance with the terms of this permit. The holder's obligations under this permit are not contingent upon any duty of the Forest Service to inspect the permit area or transmission facilities. A failure by the Forest Service or other governmental officials to inspect is not a justification for noncompliance with any of the terms and conditions of this permit.

#### **IV. RIGHTS AND LIABILITIES**

**A. LEGAL EFFECT OF THE PERMIT.** This permit, which is revocable and terminable, is not a contract or a lease, but rather a federal license. The benefits and requirements conferred by this authorization are reviewable solely under the procedures set forth in 36 CFR Part 251, Subpart C, and 5 U.S.C. 704. This permit does not constitute a contract for purposes of the Contract Disputes Act, 41 U.S.C. 601. The permit is not real property, does not convey any interest in real property, and may not be used as collateral for a loan.

**B. VALID OUTSTANDING RIGHTS.** This permit is subject to all valid outstanding rights. Valid outstanding rights include those derived under mining and mineral leasing laws of the United States. The United States is not liable to the holder for the exercise of any such right.

**C. ABSENCE OF THIRD-PARTY BENEFICIARY RIGHTS.** The parties to this permit do not intend to confer any rights on any third party as a beneficiary under this permit.

**D. SERVICES NOT PROVIDED.** This permit does not provide for the furnishing of road or trail maintenance, water, fire protection, search and rescue, or any other such service by a government agency, utility, association, or individual.

**E. RISK OF LOSS.** The holder assumes all risk of loss associated with use or occupancy of the permit area, including but not limited to theft, vandalism, fire and any fire-fighting activities (including prescribed burns), avalanches, rising waters, winds, falling limbs or trees, and other forces of nature. If authorized temporary improvements in the permit area are destroyed or substantially damaged, the authorized officer shall conduct an analysis to determine whether the improvements can be safely occupied in the future and whether rebuilding should be allowed. If rebuilding is not allowed, the permit shall terminate.

**F. DAMAGE TO UNITED STATES PROPERTY.** The holder has an affirmative duty to protect from damage the land, property, and other interests of the United States. Damage includes but is not limited to fire suppression costs, damage to government-owned improvements covered by this permit, and all costs and damages associated with or resulting from the release or threatened release of a hazardous material occurring during or as a result of activities of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees on, or related to, the lands, property, and other interests covered by this permit. For purposes of clause IV.F and section V, "hazardous material" shall mean (a) any hazardous substance under section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. § 9601(14); (b) any pollutant or contaminant under section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (c) any petroleum product or its derivative, including fuel oil, and waste oils; and (d) any hazardous substance, extremely hazardous substance, toxic substance, hazardous waste, ignitable, reactive or corrosive materials, pollutant, contaminant, element, compound, mixture, solution or substance that may pose a present or potential hazard to human health or the environment under any applicable environmental laws.

1. The holder shall avoid damaging or contaminating the environment, including but not limited to the soil, vegetation (such as trees, shrubs, and grass), surface water, and groundwater, during the holder's use or occupancy of the permit area. If the environment or any government property covered by this permit becomes damaged during the holder's use or occupancy of the permit area, the holder shall immediately repair the damage or replace the damaged items to the satisfaction of the authorized officer and at no expense to the United States.

2. The holder shall be liable for all injury, loss, or damage, including fire suppression, prevention and control of the spread of invasive species, or other costs in connection with rehabilitation or restoration of natural resources associated with the use or occupancy authorized by this permit. Compensation shall include but not be limited to the value of resources damaged or destroyed, the costs of restoration, cleanup, or other mitigation, fire suppression or other types of abatement costs, and all administrative, legal (including attorney's fees), and other costs. Such costs may be deducted from a performance bond required under clause IV.I.

3. The holder shall be liable for damage caused by use of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees to all roads and trails of the United States to the same extent as provided under clause IV.F.1, except that liability shall not include reasonable and ordinary wear and tear

**G. HEALTH, SAFETY, AND ENVIRONMENTAL PROTECTION.** The holder shall promptly abate as completely as

possible and in compliance with all applicable laws and regulations any activity or condition arising out of or relating to the authorized use or occupancy that causes or threatens to cause a hazard to public health or the safety of the holder's employees or agents or harm to the environment (including areas of vegetation or timber, fish or other wildlife populations, their habitats, or any other natural resources). The holder shall prevent impacts to the environment and cultural resources by implementing actions identified in the operating plan to prevent establishment and spread of invasive species. The holder shall immediately notify the authorized officer of all serious accidents that occur in connection with such activities. The responsibility to protect the health and safety of all persons affected by the use or occupancy authorized by this permit is solely that of the holder. The Forest Service has no duty under the terms of this permit to inspect the permit area or operations and activities of the holder for hazardous conditions or compliance with health and safety standards.

**H. INDEMNIFICATION OF THE UNITED STATES.** The holder shall indemnify, defend, and hold harmless the United States for any costs, damages, claims, liabilities, and judgments arising from past, present, and future acts or omissions of the holder in connection with the use or occupancy authorized by this permit. This indemnification provision includes but is not limited to acts and omissions of the holder or the holder's heirs, assigns, agents, employees, contractors, or lessees in connection with the use or occupancy authorized by this permit which result in (1) violations of any laws and regulations which are now or which may in the future become applicable, and including but not limited to those environmental laws listed in clause V.A of this permit; (2) judgments, claims, demands, penalties, or fees assessed against the United States; (3) costs, expenses, and damages incurred by the United States; or (4) the release or threatened release of any solid waste, hazardous waste, hazardous materials, pollutant, contaminant, oil in any form, or petroleum product into the environment. The authorized officer may prescribe terms that allow the holder to replace, repair, restore, or otherwise undertake necessary curative actions to mitigate damages in addition to or as an alternative to monetary indemnification.

**I. BONDING.** The authorized officer may require the holder to furnish a surety bond or other security for any of the obligations imposed by the terms and conditions of this permit or any applicable law, regulation, or order.

**J. INSURANCE.** The holder shall furnish proof of insurance, such as a certificate of insurance, to the authorized officer prior to issuance of this permit and each year thereafter that this permit is in effect. The Forest Service reserves the right to review and approve the insurance policy prior to issuance. The holder shall send an authenticated copy of any insurance policy obtained pursuant to this clause to the authorized officer immediately upon issuance of the policy. Any insurance policies obtained by the holder pursuant to this clause shall name the United States as an additional insured, and the additional insured provision shall provide for insurance coverage for the United States as required under this clause. Such policies also shall specify that the insurance company shall give 30 days prior written notice to the authorized officer of cancellation of or any modification to the policies. The certificate of insurance, the authenticated copy of the insurance policy, and written notice of cancellation or modification of insurance policies should be sent to Gunnison Ranger District, 216 N. Colorado St., Gunnison, CO 81230. Minimum amounts of coverage and other insurance requirements are subject to change at the sole discretion of the authorized officer on the anniversary date of this permit.

1. The holder shall have in force liability insurance covering losses, including those arising from strict liability, associated with the use or occupancy authorized by this permit arising from personal injury or death and third-party property damage in the minimum amount of \$1,000,000.00 as a combined single limit per occurrence.

2. Depending on the holder's operations, the Forest Service may require the holder to demonstrate the availability of funds to address any release or threatened release of hazardous materials that may occur in connection with the holder's use or occupancy. Any requirements imposed would be established on a case-by-case basis by the authorized officer based on the degree of environmental risk from the holder's operations. The storage and use of normal maintenance supplies in nominal amounts generally would not trigger financial assurance requirements.

## **V. RESOURCE PROTECTION**

**A. COMPLIANCE WITH ENVIRONMENTAL LAWS.** The holder shall in connection with the use or occupancy authorized by this permit comply with all applicable federal, state, and local environmental laws and regulations, including but not limited to those established pursuant to the Resource Conservation and Recovery Act, as amended, 42 U.S.C. 6901 et seq., the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq., the Oil Pollution Act, as amended, 33 U.S.C. 2701 et seq., the Clean Air Act, as amended, 42 U.S.C. 7401 et seq., CERCLA, as amended, 42 U.S.C. 9601 et seq., the Toxic Substances Control Act, as amended, 15 U.S.C. 2601 et seq., the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, 7 U.S.C. 136 et seq., and the Safe Drinking Water Act, as amended, 42 U.S.C. 300f et seq.

**B. VANDALISM.** The holder shall take reasonable measures to prevent and discourage vandalism and disorderly conduct and when necessary shall contact the appropriate law enforcement officer.

**C. PESTICIDE USE.** Pesticides may not be used outside of buildings to control undesirable woody and herbaceous vegetation (including aquatic plants), insects, rodents, fish, and other pests and weeds without prior written approval from the authorized officer. A request for approval of planned uses of pesticides shall be submitted annually by the holder on the due date established by the authorized officer. The report shall cover a 12-month period of planned use beginning 3 months after the reporting date. Information essential for review shall be provided in the form specified. Exceptions to this schedule may be allowed, subject to emergency request and approval, only when unexpected outbreaks of pests or weeds require control measures that were not anticipated at the time an annual report was submitted. Only those materials registered by the U.S. Environmental Protection Agency for the specific purpose planned shall be considered for use on National Forest System lands. Label instructions and all applicable laws and regulations shall be strictly followed in the application of pesticides and disposal of excess materials and containers.

**D. ARCHAEOLOGICAL-PALEONTOLOGICAL DISCOVERIES.** The holder shall immediately notify the authorized officer of all antiquities or other objects of historic or scientific interest, including but not limited to historic or prehistoric ruins, fossils, or artifacts discovered in connection with the use and occupancy authorized by this permit. The holder shall leave these discoveries intact and in place until directed otherwise by the authorized officer. Protective and mitigative measures specified by the authorized officer shall be the responsibility of the holder.

**E. NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION.** In accordance with 25 U.S.C. 3002(d) and 43 CFR 10.4, if the holder inadvertently discovers human remains, funerary objects, sacred objects, or objects of cultural patrimony on National Forest System lands, the holder shall immediately cease work in the area of the discovery and shall make a reasonable effort to protect and secure the items. The holder shall immediately notify the authorized officer by telephone of the discovery and shall follow up with written confirmation of the discovery. The activity that resulted in the inadvertent discovery may not resume until 30 days after the authorized officer certifies receipt of the written confirmation, if resumption of the activity is otherwise lawful, or at any time if a binding written agreement has been executed between the Forest Service and the affiliated Indian tribes that adopts a recovery plan for the human remains and objects.

**F. PROTECTION OF HABITAT OF THREATENED, ENDANGERED, AND SENSITIVE SPECIES.** The location of sites within the permit area needing special measures for protection of plants or animals listed as threatened or endangered under the Endangered Species Act (ESA) of 1973, 16 U.S.C. 1531 et seq., as amended, or identified as sensitive or otherwise requiring special protection by the Regional Forester under Forest Service Manual (FSM) 2670, pursuant to consultation conducted under section 7 of the ESA, may be shown on the ground or on a separate map. The map shall be attached to this permit as an appendix. The holder shall take any protective and mitigative measures specified by the authorized officer. If protective and mitigative measures prove inadequate, if other sites within the permit area containing threatened, endangered, or sensitive species or species otherwise requiring special protection are discovered, or if new species are listed as threatened or endangered under the ESA or identified as sensitive or otherwise requiring special protection by the Regional Forester under the FSM, the authorized officer may specify additional protective and mitigative measures. Discovery of these sites by the holder or the Forest Service shall be promptly reported to the other party.

**G. CONSENT TO STORE HAZARDOUS MATERIALS.** The holder shall not store any hazardous materials at the site without prior written approval from the authorized officer. This approval shall not be unreasonably withheld. If the authorized officer provides approval, this permit shall include, or in the case of approval provided after this permit is issued, shall be amended to include specific terms addressing the storage of hazardous materials, including the specific type of materials to be stored, the volume, the type of storage, and a spill plan. Such terms shall be proposed by the holder and are subject to approval by the authorized officer.

#### **H. CLEANUP AND REMEDIATION**

1. The holder shall immediately notify all appropriate response authorities, including the National Response Center and the authorized officer or the authorized officer's designated representative, of any oil discharge or of the release of a hazardous material in the permit area in an amount greater than or equal to its reportable quantity, in accordance with 33 CFR Part 153, Subpart B, and 40 CFR Part 302. For the purposes of this requirement, "oil" is as defined by section 311(a)(1) of the Clean Water Act, 33 U.S.C. 1321(a)(1). The holder shall immediately notify the authorized officer or the authorized officer's designated representative of any release or threatened release of any hazardous material in or near the permit area which may be harmful to public health or welfare or which may adversely affect natural resources on federal lands.

2. Except with respect to any federally permitted release as that term is defined under Section 101(10) of CERCLA, 42

U.S.C. 9601(10), the holder shall clean up or otherwise remediate any release, threat of release, or discharge of hazardous materials that occurs either in the permit area or in connection with the holder's activities in the permit area, regardless of whether those activities are authorized under this permit. The holder shall perform cleanup or remediation immediately upon discovery of the release, threat of release, or discharge of hazardous materials. The holder shall perform the cleanup or remediation to the satisfaction of the authorized officer and at no expense to the United States. Upon revocation or termination of this permit, the holder shall deliver the site to the Forest Service free and clear of contamination.

**I. CERTIFICATION UPON REVOCATION OR TERMINATION.** If the holder uses or stores hazardous materials at the site, upon revocation or termination of this permit the holder shall provide the Forest Service with a report certified by a professional or professionals acceptable to the Forest Service that the permit area is uncontaminated by the presence of hazardous materials and that there has not been a release or discharge of hazardous materials upon the permit area, into surface water at or near the permit area, or into groundwater below the permit area during the term of the permit. This certification requirement may be waived by the authorized officer when the Forest Service determines that the risks posed by the hazardous material are minimal. If a release or discharge has occurred, the professional or professionals shall document and certify that the release or discharge has been fully remediated and that the permit area is in compliance with all federal, state, and local laws and regulations:

## **VI. LAND USE FEE AND ACCOUNTING ISSUES**

**A. LAND USE FEES.** The holder shall pay an initial annual land use fee of \$1205.92 for the period from January 1 to December 31, and thereafter on January 1, shall pay an annual land use fee of \$. The annual land use fee shall be adjusted annually using the Implicit Price Deflator- Gross Domestic Product (IDP-GDP).

**B. MODIFICATION OF THE LAND USE FEE.** The land use fee may be revised whenever necessary to reflect the market value of the authorized use or occupancy or when the fee system used to calculate the land use fee is modified or replaced.

### **C. FEE PAYMENT ISSUES.**

1. Crediting of Payments. Payments shall be credited on the date received by the deposit facility, except that if a payment is received on a non-workday, the payment shall not be credited until the next workday.

2. Disputed Fees. Fees are due and payable by the due date. Disputed fees must be paid in full. Adjustments will be made if dictated by an administrative appeal decision, a court decision, or settlement terms.

### 3. Late Payments

(a) Interest. Pursuant to 31 U.S.C. 3717 et seq., interest shall be charged on any fee amount not paid within 30 days from the date it became due. The rate of interest assessed shall be the higher of the Prompt Payment Act rate or the rate of the current value of funds to the Treasury (i.e., the Treasury tax and loan account rate), as prescribed and published annually or quarterly by the Secretary of the Treasury in the Federal Register and the Treasury Fiscal Requirements Manual Bulletins. Interest on the principal shall accrue from the date the fee amount is due.

(b) Administrative Costs. If the account becomes delinquent, administrative costs to cover processing and handling the delinquency shall be assessed.

(c) Penalties. A penalty of 6% per annum shall be assessed on the total amount that is more than 90 days delinquent and shall accrue from the same date on which interest charges begin to accrue.

(d) Termination for Nonpayment. This permit shall terminate without the necessity of prior notice and opportunity to comply when any permit fee payment is 90 calendar days from the due date in arrears. The holder shall remain responsible for the delinquent fees.

4. Administrative Offset and Credit Reporting. Delinquent fees and other charges associated with the permit shall be subject to all rights and remedies afforded the United States pursuant to 31 U.S.C. 3711 et seq. and common law. Delinquencies are subject to any or all of the following:

(a) Administrative offset of payments due the holder from the Forest Service.

(b) If in excess of 60 days, referral to the Department of the Treasury for appropriate collection action as provided by 31

U.S.C. 3711(g)(1).

(c) Offset by the Secretary of the Treasury of any amount due the holder, as provided by 31 U.S.C. 3720 et seq.

(d) Disclosure to consumer or commercial credit reporting agencies.

## **VII. REVOCATION, SUSPENSION, AND TERMINATION**

**A. REVOCATION AND SUSPENSION.** The authorized officer may revoke or suspend this permit in whole or in part:

1. For noncompliance with federal, state, or local law.
2. For noncompliance with the terms of this permit.
3. For abandonment or other failure of the holder to exercise the privileges granted.
4. With the consent of the holder.
5. For specific and compelling reasons in the public interest.

Prior to revocation or suspension, other than immediate suspension under clause VI.B, the authorized officer shall give the holder written notice of the grounds for revocation or suspension. In the case of revocation or suspension based on clause VII.A.1, 2, or 3, the authorized officer shall give the holder a reasonable time, typically not to exceed 90 days, to cure any noncompliance.

**B. IMMEDIATE SUSPENSION.** The authorized officer may immediately suspend this permit in whole or in part when necessary to protect public health or safety or the environment. The suspension decision shall be in writing. The holder may request an on-site review with the authorized officer's supervisor of the adverse conditions prompting the suspension. The authorized officer's supervisor shall grant this request within 48 hours. Following the on-site review, the authorized officer's supervisor shall promptly affirm, modify, or cancel the suspension.

**C. APPEALS AND REMEDIES.** Written decisions by the authorized officer relating to administration of this permit are subject to administrative appeal pursuant to 36 CFR Part 251, Subpart C, as amended. Revocation or suspension of this permit shall not give rise to any claim for damages by the holder against the Forest Service.

**D. TERMINATION.** This permit shall terminate when by its terms a fixed or agreed upon condition, event, or time occurs without any action by the authorized officer. Examples include but are not limited to expiration of the permit by its terms on a specified date and termination upon change of control of the business entity. Termination of this permit shall not require notice, a decision document, or any environmental analysis or other documentation. Termination of this permit is not subject to administrative appeal and shall not give rise to any claim for damages by the holder against the Forest Service.

**E. RIGHTS AND RESPONSIBILITIES UPON REVOCATION OR TERMINATION WITHOUT RENEWAL.** Upon revocation or termination of this permit without renewal of the authorized use, the holder shall remove all structures and improvements, except those owned by the United States, within a reasonable period prescribed by the authorized officer and shall restore the site to the satisfaction of the authorized officer. If the holder fails to remove all structures and improvements within the prescribed period, they shall become the property of the United States and may be sold, destroyed, or otherwise disposed of without any liability to the United States. However, the holder shall remain liable for all costs associated with their removal, including costs of sale and impoundment, cleanup, and restoration of the site.

## **VIII. MISCELLANEOUS PROVISIONS**

**A. MEMBERS OF CONGRESS.** No member of or delegate to Congress or resident commissioner shall benefit from this permit either directly or indirectly, except to the extent the authorized use provides a general benefit to a corporation.

**B. CURRENT ADDRESSES.** The holder and the Forest Service shall keep each other informed of current mailing addresses, including those necessary for billing and payment of land use fees.

**C. SUPERSEDED PERMIT.** This permit supersedes a special use permit designated Mt Crested Butte Water and Sanitation District, GUN412202 dated 6/20/1967, GUN412201 dated 8/18/1980 and GUN412203 dated 8/14/1991.

**D. SUPERIOR CLAUSES.** If there is a conflict between any of the preceding printed clauses and any of the following clauses, the preceding printed clauses shall control.

**E. Operation and Maintenance Plan (R2-C102).** An Operation and Maintenance Plan, described as Exhibit B, is attached hereto and made a part hereof.

**F. Noxious Weed/Exotic Plant Prevention and Control (R2-D103).**

1. The holder shall be responsible for the prevention and control of noxious weeds and/or exotic plants of concern on the area authorized by this authorization and shall provide prevention and control measures prescribed by the Forest Service. Noxious weeds and exotic plants of concern are defined as those species recognized by Gunnison County and/or Gunnison National Forest in which the authorized use is located.
2. When determined to be necessary by the authorized officer, the holder shall develop a site-specific plan for noxious weed and exotic plant prevention and control. Such plan shall be subject to Forest Service approval. Upon Forest Service approval, the noxious weed and exotic plant prevention and control plan shall become a part of this authorization, and its provisions shall be enforceable under the terms of this authorization.
3. The holder shall also be responsible for prevention and control of noxious weed and exotic plant infestations which are not within the authorized area, but which are determined by the Forest Service to have originated within the authorized area.

**G. Use of Certified Noxious Weed Free Hay, Straw or Mulch (R2-X107).** Only hay, grain, straw, cubes or mulch certified as noxious weed free or noxious weed seed free by an authorized State Department of Agriculture official or designated county official may be used. Each individual bale or container must be tagged or marked as a certified weed free product and reference a written certification, if one exists.

The following are exempted from this requirement:

1. Pelletized feed or grain products.
2. Persons with a permit specifically authorizing the prohibited act.
3. Transporting straw, hay or mulch on Federal, State, and County roads that are not National Forest System roads and trails.

**H. Drinking Water Systems (B-38).**

**DRINKING WATER SYSTEMS.** The holder, as the water supplier and owner or operator of the drinking water system for the facilities authorized by this permit, is responsible for compliance with all applicable Federal, State, and local drinking water laws and regulations governing operation and maintenance of a public drinking water system, including but not limited to developing, operating, and maintaining the system and conducting drinking water testing and taking appropriate corrective and follow-up actions in accordance with federal, state, and any other applicable requirements. For purposes of this permit, public water systems are defined in accordance with the Safe Drinking Water Act, as amended (42 U.S.C. 300f *et seq.*), and the National Primary Drinking Water Regulations, 40 CFR Part 141, or state regulations, if more stringent. The holder shall retain all drinking water system records as required by applicable laws and regulations. The holder agrees to make the records available to the Forest Service and to any other regulatory agency authorized to review Forest Service activities.

**I. Surveys, Land Corners (D4).**

The holder shall protect, in place, all public land survey monuments, private property corners, and Forest boundary markers. In the event that any such land markers or monuments are destroyed in the exercise of the privileges permitted by this authorization, depending on the type of monument destroyed, the holder shall see that they are reestablished or referenced in accordance with (1) the procedures outlined in the "Manual of Instructions for the Survey of the Public Land of the United States," (2) the specifications of the county surveyor, or (3) the specifications of the Forest Service.

Further, the holder shall cause such official survey records as are affected to be amended as provided by law. Nothing in this clause shall relieve the holder's liability for the willful destruction or modification of any Government survey marker as provided at 18 U.S.C. 1858.



J. Removal and Planting of Vegetation and Other Resources (D-5).

**REMOVAL AND PLANTING OF VEGETATION AND OTHER RESOURCES.** This permit does not authorize the cutting of timber or other vegetation. Trees or shrubbery may be removed or destroyed only after the authorized officer or the authorized officer's designated representative has approved in writing and marked or otherwise identified what may be removed or destroyed. Timber cut or destroyed shall be paid for at current stumpage rates for similar timber in the Gunnison National Forest. The Forest Service reserves the right to dispose of the merchantable timber to those other than the holder at no stumpage cost to the holder. Unmerchantable material shall be disposed of as directed by the authorized officer. Trees, shrubs, and other plants may be planted within the permit area with prior written approval of the authorized officer.

K. Ground Surface Protection and Restoration (D-9).

**GROUND SURFACE PROTECTION AND RESTORATION.** The holder shall prevent and control soil erosion and gullyng on National Forest System lands in and adjacent to the permit area resulting from construction, operation, maintenance, and termination of the authorized use. The holder shall construct authorized improvements so as to avoid accumulation of excessive amounts of water in the permit area and encroachment on streams. The holder shall revegetate or otherwise stabilize (for example, by constructing a retaining wall) all ground where the soil has been exposed as a result of the holder's construction, maintenance, operation, or termination of the authorized use.

L. Water Facilities and Water Rights (D-25).

**WATER FACILITIES AND WATER RIGHTS.** This permit does not confer any water rights on the holder. Any necessary water rights must be acquired by the holder in accordance with State law. Any expenses for acquiring water rights shall be the responsibility of the holder. The United States reserves the right to place any conditions on installation, operation, maintenance, and removal of facilities to pump, divert, store, or convey water on National Forest System lands covered by this permit that are necessary to protect public property, public safety, and natural resources on National Forest System lands in compliance with applicable law. The holder waives any claims against the United States for compensation in connection with imposition of any conditions on installation, operation, maintenance, and removal of water facilities under this permit.

M. Improvement Relocation (X33). This authorization is granted with the express understanding that should future location of United States Government-owned improvements or road rights-of-way require the relocation of the holder's improvements, such relocation will be done by, and at the expense of, the holder within a reasonable time as specified by the authorized officer.

This permit is accepted subject to the conditions set out above.

MT CRESTED BUTTE WATER & SANITATION DISTRICT U.S. DEPARTMENT OF AGRICULTURE  
Forest Service

By: Frank L. Glick  
(Holder Signature)

By: Scott Armentrout  
SCOTT ARMENROUT  
Forest Supervisor

Frank L. Glick  
Name and Title

Date: 9 Sep 14

Date: 9/17/14

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According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond, to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0082. The time required to complete this information collection is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

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The Privacy Act of 1974 (5 U.S.C. 552a) and the Freedom of Information Act (5 U.S.C. 552) govern the confidentiality to be provided for information received by the Forest Service.

**EXHIBIT A - 1**  
**Mt. Crested Butte Water and Sanitation District**  
**Spring Development/Water Transmission/Water Storage Tank**  
**Special Use Permit**  
**Gunnison Ranger District**

**Storage Tanks**  
 4308164 N, 329938 E  
 UTM NAD 83, Zone 13 N

**Water Line**  
 Approximately 7635 X 20 feet wide,  
 (10 feet each side of center)

**Access Road**  
 Approximately 8054 X 30 feet wide,  
 (15 feet each side of center)

**Collection Tank No. 3**  
 4307818 N, 330972 E  
 UTM NAD 83, Zone 13 N

CBMR 122

CBMR 117






CBMR 9

**Collection Tank No. 2**  
 4307354 N, 330727 E  
 UTM NAD 83, Zone 13 N

8" C.I.

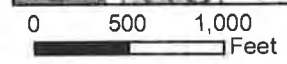
**Collection Tank No. 1**  
 4307119 N, 330766 E  
 UTM NAD 83, Zone 13

**Legend**

-  Storage Tanks
-  Spring Collection Box
-  8" Cast Iron (C.I.)
-  Access Road
-  Private Land

**ATTENTION**

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JRM 7/16/13

**T.13S., R.86W., 6th P.M.**  
**Section 24: SW 1/4**  
**Section 25: N 1/2**

Gothic, CO Quadrangle

**EXHIBIT A - 2**  
**Mt. Crested Butte Water and Sanitation District**  
**Domestic Water Pipeline**  
**Special Use Permit**  
**Gunnison Ranger District**

**Permit Area**  
 Approximately 4446 X 20 feet wide,  
 (10 feet each side of center)  
 6" 359  
 8" 195  
 10" 3079  
 12" 813

**Origin, From Storage Tanks**  
 4308177 N, 329921 E  
 UTM NAD 83, Zone 13 N

**Distribution Line/Valve**

12"

10"

**Pipeline Intersection**

6"

10"

**Air Relief Valve**  
 4307910 N, 329880 E  
 UTM NAD 83, Zone 13 N

8"

**Distribution Line/Valve**

10"

**Distribution Line/Valve**



**Legend**

- Valve/Meter
- Ductile Iron Pipeline
- Private Land

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T.13S., R.86W., 6th P.M.  
 Section 24: SW 1/4  
 Section 25: NW 1/4

JRM 7/17/13

Gothic, CO Quadrangle

**EXHIBIT A - 3**  
**Mt. Crested Butte Water and Sanitation District**  
**Water Line and Collection Pond**  
**Special Use Permit**  
**Gunnison Ranger District**

Beginning of Permit Area  
 4310130 N 329829 E  
 UTM NAD 83, Zone 13 N

**Water Line**  
 Approximately 2157 X 20 feet wide,  
 (10 feet each side of center)

**Access Road**  
 Approximately 3306 X 30 feet wide,  
 (15 feet each side of center)

Beginning of Permit Area  
 Pump House, Collection Pond and Fence  
 4309946 N, 330893 E  
 UTM NAD 83, Zone 13 N

End of Permit Area

12" Corrugated Polyethylene







8" D.I.

NFSR 317.1A

End of Permit Area  
 4309626 N, 330329 E  
 UTM NAD 83, Zone 13 N

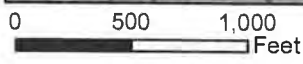


**Legend**

-  Private Land
-  Pipeline Markers
-  12" Corrugated Polyethylene
-  8" Ductile Iron
-  Access Road
-  Forest Boundary

**ATTENTION**

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T.13S., R.86W., 6th P.M.  
 Section 13: S 1/2

SDJ 7/12/14

Gothic, CO Quadrangle



**EXHIBIT A - 4**  
**Mt. Crested Butte Water and Sanitation District**  
**Spring Development/Water Transmission**  
**Special Use Permit**  
**Gunnison Ranger District**

**Meridian Lake Park**  
**Permit Area**  
 Approximately 1021 X 20 feet wide,  
 (10 feet each side of center)

**End of Permit Area**  
 4309992 N, 326525 E  
 UTM NAD 83, Zone 13 N

**Collection Box**  
 4309992 N, 326686 E  
 UTM NAD 83, Zone 13 N

8" PVC

**Beginning of Permit Area**  
**Infiltration Gallery/ Collection Enclosure**  
 4309877 N, 326781 E  
 UTM NAD 83, Zone 13 N

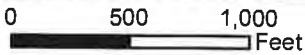


**Legend**

- ▲ Spring Collection Box
- 8" PVC
- Private Land

**ATTENTION**

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T.13S., R.86W., 6th P.M.  
 Section 15: SW1/4

JRM 7/16/13

Gothic, CO Quadrangle

## EXHIBIT B

Authorization ID: GUN1062

Contact ID: Mt. Crested Butte Water And Sanitation

### Operation and Maintenance Plan


These stipulations are hereby made a part of the Special Use Permit dated 9/19/11, 2014, issued to Mt. Crested Butte Water and Sanitation District for the purpose of maintaining a water collection and transmission system that includes approximately 15,259 feet of pipeline, four collection boxes, a diversion, collection pond and pump house on the East River and two storage tanks. The water system delivers domestic water in the Mt. Crested Butte vicinity.

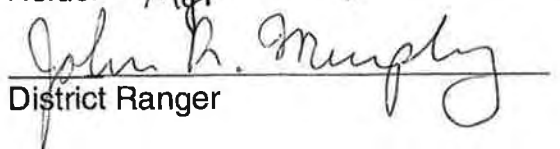
1. Permittee shall submit any proposal for ground disturbing maintenance or reconstruction to the Forest Service for approval prior to conducting the work.
2. Permittee shall perform any permit related installation/maintenance on both permitted facilities and permit area, in a manner which reasonably causes the least amount of disturbance to the permit area.
3. Permittee will remove all trash and debris generated by the use of the permit area immediately.
4. Permittee shall not cut or remove any trees from within the permit area without having received the prior written approval of the USFS; USFS may withhold its approval for any reasonable purpose.
5. Permittee shall not otherwise construct any additional improvements within the permit area, without prior written approval of the USFS.
6. Permittee shall fully repair all damage, other than ordinary wear and tear, caused in exercising the privileges granted by this permit
7. Permittee shall take all reasonable precautions to prevent pollution of air, soil, and water during reconstruction activities. In the event that the Permittee's operations or servicing of equipment result in pollution to soil or water, permittee shall conduct cleanup to restore the polluted site to the satisfaction of the Forest Service.
8. Permittee shall maintain all equipment operating in good repair and free of abnormal leakage of lubricants, fuel, coolants, and hydraulic fluid.

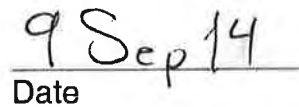


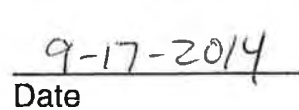
Permittee shall not service tractors, trucks, or other equipment on National Forest System lands where servicing is likely to result in pollution to soil or water. Permittee shall furnish oil-absorbing mats, approved by the Forest Service, for use under all stationary equipment or equipment being serviced to prevent leaking or spilled petroleum-based products from contaminating soil and water resources. Permittee shall remove from National Forest System lands all contaminated soil, vegetation, debris, vehicle oil filters (drained of free-flowing oil), batteries, oily rags, and waste oil resulting from use, servicing, repair, or abandonment of equipment.

9. Storage of oil and petroleum products is not authorized in the permitted area. Permittee shall notify appropriate agencies, including Authorized Officer, of all reportable (40 CFR 110) spills of oil or petroleum products on or in the vicinity of the permit area that are caused by permittee's employees or contractors, directly or indirectly, as a result of permittee's operations. Permittee will take whatever initial action that may be safely accomplished to contain all spills.
10. Routine access routes are indicated on the permit maps. Work will be performed with hand tools unless otherwise requested by the permittee and authorized by the Forest Service.
11. This O&M Plan may be reviewed annually by the Holder and the Forest Service. In addition to the authority of the Authorized Officer to unilaterally revise or modify this operation and maintenance plan, this operation and maintenance plan may also be amended by mutual agreement signed and dated by the Holder and the District Ranger.

