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Restoration Plan

Gold King Mine Release into the Animas and San Juan Rivers in San Juan County, New Mexico

DRAFT | 31 January 2022

prepared for:

New Mexico Office of the Natural Resources Trustee

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LIST OF EXHIBITS

LIST OF ACRONYMS

AMD	Acid Mine Drainage
BOR	United States Bureau of Reclamation
BLM	Bureau of Land Management
BPMD	Bonita Peak Mining District
CDPHE	Colorado Department of Public Health and Environment
CDRMS	Colorado Division of Reclamation, Mining, and Safety
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
C.F.R.	Code of Federal Regulations
DOI	Department of the Interior
DVD	Digital Versatile Disc
GKM	Gold King Mine
IPCC	Intergovernmental Panel on Climate Change
MSI	Mountain Studies Institute
NM	New Mexico
NMBGMR	New Mexico Bureau of Geology and Mineral Resources
NMDGF	New Mexico Department of Game and Fish
NMED	New Mexico Environment Department
ONRT	New Mexico Office of Natural Resource Trustees
NMSA	New Mexico Statutes Annotated
NNEPA	Navajo Nation Environmental Protection Agency
NPL	National Priority List
NRDA	Natural Resource Damage Assessment
RP	Restoration Plan
SGC	Sunnyside Gold Corporation
SJSWCD	San Juan Soil and Water Conservation District
USACE	United States Army Corps of Engineers
USCB	United States Census Bureau
USDA	United States Department of Agriculture

USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

CHAPTER 1 | INTRODUCTION

In its capacity as a trustee of natural resources on behalf of the public, the New Mexico Office of Natural Resources Trustee (ONRT) prepared this Draft Restoration Plan (Draft RP) to propose how monetary damages of $1,000,000 recovered from Sunnyside Gold Corporation for natural resource injuries in New Mexico resulting from the August 2015 Gold King Mine (GKM) blowout would be spent to restore natural resources and the services they provide. Pursuant to Section 107(f) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the U.S. Department of the Interior (DOI) natural resource damage assessment (NRDA) regulations at 43 C.F.R. Part 11, this Draft RP presents restoration alternatives intended to compensate the public for the natural resource injuries and associated service losses in New Mexico that resulted from the hazardous substances released from the GKM blowout.

This chapter provides context related to the 2015 GKM blowout and release of hazardous substances (hereafter referred to as the "GKM Blowout"), describes downstream impacts to New Mexico natural resources, identifies the purpose and need for restoration and the authorities under which ONRT is acting, and outlines the role of public involvement in the restoration planning process and the administrative record.

1.1 GOLD KING MINE

In August 2015, United States Environmental Protection Agency (USEPA) and the Colorado Division of Reclamation, Mining, and Safety (CDRMS) were engaged in reclamation activities at the GKM. On August 5, 2015, during an investigation of a mine adit, USEPA and its contractors triggered a release of approximately three million gallons of acid mine drainage (AMD) from the GKM. The release flowed from Cement Creek down the Animas and San Juan Rivers, ultimately reaching Lake Powell over an eight-day period. In total, the orange-red, metal-laden plume crossed three states (Colorado, New Mexico, and Utah) and three reservations (Southern Ute Indian Tribe, Ute Mountain Ute Tribe, and Navajo Nation) (Exhibits 1-1 and 1-2). The AMD plume triggered temporary river water use restrictions (TechLaw 2019). Materials from the GKM Blowout were also entrained in the sediment of Cement Creek and the Animas River and washed downriver during subsequent high flow events (U.S. EPA 2022c).

The State of New Mexico and the New Mexico Environment Department (NMED) subsequently sued the USEPA and its contractors, who directly caused the GKM Blowout, as well as Sunnyside Corporation and its parent companies, Kinross Gold Corporation and Kinross Gold, U.S.A., Inc. (the three mining companies are collectively referred to as the "Mining Defendants"), seeking compensation for those injuries. The lawsuit alleges that the Mining Defendants are liable for creating the underlying conditions that made the GKM Blowout possible. In January 2021, the State of New Mexico, NMED, and ONRT reached a settlement with the Mining Defendants that included a payment of $1,000,000 to ONRT to implement restoration projects. Accordingly, this Draft RP identifies and evaluates restoration alternatives

designed to compensate the public for injuries that have occurred to natural resources due to the GKM Blowout.

EXHIBIT 1-1 LOCATION OF THE GOLD KING MINE

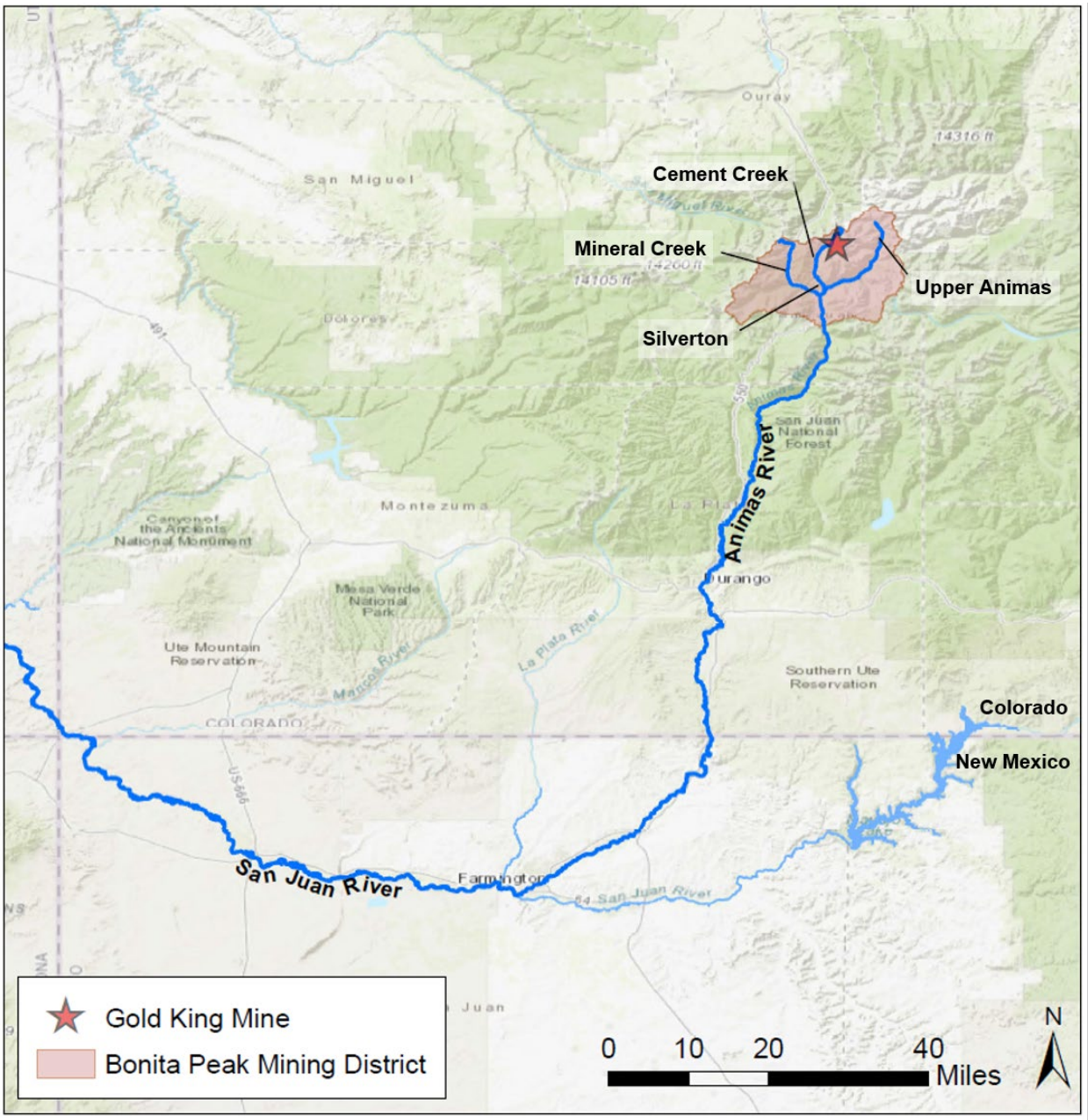


EXHIBIT 1-2 CONFLUENCE OF THE ANIMAS AND SAN JUAN RIVER FOLLOWING THE GKM BLOWOUT IN AUGUST 2015 (DAVIS 2020)

1.2 PURPOSE AND NEED FOR RESTORATION

As a result of the GKM Blowout, state and tribal governments enacted temporary river water use restrictions. Shortly after the incident, the Navajo Nation issued a "do not use" public service announcement, which discouraged the use of well fields and drinking and irrigation water intake systems (USEPA 2022a). Similarly, the City of Farmington temporarily shut off all surface water intake pumps for their drinking water systems (Davis 2020). During that time, the USEPA supplied New Mexicans and members of the Navajo Nation with potable water for human and livestock consumption (Davis 2020; EPA 2022a). By August 16, 2015, most of the Animas and San Juan River raw water intakes were reopened and recreational and agricultural uses resumed.[1] On September 4, 2015 the New Mexico Department of Game and Fish (NMDGF) lifted its catch and release recommendation on fish caught in the affected reaches of the Animas and San Juan Rivers of New Mexico (NMDGF 2015). The Navajo Nation maintained irrigation and livestock water-use restrictions on most of the San Juan River until October 2015, with some Navajo chapters deciding to not reopen irrigation access until April 2016 (Smith 2016; USEPA 2017).

1 Localities may close water intakes for a variety of reasons. For example, the City of Farmington monitors water quality and automatically closes water intakes during periods of high turbidity (City of Farmington 2017).

In addition to impacts on drinking water and recreation, water quality monitoring data reported by USEPA indicated aquatic life were exposed to metals concentrations that exceeded water quality criteria (USEPA 2018). Though there was no apparent evidence of wide-spread fish kills, studies conducted in the weeks following the GKM Blowout found that individual fish had elevated concentrations of metals compared to pre-release concentrations, though fish tissue did not exceed risk screening levels for human consumption (USEPA 2018). Studies conducted by the New Mexico Bureau of Geology and Mineral Resources (NMBGMR) reported elevated concentrations of metals in sediment, soil, riparian vegetation, and aquatic biota in New Mexico as compared to reference sites following the GKM Blowout (Duval et al. 2018). The USEPA found that metals from the GKM Blowout became entrained in the sediment of Cement Creek and the Animas River and were resuspended in the Animas and San Juan Rivers during subsequent high flow events (USEPA 2022c).

1.3 COMPLIANCE WITH AUTHORITIES

Pursuant to CERCLA, designated federal and state agencies and federally recognized tribes act as trustees on behalf of the public to assess injuries and plan restoration to compensate for those injuries. CERCLA further instructs the designated trustee(s) to develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent of injured natural resources under their trusteeship (hereafter collectively referred to as "restoration"). This document serves as the Draft RP for implementing the selected restoration alternative(s), pursuant to NRDA regulations at 43 C.F.R. Part 11. Under these regulations, the alternatives selected in the Draft RP should ensure that damages recovered from responsible parties are used to undertake feasible, safe, and cost-effective projects that address injured natural resources and resource service; consider actual and anticipated conditions; and are consistent with applicable laws and policies.

