
Section 1.0 - Introduction

The Alamosa River Watershed Restoration Master Plan and Environmental Assessment (Master Plan) summarizes current environmental conditions and develops solutions for identified problems that will lead to a healthier watershed. The incentive for the Master Plan was provided by a legal settlement over impacts of the Summitville Mine Superfund Site. That settlement also provided funding for the study and mitigation measures to be developed by the Master Plan. The scope of the Master Plan includes the entire watershed (not just the area directly affected by Summitville Mine), and covers a broad array of natural resources and watershed functions and values. The result is a multi-disciplinary approach to watershed assessment that has produced a prioritized plan for watershed restoration and enhancement. Specific projects are identified, along with potential financing sources, including funds from the Summitville legal settlement.

This section provides a brief overview of the Alamosa River watershed, and outlines the goals and objectives of the master planning process. A glossary is provided in **Appendix H** for technical terms.

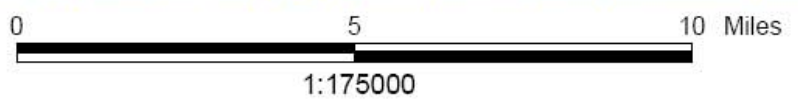
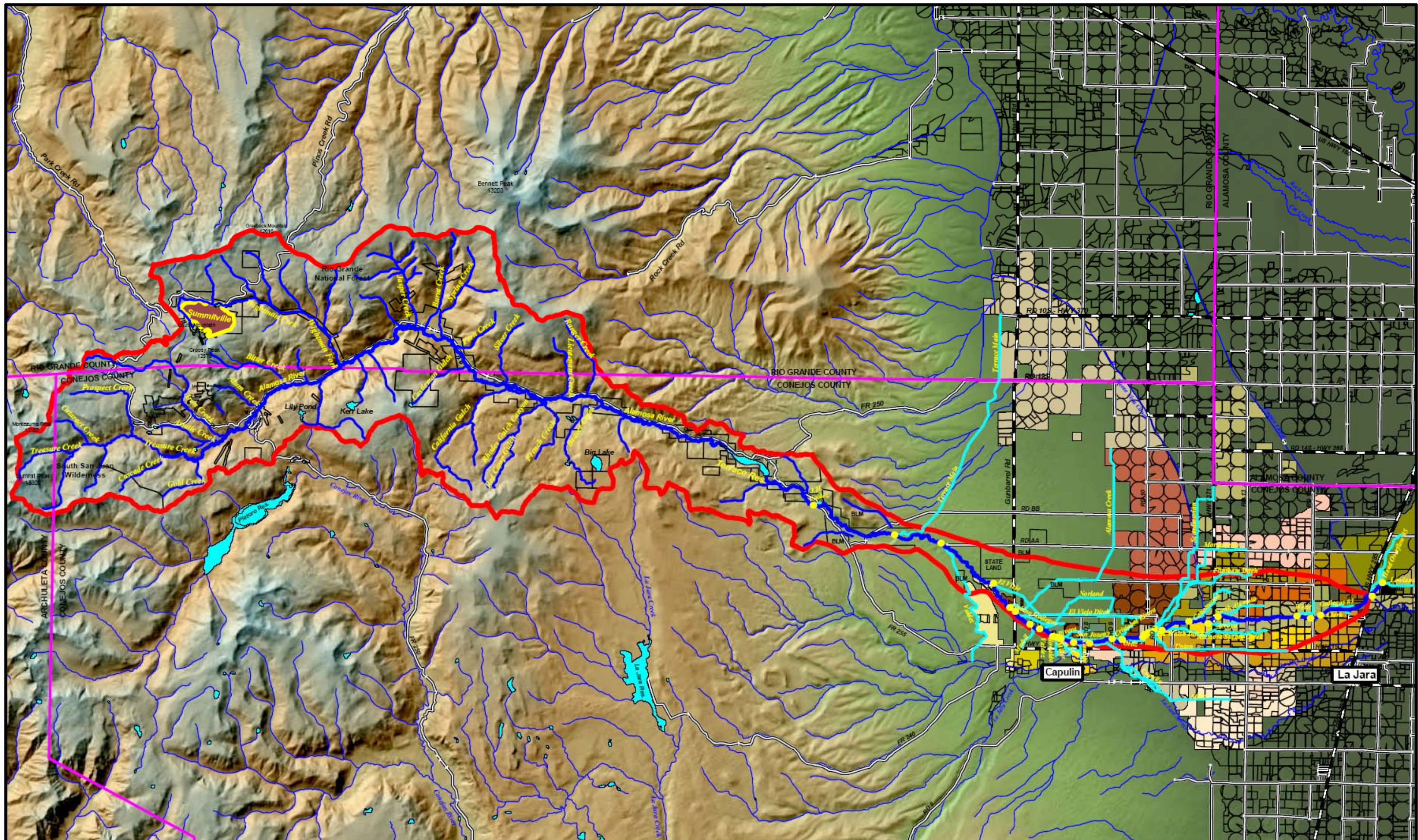
1.1 Overview of Alamosa River Watershed