  
Holder *Mgr*

  
District Ranger

  
Date

  
Date

# **ATTACHMENT 2**

U.S. Army Corps of Engineers, Letter Dated January 29, 2016



REPLY TO  
ATTENTION OF

**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT  
1325 J STREET  
SACRAMENTO CA 95814-2922

January 29, 2016

Regulatory Division SPK-2015-01106

Mr. Todd Fessenden  
District Manager, Mt. Crested Butte Water & Sanitation District  
Post Office Box 5740  
Crested Butte, Colorado 81225

Dear Mr. Fessenden:

We are responding to your December 23, 2015, request, submitted by Western Ecological Resources Incorporated, for a preliminary jurisdictional determination (JD), in accordance with our Regulatory Guidance Letter (RGL) 08-02, for two separate survey sites associated with the Mt. Crested Butte Pump Station Replacement Project. Survey site #1 is approximately 3.6 acres and is located one mile northeast of the Town of Mount Crested Butte on the East River within the NW  $\frac{1}{4}$  of the SE  $\frac{1}{4}$  of Section 13, Township 13 South, Range 86 West, Sixth Principal Meridian, at Latitude 38.92219°, Longitude -106.95087°, Gunnison County, Colorado. Survey site #2 is approximately 3.8 acres and is located  $\frac{3}{4}$  of a mile northeast of the Town of Mount Crested Butte within the SE  $\frac{1}{4}$  of the SW  $\frac{1}{4}$  of Section 13, Township 13 South, Range 86 West, Sixth Principal Meridian, at Latitude -106.95653°, Longitude 38.91965°, Gunnison County, Colorado

Based on available information, we concur with the amount and location of wetlands and other water bodies on the site as depicted on the enclosed December 2015 maps titled **Figure 2. Wetland Map Pump Station Project Area** (for survey site #1) and **Figure 3. Wetland Map Pipeline Project Area** (for survey site #2) prepared by Western Ecological Resource Incorporated. The approximately 2.46 acres of wetlands and other water bodies present within both survey areas are potential waters of the United States regulated under Section 404 of the Clean Water Act. Within the December 23, 2015 submittal, reference is made to the November 13, 1986 Federal Register, Part 328.3 (c) (page 41217) artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing. The Corps of Engineers generally does not consider these types of aquatic resources waters of the U.S. except on a case-by-case basis. The Mount Crested Butte Water and Sanitation District's pump station forebay (i.e., settling pond) is connected to the East River, but was constructed in uplands and does not contribute relatively permanent flows to the East River. As such, the pump station forebay depicted in Figure 2. Wetland Map is not considered jurisdictional.

You should not start any work in potentially jurisdictional waters of the United States unless you have Department of the Army permit authorization for the activity. You may request an approved JD for this site at any time prior to starting work within waters. In certain circumstances, as described in RGL 08-02, an approved JD may later be necessary. You should provide a copy of this letter and notice to all other affected parties, including any individual who has an identifiable and substantial legal interest in the property.

This preliminary determination has been conducted to identify the potential limits of wetlands and other water bodies which may be subject to Corps of Engineers' jurisdiction for the particular sites identified in this request. A Notification of Appeal Process and Request for Appeal form is enclosed to notify you of your options with this determination.

We have assigned identification number SPK-2015-01106 to this determination. Please refer to this number in any correspondence concerning this project. If you have any questions, please contact Ben Wilson at the Colorado West Regulatory Branch, 400 Rood Avenue, Room 224, Grand Junction, Colorado 81501, by email at [Benjamin.R.Wilson@usace.army.mil](mailto:Benjamin.R.Wilson@usace.army.mil), or telephone at 970-243-1199 ext#12. We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*. For more information regarding our program, please visit our website at [www.spk.usace.army.mil/Missions/Regulatory.aspx](http://www.spk.usace.army.mil/Missions/Regulatory.aspx).

Sincerely,



Susan Bachini Nall  
Chief, Colorado West Branch  
Regulatory Division

Enclosures:

1. Figure 2. Wetland Map Pump Station Project Area dated December 2015
2. Figure 3. Wetland Map Pipeline Project Area dated December 2015
3. Notification of Appeal Form

cc: (w/ encl 1)

Ms. Rea Orthner, Ecologist, Western Ecological Resources Incorporated, 711 Walnut Street, Boulder, Colorado 80302

Mr. Russ Forrest, Planning Director Gunnison County, 221 N. Wisconsin Street, Suite D, Gunnison, Colorado 81230

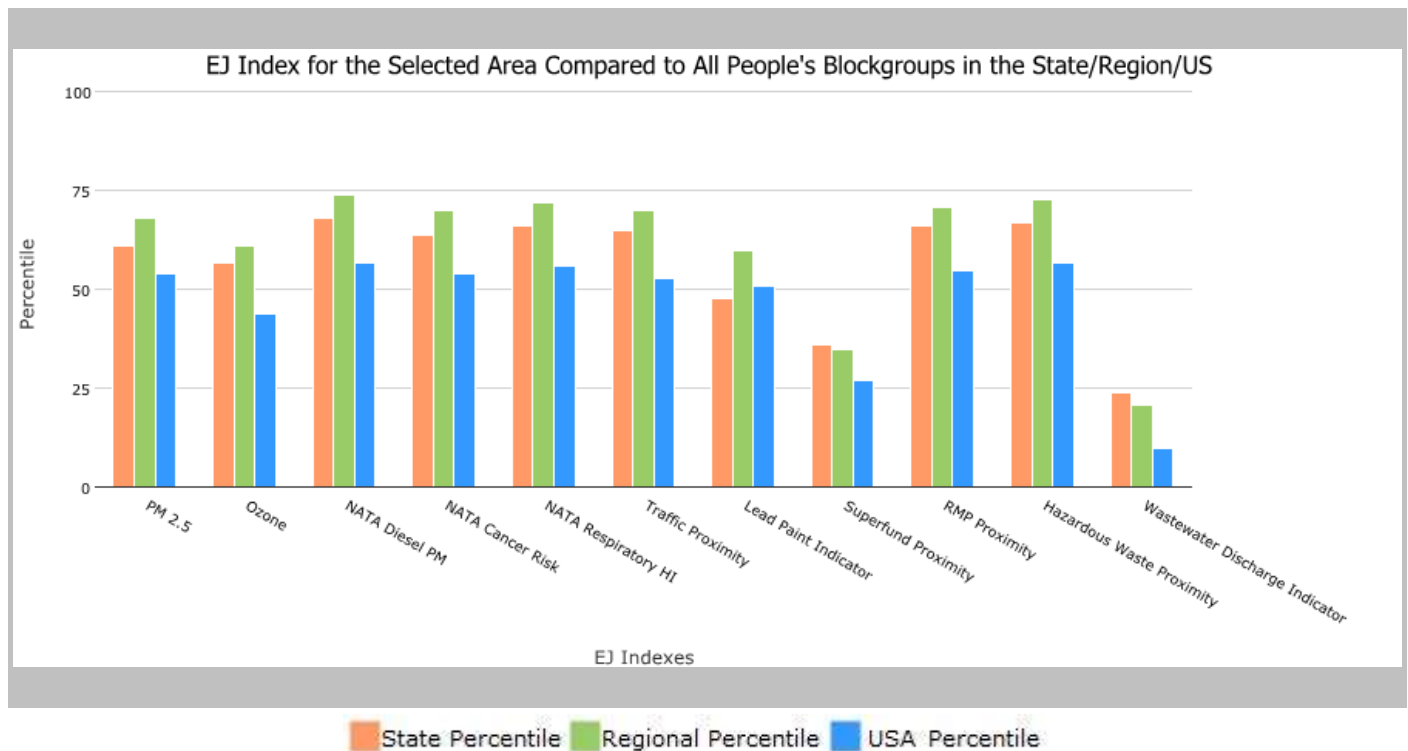
**EPA EJSCREEN REPORT, DATED MAY 02, 2019**

the User Specified Area, COLORADO, EPA Region 8

Approximate Population: 959

Input Area (sq. miles): 3.17

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
<b>EJ Indexes</b>			
EJ Index for PM2.5	61	68	54
EJ Index for Ozone	57	61	44
EJ Index for NATA* Diesel PM	68	74	57
EJ Index for NATA* Air Toxics Cancer Risk	64	70	54
EJ Index for NATA* Respiratory Hazard Index	66	72	56
EJ Index for Traffic Proximity and Volume	65	70	53
EJ Index for Lead Paint Indicator	48	60	51
EJ Index for Superfund Proximity	36	35	27
EJ Index for RMP Proximity	66	71	55
EJ Index for Hazardous Waste Proximity	67	73	57
EJ Index for Wastewater Discharge Indicator	24	21	10

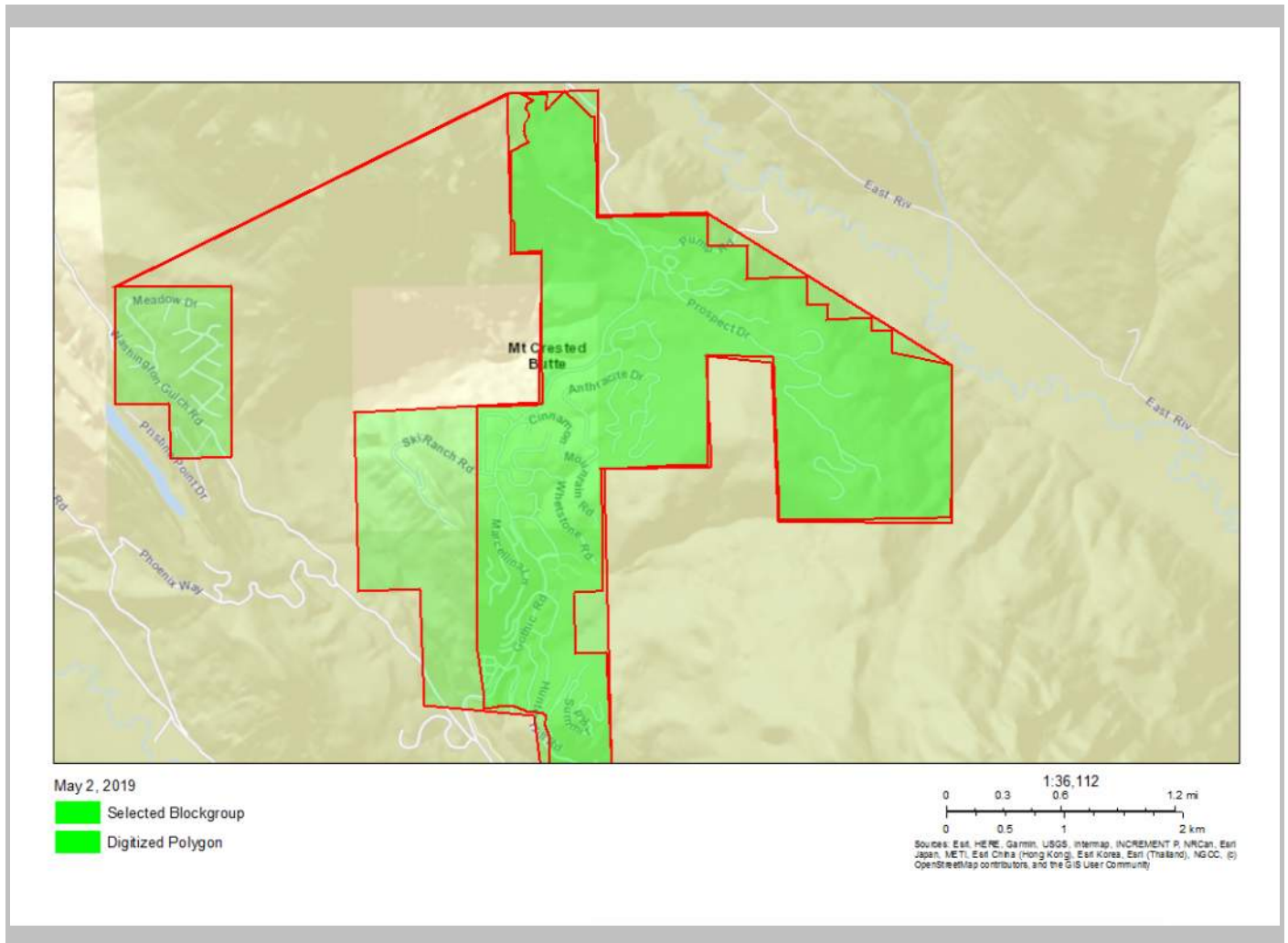


This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

the User Specified Area, COLORADO, EPA Region 8

Approximate Population: 959

Input Area (sq. miles): 3.17



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0



## EJSCREEN Report (Version 2018)

the User Specified Area, COLORADO, EPA Region 8

Approximate Population: 959

Input Area (sq. miles): 3.17



Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
<b>Environmental Indicators</b>							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$ )	3.87	6.74	1	6.64	2	9.53	0
Ozone (ppb)	49.5	51.4	7	48.6	30	42.5	89
NATA* Diesel PM ( $\mu\text{g}/\text{m}^3$ )	0.0261	0.766	1	0.607	<50th	0.938	<50th
NATA* Cancer Risk (lifetime risk per million)	13	37	1	30	<50th	40	<50th
NATA* Respiratory Hazard Index	0.26	1.8	0	1.4	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	1.5	360	3	250	4	600	5
Lead Paint Indicator (% Pre-1960 Housing)	0.0062	0.19	24	0.22	17	0.29	11
Superfund Proximity (site count/km distance)	0.1	0.1	71	0.11	72	0.12	73
RMP Proximity (facility count/km distance)	0.023	0.61	5	0.61	6	0.72	2
Hazardous Waste Proximity (facility count/km distance)	0.0054	0.65	1	0.63	2	4.3	0
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0.024	7.6	66	480	70	30	85
<b>Demographic Indicators</b>							
Demographic Index	24%	30%	49	27%	55	36%	39
Minority Population	6%	31%	5	24%	14	38%	13
Low Income Population	43%	29%	77	30%	77	34%	69
Linguistically Isolated Population	0%	3%	46	2%	55	4%	44
Population With Less Than High School Education	0%	9%	9	9%	7	13%	4
Population Under 5 years of age	1%	6%	4	7%	3	6%	4
Population over 64 years of age	13%	13%	59	13%	58	14%	48

\* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

For additional information, see: [www.epa.gov/environmentaljustice](http://www.epa.gov/environmentaljustice)

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

**SOURCE WATER ASSESSMENT REPORT, DATED  
NOVEMBER 16, 2004**

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# **SOURCE WATER ASSESSMENT REPORT**

## **Ground Water Sources**

**MOUNT CRESTED BUTTE WSD  
Public Water System ID: CO0126190**

**MT CRESTED BUTTE, CO**

**GUNNISON County**

11/16/2004



**Colorado Department of Public Health and Environment  
Water Quality Control Division  
Source Water Assessment and Protection Program  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530**

## SOURCE WATER ASSESSMENT SUMMARY

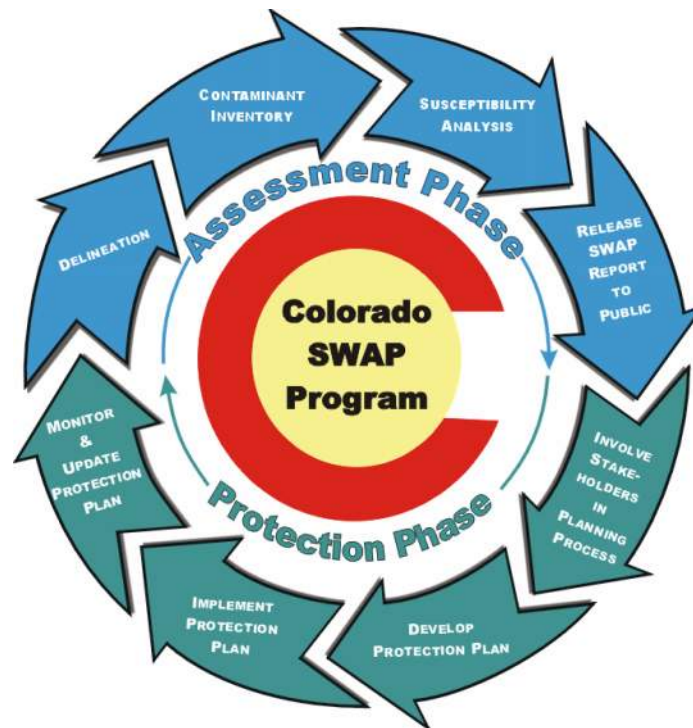
### Background

The Colorado Department of Public Health and Environment (CDPHE) has completed a source water assessment for **MOUNT CRESTED BUTTE WSD** as required by the 1996 Safe Drinking Water Act amendments and in accordance with Colorado's Source Water Assessment and Protection (SWAP) program. The purpose of this assessment is to analyze the potential susceptibility of each public drinking water source to contamination, and to supply pertinent information so that decision-makers voluntarily can develop and implement appropriate preventive measures to protect these water sources. The Safe Drinking Water Act requires that the public water system and its consumers be informed of the assessment results.

### SWAP Process

The SWAP program is a multi-step two-phased process (Figure 1) designed to assist public water systems in preventing accidental contamination of their untreated drinking water supplies. These phases include the assessment phase and the protection phase as depicted in the upper and lower portions of Figure 1, respectively.

Figure 1. Source Water Assessment and Protection Process.



The assessment phase involves understanding where each public water system's source water comes from, what contaminant sources potentially threaten the water source(s), and how

susceptible each water source is to potential contamination. The product of the assessment phase is contained in this report.

The protection phase occurs when local decision-makers use the source water assessment results and other pertinent information to develop management and response strategies to protect the water sources from potential contamination.

### *Assessment Process*

As depicted in the upper portion of Figure 1, the source water assessment for all public water systems consists of four primary elements. These elements include:

- 1) delineating the source water assessment area for each drinking water source;
- 2) conducting a contaminant source inventory to identify potential sources of contamination within each of the source water assessment areas;
- 3) conducting a susceptibility analysis to determine the potential susceptibility of each public drinking water source to the different sources of contamination and;
- 4) reporting the results of the source water assessment to the public water systems and the general public.

Public water systems were given the opportunity to review and provide corrections and/or feedback on draft versions of their source water assessment area delineations and their contaminant source inventories. All pertinent corrections and feedback were incorporated into this assessment.

### *Delineation of Source Water Assessment Area*

The source water assessment area defines the area or region of the watershed or aquifer contributing untreated water to the public water system's source water intake. The area also defines where potential contamination of this water source could occur.

A public water system may have rights to use one or more source water types for drinking water. These source water types include:

- Surface water source - any "untreated" water source that is diverted directly from a stream, river, lake, pond or similar surface water body.
- Ground water source - any "untreated" water source that is diverted directly from an underground source of water (i.e., an aquifer).
- Ground water source under the direct influence of surface water - any "untreated", shallow, ground water source that testing has shown to be in hydrologic connection to a nearby surface water body.

For ground water systems, the source water assessment area essentially includes the area of the aquifer drained by the source water intake. In the case of ground water systems, the intake would most commonly include wells, and to a lesser extent include spring boxes and infiltration galleries.

A public water system also may have purchased water sources. A purchased water source includes any “treated” surface water source, ground water source and/or ground water source under the influence of surface water that is purchased from another public water system.

This assessment report presents the results only for active ground water sources that the public water system has rights to use for drinking water. Assessment results for any purchased ground water sources that the public water system may have are presented in the source water assessment report(s) for the public water system that supplies the purchased ground water source.

### Contaminant Source Inventory

Drinking water sources are susceptible to contamination from a wide variety of natural and man-made threats. Figure 2 illustrates some of the potential contaminant sources that might be encountered for surface water and ground water sources, and how contaminants from these sources can enter the source water. Potential contaminant sources include anything likely to manufacture, produce, use, store, dispose, or transport regulated and unregulated contaminants of concern. Potential contaminant sources were divided into two groups for this assessment:

- Discrete contaminant sources – generally include facility-related operations from which the potential release of contamination would originate from a relatively small area.
- Dispersed contaminant sources – generally include broad based land uses and miscellaneous sources from which the potential release of contamination would be spread widely over a relatively large area.



Figure 2. Examples of Potential Contaminant Sources and How Contaminants Can Enter Your Source Water.



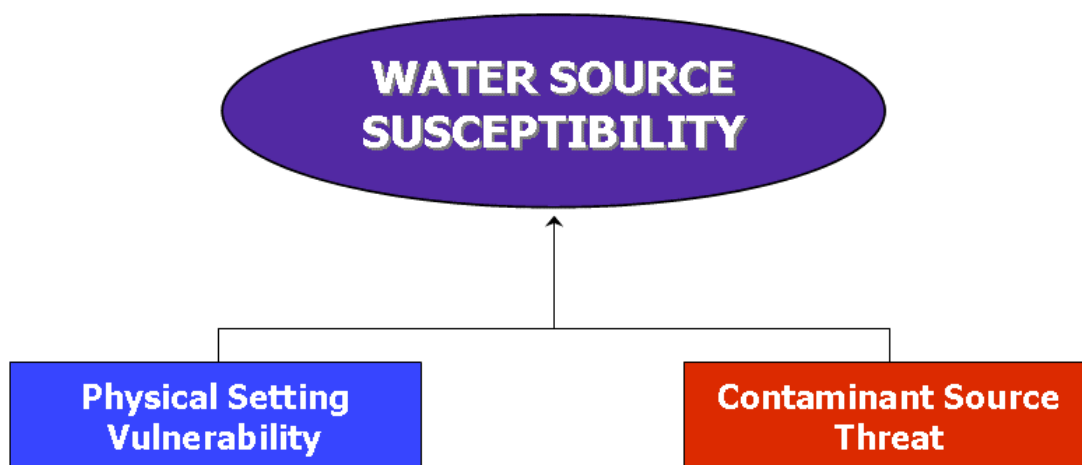


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### Susceptibility Analysis

The current analysis looks at the susceptibility of a water source to individual potential contaminant sources (referred to as individual susceptibility), as well as the total susceptibility of a water source to all of the individual potential contaminant sources that were inventoried within its source water assessment area. The susceptibility of a ground water source to an individual potential contaminant source depends on the two primary factors: physical setting vulnerability and contaminant source threat, as shown in Figure 3.

Figure 3. Components of Water Source Susceptibility.



Physical Setting Vulnerability – involves an evaluation of the ability of the ground water flow system in the source water assessment area to provide a sufficient buffering capacity to mitigate potential contaminant concentrations in the source water. This ability is affected by physical characteristics like the ground water flow properties of the aquifer, the total depth of the water source and its intake, the depth to first water, the flow rate of the water source, as well as the structural soundness of the intake itself.

Contaminant Source Threat – involves an evaluation of the potential for a contaminant source to provide contaminants in sufficient amounts for the source water to become contaminated at concentrations that may pose a health concern to consumers of the water. The potential threat is affected by the types and volumes of potential contaminants that might be present, the likelihood that contaminants might be released, the proximity of the contaminant source to the source water intake, and soil properties and water levels in the vicinity of the contaminant source.

The total susceptibility of a water source is determined from its cumulative susceptibility to all of the discrete contaminant sources and all of the dispersed contaminant sources that were inventoried in its source water assessment area. In other words, the total susceptibility of a water source is a reflection of the combined individual susceptibilities posed by all of the discrete and all of the dispersed contaminant sources inventoried in the source water assessment area. Therefore, the susceptibility of a water source to all discrete contaminant sources is a reflection of the combined individual susceptibilities posed by each discrete contaminant source that was

inventoried. Likewise, the susceptibility of a water source to all dispersed contaminant sources is a reflection of the combined individual susceptibilities posed by each dispersed contaminant source that was inventoried.

In order to determine the susceptibility of a water source to potential contamination, the Colorado Department of Public Health and Environment developed a unique susceptibility analysis model and scoring system to evaluate the different physical setting vulnerability and contaminant threat factors that contribute to the susceptibility of a water source. This unique model and scoring system serves as the benchmark by which the potential susceptibility of other like water sources in the state can be measured or judged. *Therefore, the results of your source water assessment are not directly comparable to results from other states. These assessment results are only meaningful when compared to other ground water sources in Colorado.*

To provide the reader a general sense of the degree of potential risk to a water source, the total susceptibility scores, individual susceptibility scores and physical setting vulnerability scores are assigned qualitative ratings of Low, Moderately Low, Moderate, Moderately High, or High based on statistical indicators established by the Colorado Department of Public Health and Environment. In developing the qualitative ratings for these particular factors, a commonly applied statistical approach is used to group the scores for each of these factors into the five possible rating categories. This approach is not unlike what a teacher uses in grading student test scores. The statistical approach determines the factor score's relative position within the statewide populations of total susceptibility scores, individual susceptibility scores or physical setting vulnerability scores for the more than 2,700 ground water sources that were analyzed.

In general, the higher the susceptibility rating for the water source, the greater the risk for potential contamination of the water source. For example, a total susceptibility rating of Moderately High or High generally means that the potential vulnerability posed by the physical setting of the water source and the cumulative potential threats posed by the various contaminant sources are proportionately higher than the vulnerability and cumulative threats posed to an average ground water source in the state. Similarly, an individual susceptibility rating of Moderately High or High generally means that the potential vulnerability posed by the physical setting of the water source and the potential threat posed by an individual contaminant source is proportionately higher than the vulnerability and individual threat posed to an average ground water source in the state.

Likewise, the higher the physical setting vulnerability rating for the water source, the more vulnerable the water source is to potential contamination. A physical setting vulnerability rating of Moderately High or High generally means that the physical setting of the water source potentially provides proportionately less buffering capability to mitigate potential contaminant concentrations in the source water when compared to an average ground water source in the state.

The results of the statistical evaluations are easier to understand by plotting the statewide distribution of the total and individual susceptibility ratings, and the physical setting vulnerability ratings for all ground water sources that were analyzed. The final statewide total susceptibility, individual susceptibility and physical setting vulnerability rating distribution plots

generated from the evaluations are presented in the assessment results section of this report. These rating distribution plots present the numerical scoring ranges associated with a given rating category, and the number of water sources or contaminant sources throughout the state that received a specific rating.

The Colorado Department of Public Health and Environment has provided two source water assessment methodology documents that can be downloaded from the Colorado SWAP web site ([www.cdphe.state.co.us/wq/sw/swaphom.html](http://www.cdphe.state.co.us/wq/sw/swaphom.html)) and reviewed. These documents present a more detailed discussion on the assessment methodology used for surface water sources and ground water sources under the direct influence of surface water, and ground water sources for people who are interested.

### *Protection Process*

Public water systems and communities are strongly encouraged to use their source water assessment information to voluntarily enter the protection phase of SWAP. The next step involves developing and continuously implementing a source water management or protection plan at the local level. **No statutory authority has been given to the Colorado Department of Public Health and Environment to force the adoption or implementation of source water protection measures. The authority to do so rests with local communities and governments.**

As depicted in the lower portion of Figure 1, the source water protection phase for all public water systems consists of four primary elements. These elements include:

- 1) involving stakeholders in the planning process;
- 2) developing a comprehensive protection plan for all of your drinking water sources;
- 3) implementing the protection plan on a continuous basis to reduce the risk of accidental contamination of the drinking water sources; and
- 4) monitoring the effectiveness of the protection plan and updating it accordingly as future assessment results indicate.

### *Involve Stakeholders*

Public participation is crucial to the overall success of Colorado's SWAP program. Source water protection was founded on the concept that informed citizens, equipped with fundamental knowledge about their drinking water source and the threats to it, will be the most effective advocates for protecting this valuable resource.

The public water supplier or any other well-suited local interest group may take the lead in organizing public participation in the local SWAP protection planning effort. For public participation to be effective, there must be a well-organized effort to raise public awareness, identify groups and individuals interested in helping, and to define and implement the necessary assessment and planning tasks. The lead group is encouraged to involve all types of stakeholders

– individuals, groups, organizations and local decision-makers affected by or concerned with the community’s drinking water – in the local source water protection planning efforts.

### *Develop Protection Plan*

A source water management or protection plan essentially identifies (1) the specific management tools the public water system and community will use or the actions they will take to protect their source water, and (2) how the public water system and community will carry them out. A companion contingency plan is usually developed as part of the overall management plan. The contingency plan is essentially an emergency response plan for the water system that lays out a coordinated plan for responding rapidly, effectively, and efficiently to any emergency incident that threatens or disrupts the community water supply. Emergency incidents are any man-made events (e.g., chemical contamination, fire, vandalism, terrorism) or natural events (e.g., drought, fire, tornado) that can adversely affect the capability of the public water system to provide a steady supply of safe drinking water to its consumers. Public water systems and communities are encouraged to be creative in developing these plans.

### *Implement Protection Plan*

The reduction of risk of accidental contamination of drinking water sources is affected by how well the public water system and community carry out the specific management tools they use or the actions they take to protect their source water. This requires a proper commitment of funding resources and personnel by the public water system and community to implement the source water protection measures they have developed. Considering the high cost of cleaning up contaminants once they have been released to the environment, this commitment may well be a reasonable investment to protect the natural quality of the drinking water source and avoid potential costly treatment of a contaminated water supply and/or costly development of a new water supply. The Colorado Department of Public Health and Environment also encourages public water systems and decision-makers to use their source water assessment results in making local land use decisions. Public water systems and communities interested in developing and implementing source water protection measures may be able to find limited financial assistance through the Colorado Department of Public Health and Environment.

### *Monitor and Update Protection Plan*

Public water systems and communities are encouraged to monitor the effectiveness of the source water protection measures they have implemented and to update their source water protection plan accordingly as future assessment results indicate. In developing a protection plan, each public water system is encouraged to identify measurable results that can be used to monitor the success of the protection measures they have implemented. Source water protection plans may need to be revised to address new potential threats over time as new assessment results become available. As shown in Figure 1, SWAP was designed to be an iterative process, alternating back and forth between assessment and protection phases.

The primary elements of the protection phase discussed above are meant as a guide to public water systems and communities. In actual practice, developing and implementing source water

protection may be more or less complicated depending on the local community's willingness to adopt and implement source water protection measures. Additional source water protection information can be obtained by going to the U.S. Environmental Protection Agency's source water protection website ([www.epa.gov/safewater/protect.html](http://www.epa.gov/safewater/protect.html)). Staff members at the Colorado Department of Public Health and Environment also are available to provide assistance with source water protection efforts.

### Assessment Results

The source water assessment for **MOUNT CRESTED BUTTE WSD** rendered the following results:

- At the time of this assessment, the water supply consists of:
  - 1 active ground water sources
  - 0 active, purchased ground water sources
  
- Table 1 presents the cumulative results of the total susceptibility of the water source(s) to potential contamination from both discrete and dispersed contaminant sources. Water sources with total susceptibility ratings of Moderately High or High generally are at greater risk for potential contamination than those receiving lower ratings. **As shown in Table 1, 0 active water source(s) was/were determined to have a Moderately High or High susceptibility to potential contamination.**

There may be cases where the assessment was unable to verify the presence of discrete and dispersed contaminant sources based on the databases used for the contaminant inventory. In these cases, unless new information is identified and analyzed, the water source(s) is/are not currently known to be susceptible to potential contamination from any known discrete or dispersed contaminant sources. This situation is indicated in Table 1 by water sources receiving an overall susceptibility rating of “No Known Susceptibility.”

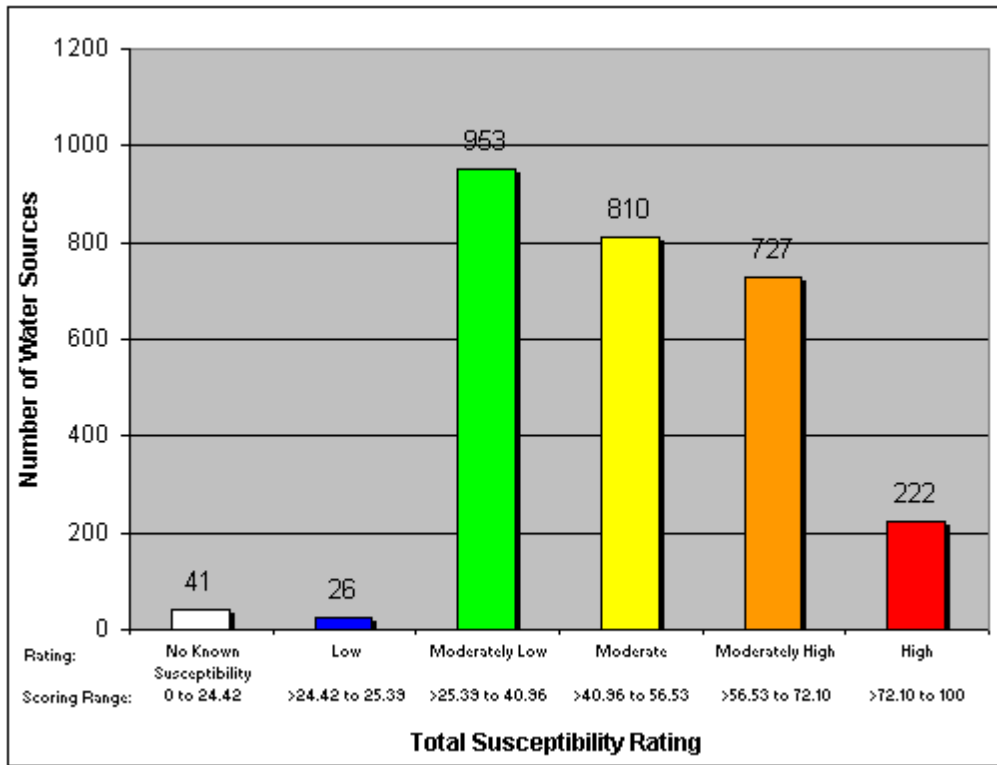
Table 1. Total Susceptibility Ratings for Water Sources.