State agencies are designated as natural resource trustees by the governors of each state (42 U.S.C. § 9607(f)(2)(B)). Pursuant to the New Mexico Natural Resources Trustee Act (New Mexico Statutes Annotated [NMSA] 1978, §§ 75-7-1 *et seq.*), the Natural Resources Trustee acts as a trustee of the State's natural resources and heads ONRT. As such, ONRT has the ability and authority to pursue restoration claims under the Trustee Act as well as under CERCLA (42 U.S.C. § 9601 *et seq.*) and the Clean Water Act (33 U.S.C. § 1251 *et seq.*). This Draft RP was prepared by ONRT pursuant to its authority and responsibilities as the natural resources trustee.

1.4 PUBLIC PARTICIPATION

Public participation is an integral part of ONRT's restoration planning process. While the Final RP will select the restoration alternative(s) to compensate the public for injuries to natural resources, the Draft RP proposes the alternative(s) for public review. In accordance with the regulations promulgated under CERCLA, ONRT encourages the public to review and comment on the Draft RP during a noticed public comment period. ONRT issued a press release on the Draft RP and a request for public comments on January 31, 2022. The public comment period will be open from January 31 to March 2, 2022. ONRT will accept public comments on the Draft RP via email to nm.onrt@state.nm.us. Any comments received by March 2, 2022 will be evaluated and incorporated, as appropriate, into the Final RP. A summary of public comments and ONRT's responses to those comments will be included as Appendix D of the Final RP. In addition, a copy of the Final RP will be available for download from the ONRT website.

1.5 ADDITIONAL INFORMATION

To facilitate public participation, ONRT has compiled relevant documents and information used during the restoration planning process. These documents can be viewed online at [gold king mine documents] or provided in digital versatile disc (DVD) format upon request to the New Mexico Office of Natural Resources Trustee, 121 Tijeras Avenue NE, Suite 1000, Albuquerque, NM 87102, (505) 313-1837, or nm.onrt@state.nm.us.

1.6 ORGANIZATION OF THIS DOCUMENT

The remainder of this document is organized as follows:

- **Chapter 2** presents information regarding the site, the NRDA process, and remediation efforts.
- **Chapter 3** describes the environment in an around the site that may be affected by the proposed restoration activities.
- **Chapter 4** discusses the restoration objectives and provides information on the process for soliciting and evaluating restoration projects.
- **Chapter 5** presents the Preferred Restoration Alternative(s), describes each of the proposed restoration projects, and includes an evaluation of each project's ability to meet ONRT's restoration goals.

CHAPTER 2 | GOLD KING MINE SITE HISTORY, REMEDY, AND RESTORATION

2.1 INTRODUCTION TO THE SITE

The GKM is an inactive gold and silver mine located approximately one-half mile northeast of Gladstone, in San Juan County, Colorado. Situated in the Upper Animas watershed near the North Fork of Cement Creek, at an approximate elevation of 11,400 feet, the GKM is one of approximately 1,500 mines that operated within the Bonita Peak Mining District (BPMD) (DOI 2015).[2] For more than 100 years between the 1870s and 1990s, large and small-scale mining and milling of polymetallic ores occurred in the BPMD. Production at the GKM began in 1886 and ended in 1923 (USEPA 2015).[3] During this period, the GKM produced a total of 665,000 short tons of ore, including gold, silver, lead, and copper (Taylor 1988 as cited in Jones 2007).

Throughout much of the mining era in the BPMD, it was common practice to dump tailings and waste rock directly into creeks and streams. Smelters, which operated before 1900, released metals that contaminated soil, sediment, and surface water of nearby creeks and rivers (TechLaw 2019). Transportation routes that brought ore from the mines to processing and shipping facilities were constructed of waste rock and other mining wastes (TechLaw 2020). Spills and other unintentional releases of metal-rich ore or waste materials from trucks, trains, and trams contaminated areas near transportation routes (TechLaw 2020).[4] By the time mining in the BPMD ceased in 1991, more than 8.6 million short tons of tailings and mining waste had been discharged directly into the Animas River and its tributaries from the headwaters to Durango, Colorado (Jones 2007). In addition to these releases, abandoned mine structures historically discharged an average of 5.4 million gallons of AMD per day into the headwaters of the Animas River (Church et al. 2007).

Following the cessation of mining in the BPMD, the USEPA and the Colorado Department of Public Health and Environment (CDPHE) conducted a Superfund site assessment of the BPMD (USEPA 2021a). The assessment identified severe impacts to aquatic life in the Upper Animas River and its tributaries from both naturally occurring and mining-related metals. However, a community-based collaborative effort involving local groups and state and federal agencies was underway to address the impacts to aquatic life, and the USEPA postponed listing the BPMD on the National Priorities List (NPL; USEPA 2018 and 2021). In 2008, the USEPA assessed Upper Cement Creek to evaluate whether this area alone could be listed on the NPL. Though the evaluation indicated that Upper Cement Creek would qualify,

[2] The Upper Animas River Watershed consists of three primary drainages: Mineral Creek, Cement Creek, and the Upper Animas. These three drainages converge into the Animas River near Silverton, Colorado.

[3] In addition, the GKM was placed under a mining permit in 1986. Most of the work was related to exploration (DOI 2015).

[4] Most of the major transportation routes in the BPMD are located along valley bottoms, in or near floodplain habitats.

USEPA again postponed listing, instead electing to continue to participate in community-based collaborative efforts (USEPA 2021a).[5]

In addition to the community-led cleanup, reclamation activities in the Upper Animas watershed have been implemented by the Sunnyside Gold Corporation (SGC), U.S. Bureau of Land Management (BLM), and the State of Colorado. These include diverting runoff away from mine waste piles; consolidating, capping, and revegetating mine waste piles; and placing bulkheads in draining adits (USEPA 2021a). In 2009, the CDRMS closed all four of the GKM portals (DOI 2015). The CDRMS attempted to insert drainpipes into the GKM Level 7 adit but was unable to penetrate a debris blockage that resulted from a roof collapse within the adit. As a result, the CDRMS identified the need for a future project to open the GKM Level 7 adit to provide adequate drainage and alleviate the potential for an unstable increase in AMD (DOI 2015).

During a subsequent investigation into the mine adit, USEPA and its contractors triggered the GKM Blowout, which released millions of gallons of AMD into the Animas and San Juan Rivers. The plume of contaminated water ultimately crossed three states, including Colorado, New Mexico, and Utah, and three Native American reservations, including the Southern Ute Indian Tribe, Ute Mountain Ute Tribe, and Navajo Nation. The geographic area of focus for this Draft RP is the portion of the Animas River within New Mexico (i.e., from the Colorado-New Mexico state line to the confluence with the San Juan River), and the San Juan River from that confluence northwesterly to the Colorado state line, including portions of the river within the Navajo Nation. The public experienced natural resource service losses due to the GKM Blowout. In addition, the affected rivers continue to experience ongoing water quality impairments due to natural processes and persistent contamination. Ongoing water quality concerns are described in the 2020-2022 State of New Mexico Clean Water Act §303(d)/§305(b) Integrated List.[6] These water quality impairments and GKM Blowout-related service losses are summarized in Exhibit 2-1.

[5] Collaborative efforts included the EPA Superfund Remedial program contributing resources for water quality sampling, ecological risk assessment and data analysis, and investigating and closing the Red and Bonita Mine tunnel, among other remedial and cleanup efforts. Water quality studies indicated that the Red and Bonita Mine is a major source of metals to the Animas River near Silverton, Colorado (USEPA 2016a).

[6] For a complete list of impairments to surface waters in New Mexico under the Clean Water Act, visit: https://www.env.nm.gov/wp-content/uploads/sites/25/2020/10/2020-2022-CWA-303d_305b-All-Impairments-IR-Cat-4-and-5.pdf (NMED 2021).

EXHIBIT 2-1 EXAMPLES OF ANIMAS AND SAN JUAN RIVER IMPAIRMENTS AND SPILL-RELATED SERVICE LOSSES

IMPAIRMENT OR SERVICE LOSS	RIVER SYSTEM	DESCRIPTION	EXAMPLES
Ongoing Impairment	Animas River	Lead, turbidity, nutrients (total phosphorous).	19.4 miles of the Animas River (Estes Arroyo to Southern Ute Indian Tribe boundary) are listed on the 303(d) List[1] due to **dissolved lead, turbidity, and nutrients (total phosphorous).**
	San Juan River	*E. coli*, temperature, sedimentation/siltation.	The Animas River from the San Juan River to Estes Arroyo (16.73 miles) does not support cool water aquatic life due to t**emperature** and was first listed on the 303(d) List in 2012. In addition, 22.8 miles of the San Juan River from the Navajo boundary at Hogback to the Animas River do not support primary contact[2] due to **E. coli** (first listed on the 303(d) List in 2006) and **sedimentation/siltation** (first listed on the 303(d) List in 2012).
Gold King Mine Spill-Related Service Loss	Animas and San Juan Rivers	Ecological service losses associated with metals contamination of surface water and sediment resources.	Soil, sediment, and vegetation in spill-affected areas within the Animas and San Juan Rivers in New Mexico had elevated concentrations of metals compared to reference areas in the years following the GKM Blowout (Duval et al. 2018).
		Loss of surface water supplied to local communities from the Animas or San Juan Rivers due to increase of lead content during turbulent river flow.	Concentrations of dissolved lead exceeded the Safe Drinking Water Act Action Level during three 2015 precipitation events measured after the GKM Blowout (DOI 2016).
		Loss of surface water supplied for growth of agricultural crops.	Intakes for irrigation water were turned off along the Animas and San Juan rivers (Davis 2020). The Shiprock chapter of the Navajo Nation did not open their irrigation ditches for diversion until April 2016 (Smith 2016).
		Loss of recreational opportunities tied to the Animas and San Juan Rivers resulting from concerns related to water contamination.	New Mexico temporarily suspended access to fishing in the Animas and San Juan Rivers and issued a fish consumption advisory following the GKM Blowout (NMDGF 2015).

Table Notes.

1. The "303(d) List" is a section of the Clean Water Act that contains a state's list of impaired and threatened waters (e.g., stream, river segment, lakes). For each water on the 303(d) list, the state identifies the pollutant causing the impairment, when known (NMED 2021).
2. The primary contact recreation classification protects people from illness due to activities involving the potential for ingestion of, or immersion in, water. Primary contact recreation usually includes swimming, water-skiing, surfing, and other activities likely to result in immersion (USEPA 2012).