The Alamosa River watershed comprises 148 square miles in the San Luis Valley of south-central Colorado (see **Figure 1-1**). The mainstem of the Alamosa River is 51 miles long, extending from near the Continental Divide to east of La Jara. Elevations vary from over 13,000 feet to about 7,600 feet where the river ends at the Lowland and Head Overflow ditch headgates just east of Highway 285. Primary tributaries to the Alamosa River include Treasure Creek, Iron Creek, Alum Creek, Bitter Creek and Wightman Fork. Several smaller tributaries also drain into the Alamosa River.

Some of Colorado's oldest communities are located in the Alamosa River watershed, including La Jara and Capulin. The economy in the watershed currently is supported primarily by agricultural and recreation-oriented tourism.

Key features in the watershed include:

- Summitville Mine, a gold mine that operated most recently from 1986 to 1992 using open pit and cyanide leach methods but which is now a Superfund site;
- Terrace Reservoir, a storage impoundment for irrigation water;
- Extensive irrigated agriculture in the lower watershed;
- Extensive forested areas and hydrothermally altered geology in the upper watershed.



**Alamosa River Watershed
Restoration Master Plan**
MWH in association with Agro Engineering,
Lidstone and Associates, and SWCA

Figure 1-1. Alamosa River Watershed Overview

Note: Different colored center pivots represent service areas of canals

1.1.1 Issues of Historical Significance

The Alamosa River watershed has been significantly impacted by human activity. Primary sources of impact include the following:

Straightening of parts of the river downstream of Terrace Reservoir to improve channel capacity and sediment transport has damaged the natural function of riparian corridors; affected habitat, vegetation and groundwater levels; and reduced the effectiveness of irrigation diversions.

- Contamination of surface and ground water by runoff from the Summitville mine site and other mining activities has damaged or eliminated aquatic habitat in stream reaches below the mine area and impacted downstream water users.
- Over-appropriation of surface flows has dried up portions of the stream channel during parts of the year.
- Over-use of riparian areas for agriculture and ranching has adversely impacted wildlife and aquatic habitat.
- Reduced flows and poor water quality have impacted the recreation value of the watershed resources.

In addition, several natural conditions also affect watershed resources. These include:

Naturally high sediment loads from the upper watershed lead to high levels of suspended sediment and sediment deposition in Terrace Reservoir

Naturally high acidity and toxic metals in runoff from portions of the upper watershed situated in hydrothermally altered geologic formations contribute to downstream water quality problems.

Past and recent projects have made efforts to improve the condition of the watershed. An Alamosa River Restoration Project to stabilize the channel between Gunbarrel Road and County Road 10 is currently under construction. Cleanup activities to reduce impacts from mining activities were initiated in the 1990's. A number of interested parties have formed stakeholder groups to improve the organization of restoration efforts.

1.2 Master Plan Purpose and Needs

The Alamosa River Watershed Restoration Master Plan and Environmental Assessment (Master Plan) covers the entire Alamosa River watershed. It uses a multi-objective approach to make recommendations for watershed improvements. General Master Plan objectives as identified by local, state and federal stakeholders are:

- River and watershed health
- Protection of resources
- Restoration of impacted natural resources
- Bio-diversity
- Resource services to the public

Specific concerns that are analyzed and addressed by the Master Plan include:

- Poor channel condition
- Surface water quality problems
- Surface water quantity and year-round availability
- Groundwater quantity and quality problems
- Terrace Reservoir storage and maintenance problems
- Sediment problems
- Damaged habitat and lost biological resources
- Impeded agricultural uses due to lack of water and structural damage to water control and storage structures
- Impeded recreational uses

1.3 Authorization

This Master Plan is being funded through the interest earned on a fund of money recovered by the State of Colorado and the United States in litigation captioned *United States of America and State of Colorado vs. Robert M. Friedland, et al.*, CV 96–N–1312 (D. Colo.). That litigation was instituted by the United States and the State of Colorado under the authority of the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended (CERCLA), 42 U.S.C. § 9601, *et seq.*, to recover response costs incurred to remediate the Summitville Superfund site.