Number of Water Sources	Susceptibility Rating
0	No Known Susceptibility
0	Low
1	Moderately Low
0	Moderate
0	Moderately High
0	High

Figure 4 presents the statewide total susceptibility rating distribution plot for all ground water sources that were analyzed. The rating distribution plot presents the numerical scoring ranges associated with a given rating category, and the number of ground water sources throughout the state that received a specific qualitative rating. By comparing the results in Table 1 to Figure 4, one can see how the total susceptibility of the water source(s) in Table 1 compared to the total susceptibility of the other ground water sources throughout the state.

Figure 4. Statewide Total Susceptibility Rating Distribution Plot.





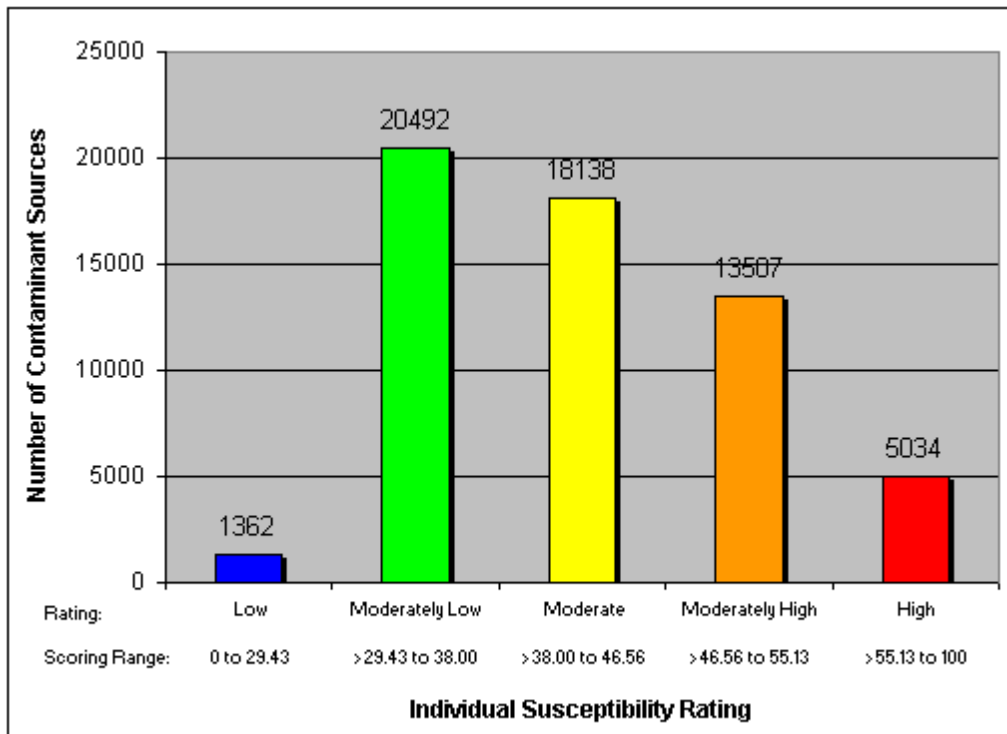
- Table 2 presents a summary of the individual susceptibility of the water source(s) to various types of discrete contaminant sources that were evaluated. Water sources with a Moderately High or High individual susceptibility to a discrete contaminant source generally are at greater risk for potential contamination from the discrete contaminant source than water sources receiving lower individual susceptibility ratings to similar or different discrete contaminant sources. The water source(s) has/have the greatest risk to potential contamination from the following types of discrete contaminant sources:

Table 2. Susceptibility of Water Source(s) to Discrete Contaminant Sources.

Contaminant Source Type	Individual Susceptibility Rating Summary (cumulative count for all water sources)				
	Low	Mod. Low	Moderate	Mod. High	High
EPA Superfund Sites	0	0	0	0	0
EPA Abandoned Contaminated Sites	0	0	0	0	0
EPA Hazardous Waste Generators	0	0	0	0	0
EPA Chemical Inventory/Storage Sites	0	0	0	0	0
EPA Toxic Release Inventory Sites	0	0	0	0	0
Permitted Wastewater Discharge Sites	0	0	0	0	0
Aboveground, Underground and Leaking Storage Tank Sites	0	0	0	0	0
Solid Waste Sites	0	0	0	0	0
Existing/Abandoned Mine Sites	0	0	0	0	0
Concentrated Animal Feeding Operations	0	0	0	0	0
Other Facilities	0	0	0	0	0
<b>TOTAL:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Figure 5 presents the statewide rating distribution plot of the individual susceptibility to various types of discrete contaminant sources for all ground water sources that were analyzed. The rating distribution plot presents the numerical scoring ranges associated with a given rating category, and the number of discrete contaminant sources throughout the state that received a specific qualitative rating. By comparing the total count results in Table 2 to Figure 5, one can see how the individual susceptibility results of the water source(s) in Table 2 compared to the combined individual susceptibility results of the other ground water sources throughout the state.

Figure 5. Statewide Rating Distribution Plot of Individual Susceptibility to Discrete Contaminant Sources.



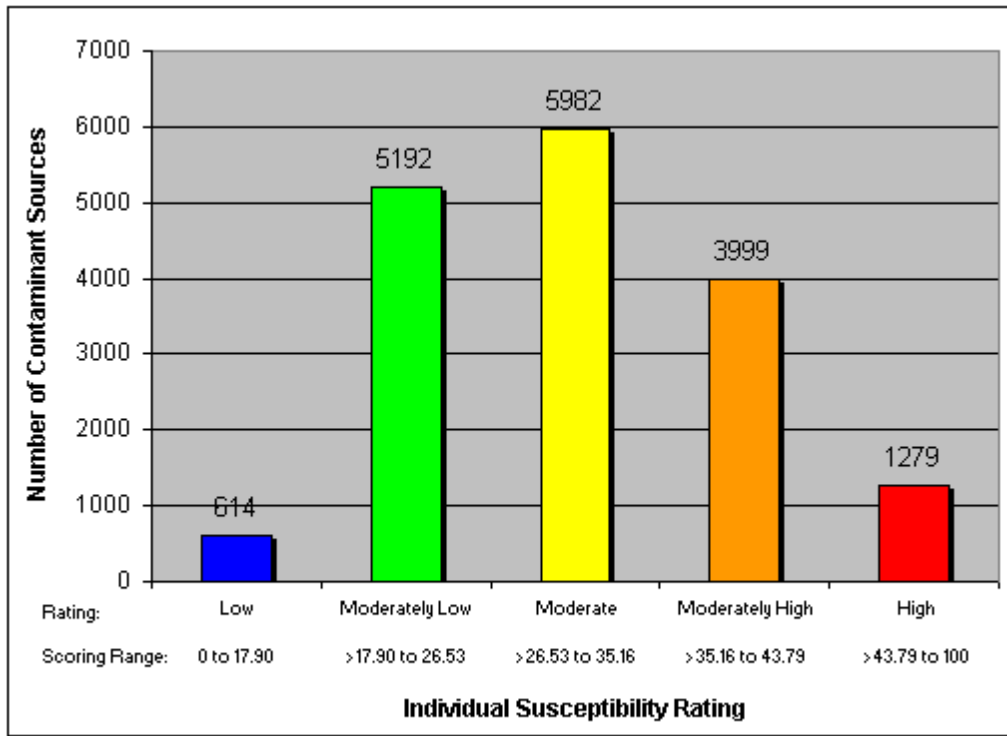
- Table 3 presents a summary of the individual susceptibility of the water source(s) to various types of dispersed contaminant sources that were evaluated. Water sources with a Moderately High or High individual susceptibility to a dispersed contaminant source generally are at greater risk of potential contamination from the dispersed contaminant source than water sources receiving lower individual susceptibility ratings to similar or different dispersed contaminant sources. The water source(s) has/have the greatest risk to potential contamination from the following types of dispersed contaminant sources:

Table 3. Susceptibility of Water Source(s) to Dispersed Contaminant Sources.

Contaminant Source Type	Individual Susceptibility Rating Summary (cumulative count for all water sources)				
	Low	Mod. Low	Moderate	Mod. High	High
<b>LAND USE / LAND COVER TYPES:</b>					
Commercial/Industrial/Transportation	0	0	0	0	0
High Intensity Residential	0	0	0	0	0
Low Intensity Residential	0	0	0	0	0
Urban Recreational Grasses	0	0	0	0	0
Quarries / Strip Mines / Gravel Pits	0	0	0	0	0
Row Crops	0	0	0	0	0
Fallow	0	0	0	0	0
Small Grains	0	0	0	0	0
Pasture / Hay	0	0	0	0	0
Orchards / Vineyards / Other	0	0	0	0	0
Deciduous Forest	0	1	0	0	0
Evergreen Forest	0	1	0	0	0
Mixed Forest	0	1	0	0	0
<b>OTHER TYPES:</b>					
Septic Systems	0	0	0	0	0
Oil / Gas Wells	0	0	0	0	0
Road Miles	0	0	0	0	0
<b>TOTAL:</b>	<b>0</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>

Figure 6 presents the statewide rating distribution plot of the individual susceptibility to various types of dispersed contaminant sources for all ground water sources that were analyzed. The rating distribution plot presents the numerical scoring ranges associated with a given rating category, and the number of dispersed contaminant sources throughout the state that received a specific qualitative rating. By comparing the total count results in Table 3 to Figure 6, one can see how the individual susceptibility results of the water source(s) in Table 3 compared to the combined individual susceptibility results of the other ground water sources throughout the state.

Figure 6. Statewide Distribution Plot of Individual Susceptibility to Dispersed Contaminant Sources.



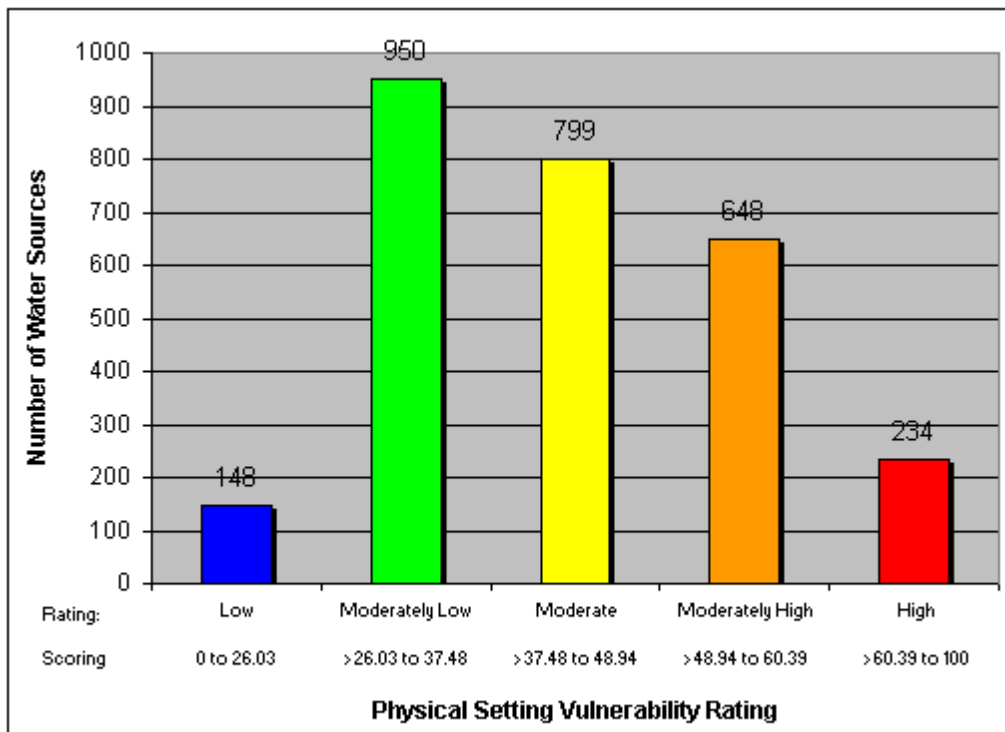
➤ Table 4 presents the cumulative results of the physical setting vulnerability ratings of the water source(s). A vulnerable physical setting generally means the water source(s) will be more susceptible to potential contamination. Water sources with physical setting vulnerability ratings of Moderately High or High generally are expected to have higher levels of potential susceptibility to contamination. As shown in Table 4, 0 active water source(s) was/were determined to have a Moderately High or High physical setting vulnerability.

Table 4. Physical Setting Vulnerability Ratings for Water Sources.

Number of Water Sources	Physical Setting Vulnerability Rating
0	Low
1	Moderately Low
0	Moderate
0	Moderately High
0	High

Figure 7 presents the statewide physical setting vulnerability rating distribution plot for all ground water sources that were analyzed. The rating distribution plot presents the numerical scoring ranges associated with a given rating category, and the number of ground water sources throughout the state that received a specific qualitative rating. By comparing the results in Table 4 to Figure 7, one can see how the physical setting vulnerability of the water source(s) in Table 4 compared to the physical setting vulnerability of the other ground water sources throughout the state.

Figure 7. Statewide Physical Setting Vulnerability Rating Distribution Plot.



The physical setting vulnerability remains important even where no or very few potential contaminant sources (discrete and/or dispersed) have been identified within the source water assessment area. In this case, if the physical setting vulnerability for a water source is estimated to be Moderately High or High, it could cause an increased susceptibility to contamination in the future if certain discrete and/or dispersed contaminant sources were located within the source water assessment area. This potential impact ultimately will depend on the degree of contaminant threat posed by the specific potential contaminant sources. Public water systems are strongly encouraged to consider this in their source water protection planning efforts, and to be vigilant to the introduction of potential contaminant sources within highly vulnerable physical settings. Such information may be useful to local land use planning agencies making land use and zoning decisions related to the siting of these future potential contaminant sources.

## Additional Considerations

The source water assessment provides a screening-level evaluation of the likelihood that a potential contamination problem could occur rather than an indication that a potential contamination problem has or will occur. This evaluation is comparable to what a doctor might use to screen a patient for a particular medical condition. The results of this assessment reflect the best efforts of the Colorado Department of Public Health and Environment and its contractors to simplify several complex physical, chemical and operational processes, and to assemble quality data sets for use in the assessment. Future improvements to the source water assessment results are envisioned as additional data become available. The Colorado Department of Public Health and Environment is confident that this assessment provides useful information to communities concerning the contaminant sources to which their water supply is potentially most susceptible. Public water systems also can use this information to evaluate the need for improvement to current water treatment capabilities, so as to be better prepared for future contamination threats.

This report represents the public version of the source water assessment that the Colorado Department of Public Health and Environment is required to make available under the Safe Drinking Water Act. The public version differs from the public water system version in that more detailed supporting information (e.g., input data and maps) was provided to each public water system as part of their report. Some of this supporting information is viewed by the Colorado Department of Public Health and Environment and many public water systems as security sensitive. Under the Colorado Open Records Act, certain information can be withheld from public disclosure if the information can be characterized either as “details of security arrangements or investigations” [section 27-72-204(3)(a)(XVII) C.R.S] or as information whose disclosure “would do substantial injury to the public interest” [section 24-72-204(6)(a) C.R.S.]. The Colorado Department of Public Health and Environment has determined that the following security sensitive information meets one or both of the preceding characterization criteria and will be withheld from public disclosure:

- Location information about the public water system’s intakes/wells, treatment facilities, and diversion/conveyance structures, as well as location information about potential sources of contamination. Location information would include location coordinates, physical addresses and maps showing the locations of the intakes/wells, treatment facilities, diversion/conveyance structures, and potential sources of contamination;
- Hazardous chemical quantities, type, processes, and/or likelihood of release;
- Well/intake depths; and
- Structural integrity information concerning the drinking water intakes/wells.

Public water systems also will be given the opportunity to provide the Colorado Department of Public Health and Environment with rationale for excluding additional supporting information from public disclosure once they have received and reviewed their source water assessment report. Their rationale must meet one or both of the preceding characterization criteria established under the Colorado Open Records Act to be acceptable.



Consumers are encouraged to contact **MOUNT CRESTED BUTTE WSD** at **970-349-7492** if you are:

- interested in knowing more about the supporting information provided to the public water system; or
- interested in what source water protection measures the water system may be developing.

If you have questions concerning the results presented in the public version of the source water assessment, the methodologies used in the source water assessment, or the SWAP program in general, please contact the Colorado Department of Public Health and Environment at (303) 692-3592.

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#### DISCLAIMER

**This Source Water Assessment utilized information from a variety of public and other sources, and as such, no warranty of merchantability or of fitness for a particular purpose, expressed or implied, shall apply and the Colorado Department of Public Health and Environment specifically disclaims the making of such warranties. In no event shall the Colorado Department of Public Health and Environment be liable to anyone for special, incidental, consequential or exemplary damages.**

# **SOURCE WATER ASSESSMENT REPORT**

## **Surface Water Sources and Ground Water Sources Under the Direct Influence of Surface Water**

**MOUNT CRESTED BUTTE WSD  
Public Water System ID: CO0126190  
MT CRESTED BUTTE, CO  
GUNNISON County**

**11/16/2004**



**Colorado Department of Public Health and Environment  
Water Quality Control Division  
Source Water Assessment and Protection Program  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530**

## SOURCE WATER ASSESSMENT SUMMARY

### Background

The Colorado Department of Public Health and Environment (CDPHE) has completed a source water assessment for **MOUNT CRESTED BUTTE WSD** as required by the 1996 Safe Drinking Water Act amendments and in accordance with Colorado's Source Water Assessment and Protection (SWAP) program. The purpose of this assessment is to analyze the potential susceptibility of each public drinking water source to contamination, and to supply pertinent information so that decision-makers voluntarily can develop and implement appropriate preventive measures to protect these water sources. The Safe Drinking Water Act requires that the public water system and its consumers be informed of the assessment results.

### SWAP Process

The SWAP program is a multi-step two-phased process (Figure 1) designed to assist public water systems in preventing accidental contamination of their untreated drinking water supplies. These phases include the assessment phase and the protection phase as depicted in the upper and lower portions of Figure 1, respectively.

Figure 1. Source Water Assessment and Protection Process.



The assessment phase involves understanding where each public water system's source water comes from, what contaminant sources potentially threaten the water source(s), and how

susceptible each water source is to potential contamination. The product of the assessment phase is contained in this report.

The protection phase occurs when local decision-makers use the source water assessment results and other pertinent information to develop management and response strategies to protect the water sources from potential contamination.

### ***Assessment Process***

As depicted in the upper portion of Figure 1, the source water assessment for all public water systems consists of four primary elements. These elements include:

- 1) delineating the source water assessment area for each drinking water source;
- 2) conducting a contaminant source inventory to identify potential sources of contamination within each of the source water assessment areas;
- 3) conducting a susceptibility analysis to determine the potential susceptibility of each public drinking water source to the different sources of contamination and;
- 4) reporting the results of the source water assessment to the public water systems and the general public.

Public water systems were given the opportunity to review and provide corrections and/or feedback on draft versions of their source water assessment area delineations and their contaminant source inventories. All pertinent corrections and feedback were incorporated into this assessment.

### ***Delineation of Source Water Assessment Area***

The source water assessment area defines the area or region of the watershed or aquifer contributing untreated water to the public water system's source water intake. The area also defines where potential contamination of this water source could occur.

A public water system may have rights to use one or more source water types for drinking water. These source water types include:

- Surface water source - any "untreated" water source that is diverted directly from a stream, river, lake, pond or similar surface water body.
- Ground water source - any "untreated" water source that is diverted directly from an underground source of water (i.e., an aquifer).
- Ground water source under the direct influence of surface water - any "untreated", shallow, ground water source that testing has shown to be in hydrologic connection to a nearby surface water body.

For surface water systems and ground water systems under the influence of surface water, the source water assessment area includes the watershed drainage area above the intake, and any secondary diversion structures used to divert untreated water from other watersheds.

A public water system also may have purchased water sources. A purchased water source includes any “treated” surface water source, ground water source and/or ground water source under the influence of surface water that is purchased from another public water system.

This assessment report presents the results only for active surface water sources and/or ground water sources under the direct influence of surface water that the public water system has rights to use for drinking water. Assessment results for any purchased water sources that the public water system may have are presented in the source water assessment report(s) for the public water system that supplies the purchased water source.

### Contaminant Source Inventory

Drinking water sources are susceptible to contamination from a wide variety of natural and man-made threats. Figure 2 illustrates some of the potential contaminant sources that might be encountered for surface water and ground water sources, and how contaminants from these sources can enter the source water. Potential contaminant sources include anything likely to manufacture, produce, use, store, dispose, or transport regulated and unregulated contaminants of concern. Potential contaminant sources were divided into two groups for this assessment:

- Discrete contaminant sources – generally include facility-related operations from which the potential release of contamination would be confined to a relatively small area.
- Dispersed contaminant sources – generally include broad based land uses and miscellaneous sources from which the potential release of contamination would be spread widely over a relatively large area.

Figure 2. Examples of Potential Contaminant Sources and How Contaminants Can Enter Your Source Water.





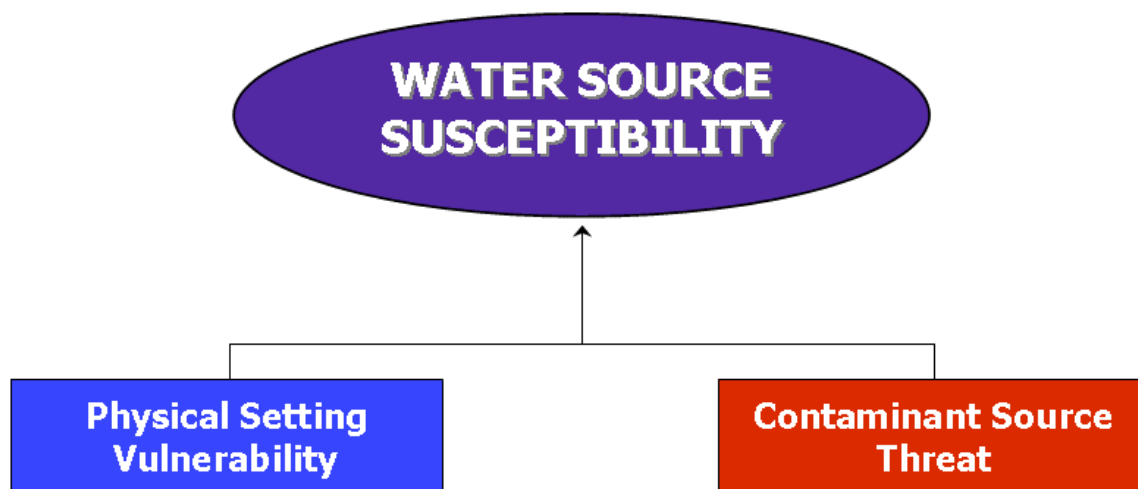
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### Susceptibility Analysis

The current analysis looks at the susceptibility of a water source to individual potential contaminant sources (referred to as individual susceptibility), as well as the total susceptibility of a water source to all of the individual potential contaminant sources that were inventoried within its source water assessment area. The susceptibility of a surface water source or a ground water source under the direct influence of surface water to an individual potential contaminant source depends on the two primary factors: physical setting vulnerability and contaminant source threat, as shown in Figure 3.

Figure 3. Components of Water Source Susceptibility.



Physical Setting Vulnerability – involves an evaluation of the ability of the watershed setting in the source water assessment area to provide a sufficient buffering capacity to mitigate potential contaminant concentrations in the source water. This ability is affected by physical characteristics like the total size of the source water assessment area, annual precipitation, soil properties and vegetative cover within the source water assessment area, as well as the structural soundness of the intake itself.

Contaminant Source Threat – involves an evaluation of the potential for a contaminant source to provide contaminants in sufficient amounts for the source water to become contaminated at concentrations that may pose a health concern to consumers of the water. The potential threat is affected by the types and volumes of potential contaminants that might be present, the likelihood that contaminants might be released, and the proximity of the contaminant source to the source water intake and its proximity to the surface water body supplying the untreated source water.

The total susceptibility of a water source is determined from its cumulative susceptibility to all of the discrete contaminant sources and all of the dispersed contaminant sources that were inventoried in its source water assessment area. In other words, the total susceptibility of a water source is a reflection of the combined individual susceptibilities posed by all of the discrete and all of the dispersed contaminant sources inventoried in the source water assessment area.

Therefore, the susceptibility of a water source to all discrete contaminant sources is a reflection of the combined individual susceptibilities posed by each discrete contaminant source that was inventoried. Likewise, the susceptibility of a water source to all dispersed contaminant sources is a reflection of the combined individual susceptibilities posed by each dispersed contaminant source that was inventoried.

In order to determine the susceptibility of a water source to potential contamination, the Colorado Department of Public Health and Environment developed a unique susceptibility analysis model and scoring system to evaluate the different physical setting vulnerability and contaminant threat factors that contribute to the susceptibility of a water source. This unique model and scoring system serves as the benchmark by which the potential susceptibility of other like water sources in the state can be measured or judged. *Therefore, the results of your source water assessment are not directly comparable to results from other states. These assessment results are only meaningful when compared to other surface water sources and ground water sources under the direct influence of surface water in Colorado.*

To provide the reader a general sense of the degree of potential risk to a water source, the total susceptibility scores, individual susceptibility scores and physical setting vulnerability scores are assigned qualitative ratings of Low, Moderately Low, Moderate, Moderately High, or High based on statistical indicators established by the Colorado Department of Public Health and Environment. In developing the qualitative ratings for these particular factors, a commonly applied statistical approach is used to group the scores for each of these factors into the five possible rating categories. This approach is not unlike what a teacher uses in grading student test scores. The statistical approach determines the factor score's relative position within the statewide populations of total susceptibility scores, individual susceptibility scores or physical setting vulnerability scores for the more than 500 surface water sources and ground water sources under the direct influence of surface water that were analyzed.

In general, the higher the susceptibility rating for the water source, the greater the risk for potential contamination of the water source. For example, a total susceptibility rating of Moderately High or High generally means that the potential vulnerability posed by the physical setting of the water source and the cumulative potential threats posed by the various contaminant sources are proportionately higher than the vulnerability and cumulative threats posed to an average surface water source or ground water source under the direct influence of surface water in the state. Similarly, an individual susceptibility rating of Moderately High or High generally means that the potential vulnerability posed by the physical setting of the water source and the potential threat posed by an individual contaminant source is proportionately higher than the vulnerability and individual threat posed to an average surface water source or ground water source under the direct influence of surface water in the state.

Likewise, the higher the physical setting vulnerability rating for the water source, the more vulnerable the water source is to potential contamination. A physical setting vulnerability rating of Moderately High or High generally means that the physical setting of the water source potentially provides proportionately less buffering capability to mitigate potential contaminant concentrations in the source water when compared to an average surface water source or ground water source under the direct influence of surface water in the state.

The results of the statistical evaluations are easier to understand by plotting the statewide distribution of the total and individual susceptibility ratings, and the physical setting vulnerability ratings for all surface water sources and ground water sources under the direct influence of surface water that were analyzed. The final statewide total susceptibility, individual susceptibility and physical setting vulnerability rating distribution plots generated from the evaluations are presented in the assessment results section of this report. These rating distribution plots present the numerical scoring ranges associated with a given rating category, and the number of water sources or contaminant sources throughout the state that received a specific rating.

The Colorado Department of Public Health and Environment has provided two source water assessment methodology documents that can be downloaded from the Colorado SWAP web site ([www.cdphe.state.co.us/wq/sw/swaphom.html](http://www.cdphe.state.co.us/wq/sw/swaphom.html)) and reviewed. These documents present a more detailed discussion on the assessment methodology used for surface water sources and ground water sources under the direct influence of surface water, and ground water sources for people who are interested.

### *Protection Process*

Public water systems and communities are strongly encouraged to use their source water assessment information to voluntarily enter the protection phase of SWAP. The next step involves developing and continuously implementing a source water management or protection plan at the local level. **No statutory authority has been given to the Colorado Department of Public Health and Environment to force the adoption or implementation of source water protection measures. The authority to do so rests with local communities and governments.**

As depicted in the lower portion of Figure 1, the source water protection phase for all public water systems consists of four primary elements. These elements include:

- 1) involving stakeholders in the planning process;
- 2) developing a comprehensive protection plan for all of your drinking water sources;
- 3) implementing the protection plan on a continuous basis to reduce the risk of accidental contamination of the drinking water sources; and
- 4) monitoring the effectiveness of the protection plan and updating it accordingly as future assessment results indicate.

### *Involve Stakeholders*

Public participation is crucial to the overall success of Colorado's SWAP program. Source water protection was founded on the concept that informed citizens, equipped with fundamental knowledge about their drinking water source and the threats to it, will be the most effective advocates for protecting this valuable resource.

The public water supplier or any other well-suited local interest group may take the lead in organizing public participation in the local SWAP protection planning effort. For public participation to be effective, there must be a well-organized effort to raise public awareness, identify groups and individuals interested in helping, and to define and implement the necessary assessment and planning tasks. The lead group is encouraged to involve all types of stakeholders – individuals, groups, organizations and local decision-makers affected by or concerned with the community’s drinking water – in the local source water protection planning efforts.

### *Develop Protection Plan*

A source water management or protection plan essentially identifies (1) the specific management tools the public water system and community will use or the actions they will take to protect their source water, and (2) how the public water system and community will carry them out. A companion contingency plan is usually developed as part of the overall management plan. The contingency plan is essentially an emergency response plan for the water system that lays out a coordinated plan for responding rapidly, effectively, and efficiently to any emergency incident that threatens or disrupts the community water supply. Emergency incidents are any man-made events (e.g., chemical contamination, fire, vandalism, terrorism) or natural events (e.g., drought, fire, tornado) that can adversely affect the capability of the public water system to provide a steady supply of safe drinking water to its consumers. Public water systems and communities are encouraged to be creative in developing these plans.

### *Implement Protection Plan*

The reduction of risk of accidental contamination of drinking water sources is affected by how well the public water system and community carry out the specific management tools they use or the actions they take to protect their source water. This requires a proper commitment of funding resources and personnel by the public water system and community to implement the source water protection measures they have developed. Considering the high cost of cleaning up contaminants once they have been released to the environment, this commitment may well be a reasonable investment to protect the natural quality of the drinking water source and avoid potential costly treatment of a contaminated water supply and/or costly development of a new water supply. The Colorado Department of Public Health and Environment also encourages public water systems and decision-makers to use their source water assessment results in making local land use decisions. Public water systems and communities interested in developing and implementing source water protection measures may be able to find limited financial assistance through the Colorado Department of Public Health and Environment.

### *Monitor and Update Protection Plan*

Public water systems and communities are encouraged to monitor the effectiveness of the source water protection measures they have implemented and to update their source water protection plan accordingly as future assessment results indicate. In developing a protection plan, each public water system is encouraged to identify measurable results that can be used to monitor the success of the protection measures they have implemented. Source water protection plans may need to be revised to address new potential threats over time as new assessment results become

available. As shown in Figure 1, SWAP was designed to be an iterative process, alternating back and forth between assessment and protection phases.

The primary elements of the protection phase discussed above are meant as a guide to public water systems and communities. In actual practice, developing and implementing source water protection may be more or less complicated depending on the local community's willingness to adopt and implement source water protection measures. Additional source water protection information can be obtained by going to the U.S. Environmental Protection Agency's source water protection website ([www.epa.gov/safewater/protect.html](http://www.epa.gov/safewater/protect.html)). Staff members at the Colorado Department of Public Health and Environment also are available to provide assistance with source water protection efforts.

**Assessment Results**

The source water assessment for **MOUNT CRESTED BUTTE WSD** rendered the following results:

- At the time of this assessment, the water supply consists of:
  - 4 active surface water sources
  - 0 active ground water sources under the influence of surface water
  - 0 active, purchased surface water sources and/or purchased ground water sources under the influence of surface water
  
- Table 1 presents the cumulative results of the total susceptibility of the water source(s) to potential contamination from both discrete and dispersed contaminant sources. Water sources with total susceptibility ratings of Moderately High or High generally are at greater risk for potential contamination than those receiving lower ratings. As shown in Table 1, 0 active water source(s) was/were determined to have a Moderately High or High susceptibility to potential contamination.

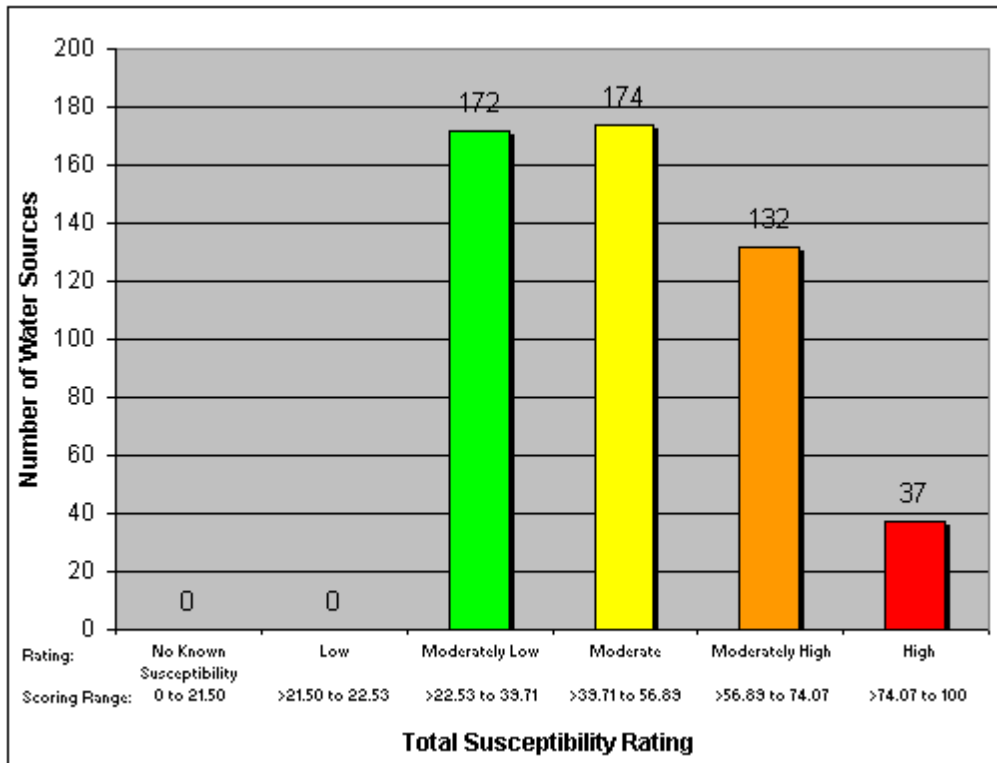
There may be cases where the assessment was unable to verify the presence of discrete and dispersed contaminant sources based on the databases used for the contaminant inventory. In these cases, unless new information is identified and analyzed, the water source(s) is/are not currently known to be susceptible to potential contamination from any known discrete or dispersed contaminant sources. This situation is indicated in Table 1 by water sources receiving an overall susceptibility rating of “No Known Susceptibility.”