2.2 SUMMARY OF RESPONSE AND REMEDIAL ACTIONS

Following the GKM Blowout, USEPA officially added the BPMD to the NPL on September 9, 2016. Starting in 2017, USEPA, U.S. Forest Service, BLM, and CDPHE began a Remedial Investigation/Feasibility Study process at the site. This has included remedial investigation work, Human Health Risk Assessment, aquatic and terrestrial Ecological Risk Assessments, and study of the Bonita Peak groundwater system. USEPA has continued to treat mine-impacted water from the GKM at the Interim Water Treatment Plant in Gladstone, Colorado and established an interim sludge management location at the Kittimac Tailings area.

In-stream remedial actions related to the GKM Blowout to date have all taken place in the Animas River watershed in Colorado. Within New Mexico, NMED and other federal and tribal agencies have focused efforts on water quality monitoring and fish tissue studies to characterize the post-spill condition of these resources. NMED also conducted public outreach to communities, tribes, and neighboring states affected by the GKM Blowout. Known environmental monitoring and remedial actions that have occurred within New Mexico are summarized briefly below.

- The United States Geologic Survey (USGS) in coordination with NMED conducted a study that collected, analyzed, and reported surface water quality data to characterize post-release conditions in the Animas and San Juan Rivers. Efforts included installing water quality instrumentation at existing USGS stations that provide continuous data on streamflow and select water-quality constituents (e.g., specific conductance, water temperature, pH, and turbidity); conducting periodic water quality monitoring at sites on the Animas and San Juan Rivers; and collecting integrated water-quality samples monthly and during snowmelt runoff periods for analysis of major ions and metals (USGS 2021).
- Immediately following the GKM Blowout through at least the spring of 2017, USGS, USEPA, and other federal, state, and tribal agencies collected surface water, sediment, benthic macroinvertebrate, and fish samples from approximately 30 locations along Cement Creek, Mineral Creek, and the Animas and San Juan Rivers to Lake Powell (USEPA 2016c).
- In June 2016, USEPA awarded $465,000 to the Navajo Nation Environmental Protection Agency (NNEPA) for water quality monitoring on the San Juan River. The NNEPA used the funds to conduct sediment and fish-tissue studies to monitor contaminant levels and characterize potential human health risks associated with fish consumption subsequent to the GKM Blowout (USEPA 2016b).
- In March and August of 2017, NMBGMR collected and analyzed soils, sediment, riparian and aquatic plants, macroinvertebrates, and fish tissue samples to compare metal concentrations among GKM Blowout-affected areas of the Animas and San Juan Rivers and a nearby reference site on the San Juan River. This study sought to quantify how metals move through the riparian food web, from river sediments to the water column and surrounding riparian habitats (Duval et al. 2018).
- Since the Blowout, NMED has worked with communities, tribes, and neighboring states affected by the spill to develop improved communications plans for future incidents, monitored for water contamination, and conducted a public relations campaign to combat stigma faced by farmers in

the Animas Valley (NMED 2020). For example, from August 2019 to July 2020, NMED, New Mexico State University, and the San Juan Soil and Water Conservation District (SJSWCD) conducted the "Healthy Food Grows Where Healthy Rivers Flow" campaign, a collaboration aimed to educate the public about the safety of eating crops grown with irrigated water in New Mexico (NMED 2020).

- Following the GKM Blowout, the City of Farmington installed an automatic monitoring system at the river pump stations. The probe system detects elevated levels of key contaminants and shuts off pump intakes when needed. The City of Farmington has conducted additional studies and work to define options for alternative water supplies and improvements to the Lake Farmington storage system (CH2M 2017).

2.3 ONRT VISION FOR RESTORATION

ONRT's goal with respect to this Draft RP is to compensate the public for natural resource injuries and associated service losses stemming from the GKM Blowout through the implementation of restoration projects. ONRT seeks to implement the restoration geographically close to the Animas and San Juan Rivers in New Mexico so that the benefits of these project accrue in the locations most adversely affected by the GKM Blowout. Projects that meet ONRT's vision for restoration will aim to return injured natural resources and the services they provide to the condition that would have existed absent the release of contamination.

CHAPTER 3 | AFFECTED ENVIRONMENT

3.1 PHYSICAL ENVIRONMENT

Hazardous substances released from the BPMD due to the GKM Blowout have affected a suite of natural resources, including surface water, groundwater, and biological resources such as aquatic invertebrates and fish, as well as a wide variety of services that these resources provide. The proposed restoration alternatives, included in the Preferred Restoration Alternative (Chapter 5), would help restore these natural resources and services to the public. This chapter describes the physical, biological (including endangered and threatened species), socioeconomic, cultural, and historical resources of the Animas and San Juan River watersheds to inform an evaluation of each restoration alternative's potential to impact the environment.

3.1.1 ANIMAS RIVER WATERSHED

The Animas River headwaters are in the mountainous terrain of the San Juan Caldera above Silverton, Colorado. Two main tributaries, Cement and Mineral Creeks, drain from this mineral-rich region and join the Animas River in Silverton.[7] The Animas River flows through the Animas Canyon between Silverton and Durango (roughly 50 miles), where it connects to numerous smaller streams that flow into the canyon. The Florida River feeds into the Animas River just north of the Colorado-New Mexico border. From the Colorado-New Mexico border, the Animas River meanders 40 miles through erodible, layered sedimentary rock of the San Juan Basin and Colorado Plateau shrublands to Farmington, NM where it joins the San Juan River (USEPA 2022b).[8] Elevation in the watershed ranges from more than 14,000 feet at the headwaters in the forests of the San Juan Mountains to less than 6,000 feet in the high desert sagebrush scrublands near the confluence with the San Juan River (USEPA 2022b).

The Animas River watershed is within the larger San Juan Basin, an area of rich coal, oil, and gas deposits that contain the largest coal-bed methane field in the world. Residential and commercial density along the river increases as it flows southwest through the towns of Aztec, Flora Vista, and Farmington. The Animas River is the primary source of irrigation water in the region (USEPA 2022b). Municipal drinking water is also largely sourced from the Animas River, while most private domestic wells in the valley rely on the hydrologically connected alluvial aquifer, with well depths of about 30 to 60 feet (Newton et al. 2017). Water in the Lower Animas River supports farming and livestock production. Much of the agricultural land in the area is classified as pasture/hay and supports winter pastures for livestock, with minimal cultivated cropland (USEPA 2022b). Numerous ranches provide jobs for local communities and divert water to support their operations. Cattle production is one of the primary agricultural uses of river water in the valley, but sheep, goats, and horses also benefit from irrigated hay and pastures

[7] These mineral-rich streams account for roughly a third of the observed flow measured in Farmington, NM (Newton et al. 2017).

[8] The Animas watershed in the State of New Mexico is entirely within San Juan county.

(USEPA 2022b). Farming and ranching along the river have declined in recent years, with the subdivision of large agricultural tracks into smaller parcels, while the oil and gas sector has expanded as an employer (USEPA 2022b).

3.1.2 SAN JUAN RIVER

The 355-mile San Juan River originates in the San Juan Mountains in southern Colorado. The river feeds into the Navajo Reservoir, moving south into New Mexico, and flows west to join the Animas River near Farmington, New Mexico. The San Juan River then runs northwest along the border of the Navajo Nation and through the southwestern corner of Colorado before its confluence with the Colorado River near Lake Powell in southeastern Utah. Within New Mexico, the San Juan River runs through Rio Arriba and San Juan counties.

Groundwater resources surrounding the San Juan River include the Colorado Plateau aquifers which underlie an area of approximately 110,000 square miles in western Colorado, northwestern New Mexico, northeastern Arizona, and eastern Utah. The aquifers in the Colorado Plateau are generally composed of permeable, moderately to well-consolidated sedimentary rocks (USGS 1995). Together, these aquifers span hundreds of miles and cross state lines. The chemical quality of the water in the Colorado Plateau aquifers is variable, but the aquifers typically yield useable quantities of water of a quality suitable for most agricultural or domestic uses (USGS 1995).

Small and large-scale farming and ranching are a food source for farmers and local communities. Navajo Nation members and others graze cattle and produce crops on farmland near the San Juan River, and often river water is used for watering livestock and irrigating cropland (United States Department of Agriculture [USDA] 1980).[9] In addition, the basin's geologic history has resulted in rich deposits of petroleum, coal, and non-fuel minerals. Mining industries for uranium, coal, and oil and gas extraction are currently and have historically been critical economic drivers in the region (Abell 1994).[10] Within the restoration area, two coal-fired power plants flank the river near Waterflow, New Mexico: the San Juan Generating Station, supplied by the San Juan Coal Mine to the north, and the Four Corners Generating Station, supplied by Navajo Coal Mine on Navajo Nation land to the south.[11] Both stations are preparing to end power production.

3.1.3 WATER QUALITY

Designated uses for surface water in the San Juan and Animas Rivers in New Mexico are summarized in Exhibit 3-1. Despite heavy use of and reliance on surface waters within the San Juan River Basin, a variety of water quality issues affect the Animas and San Juan Rivers, including:

- Levels of nutrients, phosphorus, nitrogen, and *E. coli* are elevated by stormwater runoff from adjacent agricultural lands, livestock, and human waste (Abell 1994, Mountain Studies Institute [MSI] 2016);

[9] The small agricultural communities of Kirtland and Fruitland, NM rely on the San Juan River for irrigation water.

[10] Uranium mining and milling increased rapidly until the late 1970s, when most uranium-mining activity ended in the region. Likewise, the oil and gas industry prospered until the early 1980s and then decreased rapidly (USGS 2001).

[11] Waterflow, New Mexico is approximately 16 miles west of Farmington and is on the northern banks of the San Juan River.

- Invasive species (e.g., phreatophytes Russian olive and tamarisk (salt cedar)) encroach riverbanks, increasing channelization and reducing the connection between the native riparian habitat and the river (MSI 2016);
- Reduced or eliminated riparian buffers have reduced the assimilative capacity of the rivers (MSI 2016)[12];
- AMD and sediment loading in the rivers, from historic upstream mining activities, have increased metals concentrations (Abell 1994); and
- As noted in Exhibit 2-1, both sections of the Animas River within New Mexico are on the Clean Water Act Section 303(d) List of impaired waters.

EXHIBIT 3-1 DESIGNATED USES OF SURFACE WATER IN THE ANIMAS AND SAN JUAN RIVERS

SURFACE WATER SECTION	PUBLIC WATER SUPPLY	INDUSTRIAL WATER SUPPLY	IRRIGATION	LIVESTOCK WATERING	WILDLIFE HABITAT	FISH CONSUMPTION	PRIMARY OR SECONDARY CONTACT	AQUATIC LIFE DESIGNATION[1]
Navajo Nation Jurisdiction (Navajo Nation Surface Water Quality Standards 2015, Table 206.1, 'Designated Uses for Navajo Nation Surface Waters'.)								
Main stem of the San Juan River (SJR) and perennial tributaries, eastward from border with CO.	✓	✗	✓	✓	✓	✓	✓	Cold and warm water.
New Mexico Jurisdiction (NMAC 20.6.4.401 through 20.6.4.408)								
Main stem of SJR, from Navajo Nation boundary at Hogback upstream to confluence with Animas River (AR).	✓	✓	✓	✓	✓	✗	✓	Warm-water and marginal cold-water.
AR from confluence with SJR upstream to Estes Arroyo.	✓	✓	✓	✓	✓	✗	✓	Cool-water.
AR from Estes Arroyo upstream to Southern Ute Indian tribal boundary.	✓	✓	✓	✓	✓	✗	✓	Cool-water.

