## Town of Crested Butte Source Water Protection Plan 2024



PWSID # CO0126188 PO BOX 39, 507 MAROON AVE CRESTED BUTTE, CO 81224 970-349-5338 www.crestedbutte-co.gov

### **Public Summary**

The Town of Crested Butte is taking a proactive approach to preventing the pollution of its drinking water source by developing a Source Water Protection Plan. A source water protection plan identifies a source water protection area, lists potential contaminant sources and outlines best management practices to reduce risks to the water source. Colorado's SWAP program is an iterative, two-phased process designed to assist public water systems in preventing potential contamination of their untreated drinking water supplies. The two phases include the Assessment Phase, and the Protection Phase.

### Source Water Assessment Phase

The Assessment Phase for all public water systems was completed in 2004 and consisted of four primary elements:

- 1. Delineating the source water assessment area for each of the drinking water sources,
- 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,
- 4. Reporting the results of the source water assessment to the public water systems and the general public.

### **Source Water Protection Phase**

The Protection Phase employs preventative measures to protect the water supply from the potential sources of contamination to which it may be most susceptible, including:

1. Involving local stakeholders in the planning process,

2. Developing a comprehensive protection plan for the drinking water source,

3. Implementing the protection plan on a continuous basis to reduce the risk of potential contamination of the drinking water source; and

4. Monitoring the effectiveness of the protection plan and updating it accordingly as future assessment results indicate.



### The Town of Crested Butte Source Water Protection Area

The Town of Crested Butte obtains its drinking water from two surface water intakes, one on the Coal Creek and one on Wildcat Creek. The Source Water Protection Area for the water source is the Coal Creek watershed, upstream of the intakes, and area around Glazer Reservoir, part of the system's storage. This includes Lake Irwin, Elk Creek, Splains Gulch, Wildcat Creek, and Glazer Reservoir.



The Town of Crested Butte's Source Water Protection Area is defined as:

- 1. Zone 1 is defined as a 1,000-foot-wide band on either side of the stream or reservoir.
- 2. Zone 2 extends 1/4 mile beyond each side of the boundary of Zone 1 (2,320 feet).
- 3. SWAA is made up by the remainder of the Source Water Assessment Area up to the watershed boundary.

The Town of Crested Butte identified and considered the different risks associated with potential contamination of their drinking water sources. The prioritization ranking of each potential contaminant source or other issue of concern factored in the following criteria (as described below): the level of risk, the water system control, and the management strategies associated with each item.

				Risk		
Probability of Impact	Certain	Low	Moderate	High	Very High	Very High
	Likely	Low	Moderate	High	High	Very High
	Possible	Low	Moderate	Moderate	High	High
	Unlikely	Very Low	Low	Moderate	Moderate	Moderate
	Rare	Very Low	Very Low	Low	Low	Low
		Insignificant	Minor	Significant	Maior	Catastrophic
			Imp	act to Water Sys	stem	

### The Town of Crested Butte Risk Ratings

Potential Contaminant Source or Issue of Concern	Probability of Impact	Impact to Water System	Risk	Priority Ranking
Wildfire	Likely	Catastrophic	Very High	1
Mining-Standard Mine Superfund Site	Possible	Major	High	2
Metals Loading - Standard, Keystone, Iron Fen Gossan, Background	Likely	Significant	High	2
Flooding	Possible	Major	High	2
Roads and Transportation	Possible	Significant	Moderate	2
Mining-Keystone Stormwater	Possible	Significant	Moderate	3
Mining-Tailings Pond Failure/Overflow	Unlikely	Major	Moderate	3
Mining-Historic and Small Activities	Possible	Minor	Moderate	3
Septic/OWTS/Household Hazardous Waste	Possible	Significant	Moderate	3
Recreation	Unlikely	Minor	Low	3

#### COAL CREEK INTAKE Potential Contaminant Sources and Issues of Concern Prioritization Table

### WILDCAT CREEK INTAKE Potential Contaminant Sources and Issues of Concern Prioritization Table

Potential Contaminant Source or Issue of Concern	Probability of Impact	Impact to Water System	Risk	Priority Ranking
Wildfire	Likely	Catastrophic	Very High	1
Flooding	Possible	Major	High	2
Roads and Transportation	Possible	Significant	Moderate	3
Septic/OWTS/Household Hazardous Waste	Possible	Significant	Moderate	3
Recreation	Unlikely	Minor	Low	3