Table 1. Total Susceptibility Ratings for Water Sources.

<b>Number of Water Sources</b>	<b>Susceptibility Rating</b>
0	No Known Susceptibility
0	Low
4	Moderately Low
0	Moderate
0	Moderately High
0	High

Figure 4 presents the statewide total susceptibility rating distribution plot for all surface water sources and ground water sources under the direct influence of surface water that were analyzed. The rating distribution plot presents the numerical scoring ranges associated with a given rating category, and the number of surface water sources and ground water sources under the direct influence of surface water throughout the state that received a specific qualitative rating. By comparing the results in Table 1 to Figure 4, one can see how the total susceptibility of the water source(s) in Table 1 compared to the total susceptibility of the other surface water sources and ground water sources under the direct influence of surface water throughout the state.

Figure 4. Statewide Total Susceptibility Rating Distribution Plot.



- Table 2 presents a summary of the individual susceptibility of the water source(s) to various types of discrete contaminant sources that were evaluated. Water sources with a Moderately High or High individual susceptibility to a discrete contaminant source generally are at greater risk for potential contamination from the discrete contaminant source than water sources receiving lower individual susceptibility ratings to similar or different discrete contaminant sources. The water source(s) has/have the greatest risk to potential contamination from the following types of discrete contaminant sources:

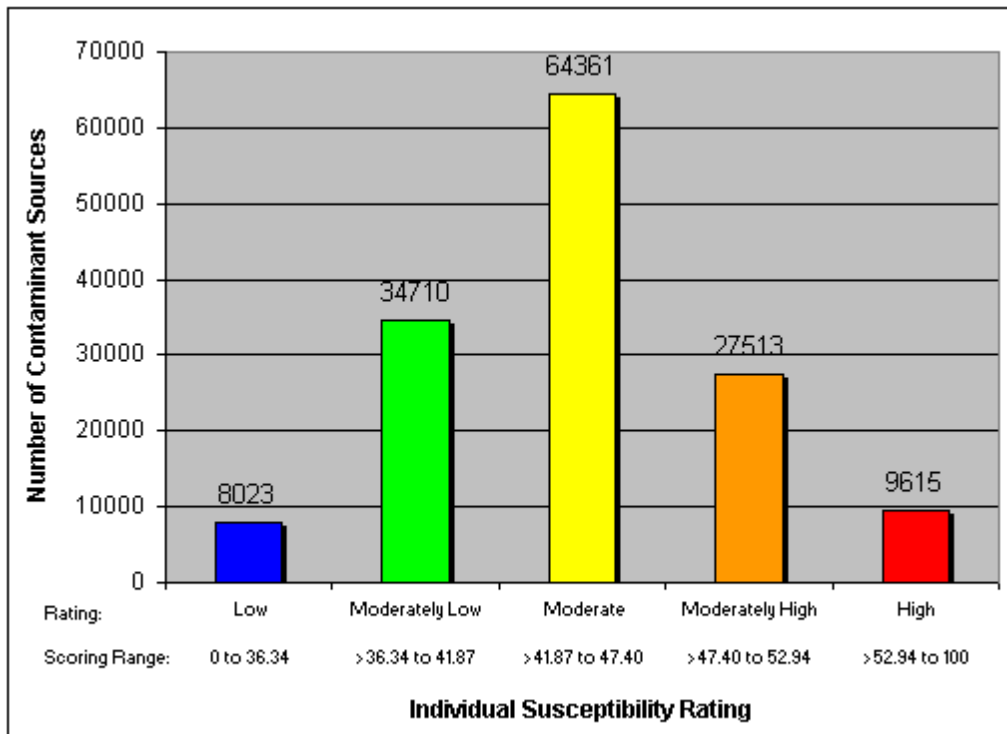


Table 2. Susceptibility of Water Source(s) to Discrete Contaminant Sources.

Contaminant Source Type	Individual Susceptibility Rating Summary (cumulative count for all water sources)				
	Low	Mod. Low	Moderate	Mod. High	High
EPA Superfund Sites	0	0	0	0	0
EPA Abandoned Contaminated Sites	0	0	0	0	0
EPA Hazardous Waste Generators	0	0	0	0	0
EPA Chemical Inventory/Storage Sites	0	0	0	0	0
EPA Toxic Release Inventory Sites	0	0	0	0	0
Permitted Wastewater Discharge Sites	0	0	0	0	0
Aboveground, Underground and Leaking Storage Tank Sites	0	0	0	0	0
Solid Waste Sites	0	0	0	0	0
Existing/Abandoned Mine Sites	0	0	0	6	2
Concentrated Animal Feeding Operations	0	0	0	0	0
Other Facilities	0	0	0	0	0
<b>TOTAL:</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>2</b>

Figure 5 presents the statewide rating distribution plot of the individual susceptibility to various types of discrete contaminant sources for all surface water sources and ground water sources under the direct influence of surface water that were analyzed. The rating distribution plot presents the numerical scoring ranges associated with a given rating category, and the number of discrete contaminant sources throughout the state that received a specific qualitative rating. By comparing the total count results in Table 2 to Figure 5, one can see how the individual susceptibility results of the water source(s) in Table 2 compared to the combined individual susceptibility results of the other surface water sources and ground water sources under the direct influence of surface water throughout the state.

Figure 5. Statewide Rating Distribution Plot of Individual Susceptibility to Discrete Contaminant Sources.



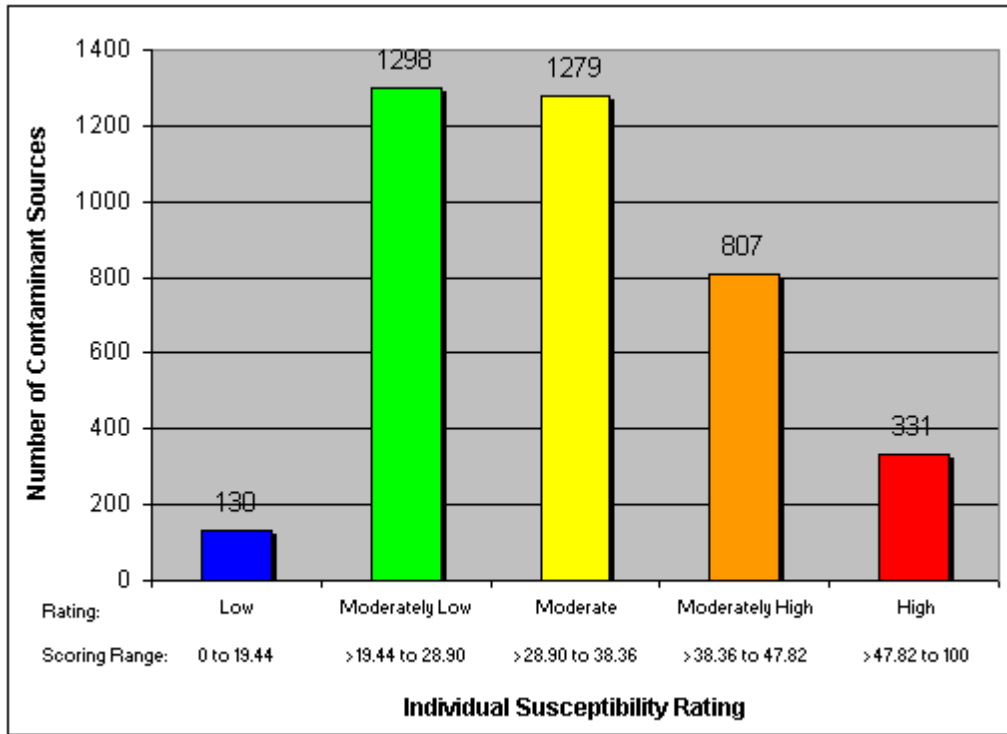
- Table 3 presents a summary of the individual susceptibility of the water source(s) to various types of dispersed contaminant sources that were evaluated. Water sources with a Moderately High or High individual susceptibility to a dispersed contaminant source generally are at greater risk of potential contamination from the dispersed contaminant source than water sources receiving lower individual susceptibility ratings to similar or different dispersed contaminant sources. The water source(s) has/have the greatest risk to potential contamination from the following types of dispersed contaminant sources:

Table 3. Susceptibility of Water Source(s) to Dispersed Contaminant Sources.

Contaminant Source Type	Individual Susceptibility Rating Summary (cumulative count for all water sources)				
	Low	Mod. Low	Moderate	Mod. High	High
<b>LAND USE / LAND COVER TYPES:</b>					
Commercial/Industrial/Transportation	0	0	0	0	0
High Intensity Residential	0	0	0	0	0
Low Intensity Residential	0	0	0	0	0
Urban Recreational Grasses	0	0	0	0	0
Quarries / Strip Mines / Gravel Pits	0	0	0	0	0
Row Crops	0	0	0	0	0
Fallow	0	0	0	0	0
Small Grains	0	1	0	0	0
Pasture / Hay	0	1	0	0	0
Orchards / Vineyards / Other	0	0	0	0	0
Deciduous Forest	0	1	3	0	0
Evergreen Forest	0	0	4	0	0
Mixed Forest	0	1	3	0	0
<b>OTHER TYPES:</b>					
Septic Systems	0	1	0	0	0
Oil / Gas Wells	0	0	0	0	0
Road Miles	0	0	1	0	0
<b>TOTAL:</b>	<b>0</b>	<b>5</b>	<b>11</b>	<b>0</b>	<b>0</b>

Figure 6 presents the statewide rating distribution plot of the individual susceptibility to various types of dispersed contaminant sources for all surface water sources and ground water sources under the direct influence of surface water that were analyzed. The rating distribution plot presents the numerical scoring ranges associated with a given rating category, and the number of dispersed contaminant sources throughout the state that received a specific qualitative rating. By comparing the total count results in Table 3 to Figure 6, one can see how the individual susceptibility results of the water source(s) in Table 3 compared to the combined individual susceptibility results of the other surface water sources and ground water sources under the direct influence of surface water throughout the state.

Figure 6. Statewide Rating Distribution Plot of Individual Susceptibility to Dispersed Contaminant Sources.



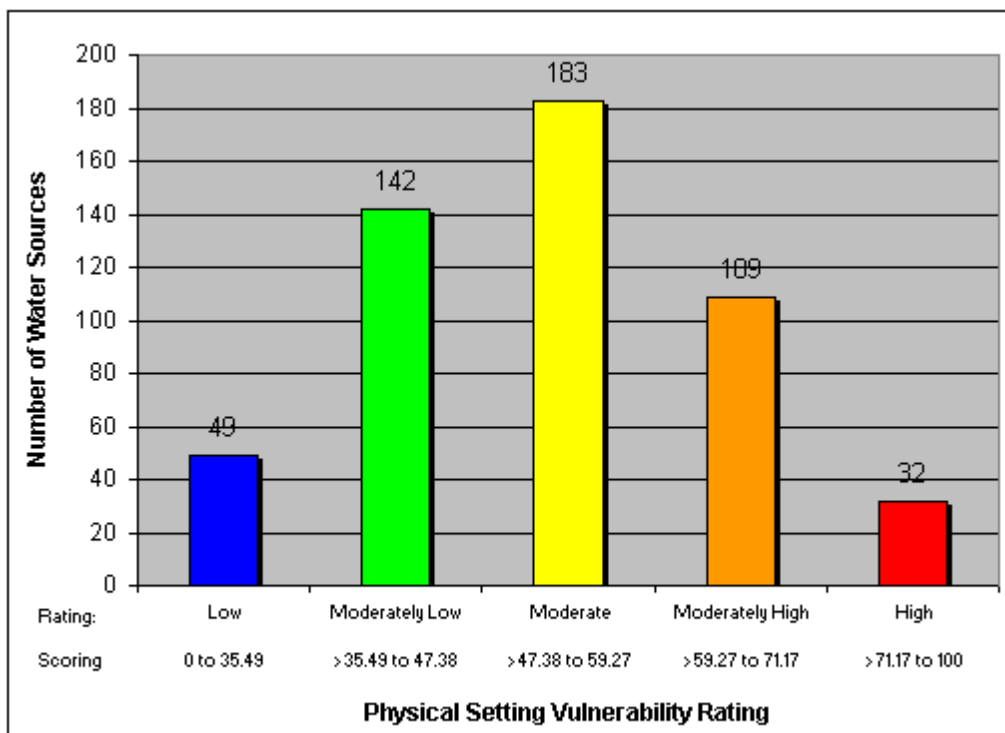
- Table 4 presents the cumulative results of the physical setting vulnerability ratings of the water source(s). A vulnerable physical setting generally means the water source(s) will be more susceptible to potential contamination. Water sources with physical setting vulnerability ratings of Moderately High or High generally are expected to have higher levels of potential susceptibility to contamination. As shown in Table 4, 0 active water source(s) was/were determined to have a Moderately High or High physical setting vulnerability.

Table 4. Physical Setting Vulnerability Ratings for Water Sources.

Number of Water Sources	Physical Setting Vulnerability Rating
0	Low
1	Moderately Low
3	Moderate
0	Moderately High
0	High

Figure 7 presents the statewide physical setting vulnerability rating distribution plot for all surface water sources and ground water sources under the direct influence of surface water that were analyzed. The rating distribution plot presents the numerical scoring ranges associated with a given rating category, and the number of surface water sources and ground water sources under the direct influence of surface water throughout the state that received a specific qualitative rating. By comparing the results in Table 4 to Figure 7, one can see how the physical setting vulnerability of the water source(s) in Table 4 compared to the physical setting vulnerability of the other surface water sources and ground water sources under the direct influence of surface water throughout the state.

Figure 7. Statewide Physical Setting Vulnerability Rating Distribution Plot.



The physical setting vulnerability remains important even where no or very few potential contaminant sources (discrete and/or dispersed) have been identified within the source water assessment area. In this case, if the physical setting vulnerability for a water source is estimated to be Moderately High or High, it could cause an increased susceptibility to contamination in the future if certain discrete and/or dispersed contaminant sources were located within the source water assessment area. This potential impact ultimately will depend on the degree of contaminant threat posed by the specific potential contaminant sources. Public water systems are strongly encouraged to consider this in their source water protection planning efforts, and to be vigilant to the introduction of potential contaminant sources within highly vulnerable physical settings. Such information may be useful to local land use planning agencies making land use and zoning decisions related to the siting of these future potential contaminant sources.

## Additional Considerations

The source water assessment provides a screening-level evaluation of the likelihood that a potential contamination problem could occur rather than an indication that a potential contamination problem has or will occur. This evaluation is comparable to what a doctor might use to screen a patient for a particular medical condition. The results of this assessment reflect the best efforts of the Colorado Department of Public Health and Environment and its contractors to simplify several complex physical, chemical and operational processes, and to assemble quality data sets for use in the assessment. Future improvements to the source water assessment results are envisioned as additional data become available. The Colorado Department of Public Health and Environment is confident that this assessment provides useful information to communities concerning the contaminant sources to which their water supply is potentially most susceptible. Public water systems also can use this information to evaluate the need for improvement to current water treatment capabilities, so as to be better prepared for future contamination threats.

This report represents the public version of the source water assessment that the Colorado Department of Public Health and Environment is required to make available under the Safe Drinking Water Act. The public version differs from the public water system version in that more detailed supporting information (e.g., input data and maps) was provided to each public water system as part of their report. Some of this supporting information is viewed by the Colorado Department of Public Health and Environment and many public water systems as security sensitive. Under the Colorado Open Records Act, certain information can be withheld from public disclosure if the information can be characterized either as “details of security arrangements or investigations” [section 27-72-204(3)(a)(XVII) C.R.S] or as information whose disclosure “would do substantial injury to the public interest” [section 24-72-204(6)(a) C.R.S.]. The Colorado Department of Public Health and Environment has determined that the following security sensitive information meets one or both of the preceding characterization criteria and will be withheld from public disclosure:

- Location information about the public water system’s intakes/wells, treatment facilities, and diversion/conveyance structures, as well as location information about potential sources of contamination. Location information would include location coordinates, physical addresses and maps showing the locations of the intakes/wells, treatment facilities, diversion/conveyance structures, and potential sources of contamination;
- Hazardous chemical quantities, type, processes, and/or likelihood of release;
- Well/intake depths; and
- Structural integrity information concerning the drinking water intakes/wells.

Public water systems also will be given the opportunity to provide the Colorado Department of Public Health and Environment with rationale for excluding additional supporting information from public disclosure once they have received and reviewed their source water assessment report. Their rationale must meet one or both of the preceding characterization criteria established under the Colorado Open Records Act to be acceptable.

Consumers are encouraged to contact **MOUNT CRESTED BUTTE WSD** at **970-349-7492** if you are:

- interested in knowing more about the supporting information provided to the public water system; or
- interested in what source water protection measures the water system may be developing.

If you have questions concerning the results presented in the public version of the source water assessment, the methodologies used in the source water assessment, or the SWAP program in general, please contact the Colorado Department of Public Health and Environment at (303) 692-3592.

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**DISCLAIMER**

**This Source Water Assessment utilized information from a variety of public and other sources, and as such, no warranty of merchantability or of fitness for a particular purpose, expressed or implied, shall apply and the Colorado Department of Public Health and Environment specifically disclaims the making of such warranties. In no event shall the Colorado Department of Public Health and Environment be liable to anyone for special, incidental, consequential or exemplary damages.**



# **PUBLIC NOTICE ADVERTISEMENTS AND AFFIDAVITS**



SRF Environmental Public Meeting  
**Mt. Crested Butte Water & Sanitation District**  
WTP Expansion Project

January 14, 2020



**Today's Presenter:**  
Cooper Best, PE



# Purpose of Meeting



- Provide project overview
- Public opportunity for feedback and questions
- Consult and respond to interested or affected public members
- Satisfy requirements of State Revolving Fund (SRF) loan process



# Environmental Report



- Prepared and submitted report to Colorado Department of Public Health and Environment (CDPHE)
- Prepared Agency Correspondence Letters
  - AQCD, NRCS, SHPO, THPO, USFW, USACE
  - SHPO Response – No Impact
  - USFWS confirmed previous biological opinion
  - USACE confirmed previous determinization
    - Nationwide General Permit
- CDPHE currently reviewing
- Anticipating Finding of No Significant Impact (FONSI)



# Project Purpose



- Replacing Aging Infrastructure
  - Existing WTP built in 1985
  - East River Pump Station built in 1976
- Add Redundancy and Increase Reliability
- Expand capacity with increasing water demands



# Project Components and Areas

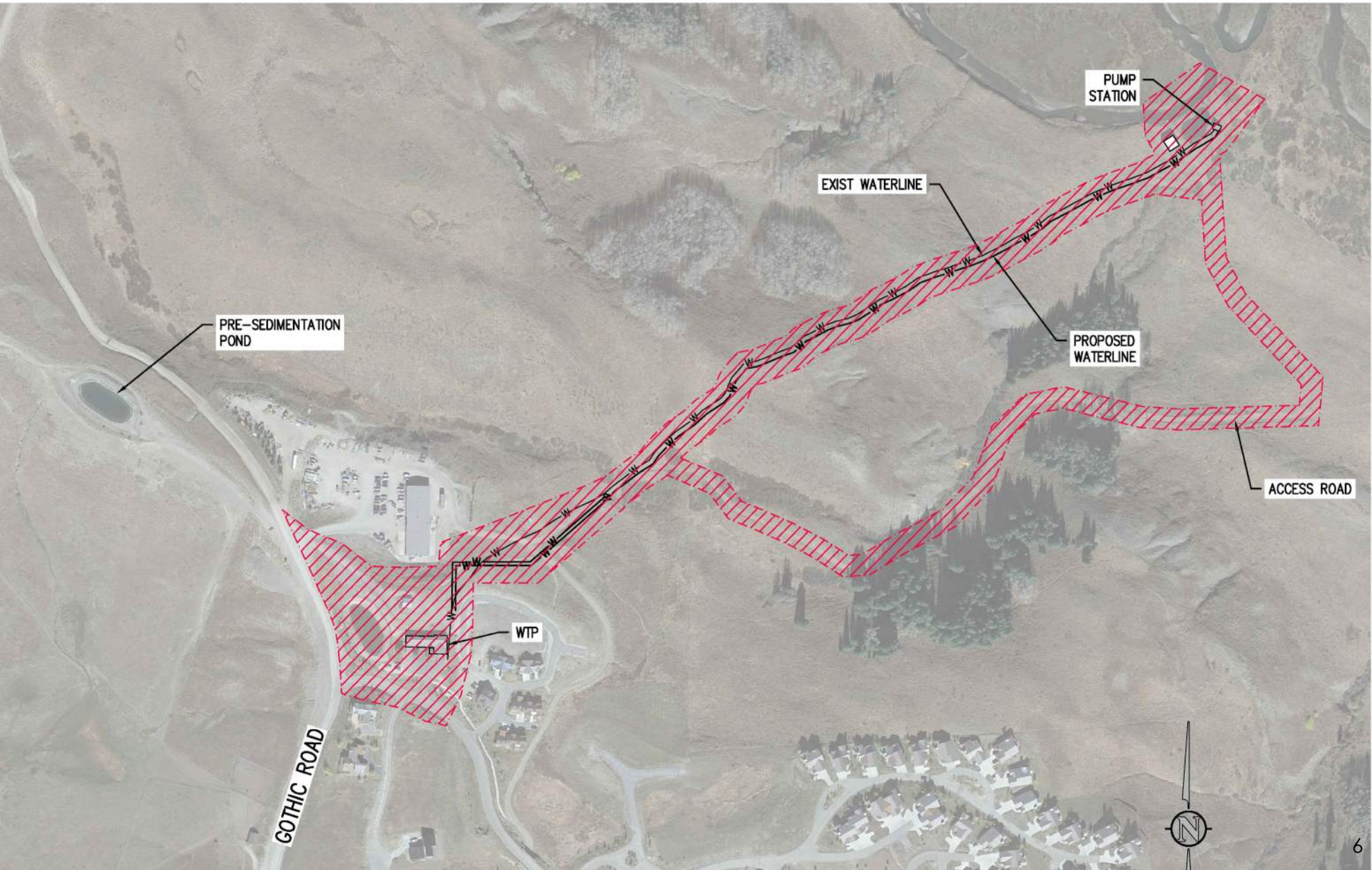


- Water Treatment Plant
  - Adjacent to existing Water Plant
  
- East River Pump Station
  - Adjacent to existing Pump Station
  - Demo Existing Pump Station
  
- Raw Waterline
  - Parallel existing raw waterline





# Area of Potential Effect





# Questions & Comments



BOARD MEETING  
SIGN-IN SHEET

DATE: January 14, 2020

PRINTED NAME

SIGNATURE


Cooper Best



Perry Solheim



BRYAN BURKS



KYLE KOELLIKER



CHUCK McGINNIS

CRM McGinnis

Marcus Lock



Carlos Velado

Co Velado

Nicholas Kampin

Nick K

Brian Brown

Bi B

Kim Whisley



Mike Fabbre

Mike Fabbre

FOR BILLING DEPARTMENT:

Agency: Int. CB water + San  
Department \_\_\_\_\_  
Publication Date: 12/6, 13, 20, 27 + 1/3 + 10  
Ad Description: Expansion Project 2019 2020  
Cost: 152.55

PROOF OF PUBLICATION

STATE OF COLORADO )  
) ss.  
COUNTY OF GUNNISON )


I, Melissa Fenlon, certify that:

I am the publisher of the Crested Butte Chronicle & Pilot/CB News, a newspaper of general circulation published in Crested Butte (printed in Salida) in said State and County:

The attached advertisement, which is a printed copy taken from said newspaper, was published in said newspaper on the 6, 13, 20, 27 day of December 2019, ~~2020~~; and 3 + 10 January 2020 said advertisement was published in said newspaper proper and not in any supplement thereof:

  
\_\_\_\_\_  
Signature

Subscribed and sworn before me this 13 day of January, 2020  
by Melissa Fenlon.

  
\_\_\_\_\_  
Notary Public

JILL R CLAIR  
NOTARY PUBLIC  
STATE OF COLORADO  
NOTARY ID 20054044048  
MY COMMISSION EXPIRES DECEMBER 4, 2021

# Legals

**—LEGAL NOTICE—  
NOTICE OF PUBLIC HEARING  
FOR THE MT. CRESTED BUTTE WATER & SANITATION DISTRICT WATER  
TREATMENT PLANT EXPANSION PROJECT  
JANUARY 14, 2019 ~ 5:00P.M.  
MT. CRESTED BUTTE WATER & SANITATION DISTRICT OFFICE,  
100 GOTHIC ROAD  
MT. CRESTED BUTTE, COLORADO 81225  
TOPIC: ENVIRONMENTAL ASSESSMENT, WATER TREATMENT PLANT  
EXPANSION PROJECT**

A public hearing will be conducted for informing citizens and soliciting public input, written or oral, regarding the Environmental Assessment (EA) for the Mt. Crested Butte Water and Sanitation District Water Treatment Plant (WTP) Expansion Project. The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was completed in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Assessment Memorandum included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on

these evaluations, the District has elected to construct a new WTP, raw water pump station and pipeline.

Included in the EA are details of the improvements, affected environmental impacts of the proposed project, and a summary of public participation and agencies contacted. Copies of the EA will be made available for public review prior to the Public Hearing at Mt. Crested Butte Water & Sanitation District Office, 100 Gothic Road, Mt. Crested Butte, Colorado 81225. The report will also be available for public review on the District's website [www.mcbwsd.com](http://www.mcbwsd.com).

The point of contact for the Mt. Crested Butte Water and Sanitation District is Mike Fabbre, District Manager, (970) 349-7575. Dated 12/05/2019

Published in the *Crested Butte News*. Issues of December 6, 13, 20, 27, January 3 and 10, 2019. #120605

# Crested Butte News, Inc.

PO Box 369  
Crested Butte, CO 81224

# Invoice

Date	Invoice #
1/10/2020	683567

**Bill To**

Mt. CB Water & Sanitation  
PO Box 5740  
Mt. Crested Butte, CO 81225

RECEIVED  
FEB 03 2020  
Per

**Invoice Approval**  
By: [Signature] Date: 2/4/  
Dent: \_\_\_\_\_  
Purpose: \_\_\_\_\_

Quantity	Description	Rate	Amount
	Legal Notice #120605 - Expansion project run 12/6	37.35	37.35
	Legal Notice #120605 - Expansion project run 12/13	27.00	27.00
	Legal Notice #120605 - Expansion project run 12/20	27.00	27.00
	Legal Notice #120605 - Expansion project run 12/27	20.40	20.40
	Legal Notice #120605 - Expansion project run 1/3	20.40	20.40
	Legal Notice #120605 - Expansion project run 1/10	20.40	20.40
<b>Total</b>			<b>\$152.55</b>

Visa & MC Accepted. Billing question? Call Jill @ 970-349-0500 ext 110 or email at jill@crestedbuttenews.com. Finance charges will apply to all overdue invoices 2%/month. Thank you for supporting your local newspaper!

# **WATER RIGHTS SUMMARY**

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Mt. Crested Butte Water and Sanitation District  
Water Right Summary, East River Pump Station

	Amount (cfs)	Water Right Status	Administration Number	Appropriation Date	Adjudication Date	Decreed Use	Notes
<b>Water Rights, Domestic/municipal Uses</b>							
Gothic Ditch	1.00	Absolute	39252.25397	1919-07-15	1961-01-27	Irr Dom Mun Snowmmkn.	Transferred to East Pump Sta.
Malensek Ditch No. 5	0.50	Absolute	39252.29675	1931-04-01	1961-01-27	Irr Dom Mun	Transferred to East Pump Sta. Limited to Water Avail. at HG
East River Water Source Addition	0.10	Absolute	47478.00000	1979-12-28	1979-12-31	Mun	
East River Water Source Addition, 1st Supplement	2.50	Conditional	51134.47478	1979-12-28	1990-12-31	Irr Mun Com Ind Rec Fish Snowmkn.	
Total	4.10						
<b>Water Rights, Irrigation Use Only</b>							
Malensek Ditch No. 5	3.00	Absolute	39252.29675	1931-04-01	1961-01-27	Irr	Limited to 32 acres Limited to Water Avail. at HG
Total All Uses	7.10						
<b>Water Rights, Summer Exchange - Verzuh-Young Bifano Ditch</b>							
Priorities	0.445	Absolute	28733.28275			Irr Dom Mun	VYB Exchange decreed to mitigate summer call. Orig. right for 2.0 cfs was reduced by 11% for ditch loss
	0.445	Absolute	30667.28275			Irr Dom Mun	
	0.890	Absolute	30667.30467			Irr Dom Mun	
Total	1.780						



Table 1: Mt. Crested Butte Water & Sanitation District Water Right Summary

Town of Mt. Crested Butte Service Area										
Structure	Source	Water Right	Decreed Amount	Administration Number	Appropriation Date	Adjudication Date	Decreed Uses			Case of Interest
Crested Butte Ltd. Pipeline	Slate River	APOD Malensek Ditch	1.50 cfs	26230.19888	1904-06-14	1924-01-07	Irr Mun	Dom		W-0267 APOD Crested Butte Ltd. Pipeline
		APOD Vuds Ditch	0.50 cfs	26230.23357	1913-12-13	1924-01-07	Irr Mun	Dom		W-0268 APOD Crested Butte Ltd. Pipeline
		Original Right	3.00 cfs	41175.00000	1962-09-25	1965-10-28	Irr Mun Com	Dom		CA 5782 Water Right = 3 Headgates / Feeder Lines.
East River Pump Station	East River	Verzuh-Young Bifano Exchange: 1.78 cfs	0.50 cfs	28733.28275	1927-06-01	1931-07-06	During the irrigation season, VYB Exchange can be diverted at a rate of <b>1.78 cfs</b> for all uses. Cannot use if call is located below Slate-East River confluence.			W-3517 While 2.0 cfs was changed, an 11% ditch loss was assessed to exchange.
			0.50 cfs	30667.28275	1927-06-01	1941-04-29				
			1.00 cfs	30667.30467	1933-06-01	1941-04-29				
		Gothic Ditch	1.00 cfs	39252.25397	1919-07-15	1961-01-27	Irr Mun	Dom	Snow	W-1989 Transferred to East River Pump Station.
		Malensek Ditch No. 5	0.50 cfs	39252.29675	1931-04-01	1961-01-27	Irr	Dom		87CW303 3.5 cfs Transferred to East River Pump Station.
			3.00 cfs	39252.29675	1931-04-01	1961-01-27	Irr			88CW148 Irrigation component limited to 32 acres.
Original Right	0.10 cfs	47478.00000	1979-12-28	1979-12-31	Mun			79CW353 Originally 5.0 cfs, 4.9 cfs was abandoned.		
1st Enlargement	2.50 cfs	51134.47478	1979-12-28	1990-12-31	Irr Mun Com Ind Rec	Fire	Snow	90CW147 Originally 3.0 cfs, 0.5 cfs was abandoned.		
Malensek Ditch No. 5	East River	1st Enlargement	5.00 cfs	50198.00000	1987-06-09	1987-12-31	Stg			87CW306 <b>Used to Fill North Village Reservoir</b>
		2nd Enlargement	2.00 cfs	59900.53552	1996-08-14	2014-12-31	Irr Mun Com Ind	Fire Dom		14CW3113 1.6 cfs is absolute, 0.4 cfs remains conditional.
			2.00 cfs	59900.58074	2008-12-31	2014-12-31			Snow	14CW3113
Verzuh-Young Bifano Ditch	CU Credit	Consumptive Use Credits = 24.2 AF	0.50 cfs	28733.28275	1927-06-01	1931-07-06	During the irrigation season, when the call is located below the Slate-East River confluence and the direct exchange cannot be operated, CU Credits can be used to augment out-of-priority depletions .			W-3517 Total CU Credits = <b>24.2 AF</b> (2.4 AF May, 7.8 AF Jun, 6.5 AF Jul, 4.0 AF Aug, 3.5 AF Sep). Based on the dry-up of 20.0 acres.
			0.50 cfs	30667.28275	1927-06-01	1941-04-29				
			1.00 cfs	30667.30467	1933-06-01	1941-04-29				
Blue Mesa Reservoir	Storage	Leased Storage = 98 AF					Annual storage supply of 98.0 AF that can be used to augment an out-of-priority depletion below Blue Mesa Reservoir.			
Meridian Lake Reservoir (Long Lake)	Storage	Original Right	138.58 AF	33356.19198	1902-07-25	1957-06-20	Irr Mun	Ind	Dom Stk Aug	03CW107
		1st Enlargement	554.27 AF	39252.19198	1902-07-25	1961-01-27	Irr Mun	Ind	Dom Stk Aug	03CW107
		Dead Pool	279.55 AF	44559.19198	1902-07-25	1972-12-31		Rec Fish	Wild	W-545
		Augmentation Right	407.21 AF	55882.55755	2002-08-26	2003-12-31	Irr Mun	Ind	Dom Stk Aug	02CW294
		"NEW" JR. Storage Right	431.85 AF							?
North Village Reservoir	Storage	Original Right	700.00 AF	48577.48374	1982-06-11	1983-12-31	Mun	Aug Snow	83CW330 Yet to be constructed.	
Meridian Lake Park Subdivision Service Area										
Structure	Source	Water Right	Decreed Amount	Administration Number	Appropriation Date	Adjudication Date	Decreed Uses			Case of Interest
MLP Pump & Pipeline	Slate	Original Right	0.50 cfs	53302.00000	1995-12-08	2009-12-31	Irr Mun	Fire Dom		95CW218 0.33 cfs is absolute, 0.17 cfs remains conditional.
Meridian Lake Park (MLP) Reservoir	Storage	Original Right	110.0 AF	45138.00000	1973-08-01	1973-12-31	Irr	Ind Rec	Dom Aug	W-2009
		1st Enlargement	82.46 AF	58074.47008	1978-09-14	2009-12-31	Irr Mun Com Ind Rec Fish	Dom	Aug	09CW175
		Refill Right	100.0 AF	53302.00000	1995-12-08	1995-12-31	Irr Mun	Rec Fish	Dom Aug Wild	95CW218 11.32 AF absolute, 88.68 AF remains conditional.
		1st Enlargement	92.46 AF	58074.53302	1995-12-08	2009-12-31	Irr Mun Com Ind Rec Fish	Dom	Aug Wild	09CW175
Jaklich Ditch	CU Credits	CU Credit = 120.0 AF	2.5 cfs	25354.00000	1919-06-02	1921-10-25				95CW218 <b>120.0 AF</b> of CU Credits