Table Note.
1. Aquatic life designations are based on whether the water temperature and other characteristics are suitable for the support or propagation of aquatic life with physiological tolerances for cold water, warm water, or intermediate (cool water) temperatures. Marginal water indicates that intermittent or low flow conditions limit the ability of the water to sustain aquatic life on a continuous basis (NMAC 20.6.4.401 – 20.6.4.408).

3.2 BIOLOGICAL ENVIRONMENT

Along the Animas and San Juan Rivers, vegetation is typical of most western rivers, with woodlands (typically cottonwood, salt cedar, Russian olive, and willow trees), shrubs/scrubs, wetlands, and

[12] Assimilative capacity is defined as "the ability of the environment or a portion of the environment to carry waste material without adverse effects on the environment or on users of its resources. Pollution occurs only when assimilative capacity is exceeded" (Gale 2010 as cited in MSI 2016).

agricultural crops present (United States Fish and Wildlife Service [USFWS] 2002).[13] Woodlands can be found along drainages and consist of Fremont cottonwood, Russian-olive, New Mexico forestiera, shrubs, and grasses, which provide habitat for a variety of animals including small and large mammals and birds (USDA 1980; Bureau of Reclamation (BOR) 2003). Shrubs/scrubs in the region include big sagebrush (*Artemisia tridentata*), fourwig saltbush (*Atriplex canescens*), winterfat (*Ceratoides lanata)*, and skunkbush sumac (*Rhus trilobata*) (Allison and Ashcroft 2011). Western wheatgrass (*Agropyron smithii*), blue grama (*Bouteloua gracilis*), Colorado rubberweed (*Hymenoxys richardsonii*), galleta (*Hilaria jamesii*), horsetail milkweed (*Asclepias subverticillata*), junegrass (*Koeleria pyramidata*), and rubber rabbitbrush (*Ericameria nauseosa*) are common grasses and forbs in San Juan County, New Mexico (Allison and Ashcroft 2011). Wetlands in the region consist of sedges, cattails, and shallow water, and provide benefits to aquatic species such as ducks, geese, heron, muskrat, and beaver (USDA 1980; AZGFD 1998). Within the region, common vegetated wetland communities include the plains cottonwood (*Populus deltoides)*, narrowleaf cottonwood (*Populus angustifolia)*, *Salix* sp., coyote willow (*Salix exigua)*, bluestem willow (*Salix irrorita)*, Russian olive (*Elaeagnus angustifoia)*, salt cedar (*Tamarix* sp.), spikerush (*Eleocharis,* sp.), bullrush (*Scirpus* sp.), cattail (*Typha latifolia*), saltgrass (*Distichlis* sp.), and rushes (*Juncus* sp.) (USFWS 2002). Much of the agricultural land in the area is classified as pasture/hay and supports winter pastures for livestock. Some cultivated cropland also exists in this region (USEPA 2022b).

3.2.1 ENDANGERED AND THREATENED SPECIES

Numerous biological resources utilize the aquatic and riparian habitats in this region for foraging, refuge, and as stopover habitat during migration. Mammals such as the black-footed ferret, Canada lynx (federally threatened), gray wolf, the New Mexico meadow jumping mouse (federally endangered) likely forage near the San Juan and Animas Rivers and utilize the rivers as a water source (BOR 2003; USFWS 2021a). The spotted bat (state threatened) also lives within San Juan County (NMDGF 2022).

Critical habitats exist for federally threatened birds such as the Mexican spotted owl, California condor, yellow-billed cuckoo, and southwestern willow flycatcher (USFWS 2021a).[14] Additionally, the broad-billed hummingbird (state threatened), brown pelican (state endangered), bald eagle (state threatened), common black hawk (state threatened), least tern (state endangered), peregrine falcon (state threatened), gray vireo (state threatened), and Baird's sparrow (state threatened) are also found within San Juan County New Mexico (NMDGF 2022). In addition, the USFWS has designated birds of conservation concern (i.e., migratory birds that breed, year-round residents, or birds that overwinter in New Mexico) including the bald eagle, black swift, Cassin's finch, Clark's grebe, evening grosbeak, Lesser yellowlegs, Lewis's woodpecker, olive-sided flycatcher, pinyon jay, and Virginia's warbler (USFWS 2021b).[15]

Critical habitats also exist for aquatic biota, including federally endangered fish species such as the Colorado pikeminnow and razorback sucker (USFWS 2021a).[16] Additional aquatic species present in the

[13] According to the 2017 United States Department of Agriculture Census, five percent (181,426 acres) of San Juan county is cropland or irrigated land.

[14] The southwestern willow flycatcher is also listed as an endangered species under the New Mexico Wildlife Conservation Act (NMDGF 2022).

[15] The Birds of Conservation Concern identifies migratory and non-migratory bird species (beyond those already designated as federally threatened or endangered) that represent the highest conservation priorities of the USFWS (USFWS 2021b).

[16] The Colorado pikeminnow is also listed as an endangered species under the New Mexico Wildlife Conservation Act (NMDGF 2022).

area include Apache trout (federally threatened), bonytail chub (federally endangered), greenback cutthroat trout (federally threatened), roundtail chub (federally proposed threatened), and Zuni bluehead sucker (federally endangered) (BOR 2003). The northern Mexican gartersnake (federally threatened), Kanab ambersnail (federally endangered), and Jemez Mountains salamander (federally endangered) may also inhabit habitats near the Animas and San Juan River (USFWS 2021a).

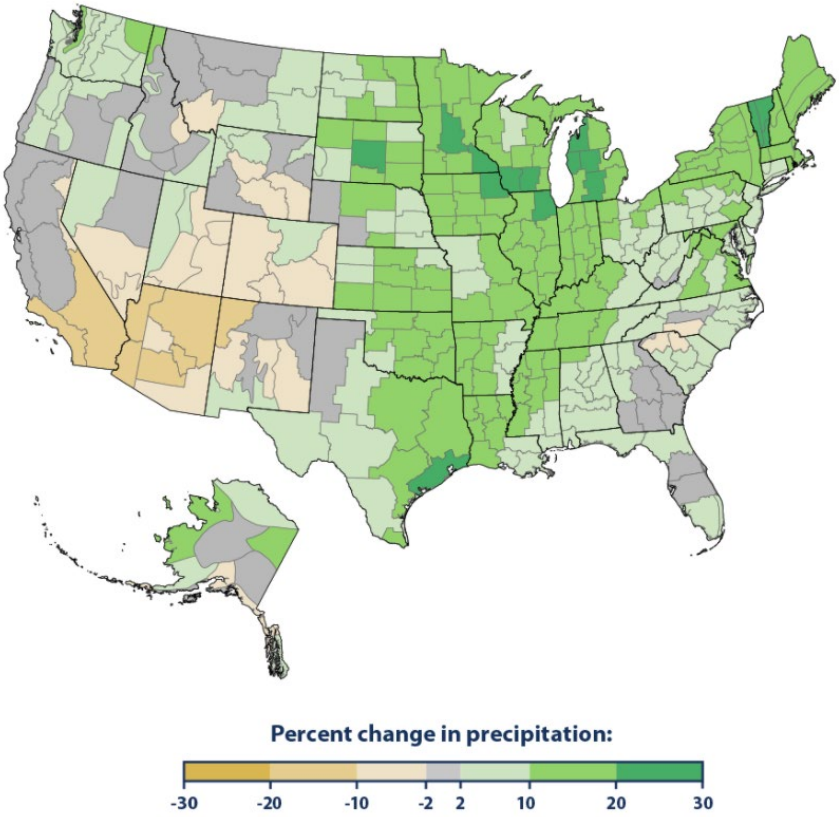
Additionally, federally threatened, endangered, or proposed threatened flowering plants in the region include the Chapin Mesa milkvetch (proposed threatened), Knowlton's cactus (federally endangered), Manco's milk-vetch (federally endangered), Mesa Verde cactus (federally threatened), Navajo sedge (federally threatened), and the Zuni fleabane (federally threatened) (USFWS 2021a).

3.3 LANDSCAPE SCALE ECOLOGICAL ENVIRONMENT AND STRESSORS

As reported in the Intergovernmental Panel on Climate Change Report (Intergovernmental Panel on Climate Change [IPCC] 2013), the Earth's surface warmed by an average of 0.74 degrees Celsius (1.3 degrees Fahrenheit) during the 20th century and the IPCC (2013) projects that there will be an increase in the frequency of extreme weather events that are temporally and spatially more variable as a result of climate change.[17] By shifting the wind patterns and ocean currents that drive the global climate, climate change will cause some areas to experience decreased precipitation, as is the case in New Mexico. Recent climatological data published by the National Oceanic and Atmosphere Administration indicate that precipitation (including snowfall and rain) has decreased throughout New Mexico since 1901, especially in the northwest portion of the state (Exhibit 3-2; USEPA 2021b).

[17] Created by the United Nations Environment Program and the World Meteorological Organization in 1988, the IPCC is the United Nations body for assessing the science related to climate change. Through its assessments, the IPCC determines the state of knowledge on climate change by identifying where there is agreement in the scientific community on topics related to climate change and where further research is needed (IPCC 2021).

EXHIBIT 3-2 CHANGE IN PRECIPITATION IN THE UNITED STATES, 1901-2020 (USEPA 2021B)



Recent warming along with occurrence of hotter and more frequent droughts are likely to produce changes in New Mexico vegetation, including drought-induced forest die-offs, extreme wildfires, and desertification of grasslands (NMBGMR 2021b). Alterations of New Mexican vegetation will impact water quantity and quality, a major focus of the New Mexico's 50-year Water Plan that will be released in 2021-2022 (NMBGMR 2021b).[18] In New Mexico and the Navajo Nation, groundwater is a vital and sometimes elusive resource. Certain regions receive less than 10 inches of rain per year (USEPA 2013). While most New Mexicans rely on groundwater for a significant percent of their potable water supply, residents in northwestern New Mexico rely heavily on surface water for their potable water supply (USEPA 2013). Members of the Navajo Nation similarly rely on groundwater and surface water resources for drinking water and for agricultural uses. Climate-change driven water stress may lead to increasing management issues related to partitioning a declining water supply for human use, agriculture, and ecosystem maintenance (NMBGMR et al. 2021b).

[18] The New Mexico 50-Year Water Plan is being developed my numerous entities including the NMBGMR, New Mexico Interstate Stream Commission, United States Army Corps of Engineers, Bureau of Reclamation, New Mexico Indian Affairs Department, and NMED (Office of the State Engineer 2021).