CERCLA authorizes states and the United States to bring actions to recover “response costs” incurred by them to remediate hazardous substance sites that are releasing or threatening to release hazardous substances into the environment. These response costs actions may be brought against potentially responsible parties (PRP’s); *i.e.*, those who contributed to the hazardous substance releases at such sites through operation, ownership or contracting for the disposal of those hazardous substances.

Under section 42 U.S.C. § 9607(f), CERCLA also authorizes states and the United States to recover from PRP’s damages to “natural resources” that have been caused by the releases of such hazardous substances. Any natural resource damage (NRD) recoveries from PRP’s are to be administered by appropriate state and federal natural resource trustees. Such recoveries must be used only to “restore, replace, or acquire the equivalent of” the injured natural resources. Restoration generally means returning the environment to the conditions in which the resource would be had the release of hazardous substances not happened, such as restoring habitat for fish in the watershed.

CERCLA defines natural resources as “land, fish, wildlife, biota, air, water, ground water, drinking water supplies, and other such resources belonging to, managed by, held in trust by, appertaining to, *or otherwise controlled by the United States...*, [*or*] *any state or local government...*” 42 U.S.C. 9607(f)(1)(emphasis supplied). In other words, what one might normally consider to be a natural resource might not be a natural resource under CERCLA if it is purely private property with no nexus to a state or federal government.

As a result of the settlement agreement and consent decree with Robert Friedland, one of the PRP defendants in the above-referenced action, the State of Colorado and the United States recovered \$5,000,000 to use to restore, replace, or acquire the equivalent of the natural resources damaged by the hazardous substances released from the Summitville Mine. The State of Colorado and the United States, through a Memorandum of Understanding (MOU), established separate funds for their individual shares of the settlement (the \$5,000,000 was split equally between the State of Colorado and the United States) and a mechanism to make joint decisions regarding how to use those funds to restore, replace, or

acquire the equivalent of the damaged natural resources in the Alamosa River system. Under the MOU there are two federal natural resource trustees and three state natural resource trustees (hereafter together referred to as “Trustees”). The federal trustee agencies are the United States Department of Agriculture’s Forest Service (USFS) and the United States Department of the Interior, represented by the Fish and Wildlife Service (USFWS) and Bureau of Land Management (BLM). The State trustees are the Colorado Attorney General, the Executive Director of the Colorado Department of Public Health and the Environment (CDPHE), and the Director of the Colorado Department of Natural Resources.

The Trustees decided through a joint resolution to contract for and fund this Master Plan from interest earned from each government’s portion of the settlement amount so that the monies recovered from the settlement would be used in a manner that comprehensively addresses the restoration needs of the Alamosa River watershed and is implemented in a manner that is fully and consistently integrated into existing and future Alamosa River projects and the Summitville CERCLA cleanup remedy. The Colorado Water Conservation Board (CWCB) was assigned responsibility for managing the Master Plan project on behalf of the Trustees and the Alamosa River Foundation. The Master Plan is not only limited to the goals of the Trustees to restore potential injuries caused by Summitville. The Plan is a comprehensive watershed plan for watershed health that includes restoration of potential injuries from Summitville. However, the Master Plan cannot suggest restoration projects at the Summitville Site itself because the site is the responsibility of CDPHE and the Environmental Protection Agency (EPA) under the Superfund Program.

The Alamosa River Foundation was formed to provide local Master Plan oversight. The Alamosa River Foundation is a non-profit organization formed by local citizens and organizations to coordinate watershed-based projects within the Alamosa River watershed. The Foundation developed and coordinated the scope of work, and may present project proposals to the Trustees for funding. The objectives of the Alamosa River Foundation are:

- Solicit local government and organization representatives for financial and technical support
- Assess, using existing information, the natural resources and related services which were injured, destroyed or lost as a result of a release of hazardous substances
- Identify the goal(s) to be attained by the proposed restoration projects
- Delineate general scope and criteria for potential plans for restoration
- Determine optimum timing for project solicitation and implementation
- Prepare requests for proposals and select the best plan for restoration