Notes: Stg = Storage, Irr = Irrigation, Mun = Municipal, Com = Commercial, Ind = Industrial, Rec = Recreation, Fish = Piscatorial, Fire = Fire Protection, Dom = Domestic, Stk = Stock Watering, Aug = Augmentation, Snow = Snowmaking, Wild = Wildlife Watering  
 Absolute Use, Condition Uses, Partial Abs/Cond

# **APPENDIX B – OPINION OF PROBABLE COST**

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1. Engineer's Opinion of Probable Cost



Job Name: MCBWSD WTP Expansion

Job Number: 1028e

Date: 10/29/2019

By: JVA

**SUMMARY OF OPINION OF PROBABLE COSTS  
FOR  
WATER TREATMENT PLANT EXPANSION PROJECT  
MT CRESTED BUTTE WATER AND SANITATION DISTRICT**

<b>Description</b>	<b>Construction Subtotal</b>
Raw Water Pipeline	\$ 1,703,000
Water Treatment Plant Expansion	\$ 9,632,000
East River Pump Station	\$ 2,164,000

**Project Subtotal                    \$13,499,000**

Contingency (20%)	\$2,700,000
General Conditions (8%)	\$1,296,000
Contractor's Overhead & Profit (8%)	\$1,296,000
60% Design & CMAR Selection	\$694,300
Final Design & CMAR GMP (3%)	\$564,000
CMAR Design Services	\$110,519
Construction Administration w/ Testing (6%)	\$1,128,000

**Project Total                            \$21,287,819**



Job Name: MCBWSD WTP Expansion

Job Number: 1028e

Date: 10/29/2019

By: JVA

**OPINION OF PROBABLE COST  
FOR  
RAW WATER PIPELINE  
MT CRESTED BUTTE WATER AND SANITATION DISTRICT**

Description	Quantity	Units	Unit Cost	Total Cost
<b>Division 02 - Sitework</b>				
Misc Demo, Clearing, and Preparation	1	LS	\$50,000	\$50,000
Water Line Connections	4	EA	\$10,000	\$40,000
Water Line - 12" DIP (incl cathodic protection)	2750	LF	\$450	\$1,237,500
Rock Excavation Allowance	1	LS	\$200,000	\$200,000
Isolation Valves - 12"	4	EA	\$10,000	\$40,000
Erosion Control	1	LS	\$30,000	\$30,000
Dewatering	1	LS	\$15,000	\$15,000
Seeding	1	LS	\$50,000	\$50,000
Air Release Valve & Vault	2	EA	\$20,000	\$40,000
			<b>Sitework Subtotal</b>	<b>\$1,702,500</b>

**Subtotal                    \$1,703,000**



**OPINION OF PROBABLE COST  
FOR  
WATER TREATMENT PLANT EXPANSION  
MT CRESTED BUTTE WATER AND SANITATION DISTRICT**

Description	Quantity	Units	Unit Cost	Total Cost
<b>Division 02 - Sitework</b>				
Erosion Control	1	LS	\$30,000	\$30,000
Demolition	1	LS	\$100,000	\$100,000
Backwash Pond Dredging and Hauling	1	LS	\$450,000	\$450,000
Import Fill	6450	CY	\$60	\$387,000
Relocate CBMR Service Line	1	LS	\$50,000	\$50,000
Asphalt Paving	1	LS	\$50,000	\$50,000
Retaining Walls - Modular Block	1200	SF	\$60	\$72,000
Site Piping	1	LS	\$75,000	\$75,000
Seeding	2	AC	\$10,000	\$20,000
Site Grading	1	LS	\$75,000	\$75,000
Dewatering	1	LS	\$50,000	\$50,000
<b>Sitework Subtotal</b>				<b>\$1,359,000</b>
<b>Division 03 - Concrete</b>				
Clearwell	180	CY	\$1,500	\$270,000
Backwash Tank, Pump Gallery, and Recycle Tank	30	CY	\$1,500	\$45,000
Generator Pad	15	CY	\$1,000	\$15,000
<b>Concrete Subtotal</b>				<b>\$330,000</b>
<b>Division 10 - Specialties</b>				
Lab Equipment & Finishes	1	LS	\$150,000	\$150,000
<b>Specialties Subtotal</b>				<b>\$150,000</b>
<b>Division 11 - Equipment</b>				
Membrane System Equipment	1	LS	\$1,500,000	\$1,500,000
Chemical Feed System	2	EA	\$50,000	\$100,000
Chemical Storage Tanks	1	LS	\$25,000	\$25,000
High Service Pumps - Vertical Turbine	3	EA	\$65,000	\$195,000
Backwash Recycle Pumps	2	EA	\$39,000	\$78,000
Solids Handling Pumps	2	EA	\$25,000	\$50,000
Solids Collection System	2	EA	\$75,000	\$150,000
<b>Equipment Subtotal</b>				<b>\$2,098,000</b>
<b>Division 13 - Special Construction</b>				
WTP Building	4,500	SF	\$325	\$1,462,500
Admin Building	2,250	SF	\$325	\$731,300
Existing WTP Renovations	1	LS	\$250,000	\$250,000
<b>Special Construction Subtotal</b>				<b>\$2,443,800</b>
<b>Division 15 - Mechanical</b>				
Process Piping, Valves, Fittings, and Supports	1	LS	\$350,000	\$350,000
Specialty Valve - Surge Anticipator Valve	1	LS	\$30,000	\$30,000
<b>Mechanical Subtotal</b>				<b>\$380,000</b>
<b>Division 16 - Electrical</b>				
Relocate CBMR Power	1	LS	\$200,000	\$200,000
Electrical (30% of Div 11, 13, 15)	1	LS	\$1,477,000	\$1,477,000
Instrumentation and Control (30% of Div 11 and 15)	1	LS	\$744,000	\$744,000
Emergency Generator	1	LS	\$450,000	\$450,000
<b>Electrical Subtotal</b>				<b>\$2,871,000</b>

**Subtotal                    \$9,632,000**



**OPINION OF PROBABLE COST  
FOR  
EAST RIVER PUMP STATION  
MT CRESTED BUTTE WATER AND SANITATION DISTRICT**

Description	Quantity	Units	Unit Cost	Total Cost
<b>Division 2 - Sitework</b>				
Erosion Control	1	LS	\$10,000	\$10,000
Demo Exist Building	1	LS	\$25,000	\$25,000
Misc. Road Improvements	1	LS	\$50,000	\$50,000
Demo Exist Inlet Structures and Culverts	1	LS	\$15,000	\$15,000
Excavation	1	LS	\$50,000	\$50,000
Grading	1	LS	\$50,000	\$50,000
Fencing	350	LF	\$100	\$35,000
New Inlet Structures	1	LS	\$50,000	\$50,000
Road Base	1	LS	\$10,000	\$10,000
Site Piping	1	LS	\$100,000	\$100,000
Seeding	1	LS	\$30,000	\$30,000
Dewatering	1	LS	\$150,000	\$150,000
<b>Sitework Subtotal</b>				<b>\$575,000</b>
<b>Division 3 - Concrete</b>				
Foundation & Wetwell	140	CY	\$2,000	\$280,000
Helical Piers	4	EA	\$20,000	\$80,000
Miscellaneous Exterior Concrete	1	LS	\$20,000	\$20,000
<b>Concrete Subtotal</b>				<b>\$380,000</b>
<b>Division 04 - Masonry</b>				
Block and Veneer	1830	SF	\$100	\$183,000
<b>Masonry Subtotal</b>				<b>\$183,000</b>
<b>Division 05 - Miscellaneous Metals</b>				
Hatches / Covers (30" x 30")	1	EA	\$1,500	\$1,500
Structural Steel	3000	LBS	\$20	\$60,000
Manual Hoist System	1	LS	\$25,000	\$25,000
<b>Miscellaneous Metals Subtotal</b>				<b>\$86,500</b>
<b>Division 07 - Thermal and Moisture</b>				
Rigid Insulation, Dampproofing and Drainage Mat - Foundation	500	SF	\$20	\$10,000
Cavity wall and Roof Insulation	2800	SF	\$10	\$28,000
Roofing	1200	SF	\$30	\$36,000
<b>Thermal and Moisture Subtotal</b>				<b>\$74,000</b>
<b>Division 08 - Doors and Windows</b>				
Overhead door	1	EA	\$20,000	\$20,000
Entry Door	2	EA	\$5,000	\$10,000
<b>Doors and Windows Subtotal</b>				<b>\$30,000</b>
<b>Division 09 - Painting</b>				
Building Painting	1	LS	\$25,000	\$25,000
Pipe Coating	1	LS	\$10,000	\$10,000
<b>Painting Subtotal</b>				<b>\$35,000</b>
<b>Division 11 - Equipment</b>				
Vertical Turbine Pumps (150HP)	3	EA	\$75,000	\$225,000
Surge Tank	1	EA	\$50,000	\$50,000
<b>Equipment Subtotal</b>				<b>\$275,000</b>
<b>Division 15 - Mechanical</b>				
Process Piping, Fittings, and Supports	1	LS	\$75,000	\$75,000
Unit Heater	1	LS	\$25,000	\$25,000
Exhaust Fan and Louver	1	LS	\$10,000	\$10,000
<b>Mechanical Subtotal</b>				<b>\$110,000</b>
<b>Division 16 - Electrical</b>				
8-Inch Magmeter	1	EA	\$15,000	\$15,000
Electrical	1	LS	\$100,000	\$100,000
Instrumentation and Controls	1	LS	\$100,000	\$100,000
Backup Generator and ATS	1	LS	\$125,000	\$125,000
Electric Utility Transformer	1	LS	\$75,000	\$75,000
<b>Electrical Subtotal</b>				<b>\$415,000</b>

**Subtotal                    \$2,164,000**

# APPENDIX C – AGENCY CORRESPONDENCE

---

1. National Resources Conservation Service
2. U.S. Army Corps of Engineers
3. U.S. Fish & Wildlife Service
4. U.S. Forest Service
5. Colorado Historical Society
6. Tribal Historic Preservation Officers
7. CDPHE Air Pollution Control Division



# **NATIONAL RESOURCES CONSERVATION SERVICE**



**JVA, Incorporated**  
25 Old Town Square  
Suite 200  
Fort Collins, CO 80524  
970.225.9099  
info@jvajva.com

September 6, 2019

Natural Resources Conservation Service  
Ms. Francine Lheritier, Area One Conservationist  
2738 Crossroads Blvd. Suite 104  
Grand Junction, CO 81506

[www.jvajva.com](http://www.jvajva.com)

RE: SRF Environmental Report for the Mt. Crested Butte Water and Sanitation District  
WTP Expansion Project  
JVA Job Number: 1028e

Ms. Francine Lheritier,

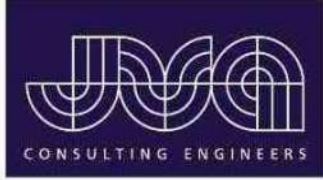
The Mt. Crested Butte Water and Sanitation District (District) is performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and pipeline improvements, in Gunnison County, Colorado.

This letter represents a formal request for input from you regarding an SRF Environmental Review for the District's WTP Improvements Project. We are requesting information on the possible effects of the proposal on important farmland and any recommendations to minimize or avoid these effects. We also seek your assessment of the compatibility of the proposal with state and local government or any private programs and policies to protect important farmland. The attached Figure 1 shows the proposed Area of Potential Effect (APE) for the project.

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was completed in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Assessment Memorandum included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the District has selected to construct a new WTP building located adjacent to the existing plant, a new pump station, and a new raw water pipeline.

The proposed improvements at the WTP will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of membrane filtration. Raw water will be diverted from the East River and pumped through a new pipeline to an existing pre-sedimentation pond near the WTP. The new pipeline and pump station will be located within existing easements on private and United States Forest Service property.

According to the United States Department of Agriculture Online Web Soil Survey mapping tool, there is no available farmland delineation for the project area. Initial investigations by JVA



and the District indicate that no farmland is present. Enclosed are pictures taken at the proposed project site that is representative of the area.

We look forward to receiving input from your agency regarding this project. Please reply at your earliest convenience, or within 30 days as required by SRF. If you have any questions, or require any further information, please feel free to contact me at 303-951-1036. Thank you in advance for your time and attention in this matter.

Sincerely,  
JVA, Incorporated

By:

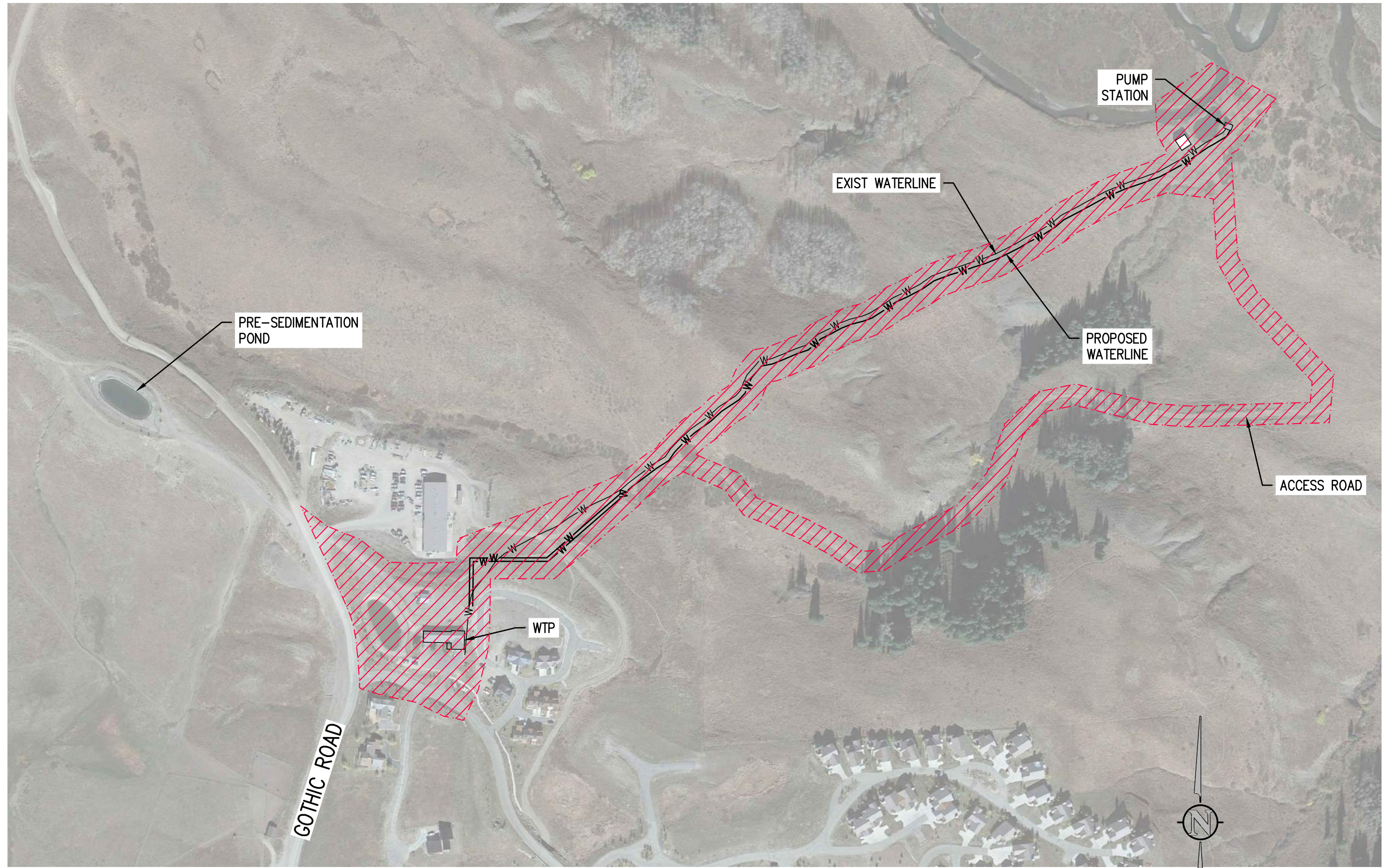
  
\_\_\_\_\_  
Shane White, JVA Inc.

Enclosure:

Figure 1 – Area of Potential Effect  
Site Photos

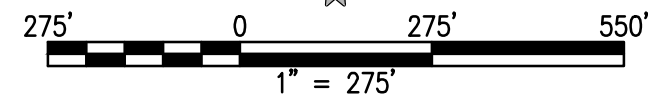


N:\1028e\Drawings\Exhibits-Figures\Area of Potential Effect\1028e - Figure - Area of Potential Effect.dwg, 8/27/2019 - 8:13 AM, RAH



**LEGEND**

 AREA OF POTENTIAL EFFECT



**FIGURE - AREA OF POTENTIAL EFFECT**  
**MCBWSW WTP EXPANSION PROJECT**  
**AUGUST 2019**



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**Fort Collins**

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970.225.9099

**Winter Park**

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Glenwood Springs, CO  
81601  
970.404.3100

**Denver**

1512 Larimer Street  
Suite 710  
Denver, CO 80202  
303.444.1951

# Site Photos



1. Existing Pump Station and Pre-sedimentation Pond (Facing Northeast)



2. View of Existing Pump Station, East River. (Facing North)



3. Existing Water Treatment Plant (Facing North)

**From:** [O'Neill, Catherine - NRCS, Alamosa, CO](#)  
**To:** [Shane A. White](#)  
**Subject:** RE: Mt. Crested Butte Water and Sanitation District - Environmental Review  
**Date:** Thursday, October 31, 2019 7:38:35 PM  
**Attachments:** [image001.png](#)

---

Hi Shane,

There is no prime farmland within the project area so you should be fine to move forward.

Thanks for your patience and have a good weekend,

*Cathy*

Cathy O'Neill  
NRCS Area 1 Resource Soil Scientist  
719.225.0399– Personal Cell  
719.992.3664 – Office

---

**From:** O'Neill, Catherine - NRCS, Alamosa, CO  
**Sent:** Thursday, October 31, 2019 6:44 AM  
**To:** Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)>  
**Subject:** RE: Mt. Crested Butte Water and Sanitation District - Environmental Review

Good morning Shane,

Thanks for the follow up. I am waiting on one last email confirmation from my supervisor before finishing the review. Hopefully today!

Thanks so much,

*Cathy*

Cathy O'Neill  
NRCS Area 1 Resource Soil Scientist  
719.225.0399– Personal Cell  
719.992.3664 – Office



---

**From:** Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)>

**Sent:** Tuesday, October 29, 2019 11:47 AM

**To:** Lheritier, Francine - NRCS, Grand Junction, CO <[francine.lheritier@usda.gov](mailto:francine.lheritier@usda.gov)>; O'Neill, Catherine - NRCS, Alamosa, CO <[catherine.oneill@usda.gov](mailto:catherine.oneill@usda.gov)>

**Cc:** Kyle Koelliker <[kkoelliker@mcbwsd.com](mailto:kkoelliker@mcbwsd.com)>; Mike Fabbre <[mfabbre@mcbwsd.com](mailto:mfabbre@mcbwsd.com)>; Richard A. Hood <[rhood@jvajva.com](mailto:rhood@jvajva.com)>; Kelsey C. Traxinger <[ktraxinger@jvajva.com](mailto:ktraxinger@jvajva.com)>; Cooper D. Best <[cbest@jvajva.com](mailto:cbest@jvajva.com)>

**Subject:** RE: Mt. Crested Butte Water and Sanitation District - Environmental Review

Hi Francine and Cathy,

We are moving forward with our environmental review process and I wanted to check in on the status of the consultation request for the Mount Crested Butte Water and Sanitation District. Please let me know if you need any more information to complete your review.

Thank you,



**SHANE A. WHITE** | Project Engineer

JVA, Incorporated  
1319 Spruce Street, Boulder, CO 80302  
Direct: [303.951.1036](tel:303.951.1036) | Phone: 303.444.1951  
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Boulder | Fort Collins | Winter Park | Glenwood Springs | Denver

---

**From:** Lheritier, Francine - NRCS, Grand Junction, CO <[francine.lheritier@usda.gov](mailto:francine.lheritier@usda.gov)>

**Sent:** Tuesday, September 10, 2019 9:22 AM

**To:** Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)>

**Cc:** Kyle Koelliker <[kkoelliker@mcbwsd.com](mailto:kkoelliker@mcbwsd.com)>; Mike Fabbre <[mfabbre@mcbwsd.com](mailto:mfabbre@mcbwsd.com)>; Richard A. Hood <[rhood@jvajva.com](mailto:rhood@jvajva.com)>; Kelsey C. Traxinger <[ktraxinger@jvajva.com](mailto:ktraxinger@jvajva.com)>; Cooper D. Best <[cbest@jvajva.com](mailto:cbest@jvajva.com)>; O'Neill, Catherine - NRCS, Alamosa, CO <[catherine.oneill@usda.gov](mailto:catherine.oneill@usda.gov)>

**Subject:** RE: Mt. Crested Butte Water and Sanitation District - Environmental Review

Good morning Shane,

I have cc'd Cathy O'Neill, she is our Resource Soil Scientist and will be completing the 1028 form for your project. Cathy will be in touch with you if she has any questions.

Thanks,  
Francine

Francine Lheritier (pronounced Larry-T-A)  
Area Conservationist  
USDA- Natural Resources Conservation Service  
2738 Crossroads Blvd., Suite 104

Grand Junction, CO 81506  
Phone (970) 361-3796  
Cell (970) 549-6408 **Currently malfunctioning**

“Unless you believe that the future can be better, you are unlikely to step up and take responsibility for making it so.” Noam Chomsky



---

**From:** Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)>  
**Sent:** Friday, September 6, 2019 4:41 PM  
**To:** Lheritier, Francine - NRCS, Grand Junction, CO <[francine.lheritier@usda.gov](mailto:francine.lheritier@usda.gov)>  
**Cc:** Kyle Koelliker <[kkoelliker@mcbwsd.com](mailto:kkoelliker@mcbwsd.com)>; Mike Fabbre <[mfabbre@mcbwsd.com](mailto:mfabbre@mcbwsd.com)>; Richard A. Hood <[rhood@jvajva.com](mailto:rhood@jvajva.com)>; Kelsey C. Traxinger <[ktraxinger@jvajva.com](mailto:ktraxinger@jvajva.com)>; Cooper D. Best <[cbest@jvajva.com](mailto:cbest@jvajva.com)>  
**Subject:** Mt. Crested Butte Water and Sanitation District - Environmental Review

Dear Ms. Lheritier,

Please find the attached document for your review. The Mount Crested Butte Water and Sanitation District is in the environmental review stage of pursuing funding through the CDPHE State Revolving Fund for its Water Treatment Plant Expansion Project. This attachment is a letter formally requesting your agency's input regarding this project.

Please feel free to call me at my direct line below if you have any questions or require further information.

Thank you,



**SHANE A. WHITE** | Project Engineer

JVA, Incorporated  
1319 Spruce Street, Boulder, CO 80302  
Direct: [303.951.1036](tel:303.951.1036) | Phone: 303.444.1951  
[www.jvajva.com](http://www.jvajva.com)

Boulder | Fort Collins | Winter Park | Glenwood Springs | Denver

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**U.S. ARMY CORPS OF ENGINEERS**

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25 Old Town Square  
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970.225.9099  
info@jvajva.com

September 6, 2019

U.S. Army Corps of Engineers  
Sacramento District  
Colorado West Regulatory Branch  
400 Rood Avenue, Room 224  
Grand Junction, CO 81501

[www.jvajva.com](http://www.jvajva.com)

RE: SRF Environmental Report for the Mt. Crested Butte Water and Sanitation District  
WTP Expansion Project (SPK-2015-01106)  
JVA Job Number: 1028e

Mr. Benjamin R. Wilson:

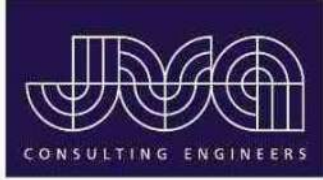
The Mt. Crested Butte Water and Sanitation District (District) is performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and pipeline improvements, in Gunnison County, Colorado.

This letter represents a formal request for input from your agency regarding an SRF Environmental Review for the District's WTP Improvements Project. Previous correspondence from your agency (Identification number SPK-2015-01106) dated November 26, 2018, indicated that a Nationwide Permit Number 39 was applicable for a portion of this project. The November 26, 2018 letter has been attached for reference.

We are notifying you to provide an updated project description and updated Area of Potential Effect (APE), as the project scope has been revised. The attached Figure 1 shows the proposed Area of Potential Effect (APE) for the project. We believe that the revised scope does not impact the verification of the Nationwide Permit Number 39 but would like to request your determination regarding this matter. A description of the project is provided below.

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was completed in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Assessment Memorandum included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the District has selected to construct a new WTP building located adjacent to the existing plant, a new pump station, and a new raw water pipeline.

The proposed improvements at the WTP will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of membrane filtration. Raw water will be diverted from the East River and pumped through a new pipeline to an existing pre-



sedimentation pond near the WTP. The new pipeline and pump station will be located within existing easements on private and United States Forest Service property.

The U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) mapper results for the proposed project area are included with this Letter.

We look forward to receiving input from your agency regarding this project. Please reply at your earliest convenience, or within 30 days as required by SRF. If you have any questions, or require any further information, please feel free to contact me at 303-951-1036. Thank you in advance for your time and attention in this matter.

Sincerely,  
JVA, Incorporated

By:

  
Shane White, JVA Inc.

Enclosure:

COE Approval NWP 39, Dated November 26, 2018  
Figure 1 – Area of Potential Effect  
National Wetlands Inventory Map



**DEPARTMENT OF THE ARMY**  
U.S. ARMY CORPS OF ENGINEERS, SACRAMENTO DISTRICT  
1325 J STREET  
SACRAMENTO CA 95814-2922

November 26, 2018

Regulatory Division (SPK-2015-01106)

Mt. Crested Butte Water and Sanitation District  
Attn: Mr. Mike Fabbre  
Post Office Box 5740  
Crested Butte, Colorado 81225  
[mfabbre@mcbwsd.com](mailto:mfabbre@mcbwsd.com)

Dear Mr. Fabbre:

We are responding to your pre-construction notification for a Department of the Army (DA) Nationwide Permit (NWP) for the East River Water Supply System Upgrade project. The approximately 4-acre project site is located on the East River, on lands administered by the U.S. Forest Service, approximately one mile northeast of the Town of Mount Crested Butte, at Latitude 38.92219°, Longitude -106.95087°, Gunnison County, Colorado.

Based on the information you provided to this office, the East River Water Supply System Upgrade project involves the discharge of dredged and/or fill material into 655 square feet of waters of the U.S. for the construction of a pump station facility, two intake structures, and a water delivery pipeline, subject to Section 404 of the Clean Water Act. The specific activities that require DA authorization are placement of materials associated with the construction of the pump station facility in wetlands, removing and replacing two intake structures in the East River, and the temporary trenching in wetlands to place the water delivery pipe. These activities will result in permanent effects to 186 square feet of perennial river and 454 square feet of palustrine scrub-shrub wetlands. Additionally the project will temporarily impact 15 square feet of palustrine scrub-shrub wetlands. The proposed activities would be conducted in accordance with the Pre-Construction Notification plans, submitted to this office on November 6, 2018, by Resource Engineering Incorporated.

We have determined that activities in waters of the U.S. associated with the project are authorized by NWP 39 for Commercial and Institutional Developments. You must comply with all terms and conditions of the NWP, applicable regional conditions, and project specific special conditions. Information about the NWP terms and conditions and Sacramento District regional conditions for Colorado are available on our website at [www.spk.usace.army.mil/Missions/Regulatory/Permitting/NationwidePermits.aspx](http://www.spk.usace.army.mil/Missions/Regulatory/Permitting/NationwidePermits.aspx). Within 30 days after completion of the authorized work, you must sign the enclosed Compliance Certification and return it to this office. In addition, your work must comply with the following **special condition**:

**Special Condition:**

1. *The enclosed U.S. Fish and Wildlife Service (USFWS) letter (ES/GJ-6-CO-09-F-001-GP036, TAILS 06E24100-2019-F-0394) dated July 20, 2018, contains mandatory terms and conditions to implement the reasonable and prudent measures that are associated with "incidental take" that is also specified in the referenced Programmatic Biological Opinion (PBO). Your authorization under this Corps permit is conditional upon your compliance with all of the mandatory terms*



*and conditions associated with "incidental take" of the attached letter, which terms and conditions are incorporated by reference in this permit. Failure to comply with the terms and conditions associated with incidental take of the PBO, where a take of the listed species occurs, would constitute an unauthorized take, and it would also constitute non-compliance with your Corps permit. The USFWS is the appropriate authority to determine compliance with the terms and conditions of its PBO, and with the ESA.*

This verification is valid until March 18, 2022, when the existing NWP's are scheduled to be modified, reissued, or revoked. Furthermore, if you commence or are under contract to commence this activity before the date the NWP is modified, reissued, or revoked, you will have 12 months from the date of the modification, reissuance or revocation to complete the activity under the present terms and conditions. Failure to comply with the general and regional conditions of this NWP, or the project-specific special condition of this authorization, may result in the suspension or revocation of your authorization.

We would appreciate your feedback on this permit action including your interaction with our staff and processes. For more information about our program or to complete our Regulatory Program national customer service survey, visit our website at [www.spk.usace.army.mil/Missions/Regulatory.aspx](http://www.spk.usace.army.mil/Missions/Regulatory.aspx).

Please refer to identification number SPK-2015-01106 in any correspondence concerning this project. If you have any questions, please contact me at the Colorado West Regulatory Branch, 400 Rood Avenue, Room 224, Grand Junction, Colorado 81501, by email at [Benjamin.R.Wilson@usace.army.mil](mailto:Benjamin.R.Wilson@usace.army.mil), or telephone at 970-243-1199 ext#1012.

Sincerely,

Benjamin R. Wilson  
Project Manager, Colorado West Section  
Regulatory Division

Enclosures

1. Compliance Certification
2. USFWS Biological Opinion (ES/GJ-6-CO-09-F-001-GP036), July 20, 2018

cc:

Ms. Ann Timberman, Western Slope Supervisor, U.S. Fish and Wildlife Service,  
[GrandJunctionES@fws.gov](mailto:GrandJunctionES@fws.gov)

Ms. Ashley Hom, Hydrologist, Gunnison National Forest, U.S. Forest Service,  
[ashleyhom@fs.fed.us](mailto:ashleyhom@fs.fed.us)

Mr. Scott Fifer, Principal Hydrologist, Resource Engineering, Incorporated,  
[sfifer@resource-eng.com](mailto:sfifer@resource-eng.com)

# COMPLIANCE CERTIFICATION

**Permit File Name:** East River Water Supply System Upgrade Project

**Action ID:** SPK-2015-01106

**Nationwide Permit Number:** 39 Commercial and Institutional Developments

**Permittee:** Mt. Crested Butte Water and Sanitation District  
Attn: Mr. Mike Fabbre  
Post Office Box 5740  
Crested Butte, Colorado 81225

**County:** Gunnison County

**Date of Verification:** November 26, 2018

Within 30 days after completion of the activity authorized by this permit, sign this certification and return it to the following address:

U.S. Army Corps of Engineers  
Sacramento District

*DLL-CESPK-RD-Compliance@usace.army.mil*

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the terms and conditions of the permit your authorization may be suspended, modified, or revoked. If you have any questions about this certification, please contact the U.S. Army Corps of Engineers.