3.4 SOCIOECONOMIC RESOURCES

The Animas and San Juan Rivers run through San Juan County in northwestern New Mexico and border a portion of the Navajo Nation. As determined in the 2020 Census, San Juan County has a population of 121,661 (United States Census Bureau [USCB] 2020). The largest city in the county is Farmington, with a population of 46,624 (USCB 2020). The essential industries of Farmington and the surrounding San Juan County are petroleum, natural gas, and coal mining in nearby Navajo and San Juan mines. The Animas and San Juan Rivers support both in-state and out-of-state tourism, and tourism accounts for a significant portion of the Navajo Nation's economy. Spring and summer tourism in San Juan County is focused on boating and fishing in the Animas and San Juan Rivers, as well as nearby tributaries and lakes. Mountain biking, camping, and hiking are also common near the rivers and in surrounding national monuments and historic parks and recreational areas.

3.5 CULTURAL AND HISTORIC RESOURCES

Many historically and culturally significant sites and resources exist in northwestern New Mexico and the Navajo Nation. The Navajo Nation contains several major national and tribal recreation areas, parks, and historic monuments in New Mexico, including Chaco Culture National Historic Park and Four Corners Monument Navajo Tribal Park (Nania et al. 2014). In addition, the Aztec Ruins National Monument in Aztec, NM is a national historic monument located along the Animas River. It showcases the Pueblo community that lived in the Animas River Valley more than 900 years ago. The Monument is also a World Heritage Site and preserves several multi-story, multi-room buildings (great houses) and kivas (circular chambers used for ceremonies) that overlook the river. Although the ancestral Pueblo people left the region around 1300 C.E., many tribes still maintain a spiritual connection to the ancestral site (USEPA 2022b).

More broadly, many Navajo still engage in traditional hunting, fishing, and gathering to supplement their diets with plants and animals, and collect traditional medicines derived from wild plants (Nania et al. 2014). In addition, some Navajo strongly associate with biological species as a part of their clan identities, and respect and hold sacred the individual roles of all life on Mother Earth (Nania et al. 2014). The San Juan River carries great spiritual and cultural significance for the Navajo people and other tribes in the region. The river is said to have a spirit of its own that can assist those in need, and older tribal members are known to offer corn pollen to the river as they cross it.

3.6 SUMMARY

The region encompassing the Animas and San Juan Rivers within New Mexico and bordering the Navajo Nation contain a suite of habitats that together support a wide range of plant, fish, and wildlife species. In addition to ecological functions, these natural resources also provide cultural, recreational, and agricultural services. Economic drivers such as mining operations, agriculture, and ranching, when combined with water resource stressors and a changing climate, are important considerations in the evaluation of potential restoration alternatives.

CHAPTER 4 | RESTORATION PROJECT IDENTIFICATION, SCREENING, AND EVALUATION PROCESS

4.1 RESTORATION OBJECTIVES

Through this restoration plan, ONRT seeks to compensate the public for natural resource injuries in New Mexico that resulted from the GKM Blowout. ONRT is pursuing restoration projects[19] that have a strong connection to the Animas and/or San Juan Rivers. Projects should address service losses and/or ongoing riverine impairments, such as those described in Exhibit 4-1.

EXHIBIT 4-1 SUMMARY OF ANIMAS AND SAN JUAN RIVER IMPAIRMENTS AND SPILL-RELATED SERVICE LOSSES

TYPE OF IMPAIRMENT OR SERVICE LOSS	RIVER SYSTEM	DESCRIPTION/DETAILS
Ongoing Riverine Impairment	Animas River	Lead, turbidity, nutrients (total phosphorous), *E. coli*, and temperature
	San Juan River	*E. coli*, sedimentation/ siltation
Gold King Mine Spill-Related Service Loss	Animas and San Juan Rivers	Ecological service losses associated with metals contamination of surface water and sediment resources
		Loss of surface water supplied to local communities from the Animas or San Juan Rivers due to increase of lead content during turbulent river flow
		Loss of surface water supplied for growth of agricultural crops
		Loss of recreational opportunities tied to the Animas and San Juan Rivers resulting from concerns related to water contamination

4.2 PROJECT SOLICITATION

As part of the restoration planning process, ONRT published a press release and sent a letter to local stakeholders on July 15, 2021 (Appendix A). The letter was distributed by ONRT to a broad list of stakeholders (Appendix B) to encompass the types of organizations involved in environmental conservation, restoration, and related construction projects that fit with ONRT's objectives for restoration.

[19] This chapter discusses the process by which restoration project ideas were identified, screened, and evaluated. In Chapter 5, individual project ideas are referred to as restoration alternatives.

The main purpose of the letter was to invite restoration project proposals from local stakeholders and describe the process by which project proposals submitted to ONRT would be evaluated. In addition, the letter outlined relevant background information for stakeholders, including a description of the settlement between the State of New Mexico and Sunnyside Corporation and its parent companies, Kinross Gold Corporation and Kinross Gold, U.S.A., Inc., as well as the ongoing impairments and service losses in the two river systems, and information to be included in all project proposals. Generally, ONRT requested that project proposals include a project description that included location, land ownership, and a timeline; information about the benefits of the project to natural resource and/or services, and consequences of not implementing the project; an assessment of the project's size and scale; a cost breakdown for project implementation; a description of the project's longevity and long-term maintenance needs; information on other sources of funding, if applicable; and the overall timeline from contract execution to project completion.

In addition, ONRT outlined restrictions on the use of settlement funds, including the following:

- The project must have a nexus to natural resources and/or the services they provide to people (see Exhibit 4-1).
- ONRT funds will be final at the time of award. Applicants must identify a source of funds for ongoing maintenance costs, as needed. Funds beyond allocated contingency costs will not be available.
- Any funding provided directly to non-governmental entities will need to go through an additional, formal competitive solicitation process, consistent with State of New Mexico procurement rules.
- Project funds will be disbursed on a reimbursable basis as costs are incurred throughout the implementation phase, or the implementation and monitoring phase, if funds for monitoring are included in the project.

ONRT held a public webinar to describe the project solicitation process, screening and evaluation criteria for project selection, and restrictions on funding, in addition to answering questions from interested parties. The meeting was held virtually on July 28, 2021. Both the project solicitation letter and webinar presentation were made available at the following address: https://onrt.env.nm.gov/invitation-to-propose-ideas-for-natural-resource-restoration-projects-related-to-2015-gold-king-mine-release/.

Throughout this process, ONRT received questions from interested parties about the solicitation process and timing, types of relevant restoration projects, and details related to partnerships. ONRT tracked the questions and released a Frequently Asked Questions document to stakeholders to provide clarifications (Appendix C).

Restoration project ideas were submitted via e-mail. The deadline for submitting a project idea, originally set to August 31, 2021, was extended to September 14, 2021 to allow interested parties additional time to prepare materials after receiving answers to their questions.

4.3 SCREENING AND EVALUATION PROCESS

ONRT implemented a two-tiered process to ensure that each project proposal met a certain number of initial criteria (screening criteria) before being fully evaluated and ranked by a second set of criteria (evaluation criteria). The screening criteria were used to identify whether a given project met the general

requirements outlined by ONRT. Projects that did not pass the screening step were not evaluated further. For the projects that passed the screening step, the evaluation criteria were used to evaluate and rank each project and assist ONRT personnel in selecting from among the projects that met the screening criteria. This process was designed such that projects that passed the screening step would align with ONRT's restoration objectives. The process thereby prioritized projects most likely to restore natural resources and services injured as a result of the GKM Blowout.

The screening and evaluation criteria together represented factors important to ONRT and satisfied the requirements outlined in CERCLA for evaluating and selecting restoration projects (43 C.F.R. § 11.82(d)).

4.3.1 SCREENING CRITERIA

The seven screening criteria by which each project proposal was measured are listed below:

1. Consistent with the ONRT mission [www.onrt.state.nm.us/].
2. Results in a net overall improvement of natural resources and/or benefit to the public in terms of increased resource services.
3. Technically and administratively feasible, as demonstrated through the use of established or previously implemented approaches.
4. Unlikely to proceed without ONRT funding.
5. Complies with applicable and relevant federal, state, local, and tribal laws and regulations.
6. Has feasible and cost-effective provisions for operations, maintenance, and monitoring; and has a demonstrated source of funds for those ongoing costs, as relevant.
7. Includes all the information necessary to evaluate the project.

4.3.2 EVALUATION CRITERIA

The eleven evaluation criteria by which each project proposal was evaluated and ranked are listed below. Projects received a rank of no (did not meet criterion), low, medium, or high, depending on how well the proposal addressed the criterion. Projects that met each criterion and received a medium or high rank for at least nine criteria were included as part of the Preferred Restoration Alternative.

1. Geographically close to the Animas River from the New Mexico-Colorado state line to the confluence with the San Juan River, and/or the San Juan River downstream to the Colorado state line.
2. Consistent with regional planning and federal and state policies, if applicable.
3. Availability of additional funds or in-kind support to leverage ONRT dollars.
4. Low ratio of planning and administrative costs to restoration costs.
5. Relationship of the expected costs of the proposed actions to the expected benefits.
6. Cost-effectiveness compared to other projects that provide similar benefits.
7. Lead project proponent or partner is a state agency or local public body.

8. Implemented in a timely manner.
9. Likely to provide benefits quickly after project implementation.
10. High potential for long-term success and a low risk of failure.
11. Low potential for adverse impacts to natural resources or human health and safety resulting from the restoration project itself, including long-term and indirect impacts.

During the screening and evaluation process, ONRT sought clarifications for each project submitted for evaluation and followed a standard procedure to communicate with each project proponent. A harmonized list of questions was drafted and sent to each project proponent via email on October 27, 2021. Responses were requested by November 12, 2021, to ensure each project proponent was given an equal amount of time to respond. After reviewing the responses from each project proponent, ONRT communicated with project proponents on an as-needed basis if specific clarifications were necessary to finalize the screening and evaluation of that project.

4.4 PROJECTS CONSIDERED BUT NOT EVALUATED FURTHER

After completing the screening step, ONRT determined that one proposed restoration project did not meet the screening criteria. The City of Farmington submitted a project proposal for design of an in-water whitewater wave feature in the Animas River near the new Gateway Park. Due to the preliminary nature of the project, only the design of the in-water features was envisioned by the project proponent, while the actual construction of the feature would be part of a future City-led phase of the project. This did not meet screening criterion #2 (results in a net overall improvement of natural resources) and would not ensure restoration dollars led to on-the-ground improvements in resources and/or resource services. This project also did not strictly meet screening criterion #4 (unlikely to proceed without ONRT funding), as the City of Farmington levied a local tax to pay for similar initiatives and has prioritized this project. Thus, ONRT did not move forward with the City of Farmington whitewater wave feature project in the evaluation phase.

The proposed restoration projects that passed the screening step are described and further evaluated in Chapter 5.

CHAPTER 5 | EVALUATION OF THE RESTORATION ALTERNATIVES AND IDENTIFICATION OF THE PREFERRED RESTORATION ALTERNATIVE

This chapter describes ONRT's evaluation of the proposed restoration projects that met the screening criteria and outlines the Preferred Restoration Alternative. The Preferred Restoration Alternative includes all of the proposed restoration projects that met the screening criteria. However, these projects together requested more funding than is available through this settlement. Therefore, ONRT may fund only certain portions of the proposed projects. The cost assessment is discussed as part of ONRT's evaluation in the following sections and summarized at the end of this chapter.