### GLAZER RESERVOIR Potential Contaminant Sources and Issues of Concern Prioritization Table

Potential Contaminant Source or Issue of Concern	Probability of Impact	Impact to Water System	Risk	Priority Ranking
Wildfire	Likely	Major	High	1
Septic/OWTS/Household Hazardous Waste	Possible	Significant	Moderate	3
Roads and Transportation	Possible	Significant	Moderate	2
Recreation	Unlikely	Minor	Low	3

### **Best Management Strategies**

The Steering Committee developed several best management practices to reduce the risks from the potential contaminant sources and issues of concern. The best management practices are centered on the themes of building partnerships with community members, businesses, and local decision makers; raising awareness of the value of protecting community drinking water supplies; and empowering local communities to become stewards of their drinking water supplies by taking actions to protect their water sources.



Several expert presenters shared research and efforts regarding wildfire risk and outcome in the Coal Creek Watershed. This process analyzed individual components such as flame length, crown fire activity, roads, soil erodibility, and debris flow to evaluate the Source Water Protection Area's wildfire and post wildfire hazards.

### **Wildfire Best Management Strategies**

	Develop an Alternative Source of Drinking Water.
	Explore the installation of automated valves above raw water storage in the event that the upper two intakes are inaccessible. (Raw Water Conveyance Study)
*	Three-pronged approach in Mining BMP, point 2.
	Develop a multi-hazard emergency response plan. Stay updated with the County's Community Wildfire Protection Plan.
	Identify High Connectivity Hillslopes and mitigate by moving into deposition. (Geo-fluvial Assessment)
•	Active participant in the development of CCWC's Coal 8- Lower Coal Creek Stream Corridor Enhancement project just above Wildcat intake. (Geo-fluvial Assessment)
	Pre-fire mitigation - Continue to work with USFS on developing projects and strategies. Interagency Collaboration with NRCS, County, and State.
	Debris Flow Mitigation.

### **Partnerships**

Coal Creek Watershed Coalition • US Forest Service • Colorado State Forest Service • West Region Wildfire Council • Gunnison County Emergency Management • Upper Gunnison River Water Conservancy District • Colorado Department of Health and Environment• Crested Butte Fire Protection District • Colorado Water Conservancy Board • Colorado Rural Water Association • High Country Conservation Advocates

# Mining and Metals Loading

The discussion around Mining is intertwined with Wildfire and Metals Loading as they have comingling factors in the watershed. There are four focus areas of potential contaminant sources: Keystone Mine stormwater, Keystone tailings pond failure/overflow, Standard Mine Superfund site, and general mining of coal. Metals loading from the mining activities from Standard Mine and Keystone Mine substantially contribute to Elk Creek and Coal Creek, their springs, and tributaries.

### Mining and Metals Loading Best Management Strategies



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Continue to partner with ongoing BMP efforts taking place at the Keystone Mine, Standard Mine, the Gossan, and the Coal Creek Watershed Coalition.

Factor a three-pronged approach considering an emergency plan that shows exacerbated effects on metals loading when combined with Wildfire and/or Flooding.

### **Partnerships**

US Forest Service • Mt. Emmons Mining Company • EPA/State Superfund Program for Standard Mine Coal Creek Watershed Coalition • Upper Gunnison River Water Conservancy District High Country Conservation Advocates • Gunnison County • Colorado Division of Mining, Reclamation and Safety



A spill, accident, or application of chemical road treatment in the source water protection area could have negative implications on the Town's source water. Considerations for private landowner access roads, US Forest Service roads and County roads were evaluated.

### **Roads and Transportation Best Management Strategies**

Keep informed on road maintenance practices and schedules within the SWPA including: grading, the application of magnesium chloride, and dust abatement activities along with the best management practices utilized during these activities.



Provide a copy of the SWPP, Emergency Response Notification Cards to the Gunnison County Office of Emergency Management and Road and Bridge Department.



Post Source Water Protection signage on the county roadways entering the protection area.

### Roads and Transportation Best Management Strategies (continued)



Utilize a spill time calculator to measure how long pollutants will take to travel to the intake.