\* \* \* \* \*

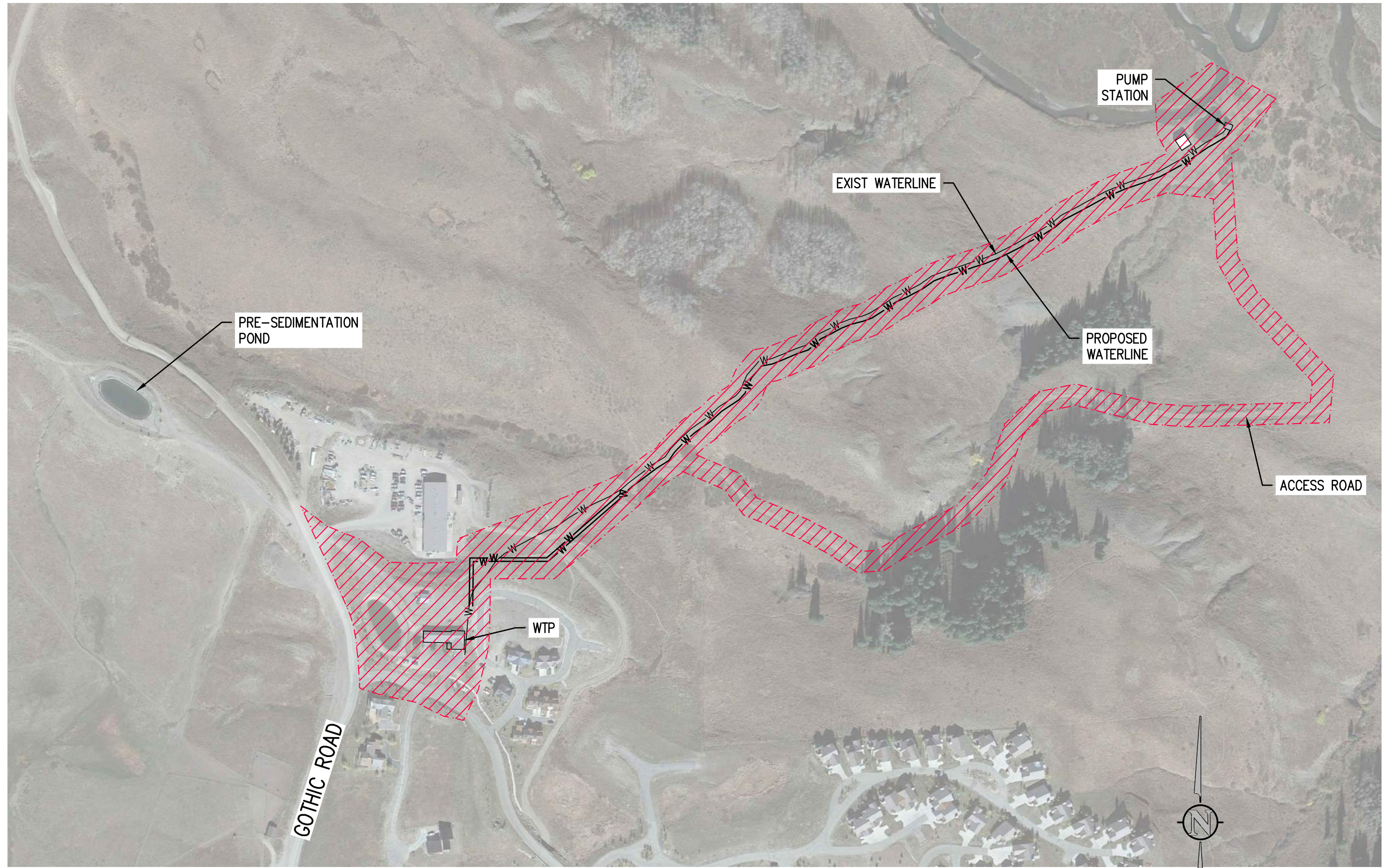
***I hereby certify that the work authorized by the above-referenced permit, including all the required mitigation, was completed in accordance with the terms and conditions of the permit verification.***

\_\_\_\_\_  
Permittee Signature

\_\_\_\_\_  
Date

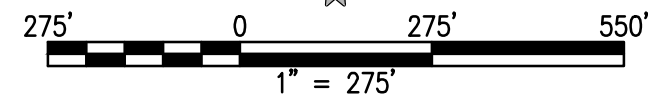


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**LEGEND**

 AREA OF POTENTIAL EFFECT



**FIGURE - AREA OF POTENTIAL EFFECT  
MCBWSW WTP EXPANSION PROJECT  
AUGUST 2019**











JVA, Inc.  
817 Colorado Avenue, Suite 301  
Glenwood Springs, CO 81601  
970.404.3100  
www.jvajva.com  
Boulder • Fort Collins • Winter Park  
Glenwood Springs • Denver





August 8, 2019

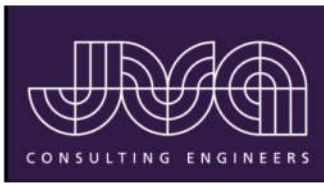
**Wetlands**

- |   |                                |   |                                   |   |          |
|---|--------------------------------|---|-----------------------------------|---|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland       |  | Lake     |
|  | Estuarine and Marine Wetland   |  | Freshwater Forested/Shrub Wetland |  | Other    |
|   |                                |  | Freshwater Pond                   |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

# **U.S. FISH & WILDLIFE SERVICE**

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**JVA, Incorporated**  
817 Colorado Avenue  
Suite 301  
Glenwood Springs,  
CO 81601  
970.404.3100  
info@jvajva.com

December 13, 2019

Allison Jehly  
Ecological Services  
U.S. Fish & Wildlife Service, Western Colorado Field Office  
445 West Gunnison Avenue, Suite 240  
Grand Junction, CO 81501

[www.jvajva.com](http://www.jvajva.com)

RE: SRF Environmental Report for the Mt. Crested Butte Water and Sanitation District  
WTP Expansion Project (Reference Number: ES/GJ-6-CO-09-F-001-GP036 TAILS  
068241 00 -2018-F-0394)  
JVA Job Number: 1028e

Dear Allison Jehly:

The Mt. Crested Butte Water and Sanitation District (District) is performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and pipeline improvements, in Gunnison County, Colorado.

This letter represents a request for input from your agency regarding an SRF Environmental Review for the District's WTP Improvements Project. A previous Final Biological Opinion for a portion of this project was provided to the district in a Letter dated July 20, 2018. The Biological Opinion has been attached to this letter for reference. The attached Figure 1 shows the proposed Area of Potential Effect (APE) for the project.

We are notifying you to provide an updated project description and updated Area of Potential Effect (APE), as the project scope has been revised. As stated in the previous Biological Opinion Letter, the USFWS concluded that the previously reviewed project scope meets the necessary criteria to rely on the RIPRAP to offset depletion impacts and is not likely to jeopardize the continued existence of the species and is not likely to destroy or adversely modify designated critical habitat. We believe that the revised scope does not impact the previous Biological Opinion but would like to request any comments regarding this matter. A description of the project is provided below.

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was completed in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Assessment Memorandum included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the

District has selected to construct a new WTP building located adjacent to the existing plant, a new pump station, and a new raw water pipeline.

The proposed improvements at the WTP will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of membrane filtration. Raw water will be diverted from the East River and pumped through a new pipeline to an existing pre-sedimentation pond near the WTP. The new pipeline and pump station will be located within existing easements on private and United States Forest Service property.

An updated resource list has been generated by the U.S. Fish and Wildlife's Information for Planning and Consultation (IPaC) and the results have been evaluated. As all construction activity will occur on the existing WTP property, a previously disturbed area, habitats for endangered or threatened species in the area not anticipated to be impacted. The existing site is developed and fully operational and there is a lack of suitable habitat for the species listed. Construction activities may temporarily impact the habitat of local wildlife; however, this impact is anticipated to be minor and temporary and wildlife would return to the area following construction completion. The design of the WTP Improvements Project will be subject to CDPHE's design review and permitting process.

We look forward to receiving input from your agency regarding this project. Please reply at your earliest convenience. If you have any questions, or require any further information, please feel free to contact me at 303-951-1036. Thank you in advance for your time and attention in this matter.

Sincerely,

JVA, INCORPORATED

By:   
Shane White, JVA

Attachments: Previous Biological Opinion, Dated July 20<sup>th</sup>, 2018 ← Included in Appendix A of this report.  
Area of Potential Effect Map  
IPaC Resource List





# United States Department of the Interior



## FISH AND WILDLIFE SERVICE Colorado Ecological Services

IN REPLY REFER TO:  
FWS/R6/ES CO

Front Range:  
Post Office Box 25486  
Mail Stop 65412  
Denver, Colorado 80225-0486

Western Slope:  
445 W. Gunnison Avenue  
Suite 240  
Grand Junction, Colorado 81501-5711

ES/GJ-6-CO-09-F-001-GP036  
TAILS 06E24100-2018-F-0394

July 20, 2018

Scott Armentrout  
Forest Supervisor  
US Forest Service, GMUG National Forests  
2250 South Main Street  
Delta, Colorado 81416

Dear Mr. Armentrout:

In accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 et seq.), and the Interagency Cooperation Regulations (50 CFR 402), the Fish and Wildlife Service (Service) transmits this correspondence to serve as the final biological opinion (BO) for the Mount Crested Butte Water and Sanitation District Project located in the Town of Mt. Crested Butte, Gunnison County, Colorado.

The proposed project occurs on 3.5 acres of a Special Use Permit (SUP) on land managed by the Forest Service. The subject project will cause a new average annual water depletion of 164 acre-feet/year (AF/yr) to the Gunnison River and includes 33.4 AF/year historic water depletions. These depletions may affect the endangered Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), humpback chub (*Gila cypha*), bonytail (*Gila elegans*), and their designated critical habitat.

A Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin was initiated on January 22, 1988. The Recovery Program was intended to be the reasonable and prudent alternative for individual projects to avoid the likelihood of jeopardy to the endangered fishes from impacts of depletions to the Upper Colorado River Basin. In order to further define and clarify the process in the Recovery Program, a section 7 agreement was implemented on October 15, 1993, by the Recovery Program participants. Incorporated into this agreement is a Recovery Implementation Program Recovery Action Plan (RIPRAP) which identifies actions currently believed to be required to recover the endangered fishes in the most expeditious manner.

On December 4, 2009, the Service issued a final Gunnison River Basin Programmatic Biological Opinion (PBO) (this document is available for viewing at the following internet address: <http://www.coloradoriverrecovery.org/documents-publications/section-7->

consultation/GUPBO.pdf). The Service has determined that projects that fit under the umbrella of the Gunnison River PBO would avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts. The Gunnison River PBO states that in order for actions to fall within the umbrella of the PBO and rely on the RIPRAP to offset its depletion, the following criteria must be met.

1. A Recovery Agreement must be offered and signed prior to conclusion of section 7 consultation.
2. A fee to fund recovery actions will be submitted as described in the proposed action for new depletion projects greater than 100 acre-feet/year (AF/yr). The 2018 fee is \$21.17 per AF and is adjusted each year for inflation.
3. Reinitiation stipulations will be included in all individual consultations under the umbrella of this programmatic.
4. The Service and project proponents will request that discretionary Federal control be retained for all consultations under this programmatic.

The Recovery Agreement was signed by the Service and the Water User. In the letter dated July 10, 2018, the Mt. Crested Butte Water and Sanitation District agreed to make a one-time contribution based on its share of the costs of the Recovery Implementation Program to fund recovery actions specified in the Gunnison River PBO. The project also includes historic depletions which do not make contributions to fund recovery actions. The US Forest Service has agreed to condition its approval documents to retain jurisdiction should section 7 consultation need to be reinitiated. Therefore, the Service concludes that the subject project meets the criteria to rely on the RIPRAP to offset depletion impacts and is not likely to jeopardize the continued existence of the species and is not likely to destroy or adversely modify designated critical habitat.

The Service and the Recovery Program track all water depletions that are covered under the Gunnison PBO and other water depletion PBOs within the Upper Colorado River Basin on a quarterly basis. A summary of those depletions are available at: <http://www.coloradoriverrecovery.org/documents-publications/section-7-consultation/consultation-list.html>. Also, in accordance with the Section 7, Sufficient Progress, and Historic Projects Agreement, the Service reviews cumulative accomplishments and shortcomings of the Recovery Program in the upper Colorado River basin. Per that Agreement, the Service uses the following criteria to evaluate whether the Recovery Program is making “sufficient progress” toward recovery of the four listed fish species:

- actions which result in a measurable population response, a measurable improvement in habitat for the fishes, legal protection of flows needed for recovery, or a reduction in the threat of immediate extinction;
- status of the fish populations;
- adequacy of flows;
- and magnitude of the impact of projects.

Through these bi-annual Sufficient Progress reviews the Service evaluates the best available and current information to determine if the Recovery Program continues to offset depletion effects identified in existing Section 7 consultations including the depletions covered by these PBOs. In the most recent assessment (dated October 7, 2015), the Service determined that sufficient progress has been made towards recovery. Sufficient Progress reports can be found at: <http://www.coloradoriverrecovery.org/documents-publications/section-7-consultation/sufficient-progress-letters.html>.

The reinitiation criteria for the Gunnison PBO apply to all projects under the umbrella of the PBO. For your information the reinitiation notice from the Gunnison River PBO is presented below.

#### REINITIATION NOTICE

This concludes formal consultation on the subject action. The proposed action includes adaptive management because additional information, changing priorities, and the development of the States' entitlement may require modification of the Recovery Action Plan. Therefore, the Recovery Action Plan is reviewed annually and updated and changed when necessary and the required time frames include changes in timing approved by means of the normal procedures of the Recovery Program, as explained in the description of the proposed action. Every 2 years, for the life of the Recovery Program, the Service and Recovery Program will review implementation of the Recovery Action Plan actions that are included in this BO to determine timely compliance with applicable schedules. As provided in 50 CFR sec. 402.16, reinitiation of formal consultation is required for new projects where discretionary Federal Agency involvement or control over the action has been retained (or is authorized by law) and under the following conditions:

1. **The amount or extent of take specified in the incidental take statement for this opinion is exceeded.** The terms and conditions outlined in the incidental take statement are not implemented. The implementation of the proposed reoperation of Aspinall and the Selenium Management Program will further decrease the likelihood of take caused by water depletion impacts.
2. **New information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion,** such as impacts due to climate change. In preparing this opinion, the Service describes the positive and negative effects of the action it anticipates and considered in the section of the opinion entitled "EFFECTS OF THE ACTION."
3. **The identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the BO.** It would be considered a change in the action subject to consultation if the reoperation of Aspinall and the Selenium Management Program described in this opinion are not implemented within the required timeframes. If a draft Selenium Management Program document is not completed within 18 months of the final PBO and a final document within 24 months, reinitiation of consultation will be required. Reinitiating consultation could consist of an

exchange of memoranda examining the progress made on the plan and evaluating the consequences of extending the timeframe. Also, at any time, if funding is not available to implement the Selenium Management Program reinitiation of consultation will be required.

The analysis for this BO assumed implementation of the Colorado River Mainstem Action Plan of the RIPRAP because the Colorado pikeminnow (*Ptychocheilus lucius*) and razorback sucker (*Xyrauchen texanus*) that occur in the Gunnison River use the Colorado River and are considered one population. The essential elements of the Colorado River Plan are as follows: 1) provide and protect instream flows; 2) restore floodplain habitat; 3) reduce impacts of nonnative fishes; 4) augment or restore populations; and 5) monitor populations and conduct research to support recovery actions. The analysis for the non-jeopardy determination of the proposed action that includes about 37,900 af/yr of new water depletions from the Gunnison River Basin relies on the Recovery Program to provide and protect flows on the Gunnison and Colorado Rivers.

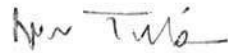
4. **The Service lists new species or designates new or additional critical habitat, where the level or pattern of depletions covered under this opinion may have an adverse impact on the newly listed species or habitat.** If the species or habitat may be adversely affected by depletions, the Service will reinitiate consultation on the PBO as required by its section 7 regulations. The Service will first determine whether the Recovery Program can avoid such impact or can be amended to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for such depletion impacts. If the Recovery Program can avoid the likelihood of jeopardy and/or adverse modification of critical habitat no additional recovery actions for individual projects would be required, if the avoidance actions are included in the Recovery Action Plan. If the Recovery Program can't avoid the likelihood of jeopardy and/or adverse modification of critical habitat then the Service will reinitiate consultation and develop reasonable and prudent alternatives.

If the annual assessment from Reclamation's reports indicates that the operation of the Aspinall Unit to meet flow targets or that the Selenium Management Program, as specified in this opinion has not been implemented as proposed, Reclamation will be required to reinitiate consultation to specify additional measures to be taken by Reclamation or the Recovery Program to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletions and water quality. Also, if the status of all four fish species has not sufficiently improved, as determined by the Service in a formal sufficient progress finding under provisions of the Recovery Program, Reclamation will be required to reinitiate consultation. If other measures are determined by the Service or the Recovery Program to be needed for recovery prior to the review, they can be added to the Recovery Action Plan according to standard procedures. If the Recovery Program is unable to complete those actions which the Service has determined to be required, Reclamation will be required to reinitiate consultation in accordance with ESA regulations and this opinion's reinitiation requirements.

All individual consultations conducted under this programmatic opinion will contain language requesting the applicable Federal agency to retain sufficient authority to reinstate consultation should reinstatement become necessary. The recovery agreements to be signed by non-Federal entities who rely on the Recovery Program to avoid the likelihood of jeopardy and/or adverse modification of critical habitat for depletion impacts related to their projects will provide that such non-Federal entities also must request the Federal agency to retain such authority. Non-Federal entities will agree by means of recovery agreements to participate during reinstated consultations in finding solutions to the problem which triggered the reinstatement of consultation.

If you have any questions regarding this consultation or would like to discuss it in more detail, please contact Allison Jehly of our Western Slope Field Office at (970) 628-7194, Email: [Allison\\_Jehly@fws.gov](mailto:Allison_Jehly@fws.gov).

Sincerely,



Ann Timberman  
Western Slope Supervisor

Enclosure: Recovery Agreement

cc: FWS/UCREFRP, Lakewood; Email: [Kevin\\_McAbee@fws.gov](mailto:Kevin_McAbee@fws.gov)



## RECOVERY AGREEMENT

This RECOVERY AGREEMENT is entered into this 5<sup>th</sup> day of July, 2018, by and between the United States Fish and Wildlife Service (Service) and Mount Crested Butte Water and Sanitation District (Water User).

WHEREAS, in 1988, the Secretary of Interior, the Governors of Wyoming, Colorado and Utah, and the Administrator of the Western Area Power Administration signed a Cooperative Agreement to implement the Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (Recovery Program); and

WHEREAS, the Recovery Program is intended to recover the endangered fish while providing for water development in the Upper Basin to proceed in compliance with state law, interstate compacts and the Endangered Species Act; and

WHEREAS, the Colorado Water Congress has passed a resolution supporting the Recovery Program; and

WHEREAS, on December 4, 2009, the Service issued a programmatic biological opinion (2009 Opinion) for the Gunnison River Basin and the operation of the Wayne N. Aspinall Unit concluding that implementation of specific operation of the Aspinall Unit, implementation of a Selenium Management Plan and specified elements of the Recovery Action Plan (Recovery Elements), along with existing and a specified amount of new depletions, are not likely to jeopardize the continued existence of the endangered fish or adversely modify their critical habitat in the Gunnison River subbasin and Colorado River subbasin downstream of the Gunnison River confluence; and

WHEREAS, Water User is the operator of Mount Crested Butte Water and Sanitation District's Expansion Project (Water Project), which causes or will cause depletions to the Gunnison River subbasin; and

WHEREAS, Water User desires certainty that its depletions can occur consistent with section 7 and section 9 of the Endangered Species Act (ESA); and

WHEREAS, the Service desires a commitment from Water User to the Recovery Program so that the Program can actually be implemented to recover the endangered fish and to carry out the Recovery Elements.

NOW THEREFORE, Water User and the Service agree as follows (1):

1. The Service agrees that implementation of the Recovery Elements specified in the 2009 Opinion will avoid the likelihood of jeopardy and adverse modification under section 7 of the ESA, for depletion impacts caused by Water Users Water Project. Any consultations under section 7 regarding Water Projects depletions are to be governed by the provisions of the 2009 Opinion. The Service agrees that, except as provided in the 2009 Opinion, no other measure or action shall be required or imposed on Water Project to comply with section 7 or section 9 of the ESA with regard to Water Projects depletion impacts or other impacts covered by the 2009 Opinion. Water User is entitled to rely on this Agreement in making the commitment described in paragraph 2.
2. Water User agrees not to take any action which would probably prevent the implementation of the Recovery Elements. To the extent implementing the Recovery Elements requires active cooperation by Water User, Water User agrees to take reasonable actions required to implement those Recovery Elements. Water User will not be required to take any action that would violate its decrees or the statutory authorization for Water Project, or any applicable limits on Water Users legal authority. Water User will not be precluded from undertaking good faith negotiations over terms and conditions applicable to implementation of the Recovery Elements.
3. If the Service believes that Water User has violated paragraph 2 of this Recovery Agreement, the Service shall notify both Water User and the Management Committee of the Recovery Program. Water User and the Management Committee shall have a reasonable opportunity to comment to the Service regarding the existence of a violation and to recommend remedies, if appropriate. The Service will consider the comments of Water User and the comments and recommendations of the Management Committee, but retains the authority to determine the existence of a violation. If the Service reasonably determines that a violation has occurred and will not be remedied by Water User despite an opportunity to do so, the Service may request reinitiation of consultation on Water Project without reinitiating other consultations as would otherwise be required by the Reinitiation Notice section of the 2009 Opinion. In that event, the Water Projects depletions would be excluded from the depletions covered by 2009 Opinion and the protection provided by the Incidental Take Statement.
4. Nothing in this Recovery Agreement shall be deemed to affect the authorized purposes of Water Users Water Project or The Service statutory authority.
5. This Recovery Agreement shall be in effect until one of the following occurs.
  - a. The Service removes the listed species in the Upper Colorado River Basin from the endangered or threatened species list and determines that the Recovery

---

1 Individual Recovery Agreement may be changed to fit specific circumstances.



Elements are no longer needed to prevent the species from being relisted under the ESA; or

- b. The Service determines that the Recovery Elements are no longer needed to recover or offset the likelihood of jeopardy to the listed species in the Upper Colorado River Basin; or
  - c. The Service declares that the endangered fish in the Upper Colorado River Basin are extinct; or
  - d. Federal legislation is passed or federal regulatory action is taken that negates the need for [or eliminates] the Recovery Program.
6. Water User may withdraw from this Recovery Agreement upon written notice to the Service. If Water User withdraws, the Service may request reinitiation of consultation on Water Project without reinitiating other consultations as would otherwise be required by the Reinitiation Notice section of the 2009 Opinion.

  
\_\_\_\_\_  
Water User Representative

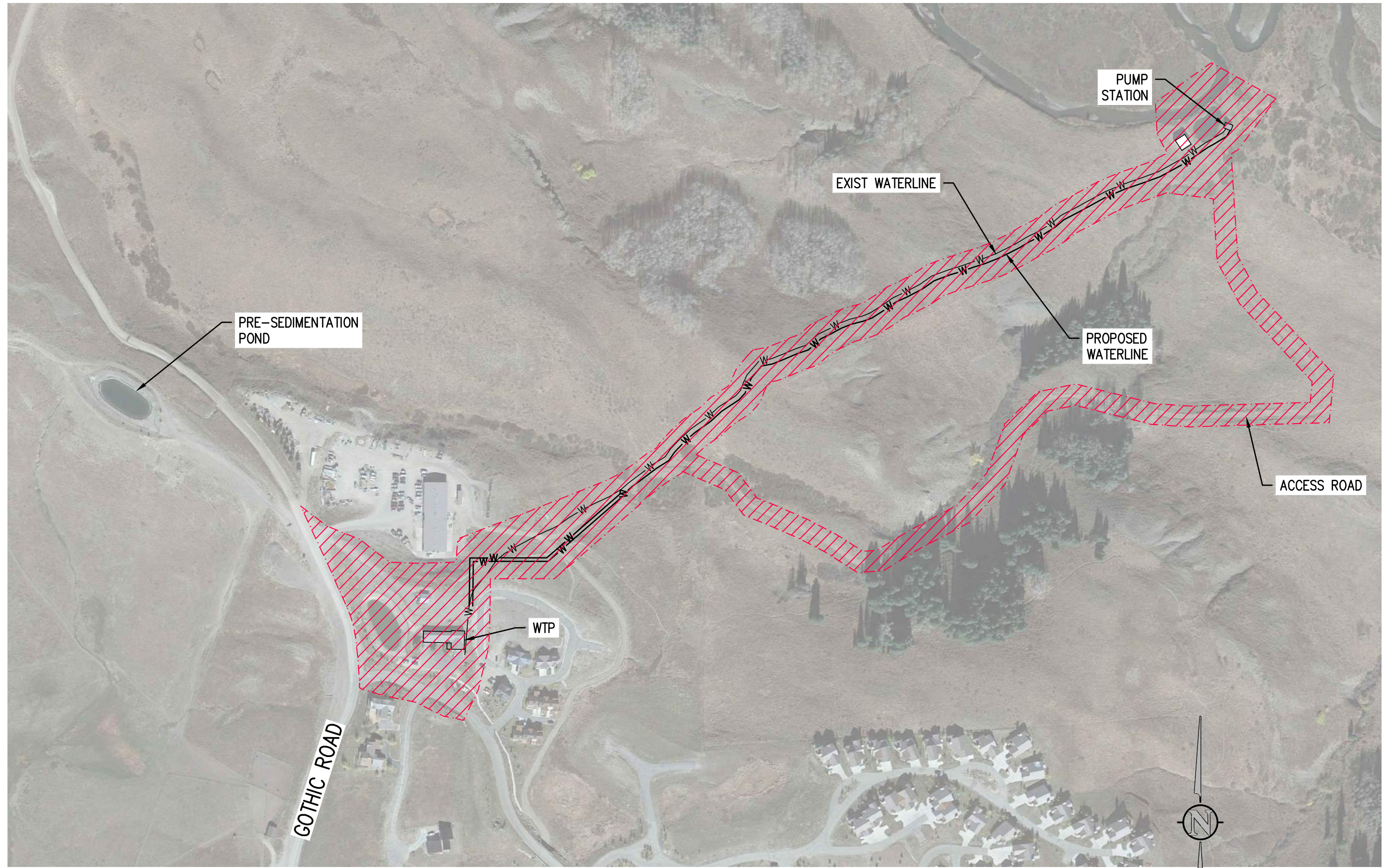
7-5-18  
Date

  
\_\_\_\_\_  
Western Slope Supervisor  
U.S. Fish and Wildlife Service

7/20/18  
Date



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**LEGEND**

 AREA OF POTENTIAL EFFECT

275' 0 275' 550'  
1" = 275'

**FIGURE - AREA OF POTENTIAL EFFECT**  
**MCBWSW WTP EXPANSION PROJECT**  
**AUGUST 2019**



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# United States Department of the Interior



## FISH AND WILDLIFE SERVICE

Western Colorado Ecological Services Field Office

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<http://www.fws.gov/mountain-prairie/es/Colorado/>

<http://www.fws.gov/platteriver/>

In Reply Refer To:

August 07, 2019

Consultation Code: 06E24100-2019-SLI-0405

Event Code: 06E24100-2019-E-01067

Project Name: Mount Crested Butte WTP and Pump Station

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan ([http://www.fws.gov/windenergy/eagle\\_guidance.html](http://www.fws.gov/windenergy/eagle_guidance.html)). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
  - USFWS National Wildlife Refuges and Fish Hatcheries
  - Migratory Birds
  - Wetlands
-

## Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Western Colorado Ecological Services Field Office**

445 West Gunnison Avenue, Suite 240

Grand Junction, CO 81501-5711

(970) 243-2778

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## Project Summary

Consultation Code: 06E24100-2019-SLI-0405

Event Code: 06E24100-2019-E-01067

Project Name: Mount Crested Butte WTP and Pump Station

Project Type: Federal Grant / Loan Related

**Project Description:** The Mt. Crested Butte Water and Sanitation District (District) is in the process of performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and pipeline improvements, in Gunnison County, Colorado.

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was performed in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Evaluation included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the District has selected to construct a new WTP building located adjacent to the existing plant, and a new pump station, and new raw water pipeline. The project includes three major aspects:

1. A new membrane water treatment plant located adjacent to the existing plant;
2. The replacement of the East River Pump Station (ERPS) which acts as one of several raw water supply sources for the water treatment plant; and
3. Installation of a redundant transmission pipeline from the ERPS to the water treatment plant.

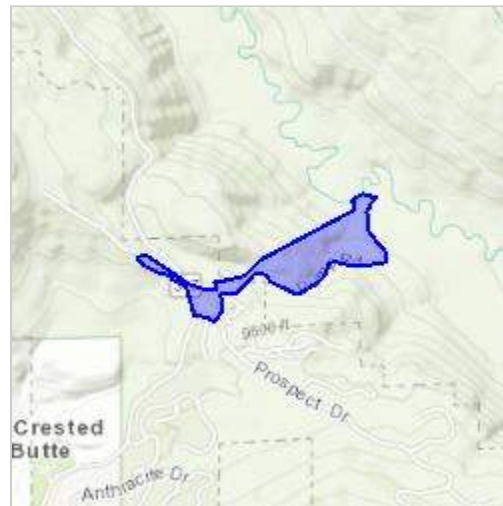
The proposed improvements will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of pre-sedimentation followed by membrane filtration technology. Raw water from the East River will be sent to a settling pond which will then be pumped to an existing pre-sedimentation pond near the WTP. Piping will be installed, running

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southwest, to convey the raw water to the pre-sedimentation pond. All proposed improvements will occur within District owned property, rights-of-way, and easements.

**Project Location:**

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/38.920168647729746N106.95272676004461W>



Counties: Gunnison, CO

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## Endangered Species Act Species

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 4 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

## Mammals

NAME	STATUS
Canada Lynx <i>Lynx canadensis</i> Population: Wherever Found in Contiguous U.S. There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/3652">https://ecos.fws.gov/ecp/species/3652</a>	Threatened

## Birds

NAME	STATUS
Gunnison Sage-grouse <i>Centrocercus minimus</i> There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat. Species profile: <a href="https://ecos.fws.gov/ecp/species/6040">https://ecos.fws.gov/ecp/species/6040</a>	Threatened

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## Fishes

NAME	STATUS
<p><b>Bonytail Chub</b> <i>Gila elegans</i></p> <p>There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>Water depletions in the upper Colorado River basin adversely affect this species and its critical habitat. This species does not need to be considered if the project is outside of its occupied habitat and does not deplete water from the basin.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/1377">https://ecos.fws.gov/ecp/species/1377</a></p>	Endangered
<p><b>Colorado Pikeminnow (=squawfish)</b> <i>Ptychocheilus lucius</i></p> <p>Population: Wherever found, except where listed as an experimental population</p> <p>There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>Water depletions in the upper Colorado River basin adversely affect this species and its critical habitat. This species does not need to be considered if the project is outside of its occupied habitat and does not deplete water from the basin.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/3531">https://ecos.fws.gov/ecp/species/3531</a></p>	Endangered
<p><b>Greenback Cutthroat Trout</b> <i>Oncorhynchus clarkii stomias</i></p> <p>No critical habitat has been designated for this species.</p> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/2775">https://ecos.fws.gov/ecp/species/2775</a></p>	Threatened
<p><b>Humpback Chub</b> <i>Gila cypha</i></p> <p>There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>Water depletions in the upper Colorado River basin adversely affect this species and its critical habitat. This species does not need to be considered if the project is outside of its occupied habitat and does not deplete water from the basin.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/3930">https://ecos.fws.gov/ecp/species/3930</a></p>	Endangered
<p><b>Razorback Sucker</b> <i>Xyrauchen texanus</i></p> <p>There is <b>final</b> critical habitat for this species. Your location is outside the critical habitat.</p> <p>This species only needs to be considered under the following conditions:</p> <ul style="list-style-type: none"> <li>Water depletions in the upper Colorado River basin adversely affect this species and its critical habitat. This species does not need to be considered if the project is outside of its occupied habitat and does not deplete water from the basin.</li> </ul> <p>Species profile: <a href="https://ecos.fws.gov/ecp/species/530">https://ecos.fws.gov/ecp/species/530</a></p>	Endangered

## Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

# USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

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## Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

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1. The [Migratory Birds Treaty Act](#) of 1918.
  2. The [Bald and Golden Eagle Protection Act](#) of 1940.
  3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Black Rosy-finch <i>Leucosticte atrata</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/9460">https://ecos.fws.gov/ecp/species/9460</a>	Breeds Jun 15 to Aug 31
Brown-capped Rosy-finch <i>Leucosticte australis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 15 to Sep 15

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NAME	BREEDING SEASON
<b>Golden Eagle <i>Aquila chrysaetos</i></b> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA <a href="https://ecos.fws.gov/ecp/species/1680">https://ecos.fws.gov/ecp/species/1680</a>	Breeds Jan 1 to Aug 31
<b>Long-billed Curlew <i>Numenius americanus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/5511">https://ecos.fws.gov/ecp/species/5511</a>	Breeds Apr 1 to Jul 31
<b>Rufous Hummingbird <i>selasphorus rufus</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. <a href="https://ecos.fws.gov/ecp/species/8002">https://ecos.fws.gov/ecp/species/8002</a>	Breeds elsewhere
<b>Willet <i>Tringa semipalmata</i></b> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

## Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

### Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12

(0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is  $0.25/0.25 = 1$ ; at week 20 it is  $0.05/0.25 = 0.2$ .