5.1 PROPOSED ALTERNATIVES AND THE PREFERRED RESTORATION ALTERNATIVE

The alternatives that ONRT evaluated as part of this draft restoration plan include the following:

- Alternative A: No Action – Natural Recovery Alternative.
- Alternative B: Agricultural Irrigation System Upgrade Project (proposed by the Tse Daa Kaan (Hogback) Navajo Community).
- Alternative C: Cedar Hill Boat Ramp on the Animas River (proposed by San Juan County).
- Alternative D: Festival and Farmer's Market Pavilion at Gateway Park (proposed by the City of Farmington).
- Alternative E: San Juan Valley Soil Health Restoration Project (proposed by the San Juan County Soil and Water Conservation District).

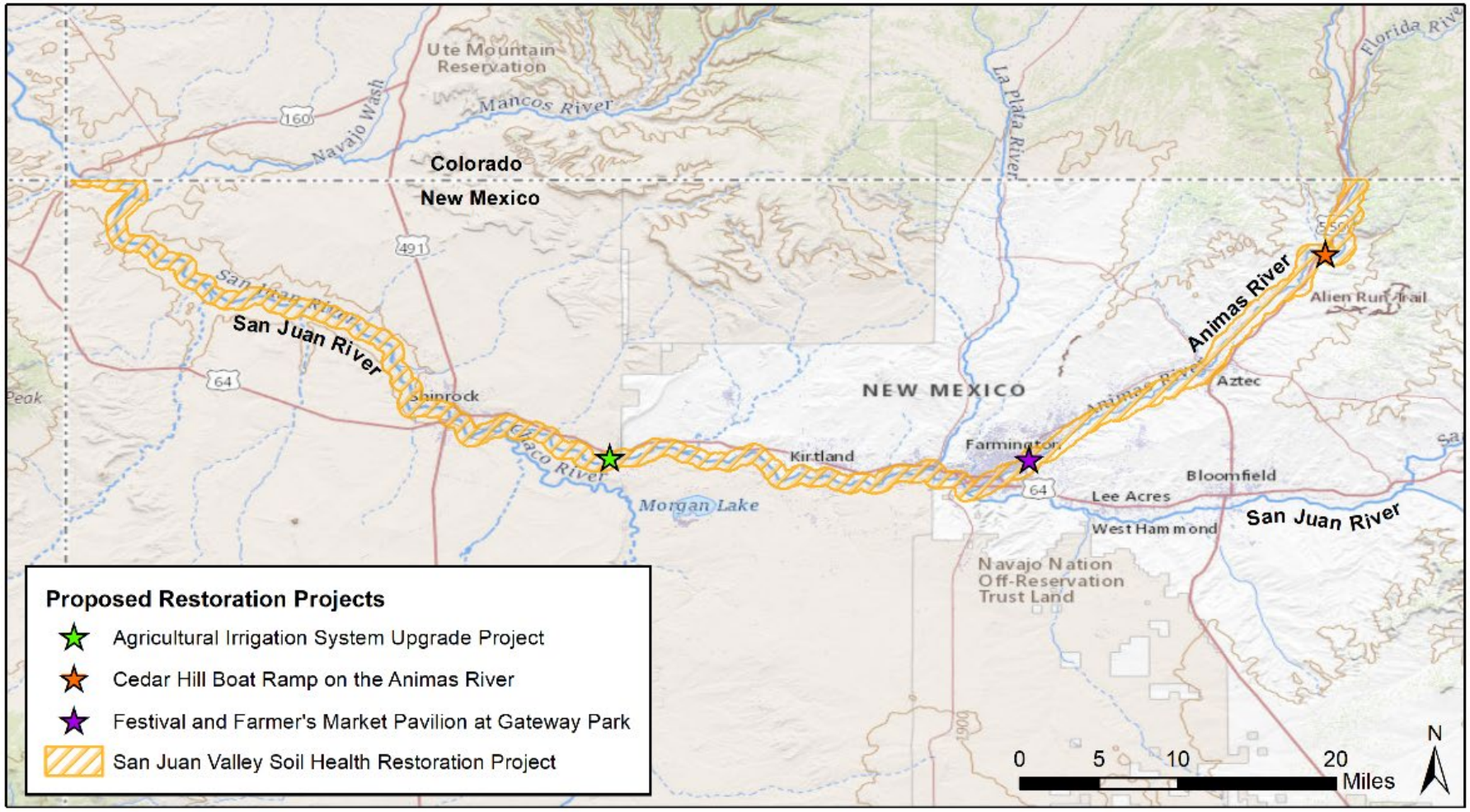
The Preferred Restoration Alternative includes a suite of projects (Alternatives B, C, D, and E) that, together, would provide additional in-river recreational opportunities, enhance soil and stream health, and compensate for agricultural losses. Additionally, these projects compensate for cultural losses for the Navajo community within the geographic boundaries of New Mexico. Projects evaluated and proposed as part of the Preferred Restoration Alternative are summarized in Exhibit 5-1 and shown geographically in Exhibit 5-2. Projects are presented in two tiers. Tier 1 includes the projects that ONRT would prioritize for funding, while Tier 2 includes one project (Alternative B) for which funding is contingent on matching contributions that have not yet been secured.

EXHIBIT 5-1 RESULTS OF THE SCREENING AND EVALUATION PROCESS

PROJECT NAME[1]	SCREENING SUMMARY	EVALUATION SUMMARY	RELATIVE PROJECT COST[2]
PREFERRED RESTORATION ALTERNATIVE (PROJECTS RECOMMENDED FOR FUNDING)			
Tier 1 Preferred Restoration Projects			
Alternative C: Cedar Hill Boat Ramp on the Animas River	Passed	High	$
Alternative D: Festival and Farmer's Market Pavilion at Gateway Park	Passed	Moderate	$$-$$$
Alternative E: San Juan Valley Soil Health Restoration Project	Passed	High	$-$$
TIER 2 PREFERRED RESTORATION PROJECT			
Alternative B: Agricultural Irrigation System Upgrade Project	Passed	Low	$$
PROJECTS CONSIDERED BUT NOT RECOMMENDED FOR FUNDING			
Whitewater Wave Feature	Did Not Pass	Not Applicable	$$$

Table Notes.
1. Projects are listed alphabetically within each tier.
2. Project costs are categorized as low ($, less than $200,000), medium ($$, between $200,000 and $400,000) and high ($$$, greater than $400,000). Scalable projects include a cost range.

EXHIBIT 5-2 PROJECT LOCATIONS ASSOCIATED WITH PREFERRED RESTORATION ALTERNATIVE[20]



[20] The San Juan Valley Soil Health Restoration Project is focused on farmland within the San Juan Valley. Specific locations for project implementation have not yet been chosen.

5.2 ALTERNATIVE A | NO ACTION – NATURAL RECOVERY ALTERNATIVE

NRDA regulations specify that the natural resource trustee must consider an alternative that involves "minimal management actions" to restore natural resources or resource services or compensate for interim losses (43 C.F.R. § 11.82(c)(2)). The No Action - Natural Recovery Alternative would not include any direct actions to restore injured natural resources or resource services, and any improvement would occur through natural recovery alone. While it is possible that natural resources may improve to baseline conditions over time, the public would not be compensated for losses that occurred in the interim (i.e., the time between the Gold King Mine spill and the return to baseline conditions). The No Action – Natural Recovery Alternative would not utilize settlement monies for restoration or acquisition of the equivalent of lost resources and resource services, which is the purpose of NRDA. In addition, the No Action – Natural Recovery Alternative does not meet the screening criteria, as described further in Exhibit 5-3.

EXHIBIT 5-3 NO ACTION – NATURAL RECOVERY ALTERNATIVE: ASSESSMENT AGAINST SCREENING CRITERIA

SCREENING CRITERIA	PROJECT DESCRIPTION	ASSESSMENT[1]
1. Is consistent with ONRT's mission.	Alternative A does not compensate for interim losses.	Does Not Pass
2. Results in a net overall improvement of natural resources and/or benefit to the public in terms of increased resource services.	It is not clear that Alternative A would result in an overall improvement.	Does Not Pass
3. Technically and administratively feasible, as demonstrated through the use of established or previously implemented approaches.	No actions would be implemented.	Not Applicable
4. Unlikely to proceed without ONRT funding.	No funding would be utilized.	Not Applicable
5. Complies with applicable and relevant federal, state, local, and tribal laws and regulations.	Does not utilize settlement monies for restoration, which would not comply with CERCLA NRDA regulations.	Does Not Pass
6. Has feasible and cost-effective provisions for operations, maintenance, and monitoring; and a demonstrated source of funds, as relevant.	No actions would be implemented.	Not Applicable
7. Includes all the information necessary to evaluate the project.	No project materials were submitted.	Not Applicable

Table Note.
1. Several screening criteria are not applicable, given the nature of the No Action alternative.

Therefore, the No Action – Natural Recovery Alternative would not make the public whole, and ONRT does not further evaluate the No Action – Natural Recovery Alternative in this Draft RP.

5.3 DESCRIPTION AND ASSESSMENT OF THE PREFERRED RESTORATION ALTERNATIVE

The Preferred Restoration Alternative includes the Agricultural Irrigation System Upgrade Project (Alternative B), Cedar Hill Boat Ramp on the Animas River (Alternative C), Festival and Farmer's

Market Pavilion at Gateway Park (Alternative D), and San Juan Valley Soil Health Restoration Project (Alternative E). The following sections describe each restoration alternative in more detail and provide a general project description, information on project benefits, size, cost, longevity, funding sources, and timing. The description includes a summary of all the information evaluated. For each restoration alternative, ONRT's assessment of the project against the evaluation criteria follows the project description.

5.3.1 ALTERNATIVE B | AGRICULTURAL IRRIGATION SYSTEM UPGRADE PROJECT (TSE DAA KAAN (HOGBACK) NAVAJO COMMUNITY)

Alternative B is a project proposed by the Tse Daa Kaan (Hogback) Navajo Chapter to fund the purchase of three upgraded water pumps to irrigate up to 955 acres of land on the Navajo Nation, that use San Juan River water for growing traditional and culturally-significant crops.

Project Description

The Agricultural Irrigation System Upgrade project would entail replacing water pumps that deliver irrigation water to 55 farmers and nearly 1,000 acres of farmable land in the Hogback community. The high sediment load in the San Juan River has caused frequent breakdowns of pumps that provide irrigation water to farms in the Hogback community. The failures can last up to a month while pumps are repaired, and cause loss of crops due to lack of irrigation water. According to the Tse Daa Kaan Irrigation Task Force, frequent pump breakdowns occur because the current vertical pumps are not designed to handle high sediment loads. The high sedimentation load stresses the pumps, which are often replaced annually.