Provide a copy of the Source Water Protection Plan to the USFS and encourage them to use Best Management Practices to prevent road materials from entering the source waters.



The impact to water system infrastructure and raw water quality in the event of flooding in the source water protection area was evaluated. Strategies for flooding were developed for high volume runoff events, and correlate with the Wildfire section.

### Flooding Best Management Strategies





**Septic, Onsite Wastewater Treatment System, Household Hazardous Waste** found at residential properties in the watershed have potentially contaminating activities due to failure, and improper use or maintenance. The Town and County work jointly to manage permitting uses in the source water protection area.

### Septic, OWTS, HHW Best Management Strategies





Recreation poses a myriad of nonpoint sources of contamination that may affect the watershed. Activities such as dispersed camping, hiking, biking, fishing, and other activities occur in and around the raw drinking water supply.

### **Recreation Best Management Strategies**

Post Source Water Protection signage and a sub-sign that highlights cleaning up recreation waste such as pet and human waste.

Continuing to monitor and analyze potential contamination sources as recreation continues to develop.

### **Partnerships**

United States Forest Service • Bureau of Land Management Gunnison County Sustainable Tourism & Outdoor Recreation Committee

This list represents just some of the ideas that surfaced through the creation of the Source Water Protection Plan. The Town of Crested Butte is committed to evaluating the effectiveness of the strategies that may be implemented and is committed to developing partnerships identified.

### **Stakeholder Participation in the Planning Process**

The Town of Crested Butte's source water protection planning process attracted interest and participation from a number of stakeholders including local citizens and landowners, private businesses, water operators, local and state governments, and agency representatives. Their representation provided diversity and led to a thorough Source Water Protection Plan. The Town of Crested Butte is very appreciative of the participation and expert input from the participants.

Title	Organization
Town Engineer	Town of Crested Butte
Public Works Director	Town of Crested Butte
Operator	Town of Crested Butte
ORC	Town of Crested Butte
Recreation, Open Space & Trails Supervisor	Town of Crested Butte
Parks, Recreation, Open Space and Trails Director	Town of Crested Butte
Executive Director	Coal Creek Watershed Coalition
Forest Hydrologist	JW Associates Working Wildfire Protection Group
Senior Engineer and Geofluvial Morphologist	Watershed Science Design
Project Manager	Environmental Protection Agency
General Manager	Upper Gunnison River Water Conservancy District
Watershed Scientist	Colorado Water Conservation Board
Water Director	High Country Conservation Advocates
Water Resource Specialist	Upper Gunnison Water Conservancy District
Supervisory Forester of Science & Data	Colorado State Forest Service
Manager for Remediation Projects	Keystone Mine
GIS Analyst	Town of Crested Butte
Community Development Director	Town of Crested Butte
Wastewater System Manager	Town of Crested Butte
Sustainability Coordinator	Town of Crested Butte
Town Manager	Town of Crested Butte
Emergency Manager	Gunnison County OEM
Director	Gunnison County CSU Extension
Area 1 Representative	Natural Resources Conservation Service
Assistant STC for Water Resources	Natural Resources Conservation Service
District Technician	Gunnison Conservation District
Environmental Protection Specialist	Colorado Division of Reclamation, Mining and Safety
Gunnison, Senior Environmental Protection Specialist	Colorado Division of Reclamation, Mining and Safety
Source Water Assessment Program Manager	Colorado Department of Health and Environment
Source Water Protection Specialist	Colorado Rural Water Association
WFDSS Source Water Protection Specialist	Colorado Rural Water Association
Lands Use Expert	United States Forest Service
USDA Source Water Specialist	Colorado Rural Water Association
Forest Manager for Gunnison	United States Forest Service
Specialist for Standard Mine Superfund	Colorado Department of Health and Environment
Partnership and Collaboration Director	West Region Wildfire Council
Deputy Emergency Manager/EPR Coordinator	Gunnison County
Senior Staff Professional – Consultant	GeoSyntec
Water Resource Fellow	Upper Gunnison River Conservancy District
Coordinator	Coordinator for Standard Mine Superfund Site
Abandoned Mine Land Project Manager	Trout Unlimited

This plan was completed with the assistance of Colorado Rural Water Association.