- The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

### Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

### Survey Effort (|)

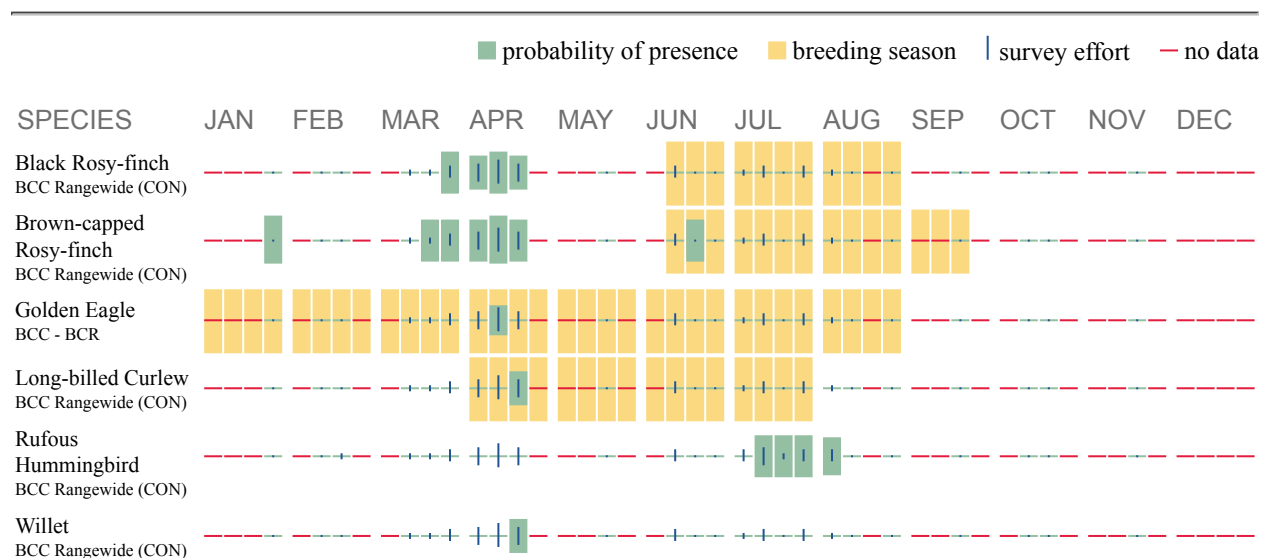
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

### No Data (—)

A week is marked as having no data if there were no survey events for that week.

### Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

## Migratory Birds FAQ

**Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.**

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

**What does IPaC use to generate the migratory birds potentially occurring in my specified location?**

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

**What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?**

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and

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how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

### **How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

### **What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

### **Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

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**What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

**Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location?”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

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# Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

## FRESHWATER FORESTED/SHRUB WETLAND

- [PSSB](#)

## FRESHWATER POND

- [PABG](#)

## RIVERINE

- [R4SBC](#)
  - [R3UBH](#)
-

**From:** [Vendramel, Allison M](#)  
**To:** [Shane A. White](#)  
**Cc:** [Richard A. Hood](#); [Cooper D. Best](#); [Johnson-Hufford - CDPHE, Randi](#); [Mike Fabbre](#); [Kyle Koelliker](#)  
**Subject:** Re: [EXTERNAL] Mt. Crested Butte Water and Sanitation District - Environmental Review  
**Date:** Monday, February 3, 2020 3:30:31 PM  
**Attachments:** [image001.png](#)

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Hi Shane,

Based on our previous emails, it sounds like there is no change in your determination of effects (primarily from water depletions) from the initial consultation, and since consultation is initiated at the discretion of the action agency, I don't think there is anything else you need to do. I have saved our conversation and the updates you provided to the project file.

Thanks,

**Allison Hearne (Vendramel)**

Fish and Wildlife Biologist  
Pronouns: she/her/hers

U.S. Fish and Wildlife Service  
Grand Junction, CO Field Office  
445 W. Gunnison Ave Ste. 240  
Grand Junction, CO 81501

**(970) 628-7194**

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**From:** Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)>  
**Sent:** Monday, February 3, 2020 2:59 PM  
**To:** Vendramel, Allison M <[Allison\\_Vendramel@fws.gov](mailto:Allison_Vendramel@fws.gov)>  
**Cc:** Vendramel, Allison M <[Allison\\_Vendramel@fws.gov](mailto:Allison_Vendramel@fws.gov)>; Vana-Miller, Sandy <[sandy\\_vana-miller@fws.gov](mailto:sandy_vana-miller@fws.gov)>; Richard A. Hood <[rhood@jvajva.com](mailto:rhood@jvajva.com)>; Cooper D. Best <[cbest@jvajva.com](mailto:cbest@jvajva.com)>; Johnson-Hufford - CDPHE, Randi <[randi.johnson-hufford@state.co.us](mailto:randi.johnson-hufford@state.co.us)>; Mike Fabbre <[mfabbre@mcbwsd.com](mailto:mfabbre@mcbwsd.com)>; Kyle Koelliker <[kkoelliker@mcbwsd.com](mailto:kkoelliker@mcbwsd.com)>  
**Subject:** RE: [EXTERNAL] Mt. Crested Butte Water and Sanitation District - Environmental Review

Allison,

In order to close the loop on the Environmental Review of this project, can you please confirm that no additional consultation is required from the previous Biological Opinion dated July 20<sup>th</sup>, 2018?

Thank you,



**SHANE A. WHITE** | Project Engineer

JVA, Incorporated  
1319 Spruce Street, Boulder, CO 80302  
Direct: [303.951.1036](tel:303.951.1036) | Phone: 303.444.1951  
[www.jvajva.com](http://www.jvajva.com)

Boulder | Fort Collins | Winter Park | Glenwood Springs | Denver

***JVA is pleased to announce that Structural Consultants, Incorporated (SCI) has joined our Denver team!***

**From:** Vendramel, Allison <[allison\\_vendramel@fws.gov](mailto:allison_vendramel@fws.gov)>

**Sent:** Monday, December 30, 2019 9:18 AM

**To:** Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)>

**Cc:** Allison\_Jehly@fws.gov; Vana-Miller, Sandy <[sandy\\_vana-miller@fws.gov](mailto:sandy_vana-miller@fws.gov)>; Richard A. Hood <[rhood@jvajva.com](mailto:rhood@jvajva.com)>; Cooper D. Best <[cbest@jvajva.com](mailto:cbest@jvajva.com)>; Johnson-Hufford - CDPHE, Randi <[randi.johnson-hufford@state.co.us](mailto:randi.johnson-hufford@state.co.us)>; Mike Fabbre <[mfabbre@mcbwsd.com](mailto:mfabbre@mcbwsd.com)>; Kyle Koelliker <[kkoelliker@mcbwsd.com](mailto:kkoelliker@mcbwsd.com)>

**Subject:** Re: [EXTERNAL] Mt. Crested Butte Water and Sanitation District - Environmental Review

Thanks Shane, I'll add the supporting documents to the project file.

**Allison Hearne (Vendramel)**

Fish and Wildlife Biologist

U.S. Fish and Wildlife Service  
Grand Junction, CO Field Office  
445 W. Gunnison Ave Ste. 240  
Grand Junction, CO 81501

**(970) 628-7194**

On Mon, Dec 30, 2019 at 9:16 AM Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)> wrote:

Hi Allison,

Thank you for reaching out. The anticipated water depletions will not change and the 164AF/year new and 33.4AF/year is still accurate for this project. The main reason for our letter was to inform you of the additional Water Treatment Plant construction and revised Area of Potential Effect. Please let me know if you have any other questions or comments.

Thank you,



**SHANE A. WHITE** | Project Engineer

JVA, Incorporated  
1319 Spruce Street, Boulder, CO 80302  
Direct: [303.951.1036](tel:303.951.1036) | Phone: 303.444.1951  
[www.jvajva.com](http://www.jvajva.com)

Boulder | Fort Collins | Winter Park | Glenwood Springs | Denver

***JVA is pleased to announce that Structural Consultants, Incorporated (SCI) has joined our Denver team!***

**From:** Vendramel, Allison <[allison\\_vendramel@fws.gov](mailto:allison_vendramel@fws.gov)>

**Sent:** Thursday, December 26, 2019 8:45 AM

**To:** Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)>

**Cc:** Allison\_Jehly@fws.gov; Allison\_Jehly@fws.gov; Vana-Miller, Sandy <[sandy\\_vana-miller@fws.gov](mailto:sandy_vana-miller@fws.gov)>; Richard A. Hood <[rhood@jvajva.com](mailto:rhood@jvajva.com)>; Cooper D. Best <[cbest@jvajva.com](mailto:cbest@jvajva.com)>; Johnson-Hufford - CDPHE, Randi <[randi.johnson-hufford@state.co.us](mailto:randi.johnson-hufford@state.co.us)>; Mike Fabbre <[mfabbre@mcbwsd.com](mailto:mfabbre@mcbwsd.com)>; Kyle Koelliker <[kkoelliker@mcbwsd.com](mailto:kkoelliker@mcbwsd.com)>

**Subject:** Re: [EXTERNAL] Mt. Crested Butte Water and Sanitation District - Environmental Review

Hi Shane,

Thank you for the update on the project. Our consultation was primarily for effects to listed fish from the water depletions (164 AF/year new and 33.4 AF/year historic). With the change in construction of the water treatment plant, will the projected water depletions change at all?

Thank you,  
**Allison Hearne (Vendramel)**  
Fish and Wildlife Biologist

U.S. Fish and Wildlife Service  
Grand Junction, CO Field Office  
445 W. Gunnison Ave Ste. 240  
Grand Junction, CO 81501

**(970) 628-7194**

On Fri, Dec 13, 2019 at 10:33 AM Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)> wrote:

Dear Ms. Jehly,

Please find the attached document for your review. The Mount Crested Butte Water and Sanitation District is in the environmental review stage of pursuing funding through the CDPHE State Revolving Fund for its Water Treatment Plant Expansion Project. The attachment is a letter requesting your agency's input regarding this project. A previous Biological Opinion was provided on July 20<sup>th</sup>, 2018 for this project (included in attachment), but the scope for this project has been revised. We believe that the revised scope does not impact the previous Biological Opinion but would like to request any comments regarding this matter.

Please feel free to call me at my direct line below if you have any questions or require further information.

Thank you,



**SHANE A. WHITE** | Project Engineer

JVA, Incorporated  
1319 Spruce Street, Boulder, CO 80302  
Direct: [303.951.1036](tel:303.951.1036) | Phone: 303.444.1951  
[www.jvajva.com](http://www.jvajva.com)

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# **U.S. FOREST SERVICE**

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**From:** [Richard A. Hood](#)  
**To:** [Scott Fifer](#)  
**Cc:** [Cooper D. Best](#); [Shane A. White](#)  
**Subject:** FW: Mount Crested Butte  
**Date:** Wednesday, October 9, 2019 4:02:11 PM  
**Attachments:** [image001.png](#)  
[image002.png](#)  
[image003.png](#)  
[image004.png](#)  
[image005.png](#)  
[10739 Limited Results Form.pdf](#)

---

Hi Scott,

See the below emails and correspondence with the USFS and CDPHE regarding the USFS permitting. The Heritage Assessment is attached.

Thanks,



**RICHARD A. HOOD, P.E.** | Senior Project Engineer

JVA, Incorporated  
1512 Larimer Street, Suite 710, Denver, CO 80202  
Direct: 303.565.4901 | Mobile: 720.409.8695 | Phone: 303.444.1951  
[www.jvajva.com](http://www.jvajva.com)

Boulder | Fort Collins | Winter Park | Glenwood Springs | Denver

---

**From:** Hare, Jonathan -FS <[jonathan.hare@usda.gov](mailto:jonathan.hare@usda.gov)>  
**Sent:** Wednesday, October 09, 2019 2:45 PM  
**To:** Karchut, Jeremy M -FS <[jeremy.m.karchut@usda.gov](mailto:jeremy.m.karchut@usda.gov)>; Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)>  
**Cc:** [whittaker.breana@epa.gov](mailto:whittaker.breana@epa.gov); Johnson-Hufford - CDPHE, Randi <[randi.johnson-hufford@state.co.us](mailto:randi.johnson-hufford@state.co.us)>; [matt.alms@state.co.us](mailto:matt.alms@state.co.us); Richard A. Hood <[rhood@jvajva.com](mailto:rhood@jvajva.com)>; Cooper D. Best <[cbest@jvajva.com](mailto:cbest@jvajva.com)>  
**Subject:** RE: Mount Crested Butte

Thanks Shane – I will look for the SHPO letter on the topic to include in the project file. Jon



**Jon Hare**  
Realty Specialist

**Forest Service**  
Gunnison Ranger District; Grand Mesa, Uncompahgre, and  
Gunnison National Forest

p: 970-642-4445  
c: 970-250-9966  
[jonathan.hare@usda.gov](mailto:jonathan.hare@usda.gov)

216 N. Colorado Street  
Gunnison, CO 81230  
[www.fs.fed.us](http://www.fs.fed.us)



Caring for the land and serving people

---

**From:** Karchut, Jeremy M -FS  
**Sent:** Wednesday, October 9, 2019 1:39 PM  
**To:** Shane A. White <[swhite@jvajva.com](mailto:swhite@jvajva.com)>; Hare, Jonathan -FS <[jonathan.hare@usda.gov](mailto:jonathan.hare@usda.gov)>  
**Cc:** [whittaker.breana@epa.gov](mailto:whittaker.breana@epa.gov); Johnson-Hufford - CDPHE, Randi <[randi.johnson-hufford@state.co.us](mailto:randi.johnson-hufford@state.co.us)>; [matt.alm@state.co.us](mailto:matt.alm@state.co.us); Richard A. Hood <[rhood@jvajva.com](mailto:rhood@jvajva.com)>; Cooper D. Best <[cbest@jvajva.com](mailto:cbest@jvajva.com)>  
**Subject:** RE: Mount Crested Butte

Thank you, Shane. I have been in contact with ERO so I was expecting this report. I am good with their recommendations and do not have any further cultural resource concerns for this project. The GMUG NF will include a copy of this in our annual report to SHPO that we will submit next March.  
Jeremy



**Jeremy M. Karchut**  
**Forest Archaeologist/ Heritage Program Manager**  
**Forest Climate Change Coordinator**  
**Forest Service**  
**Grand Mesa, Uncompahgre & Gunnison National Forests**  
**p: 970-874-6604**  
[jeremy.m.karchut@usda.gov](mailto:jeremy.m.karchut@usda.gov)  
2250 S. Main St.  
Delta, CO 81416  
[www.fs.fed.us](http://www.fs.fed.us)  
  
Caring for the land and serving people

---

**From:** Shane A. White [<mailto:swhite@jvajva.com>]  
**Sent:** Wednesday, October 9, 2019 1:31 PM  
**To:** Hare, Jonathan -FS <[jonathan.hare@usda.gov](mailto:jonathan.hare@usda.gov)>  
**Cc:** [whittaker.breana@epa.gov](mailto:whittaker.breana@epa.gov); Karchut, Jeremy M -FS <[jeremy.m.karchut@usda.gov](mailto:jeremy.m.karchut@usda.gov)>; Johnson-Hufford - CDPHE, Randi <[randi.johnson-hufford@state.co.us](mailto:randi.johnson-hufford@state.co.us)>; [matt.alm@state.co.us](mailto:matt.alm@state.co.us); Richard A. Hood <[rhood@jvajva.com](mailto:rhood@jvajva.com)>; Cooper D. Best <[cbest@jvajva.com](mailto:cbest@jvajva.com)>  
**Subject:** Mount Crested Butte

Hi John,

JVA has been working closely with the Mount Crested Butte Water and Sanitation District and CDPHE

to complete the CDPHE Environmental Report for the MCB WTP improvements project (East River Pump Station and Pipeline included). I wanted to send over the results of the cultural survey that was performed for the Area of Potential Affect to assist you in your review of the USFS portion of this project. Concurrently, CDPHE is reaching out to the State Historic Preservation Office for their comment, we can make sure you get their response as well once we receive it.

Please let me know if you need any additional information going forward to assist you in your review. It sounds like you may have been working with Breana Whittaker and possibly Randi and Matt as well - I CC'd them so everyone is on the same page. If there is anyone else with the USFS that I should include in future correspondence related to this project, please let me know.

Take Care,



**SHANE A. WHITE** | Project Engineer

JVA, Incorporated  
1319 Spruce Street, Boulder, CO 80302  
Direct: [303.951.1036](tel:303.951.1036) | Phone: 303.444.1951  
[www.jvajva.com](http://www.jvajva.com)

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# COLORADO HISTORICAL SOCIETY

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**LIMITED-RESULTS CULTURAL RESOURCE SURVEY FORM**

(Page 1 of 5)

This form (#1420) is for small scale limited results projects - block surveys less than 160 acres with linear surveys under four miles. Additionally, there should be no sites and a maximum of four Isolated Finds. This form must be typed.

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**I. IDENTIFICATION**

1. Report Title (include County): Cultural Resource Survey, Mt. Crested Butte Water and Sanitation District Water Treatment Plant Expansion Project, Gunnison County, Colorado
2. Date of Field Work: August 8, 2019
3. Form completed by: Kathy Croll Date: 8/28/2019
4. Survey Organization/Agency: ERO Resources Corporation  
Principal Investigator: Kathy Croll

Principal Investigator's Signature:



Other Crew:

Address: 1015 1/2 Main Avenue, Durango, CO 81301

5. Lead Agency / Land Owner: USFS, Grand Mesa, Uncompahgre, and Gunnison National Forest

Contact: Justin Lawrence

Address: 216 N. Colorado, Gunnison, Colorado 81230

6. Client: JVA, Incorporated
7. Permit Type and Number: USFS Region 2 Permit: CAN715HR
8. Report / Contract Number: GN.FS.NR299
9. Comments:

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**II. DESCRIPTION OF UNDERTAKING / PROJECT**

10. Type of Undertaking: Expansion of existing water treatment plant
11. Size of Undertaking (acres): 15.5 Size of Project (if different):
12. Nature of the Anticipated Disturbance: Expansion of existing water treatment plant and burial of waterline in existing pipeline corridor
13. Comments: The entire project area has been previously disturbed by the existing water treatment plant and associated features

### III. PROJECT LOCATION

Please attach a photocopy of USGS Quad. clearly showing the project location. The Quad. should be clearly labeled with the Prime Meridian, Township, Range, Section(s), Quad. map name, size, and date. Please do not reduce or enlarge the photocopy.

14. Description: Project area is located north of Mount Crested Butte to the east of Gothic Road in the East River Valley

15. Legal Location: Quad. Map: Gothic, CO Date(s): 1979

Principal Meridian: 6<sup>th</sup> X NM Ute

*NOTE:* Only generalized subdivision ("quarter quarters") within each section is needed

Township: 15S Range: 86W Sec.: 13 1/4s S 1/2

If section(s) is irregular, explain alignment method:

16. Total number of acres surveyed: 15.5

17. Comments:

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### IV. ENVIRONMENT

18. General Topographic Setting: Project area is located on the slope and terrace above and to the southwest of the East River north of Mount Crested Butte.

Current Land Use: Wastewater treatment and open range. A bike trail cuts through the project area as well.

19. Flora: bunch grasses, aspen, low shrubs, aster, skunkweed, green gentian

20. Soils/Geology: Gray brown clay loam/ Surface geology is Mancos Shale

21. Ground Visibility: 50-75 percent

22. Comments:

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### V. LITERATURE REVIEW

23. Location of File Search: Compass online database and USFS GMUG-Gunnison Ranger District

Date: 8/7/2019 and 8/8/2019

24. Previous Survey Activity – In the project area: Two previous surveys overlap the current project area: A survey conducted for the Crested Butte Mountain Resort proposed master plan revision (GN.FS.R26) and a survey of portions of the Crested Butte Mountain Resort Permit Area (GN.FS.NR252)

In the general region: Most of the previous survey work in the region was conducted for land exchanges or in advance of expansion of the Mt. Crested Butte Ski Area

25. Known Cultural Resources - In the project area: None

In the general region (summarize): Sites in the region are primarily historic; one site, 5GN2476, is an aspen carving located near the project area.

26. Expected Results: Based on previous inventory and the level of disturbance within the project area, no sites were expected. There was limited potential for culturally modified aspens, but none were found.

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## **VI. STATEMENT OF OBJECTIVES**

27. To identify historic properties pursuant to 36 CFR 800 within the project area likely to be impacted by project activities.

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## **VII. FIELD METHODS**

28. Definitions – Site: The locus of previous (50-year age minimum) human activity at which the preponderance of evidence suggests repeated and patterned use over time, or multiple classes of activities. A site is defined as an artifact scatter of more than 10 artifacts in a 10-meter-diameter area or less than 10 artifacts with one or more site features. Isolated thermal features, rock art panels, and human burials are considered archaeological sites.

IF: An isolated find refers to one or more culturally modified and transportable objects representing a single activity and not found in the context of a site as defined above.

29. Describe Survey Method: Intensive pedestrian survey of the project area was conducted in 15-meter intervals.

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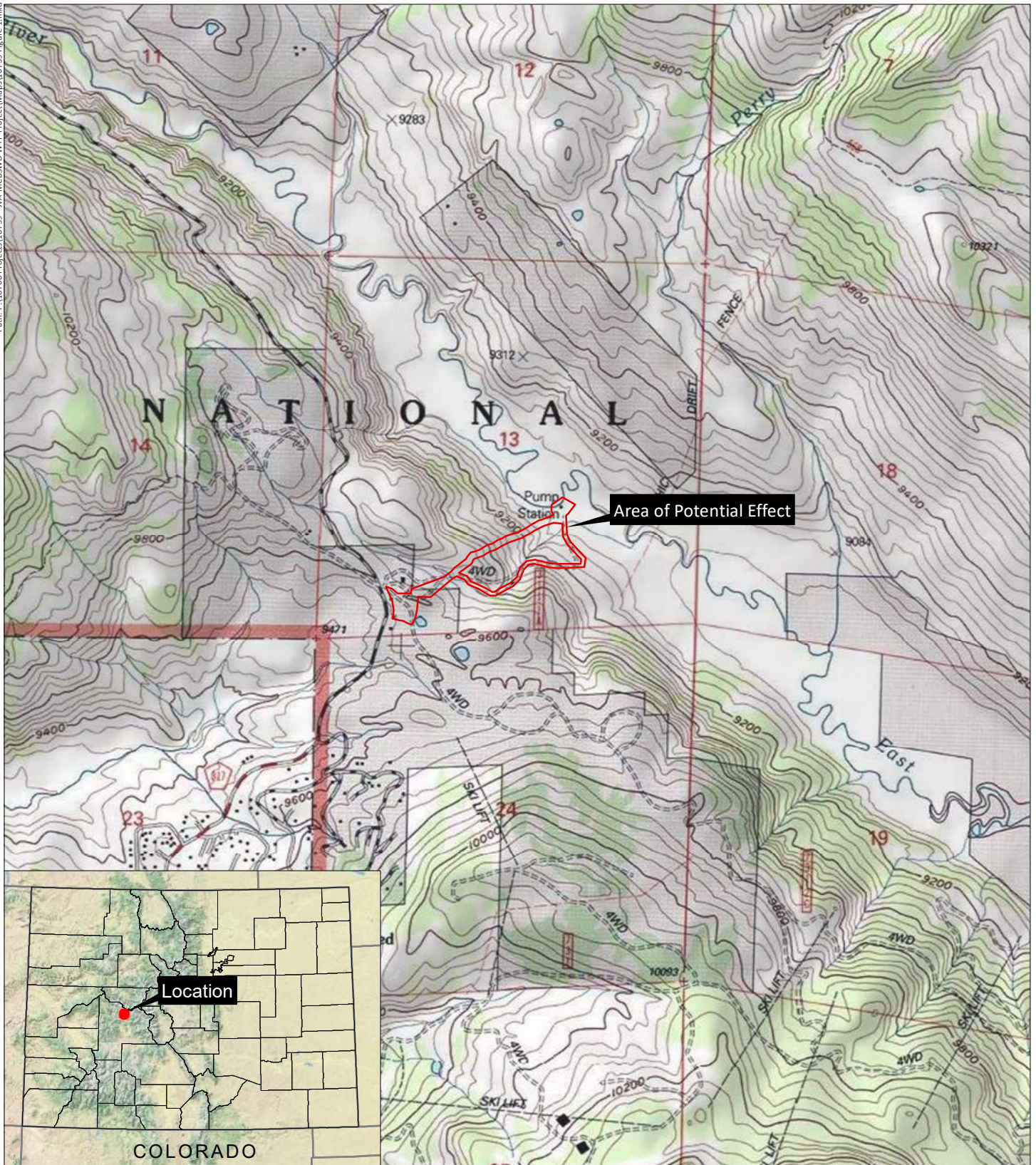
## **VIII. RESULTS**

30. List IFs if applicable. Indicate IF locations on the map completed for Part III.  
None

31. Using your professional knowledge of the region, why are there none or very limited cultural remains in the project area? Is there subsurface potential?

The project area has undergone extensive disturbance from construction of the existing water treatment plant and associated facilities. Furthermore, the project area is primarily located on a steep slope above the East River limiting the potential cultural resources. There is subsurface potential in the area of the project near the East River in the floodplain.





Cultural Resource Survey  
 Mt. Crested Butte Water and Sanitation District  
 Water Treatment Plant Expansion Project  
 Gunnison County, Colorado

Section 13, T15S, R86W; 6th PM  
 USGS Gothic, CO Quadrangle (1:24,000, 1979)

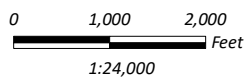


Figure 1  
 Project Location

Prepared for: JVA, Inc.  
 File: 10739 Figure 1.mxd (GS)  
 August 29, 2019







**Figure 2. Project overview, view to the east.  
Photo number: P1040060.jpg Date: 8/8/2019**

**HISTORY COLORADO**  
**Office of Archaeology and Historic Preservation**  
**1200 Broadway, Denver, Colorado 80203**

Kelsey Traxinger  
JVA, Inc.  
1512 Larimer Street, Suite 710  
Denver, CO 80202

May 28, 2019

Re: Mt. Crested Butte Water and Sanitation District WTP Improvements  
File Search No. 21896

At your request, the Office of Archaeology and Historic Preservation has conducted a search of the Colorado Inventory of Cultural Resources within the following areas:

PM	T	R	S
6th	13S	86W	13

1 sites and 3 surveys were located in the designated area(s).

If information on any district, site, building, structure, or object in the project area was found, detailed information follows the summary. If no properties were found, but surveys are known to have been conducted in the project area, survey information follows the summary. We do not have complete information on surveys conducted in Colorado, and our site files cannot be considered complete because most of the state has not been surveyed for cultural resources. There is the possibility that as yet unidentified cultural resources exist within the proposed impact area.

Our letter should not be interpreted as formal consultation under Section 106 of the National Historic Preservation Act (36 CFR 800) or the Colorado Register of Historic Places (CRS 24-80.1). In the event that there is federal or state agency involvement, please note that it is the responsibility of the agencies to meet the requirements of these regulations.

We look forward to consulting with you regarding the effect of the proposed project on significant cultural resources in accordance with the Advisory Council on Historic Preservation regulations titled "Protection of Historic Properties" or the Colorado Register of Historic Places, as applicable (<http://www.historycolorado.org/oahp/consultation-guidance>).

If you have any questions, please contact the Office of Archaeology and Historic Preservation at (303) 866-3392. Thank you for your interest in Colorado's cultural heritage.

Steve Turner, AIA  
State Historic Preservation Officer

\*Information regarding significant archaeological resources is excluded from the Freedom of Information Act. Therefore, legal locations of these resources must not be included in documents for public distribution.

**HISTORY COLORADO**  
**Office of Archaeology and Historic Preservation**  
**1200 Broadway, Denver, Colorado 80203**

Kelsey Traxinger  
JVA, Inc.  
1512 Larimer Street, Suite 710  
Denver, CO 80202

July 3, 2019

Re: Mt. Crested Butte Water and Sanitation District WTP Improvements  
File Search No. 21962

At your request, the Office of Archaeology and Historic Preservation has conducted a search of the Colorado Inventory of Cultural Resources within the following areas:

PM	T	R	S
6th	13S	86W	11-14, 23, 24
6th	13S	85W	7, 18, 19

3 sites and 8 surveys were located in the designated area(s).

If information on any district, site, building, structure, or object in the project area was found, detailed information follows the summary. If no properties were found, but surveys are known to have been conducted in the project area, survey information follows the summary. We do not have complete information on surveys conducted in Colorado, and our site files cannot be considered complete because most of the state has not been surveyed for cultural resources. There is the possibility that as yet unidentified cultural resources exist within the proposed impact area.

Our letter should not be interpreted as formal consultation under Section 106 of the National Historic Preservation Act (36 CFR 800) or the Colorado Register of Historic Places (CRS 24-80.1). In the event that there is federal or state agency involvement, please note that it is the responsibility of the agencies to meet the requirements of these regulations.

We look forward to consulting with you regarding the effect of the proposed project on significant cultural resources in accordance with the Advisory Council on Historic Preservation regulations titled "Protection of Historic Properties" or the Colorado Register of Historic Places, as applicable (<http://www.historycolorado.org/oahp/consultation-guidance>).

If you have any questions, please contact the Office of Archaeology and Historic Preservation at (303) 866-3392. Thank you for your interest in Colorado's cultural heritage.

Steve Turner, AIA  
State Historic Preservation Officer

\*Information regarding significant archaeological resources is excluded from the Freedom of Information Act. Therefore, legal locations of these resources must not be included in documents for public distribution.

21962\_s\_sy



Water Quality Control  
DEC 30 2019  
Received

December 23, 2019

Patrick J. Pfaltzgraff  
Director, Water Quality Control Division  
Colorado Department of Public Health and Environment  
4300 Cherry Creek Drive South  
Denver, Colorado 80246-1530

Re: Drinking Water State Revolving Fund, Mt. Crested (Butte) Water and Sanitation District, Gunnison County, Colorado (HC #77023)

Dear Mr. Pfaltzgraff:

We received your correspondence dated December 11, 2019 on December 17, 2019 formally initiating consultation on the referenced submission provided in accordance with Section of the National Historic Preservation Act.

We find the provided documentation that includes the report titled Cultural Resource Survey, Mt. Crested Butte Water and Sanitation District Water Treatment Plant Expansion Project, Gunnison County, Colorado satisfactory. Based on the information presented, we concur that the proposed undertaking will result in no historic properties affected pursuant to 36 CFR 800.4(d)(1).

Should unidentified archaeological resources be discovered in the course of the undertaking, work must be interrupted until the resources have been evaluated in terms of the National Register eligibility criteria (36 CFR 60.4) in consultation with our office pursuant to 36 CFR 800.13. Also, should the consulted-upon scope of the work change please contact our office for continued consultation under Section 106 of the National Historic Preservation Act.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or consulting parties might cause our office to re-evaluate our eligibility and potential effect findings. Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

Thank you for the opportunity to comment. If we may be of further assistance, please contact Mark Tobias, Intergovernmental Services Manager, at (303) 866-4674 or [mark.tobias@state.co.us](mailto:mark.tobias@state.co.us).

Sincerely,

Steve Turner, AIA  
State Historic Preservation Officer  
ST/mt

# **TRIBAL HISTORIC PRESERVATION OFFICERS**

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**JVA, Incorporated**  
817 Colorado Avenue  
Suite 301  
Glenwood Springs,  
CO 81601  
970.404.3100  
info@jvajva.com

July 10, 2019

Apache Tribe of Oklahoma  
Lyman Guy  
PO Box 1330  
Anadarko, OK 73005

[www.jvajva.com](http://www.jvajva.com)

RE: SRF Environmental Report for the Mt. Crested Butte Water and Sanitation District  
WTP Improvements  
JVA Job Number: 1028e

Dear Lyman Guy,

The Mt. Crested Butte Water and Sanitation District (District) is in the process of performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and pipeline improvements, in Gunnison County, Colorado.

This letter represents a formal request for input from you regarding an SRF Environmental Review for the District's WTP Improvements Project. The attached Figure 1 shows the proposed Area of Potential Effect (APE) for the project. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was performed by HDR in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Evaluation included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the District has selected to construct a new WTP building located adjacent to the existing plant, and a new pump station, and new raw water pipeline.

The proposed improvements will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of pre-sedimentation followed by membrane filtration technology. Raw water from the East River will be sent to a settling pond which will then be pumped to an existing pre-sedimentation pond near the WTP. Piping will be installed, running southwest, to convey the raw water to the pre-sedimentation pond. All proposed improvements will occur within District owned property, rights-of-way, and easements.

The District is notifying you about the referenced project because of the possible interest of the Apache Tribe of Oklahoma in Gunnison County. Should the Apache Tribe of Oklahoma elect to participate in Section 106 review of the referenced project, please notify me in writing via letter or email as soon as possible at the following addresses:





Attn: Kelsey Traxinger  
JVA, Inc.  
1512 Larimer St  
Denver, CO 80202  
Or [ktraxinger@jvajva.com](mailto:ktraxinger@jvajva.com)

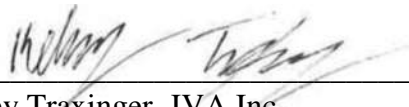
Please include with your affirmative response, a description and location of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project. The District of Mt. Crested Butte will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with SRF, as the agency responsible for conducting Section 106 review, or to request that SRF participate directly in Section 106 review, please notify me as soon as possible, preferably via email. However, you may also contact SRF directly by submitting your request to:

Attn: Matt Alms, Compliance Specialist  
CDPHE Grants and Loans Unit  
4300 Cherry Creek Drive South  
Denver, CO 80246  
Or [matt.alm@state.co.us](mailto:matt.alm@state.co.us)

We look forward to receiving input regarding this project. Please reply at your earliest convenience, within 30 calendar days. The District has been instructed to proceed to the next step in Section 106 review if you fail to provide a timely response. If you have any questions, or require any further information, please feel free to contact me at 303-951-1035. Thank you in advance for your time and attention in this matter.