The proposed project would purchase three horizontal centrifugal pumps, each with an output of 5,500 to 6,000 gallons per minute at an existing 2-acre site. The proposed pumps are designed to handle the high sediment loads typical of water diverted from the San Juan River. The project proposes to install two pumps prior to the 2022 planting season, which runs from April through October. After installation, the pumps would be maintained by the Hogback Chapter and the Navajo Nation Irrigation Department. Maintenance would include checking the pumps daily and conducting any necessary repairs. The third pump would be kept in reserve, in case repairs are needed for the two operational pumps.

The goal of this project is to reduce the amount of time each year that farmers go without irrigation water due to breakdowns and decrease the costs associated with pump maintenance and replacement. This would address crops that were lost when irrigation water was not available following the 2015 Gold King Mine Spill. Crops grown in the Hogback community are used throughout the Navajo Nation. One of the major crops of interest is corn, which is commonly used for ceremonial purposes. Other crops include squash, melons, and other organic vegetables. The pump upgrades would have cultural benefits in addition to agricultural benefits due to the inclusion of crops used for ceremonial purposes.

The project proponents requested funds to cover the cost of the pumps, which are each $125,000, for a total of $375,000. Maintenance costs covered by the Hogback Chapter and the Navajo Nation Irrigation Department would be considered as additional in-kind funding. In addition, the Hogback Chapter is currently seeking additional sources of funding for a separate part of this project that would involve construction of settling ponds to reduce the amount of sediment entering the pumps.

Trustee Evaluation Against Criteria

Exhibit 5-4 summarizes the evaluation of Alternative B and provides a general assessment rank for each evaluation criterion. The project location is adjacent to the San Juan River and would irrigate farms located on tribal lands. The project's scope, including the purchase and installation of irrigation pumps is consistent with regional, state, and federal policies. In terms of costs, funding is requested in the amount of $375,000. This total amount comprises $125,000 per pump, a portion of which will also fund pump installation and maintenance. No planning or administrative costs were included in the budget, and thus there is a low ratio of planning to restoration costs.

The project benefits are more challenging to quantify. The pumps would service up to 955 acres of agricultural land and provide benefits to 55 farmers who use the irrigation system. An extra pump is included in the proposal as a contingency, in case one of the two operational pumps breaks down and needs to be sent for repairs or replaced. This has been a typical occurrence with the current irrigation system and leads to dry periods without irrigation when a pump needs repairs. However, the project proponent stated an interest in purchasing a different type of horizontal centrifugal pump that has not been tested at this site. After further communication with the project proponent, it became clear that the new pumps are part of a larger project to upgrade the entire pumping station with settling ponds to address the heavy sedimentation from the river. The project proponent is in the process of finding funding to upgrade the infrastructure to reduce the sedimentation and improve pumping efficiency. Therefore, even if the project is implemented in a timely manner such that the pumps are purchased and installed before the planting season, it is not clear that purchasing new pumps will serve the project's goal to irrigate the agricultural lands more efficiently. The benefits to the farmers are contingent upon ensuring the pumps work properly (and better, with fewer failures) than the current system.

The likelihood for adverse environmental impacts is low. This area is developed as agricultural land, and the project area was previously disturbed to create the pumping station. Potential adverse impacts include localized pooling of water and possibly sediment if the pumps malfunction, and lack of irrigation water if the pumps cannot handle the suspended solids and fail.

The project proponent is the Hogback Chapter of the Navajo Nation and is considered a local public body. This project would benefit local farmers and compensate for agricultural and cultural losses due to the GKM Blowout, and for that reason it is included as part of the Preferred Restoration Alternative. However, based on this review, it is not clear that the new pumps alone would be a significant improvement over the current system.

Thus, Alternative B ranks as a Tier 2 Preferred Restoration Alternative. ONRT reserves the right to fund this project should the Hogback Chapter receive matching funds to upgrade the infrastructure, thereby assuring the irrigation system will have a reduced sediment load and higher likelihood of providing benefits quickly after project implementation.

EXHIBIT 5-4 AGRICULTURAL IRRIGATION SYSTEM UPGRADE PROJECT: ASSESSMENT AGAINST EVALUATION CRITERIA

EVALUATION CRITERIA	PROJECT DESCRIPTION	ASSESSMENT RANK
1. Geographically close to rivers.	The proposed project would pump water from the San Juan River to irrigate local farms on tribal lands.	High
2. Consistent with policies.	Based on the information provided, this project is consistent with relevant policies.	High
3. Availability of leverage.	The project proponent will provide an in-kind match for pump system upkeep and maintenance. The match was not quantified.	High
4. Low ratio of planning costs to restoration costs.	The itemized budget only included the cost of the three pumps. No planning costs were included. Therefore, we assume that most of the cost will go toward purchasing equipment while a portion will go towards installation and maintenance of the same.	High
5. Relationship of costs to benefits.	The budget estimates $125,000 per pump, with three pumps irrigating a total of 955 acres of agricultural land.	High
6. Cost-effectiveness.	The estimated costs are in the range expected for this type of project.	Medium
7. Lead project proponent is state or local public body.	This project was submitted by the Hogback Chapter of the Navajo Nation, an entity that qualifies for treatment as a local public body for these purposes.	High
8. Implemented in a timely manner.	The project could be implemented in a timely manner, upon receipt of matching funds to upgrade the infrastructure and thereby reduce the sediment load reaching the pumps. The pumps would be procured and installed prior to the planting season.	Medium-High
9. Likely to provide benefits quickly.	If the project proceeds as described, benefits should follow quickly after implementation. However, the benefits to farmers are contingent on ensuring the new pumps work properly.	Medium
10. High potential for long-term success and low risk of failure.	Through the proposal text and answers to subsequent questions, it is not clear that the requested horizontal pumps will be a significant improvement over the current setup. The Hogback Chapter is in the process of funding a related update to the infrastructure of the settling ponds to reduce the sedimentation and improve pumping efficiency.	Low

EVALUATION CRITERIA	PROJECT DESCRIPTION	ASSESSMENT RANK
11. Low potential for adverse impacts to natural resources or human health and safety.	The pumps would be inserted into the same infrastructure that is currently used for irrigation. While it is not certain these new pumps will be a significant improvement on the current pumps, the likelihood for adverse environmental impacts is low. Potential adverse impacts include localized pooling of water if the pump malfunctions.	Medium

5.3.2 ALTERNATIVE C | CEDAR HILL BOAT RAMP ON THE ANIMAS RIVER (SAN JUAN COUNTY)

Alternative C is a project proposed by San Juan County to construct a new river access point and boat ramp on 5.2 acres of land bordering the Animas River at Cedar Hill, NM.

Project Description

The Cedar Hill Boat Ramp restoration project would construct a new river access point and boat ramp on the Animas River in Cedar Hill, NM. The goal of this restoration project would be to increase recreational opportunities to compensate for lost access to in-water recreation and lost revenues associated with tourism due to the GKM Blowout. As stated in San Juan County's proposal, increasing recreation opportunities along this segment of the Animas River would highlight the area as a recreation destination that benefits local residents and businesses that offer river-based recreation opportunities.

The Animas River currently has abundant public access in Durango, CO and from Aztec, NM to the confluence with the San Juan River in Farmington, NM. However, the 38.7-mile reach between Durango and Aztec currently does not have a public access point. The new river access and boat ramp in Cedar Hill would add to the current system of public access points to allow recreational day trips along the entire length of the Animas River from Durango to Farmington. During peak runoff conditions in May and June, San Juan County estimates visitation at 10 and 20 boat trips per day, while low water conditions between November and April would attract between three and five trips per day for activities such as fishing and tubing.

San Juan County has completed the project design and permitting for this project, which could be considered "shovel ready." The San Juan County Commission approved the project design in December 2020. The proposed project would be located on a 5.2-acre parcel owned by the county that is currently wooded. The physical improvements would occur on approximately 1.5 to 2 acres of the property. The undisturbed land would remain vegetated. Remains of the former railroad bridge abutment on the property would be preserved and interpretive signage would be placed to document the former railway. Based on the design drawings, the site improvements include a new access road from County Road 2390, vehicle/trailer parking area, solar security gate and fencing, stone stabilized boat ramp and staging area, native plantings, river information, and interpretive signage. The U.S. Army Corps of Engineers (USACE) approved the 401 Permit for project construction on November 2, 2021. Construction of the project is expected during the seasonal low-water period of summer and fall 2022. Project benefits would be expected to start accruing once construction is complete and the access point opened to the public. After construction, San Juan County would conduct outreach through area partners, social media, and a press release to advertise the new access point. Maintenance would be conducted by San Juan County

Public Works or Parks and Facilities Department staff and would include activities such as periodic grading, weed control, trash removal, and sign repairs. San Juan County would utilize traffic counting monitors to estimate the number of trips to the site. The site would be maintained in perpetuity.

San Juan County estimated construction costs at $200,000 and committed $40,000 in matching funds towards construction. The total project cost requested from ONRT is $160,000, including contingency and New Mexico Gross Receipts Tax (GRT) as applicable.

Trustee Evaluation Against Criteria

Exhibit 5-5 summarizes the evaluation of Alternative C and provides a general assessment rank for each evaluation criterion. The project location is adjacent to the Animas River and the project involves construction of a riverine access point and boat ramp on a section of the river that currently has poor public access. The project's scope is consistent with regional, state, and federal policies, and the project proponent is a local public body (San Juan County). In terms of project costs, the County requested $160,000 to fund mobilization, surveying, construction of the boat ramp, fencing, and signage. Planning and administrative costs account for less than 10 percent of the total cost, and thus there is a low ratio of planning to restoration costs. The project proponent provides significant leverage, including an in-kind cash match of $40,000 and previous funding in the amount of $25,000 for project design. In addition, operations and maintenance will be conducted by the project proponent. The estimated costs are in the range expected for this type of project, and the project proponent brings significant leverage with matching funds and long-term maintenance.

The project benefits would include an increase in recreational opportunities on the Animas River, along a currently underserved 38.7-mile reach between Durango, CO and Aztec, NM. The site would add to a network of six existing boat ramps along 50 miles of river. The project proponent estimates between three and 20 recreational trips per day, which will vary by season and flow conditions. For example, the peak flow conditions in May and June will be conducive to more boating trips, while the low flow conditions experienced during November through April will lend themselves to fishing and tubing.

Based on the project proposal and subsequent communications, the project would be implemented in a timely manner. The project proponent has secured all necessary permits, and construction is expected in Summer/Fall 2022. When construction is complete, the project proponent would advertise the new access point through a press release, social media, and engagement with local partners. The San Juan County Public Works and Parks and Facilities departments will be responsible for ongoing maintenance (e.g., grading, sign replacement, maintenance of the boat ramp) and the project will be maintained in perpetuity. Therefore, the benefits to resource services (i.e., provision of additional in-river recreational opportunities for the public) should follow quickly after implementation.

Lastly, the likelihood for adverse environmental impacts is low. Water quality and wetland loss concerns were addressed in the procured USACE permit, which clarifies that less than 0.03 riverine and wetland acres will be lost to accommodate the ramp. The access point and parking area would not be located in the 5, 10, or 25-year floodplain and the construction plan anticipates and accounts for modest runoff events. One potential impact is trampling of nearby natural areas if there is crowding at the site due to above expected use (i.e., parking in no-parking zones), that could require additional parking or expansion of the site. San Juan County will monitor activity at the site through traffic counting monitors to measure public usage.