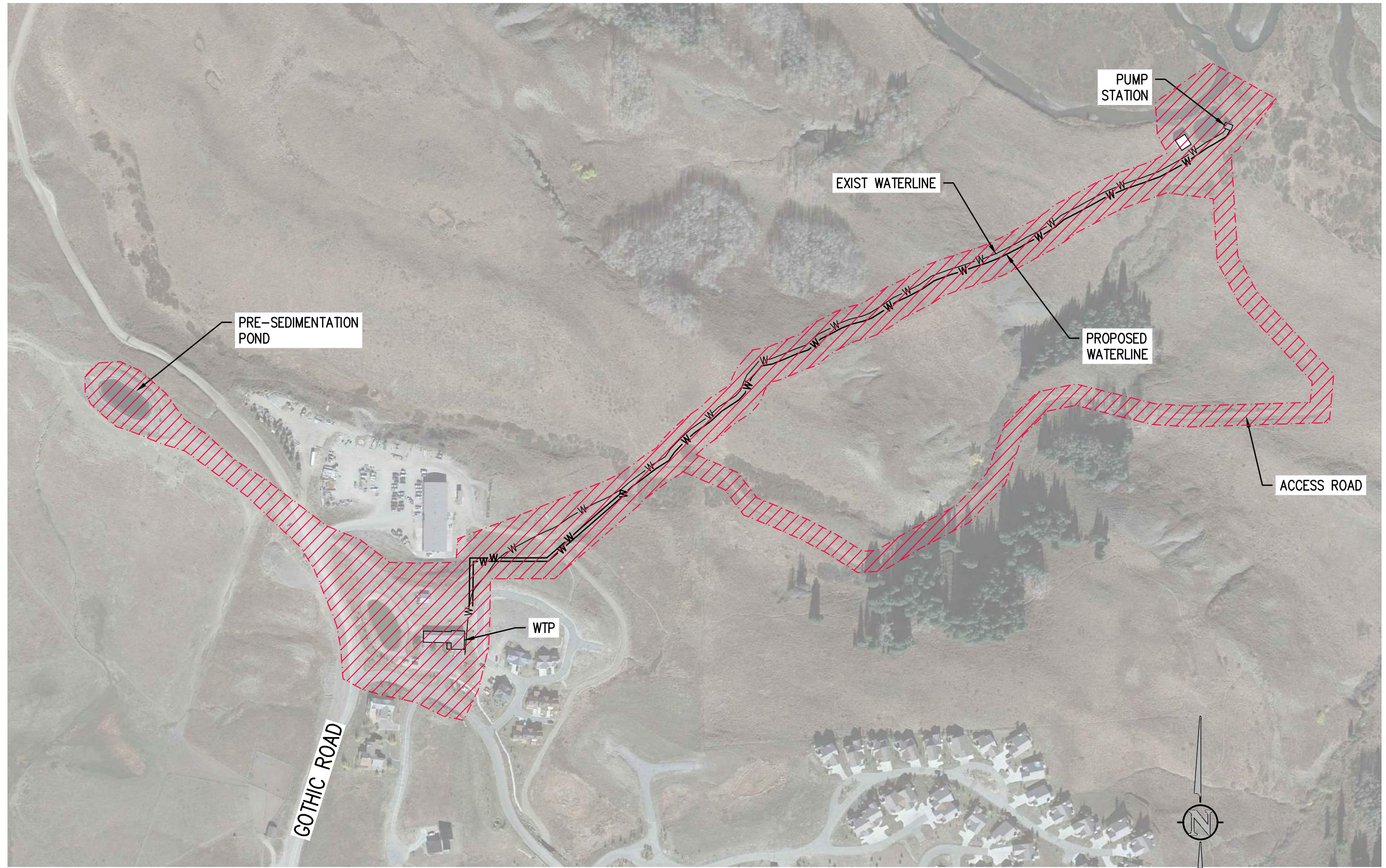
Sincerely,  
JVA, Incorporated

By:   
Kelsey Traxinger, JVA Inc.

Enclosure:  
Figure 1 – Area of Potential Effect

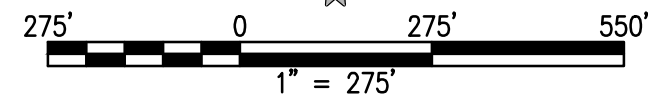


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**LEGEND**

 AREA OF POTENTIAL EFFECT



**FIGURE 1 - AREA OF POTENTIAL EFFECT**  
**MCBWSW WTP EXPANSION PROJECT**  
**JUNE 2019**

JVA, Inc.  
817 Colorado Avenue, Suite 301  
Glenwood Springs, CO 81601  
970.404.3100  
www.jvajva.com  
Boulder • Fort Collins • Winter Park  
Glenwood Springs • Denver







**JVA, Incorporated**  
817 Colorado Avenue  
Suite 301  
Glenwood Springs,  
CO 81601  
970.404.3100  
info@jvajva.com

July 10, 2019

Comanche Nation of Oklahoma  
Martina Callahan  
6 SW D Avenue  
Lawton, OK 73502

[www.jvajva.com](http://www.jvajva.com)

RE: SRF Environmental Report for the Mt. Crested Butte Water and Sanitation District  
WTP Improvements  
JVA Job Number: 1028e

Dear Martina Callahan,

The Mt. Crested Butte Water and Sanitation District (District) is in the process of performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and pipeline improvements, in Gunnison County, Colorado.

This letter represents a formal request for input from you regarding an SRF Environmental Review for the District's WTP Improvements Project. The attached Figure 1 shows the proposed Area of Potential Effect (APE) for the project. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was performed by HDR in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Evaluation included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the District has selected to construct a new WTP building located adjacent to the existing plant, and a new pump station, and new raw water pipeline.

The proposed improvements will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of pre-sedimentation followed by membrane filtration technology. Raw water from the East River will be sent to a settling pond which will then be pumped to an existing pre-sedimentation pond near the WTP. Piping will be installed, running southwest, to convey the raw water to the pre-sedimentation pond. All proposed improvements will occur within District owned property, rights-of-way, and easements.

The District is notifying you about the referenced project because of the possible interest of the Comanche Nation Tribe of Oklahoma in Gunnison County. Should the Comanche Nation Tribe of Oklahoma elect to participate in Section 106 review of the referenced project, please notify me in writing via letter or email as soon as possible at the following addresses:



Attn: Kelsey Traxinger  
JVA, Inc.  
1512 Larimer St  
Denver, CO 80202  
Or [ktraxinger@jvajva.com](mailto:ktraxinger@jvajva.com)

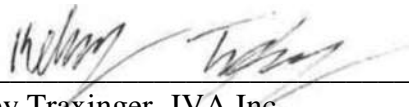
Please include with your affirmative response, a description and location of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project. The District of Mt. Crested Butte will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with SRF, as the agency responsible for conducting Section 106 review, or to request that SRF participate directly in Section 106 review, please notify me as soon as possible, preferably via email. However, you may also contact SRF directly by submitting your request to:

Attn: Matt Alms, Compliance Specialist  
CDPHE Grants and Loans Unit  
4300 Cherry Creek Drive South  
Denver, CO 80246  
Or [matt.alm@state.co.us](mailto:matt.alm@state.co.us)

We look forward to receiving input regarding this project. Please reply at your earliest convenience, within 30 calendar days. The District has been instructed to proceed to the next step in Section 106 review if you fail to provide a timely response. If you have any questions, or require any further information, please feel free to contact me at 303-951-1035. Thank you in advance for your time and attention in this matter.

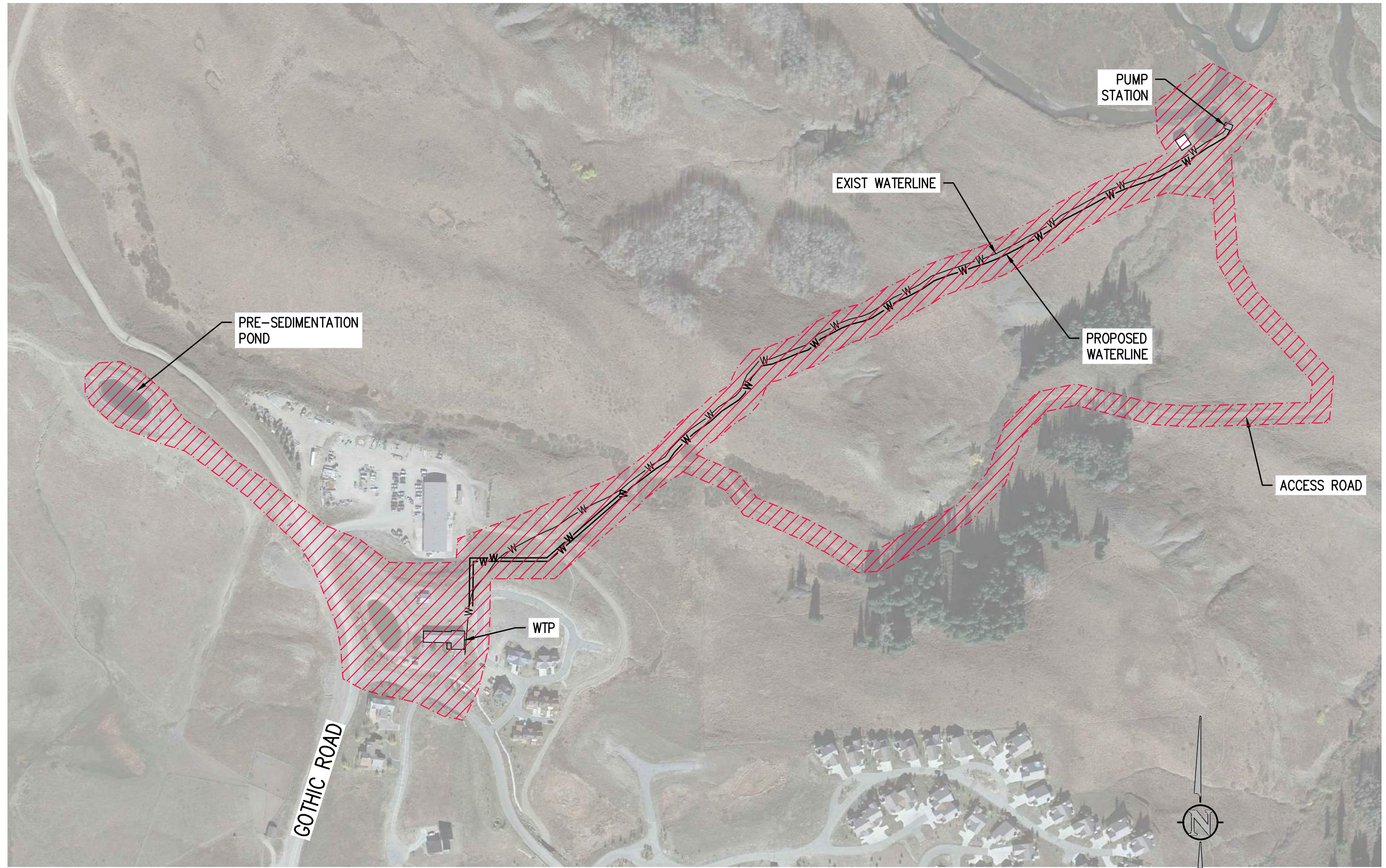
Sincerely,  
JVA, Incorporated

By:   
\_\_\_\_\_  
Kelsey Traxinger, JVA Inc.

Enclosure:  
Figure 1 – Area of Potential Effect

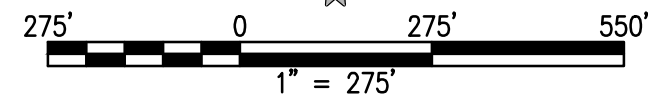


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**LEGEND**

 AREA OF POTENTIAL EFFECT



**FIGURE 1 - AREA OF POTENTIAL EFFECT**  
**MCBWSW WTP EXPANSION PROJECT**  
**JUNE 2019**



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970.404.3100  
info@jvajva.com

July 10, 2019

Fort Belknap Indian Community  
Fort Belknap Reservation of Montana  
Michael Blackwolf  
656 Agency Main Street  
Harlem, MT 59526

[www.jvajva.com](http://www.jvajva.com)

RE: SRF Environmental Report for the Mt. Crested Butte Water and Sanitation District  
WTP Improvements  
JVA Job Number: 1028e

Dear Michael Blackwolf,

The Mt. Crested Butte Water and Sanitation District (District) is in the process of performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and pipeline improvements, in Gunnison County, Colorado.

This letter represents a formal request for input from you regarding an SRF Environmental Review for the District's WTP Improvements Project. The attached Figure 1 shows the proposed Area of Potential Effect (APE) for the project. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was performed by HDR in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Evaluation included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the District has selected to construct a new WTP building located adjacent to the existing plant, and a new pump station, and new raw water pipeline.

The proposed improvements will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of pre-sedimentation followed by membrane filtration technology. Raw water from the East River will be sent to a settling pond which will then be pumped to an existing pre-sedimentation pond near the WTP. Piping will be installed, running southwest, to convey the raw water to the pre-sedimentation pond. All proposed improvements will occur within District owned property, rights-of-way, and easements.

The District is notifying you about the referenced project because of the possible interest of the Fort Belknap Indian Community of Montana in Gunnison County. Should the Fort Belknap Indian Community of Montana elect to participate in Section 106 review of the referenced



project, please notify me in writing via letter or email as soon as possible at the following addresses:

Attn: Kelsey Traxinger  
JVA, Inc.  
1512 Larimer St  
Denver, CO 80202  
Or [ktraxinger@jvajva.com](mailto:ktraxinger@jvajva.com)

Please include with your affirmative response, a description and location of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project. The District of Mt. Crested Butte will respect the confidentiality of the information which you provide to the fullest extent possible.

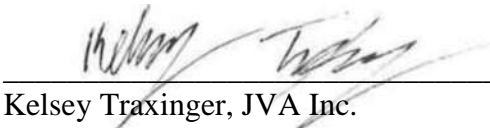
If at any time you wish to share your interests, recommendations and concerns directly with SRF, as the agency responsible for conducting Section 106 review, or to request that SRF participate directly in Section 106 review, please notify me as soon as possible, preferably via email. However, you may also contact SRF directly by submitting your request to:

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CDPHE Grants and Loans Unit  
4300 Cherry Creek Drive South  
Denver, CO 80246  
Or [matt.alm@state.co.us](mailto:matt.alm@state.co.us)

We look forward to receiving input regarding this project. Please reply at your earliest convenience, within 30 calendar days. The District has been instructed to proceed to the next step in Section 106 review if you fail to provide a timely response. If you have any questions, or require any further information, please feel free to contact me at 303-951-1035. Thank you in advance for your time and attention in this matter.

Sincerely,  
JVA, Incorporated

By:

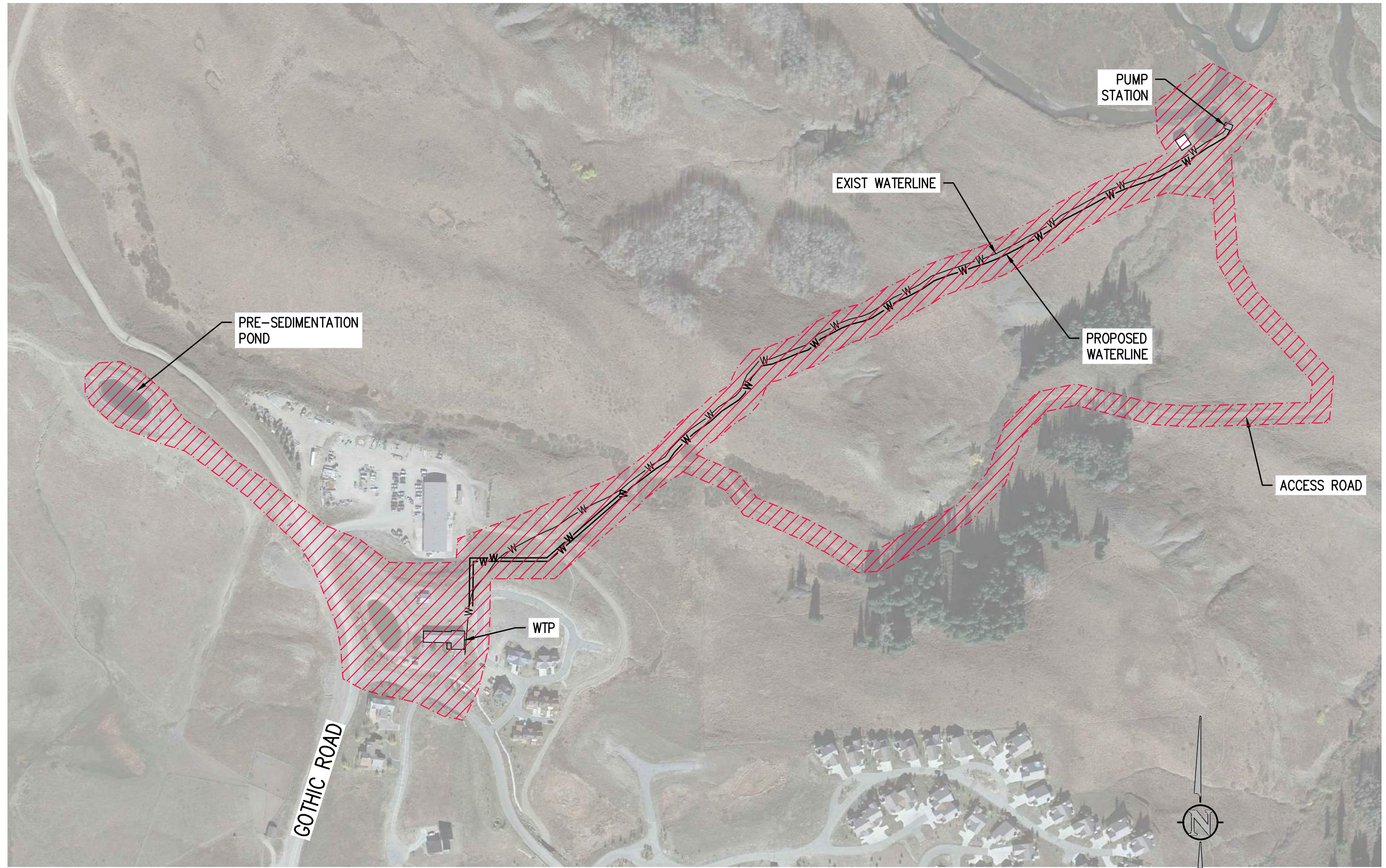
  
Kelsey Traxinger, JVA Inc.

Enclosure:

Figure 1 – Area of Potential Effect

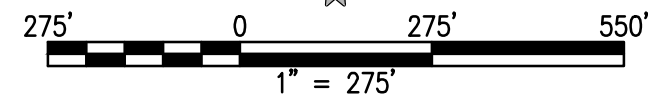


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**LEGEND**

 AREA OF POTENTIAL EFFECT



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 Glenwood Springs, CO 81601  
 970.404.3100  
 www.jvajva.com  
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**FIGURE 1 - AREA OF POTENTIAL EFFECT**  
**MCBWSD WTP EXPANSION PROJECT**  
**JUNE 2019**





**JVA, Incorporated**  
817 Colorado Avenue  
Suite 301  
Glenwood Springs,  
CO 81601  
970.404.3100  
info@jvajva.com

July 10, 2019

Navajo Nation of Arizona, New Mexico and Utah  
Richard Begay  
PO Box 4950  
Window Rock, AZ 86515

[www.jvajva.com](http://www.jvajva.com)

RE: SRF Environmental Report for the Mt. Crested Butte Water and Sanitation District  
WTP Improvements  
JVA Job Number: 1028e

Dear Richard Begay,

The Mt. Crested Butte Water and Sanitation District (District) is in the process of performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and pipeline improvements, in Gunnison County, Colorado.

This letter represents a formal request for input from you regarding an SRF Environmental Review for the District's WTP Improvements Project. The attached Figure 1 shows the proposed Area of Potential Effect (APE) for the project. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

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The proposed improvements will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of pre-sedimentation followed by membrane filtration technology. Raw water from the East River will be sent to a settling pond which will then be pumped to an existing pre-sedimentation pond near the WTP. Piping will be installed, running southwest, to convey the raw water to the pre-sedimentation pond. All proposed improvements will occur within District owned property, rights-of-way, and easements.

The District is notifying you about the referenced project because of the possible interest of the Navajo Nation of Arizona, New Mexico and Utah in Gunnison County. Should the Navajo Nation of Arizona, New Mexico and Utah elect to participate in Section 106 review of the referenced project, please notify me in writing via letter or email as soon as possible at the following addresses:



Attn: Kelsey Traxinger  
JVA, Inc.  
1512 Larimer St  
Denver, CO 80202  
Or [ktraxinger@jvajva.com](mailto:ktraxinger@jvajva.com)

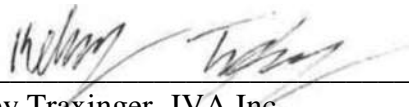
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If at any time you wish to share your interests, recommendations and concerns directly with SRF, as the agency responsible for conducting Section 106 review, or to request that SRF participate directly in Section 106 review, please notify me as soon as possible, preferably via email. However, you may also contact SRF directly by submitting your request to:

Attn: Matt Alms, Compliance Specialist  
CDPHE Grants and Loans Unit  
4300 Cherry Creek Drive South  
Denver, CO 80246  
Or [matt.alm@state.co.us](mailto:matt.alm@state.co.us)

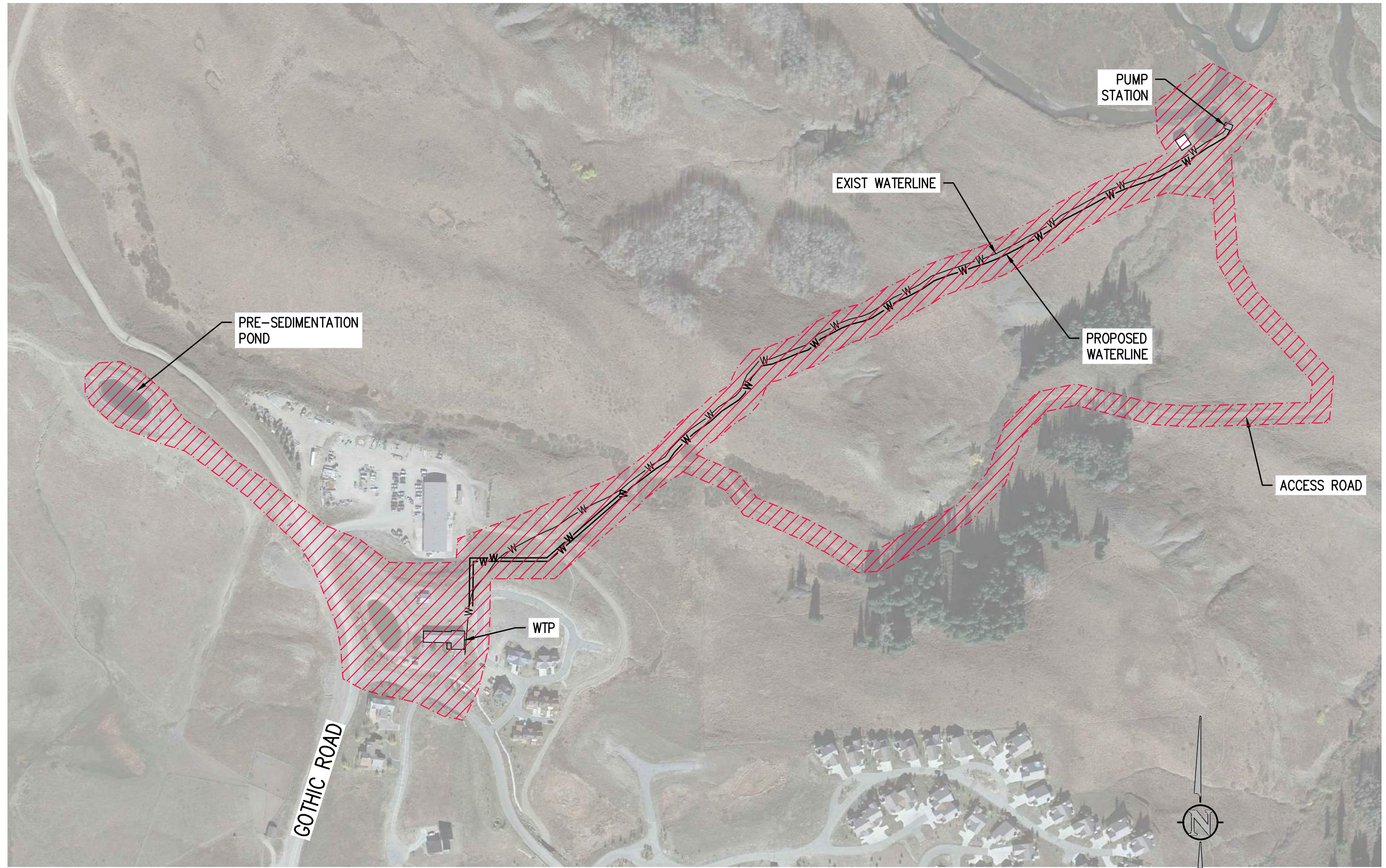
We look forward to receiving input regarding this project. Please reply at your earliest convenience, within 30 calendar days. The District has been instructed to proceed to the next step in Section 106 review if you fail to provide a timely response. If you have any questions, or require any further information, please feel free to contact me at 303-951-1035. Thank you in advance for your time and attention in this matter.

Sincerely,  
JVA, Incorporated

By:   
\_\_\_\_\_  
Kelsey Traxinger, JVA Inc.

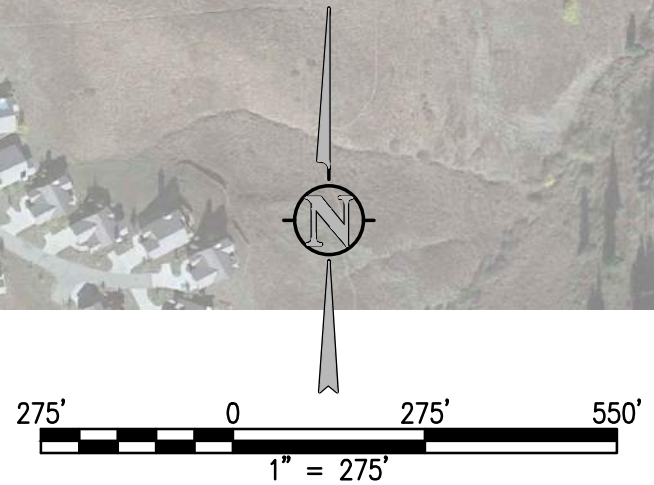
Enclosure:  
Figure 1 – Area of Potential Effect





**LEGEND**

 AREA OF POTENTIAL EFFECT



**FIGURE 1 - AREA OF POTENTIAL EFFECT**  
**MCBWSW WTP EXPANSION PROJECT**  
**JUNE 2019**





# **CDPHE AIR POLLUTION CONTROL DIVISION**

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JVA, Incorporated  
25 Old Town Square  
Suite 200  
Fort Collins, CO 80524  
970.225.9099  
info@jvajva.com

September 6, 2019

Colorado Department of Public Health and Environment  
Air Pollution Control Division  
Ms. Dena Wojtach  
4300 Cherry Creek Drive South  
Denver, CO 80246

[www.jvajva.com](http://www.jvajva.com)

RE: SRF Environmental Report for the Mt. Crested Butte Water and Sanitation District  
WTP Expansion Project  
JVA Job Number: 1028e

Ms. Dena Wojtach,

The Mt. Crested Butte Water and Sanitation District (District) is performing an environmental review pursuant to the National Environmental Policy Act for the Colorado Department of Public Health and Environment (CDPHE) State Revolving Fund (SRF) to assess the environmental impacts of its Water Treatment Plant (WTP) improvement project, which also includes pump station and pipeline improvements, in Gunnison County, Colorado.

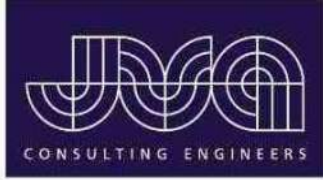
This letter represents a formal request for input from your agency regarding an SRF Environmental Review for the District's WTP Improvements Project. The attached Figure 1 shows the proposed Area of Potential Effect (APE) for the project.

The District serves the Town of Mt. Crested Butte, Colorado with an existing WTP that was built in 1985 and has undergone only minor updates and repairs since construction. Installed equipment is approaching the end of its useful life and cannot reliably meet increasing water demands in the District. A Facility Assessment Report of the WTP, pump station, and pipeline was completed in 2017 followed by a Treatment Assessment Memorandum of the WTP in 2018. The Treatment Assessment Memorandum included an alternatives analysis for improving and expanding plant capacity utilizing the findings of the Facility Assessment Report. Based on these evaluations, the District has selected to construct a new WTP building located adjacent to the existing plant, a new pump station, and a new raw water pipeline.

The proposed improvements at the WTP will all occur inside of the existing property boundaries of the District. The existing property is within the southern half of Section 13, Township 13 South, Range 86 West, in Gunnison County. The proposed WTP will consist of membrane filtration. Raw water will be diverted from the East River and pumped through a new pipeline to an existing pre-sedimentation pond near the WTP. The new pipeline and pump station will be located within existing easements on private and United States Forest Service property.

We look forward to receiving input from your agency regarding this project. Please reply at your earliest convenience, or within 30 days as required by SRF. If you have any questions, or require any further information, please feel free to contact me at 303-951-1036. Thank you in advance for your time and attention in this matter.





Sincerely,  
JVA, Incorporated

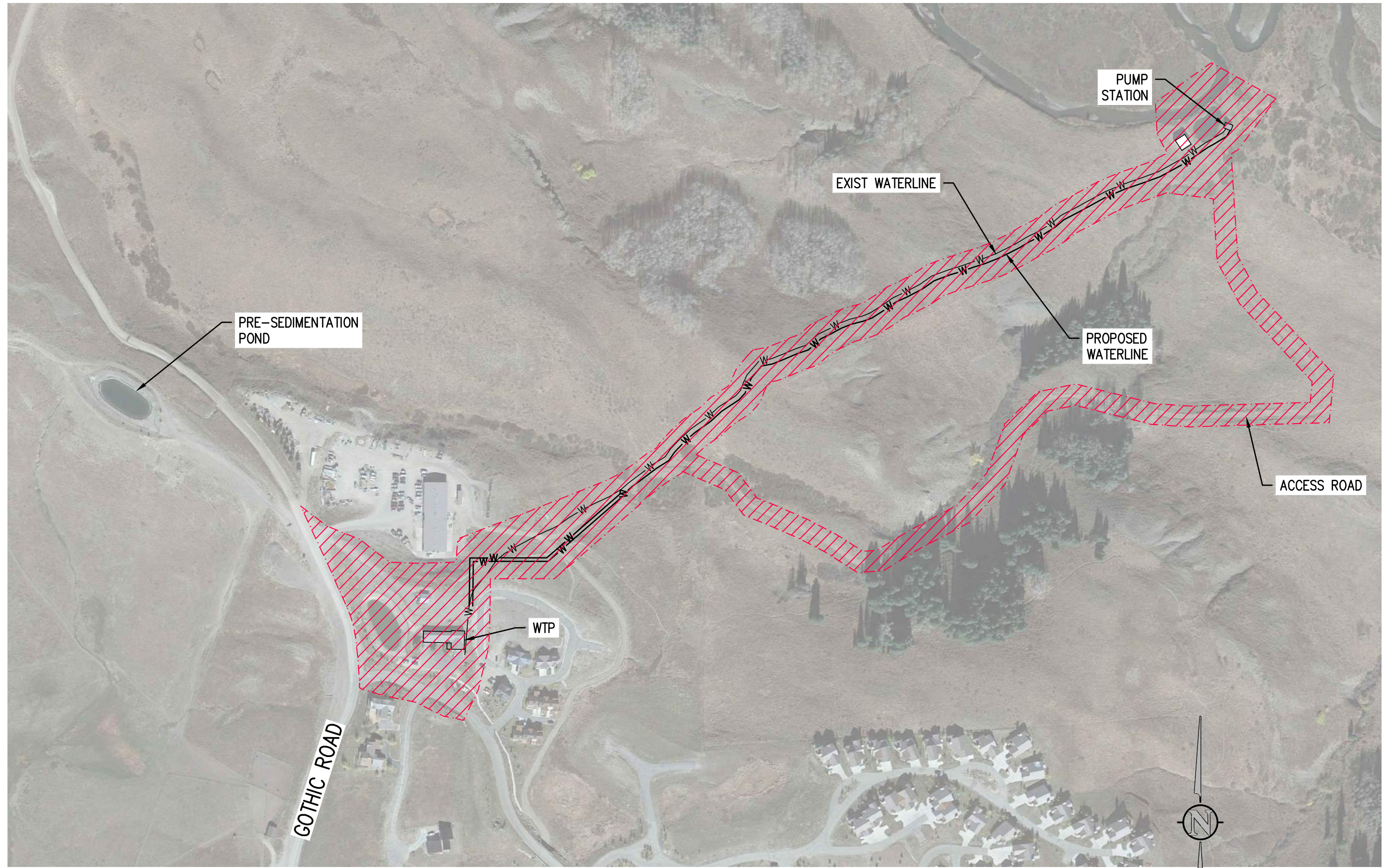
By:

Shane White, JVA Inc.

Enclosure:

Figure 1 – Area of Potential Effect





**LEGEND**

 AREA OF POTENTIAL EFFECT

275' 0 275' 550'  
1" = 275'



**FIGURE - AREA OF POTENTIAL EFFECT  
MCBWSW WTP EXPANSION PROJECT  
AUGUST 2019**