Alternative C would compensate for in-river recreational losses due to the GKM Blowout by benefitting boaters, anglers, other river-based recreators, and the businesses that serve them. For that reason, it is included as part of the Preferred Restoration Alternative. Because the project proponent has clearly articulated the goal, benefits, and construction plans, has obtained the necessary permits, and has secured significant leverage in the form of matching funds and long-term maintenance of the project site, Alternative C ranks as a Tier 1 Preferred Restoration Alternative.

EXHIBIT 5-5 CEDAR HILL BOAT RAMP ON THE ANIMAS RIVER: ASSESSMENT AGAINST EVALUATION CRITERIA

EVALUATION CRITERIA	PROJECT DESCRIPTION	ASSESSMENT RANK
1. Geographically close to rivers.	The proposed project would construct a riverine access point and boat ramp on the Animas River in New Mexico.	High
2. Consistent with policies.	Based on the information provided, this project is consistent with relevant policies.	High
3. Availability of leverage.	The project proponent will provide an in-kind match of $40,000, and previously funded the project design ($25,000). In addition, operations and maintenance will be conducted by the project proponent.	High
4. Low ratio of planning costs to restoration costs.	Based on the itemized budget, planning and administrative costs accounted for less than 10 percent of the total cost.	High
5. Relationship of costs to benefits.	The budget requests $160,000 from ONRT. The project would increase recreational opportunities on the Animas River, by an estimated three-20 recreational trips per day (varying by season).	High
6. Cost-effectiveness.	The estimated costs are in the range expected for this type of project, and the project proponent brings significant leverage in terms of cash match and maintenance.	High
7. Lead project proponent is state or local public body.	Yes. This project was submitted by the San Juan County Public Works department.	High
8. Implemented in a timely manner.	The project would be implemented in a timely manner. Permits are currently in-hand and construction is expected in Summer/Fall 2022.	High
9. Likely to provide benefits quickly.	If the project proceeds as described, benefits should follow quickly after implementation. The project proponent will advertise the new access point through a press release, social media, and engagement with local partners.	High

EVALUATION CRITERIA	PROJECT DESCRIPTION	ASSESSMENT RANK
10. High potential for long-term success and low risk of failure.	This project would follow standard practices for constructing the new access point and boat ramp. All required permits are currently in-hand. The San Juan County Public Works and Parks and Facilities departments would be responsible for ongoing maintenance (e.g., grading, sign replacement, maintenance of the boat ramp) and the project would be maintained in perpetuity.	High
11. Low potential for adverse impacts to natural resources or human health and safety.	There is a low potential for adverse impacts. Water quality and wetland loss concerns are addressed in the USACE 401 permit, which clarifies that less than 0.03 riverine and wetland acres will be lost to accommodate the ramp. The access point and parking area are not located in the 5, 10, or 25-year floodplain and the construction plan anticipates and accounts for modest runoff events. One potential impact is overuse of nearby natural areas if there is crowding at the site due to higher-than-anticipated interest, which could require additional parking or expansion. San Juan County will monitor activity through traffic counting monitors.	Medium-High

5.3.3 ALTERNATIVE D | FESTIVAL AND FARMER'S MARKET PAVILION AT GATEWAY PARK (CITY OF FARMINGTON)

Alternative D is a project proposed by the City of Farmington to construct a new festival and farmer's market pavilion at the Gateway Park community development in Farmington, NM.

Project Description

Alternative D, the Festival and Farmer's Market Pavilion at Gateway Park, involves construction of a permanent outdoor covered space and designated market location for the farmer's market at Gateway Park. The project would consist of a 2,500 to 3,000 square foot pavilion with electricity, roll-up door enclosures, restrooms, and other amenities and would be one component of a larger effort to revitalize Gateway Park as a signature park for the Farmington community and visitors. Other components of the park may include new outdoor recreational features, sites for restaurants and eateries, trail connections, and improvements to the Farmington Museum and Visitor Center's riverside outdoor event space.

The purpose of this project would be to compensate for lost agricultural opportunities by creating a permanent community space and reducing the burden of farmers to participate in the market. The farmer's market is held weekly on Tuesdays and Saturdays from June through October. Approximately 70 farmer and small business vendors, along with roughly 20,000 community members, participate in the market each year. Since 2015, an estimated 15 vendors have left the market, and the customer base and overall income reported by farmers have decreased nearly 30 percent. The City of Farmington anticipates that an enhanced market space would create greater community demand for local food and increase the ability for area farmers to sell their products. According to the City, market customers have routinely requested shade and a more comfortable shopping area, which the proposed pavilion would provide. The City

estimates that visitor attendance at the markets would increase by at least 15 percent in the first year. Project benefits would be expected to start accruing as soon as the pavilion was open for the market and continue accruing throughout the useful life of the pavilion.

In addition to agricultural benefits, the City cites potential indirect benefits to natural resources. Farmers selling at the market may be more inclined to reduce the number of pesticides used as compared to conventional agricultural practices and are required to attend annual food safety and business training in order to become a vendor. Thus, according to the City, increasing the number of farmers participating in the market would help the community "build a food system that is not only sustainable, but growing."

Project design is expected to occur during Spring 2022, while permitting and construction would occur during early Summer 2022. The City anticipates that the only permit necessary for the pavilion would be a NM Construction Industries Division permit. Project completion would be advertised on the Farmington Growers Market Board and the Northwest New Mexico Growers Market Alliance social media sites and websites. A project description could also be included in the 2022 NWNM Local Food Guide, which is distributed across San Juan County. After construction, vendor sales and customer attendance would be documented annually. The pavilion is expected to have a useful life of at least 25 years with proper maintenance. Maintenance of the pavilion would be managed and funded by the City General Services and Parks, Recreation and Cultural Affairs Departments.

The City expects the total cost of the Gateway Park Conceptual Plan to be between four and five million dollars. The City requested $500,000 to construct the pavilion, including the structure, enclosure system, electrical and plumbing, installation and construction, stone cladding, and fixtures. The City is seeking other funding sources for additional components of the Gateway Park improvements.

Trustee Evaluation Against Criteria

Exhibit 5-6 summarizes the evaluation of Alternative D and provides a general assessment rank for each evaluation criterion. The project location is adjacent to the Animas River and would construct a pavilion at Gateway Park. The project's scope is consistent with regional, state, and federal policies, and the project proponent is a local public body (City of Farmington). In terms of costs, funding is requested in the amount of $500,000. This total amount includes construction materials, electrical and plumbing, and labor costs for installation and construction. Planning and administrative costs would be covered by the project proponent, and thus there is a low ratio of planning to restoration costs. The project proponent provides significant leverage, including an investment through the conceptual design of Gateway Park, as well as long-term operations and maintenance that will be conducted by the project proponent. The estimated costs are along the high end of the range expected for this type of project, though the project proponent brings significant leverage with matching funds and long-term maintenance.

The project benefits would address agricultural losses by providing an attractive and comfortable venue for local farmers to sell their crops and reduce the stigma created by the GKM Blowout that exists to this day. The covered pavilion would provide a gathering place with a shade structure for sun protection. The project proponent anticipates a 15 percent increase in market attendance after the first year, and up to a 50 percent increase in subsequent years (both vendors and customers). This is part of a larger expansion of Gateway Park, which contains other attractions and is adjacent to the river.

Based on the project proposal and subsequent communications, the project would be implemented in a timely manner. The project proponent does not currently have permits in-hand, but anticipates that the

necessary site assessment, permitting, and construction would take 8-12 months from start to finish. When construction is complete, the project proponent will advertise the new market pavilion through social media, engagement with local partners, and potentially a ribbon cutting event. In addition, the project proponent will advertise to farmers through the Farmington Growers Market Board and Northwest New Mexico Growers Market Alliance. The City of Farmington will monitor annual vendor sales and customer attendance at the market. The City of Farmington General Services Department will be responsible for ongoing maintenance and the project will be maintained in perpetuity. Therefore, the benefits to farmers that address agricultural losses should follow quickly after implementation.

Lastly, the likelihood for adverse environmental impacts is low. Construction will take place on already developed land that has a buffer between the construction area and the Animas River. Permits will address any potential for runoff or other water quality impacts. Human health and safety are not expected to be impacted during construction or when the pavilion is finished.

Alternative D would benefit local farmers (and market customers) and compensate for agricultural losses due to the GKM Blowout. For that reason, it is included as part of the Preferred Restoration Alternative. Because the project proponent has clearly articulated the goal and benefits and has secured significant leverage in the form of matching funds to further develop Gateway Park and conduct long-term maintenance of the project site, Alternative D ranks as a Tier 1 Preferred Restoration Alternative.

EXHIBIT 5-6 FESTIVAL AND FARMER'S MARKET PAVILION AT GATEWAY PARK: ASSESSMENT AGAINST EVALUATION CRITERIA

EVALUATION CRITERIA	PROJECT DESCRIPTION	ASSESSMENT RANK
1. Geographically close to rivers.	The proposed project would construct a pavilion at Gateway Park, located on the Animas River in Farmington, NM.	High
2. Consistent with policies.	Based on the information provided, this project is consistent with relevant policies.	High
3. Availability of leverage.	The project proponent has invested in the project through the conceptual design of Gateway Park. In addition, long-term operations and maintenance will be conducted by the project proponent.	High
4. Low ratio of planning costs to restoration costs.	Based on the itemized budget, planning and administrative costs were not included. The budget focused on materials and labor for construction.	High
5. Relationship of costs to benefits.	The budget requests $500,000 from ONRT. The project would address agricultural losses by providing a venue for local farmers to sell in harsher conditions (e.g., hot summer weather). The project proponent anticipates a 15-50 percent increase in market attendance within the first three years.	Medium
6. Cost-effectiveness.	The estimated costs are at the high end of the range expected for this type of project. The project proponent brings leverage in terms of conceptual design and maintenance.	Medium

EVALUATION CRITERIA	PROJECT DESCRIPTION	ASSESSMENT RANK
7. Lead project proponent is state or local public body.	Yes. This project was submitted by the City of Farmington.	High
8. Implemented in a timely manner.	The project would be implemented in a timely manner. No permits are currently in-hand. The project proponent anticipates site assessments, permitting, and construction to take 8-12 months.	Medium
9. Likely to provide benefits quickly.	If the project proceeds as described, benefits should follow quickly after implementation. The project proponent will advertise the pavilion through social media, engagement with local partners, and a ribbon cutting event.	High
10. High potential for long-term success and low risk of failure.	This project would follow standard practices for constructing the new pavilion and will advertise to farmers through the Farmington Growers Market Board and Northwest New Mexico Growers Market Alliance. The City of Farmington General Services Department will be responsible for ongoing maintenance and the project will be maintained in perpetuity.	High
11. Low potential for adverse impacts to natural resources or human health and safety.	There is a low potential for adverse impacts. Construction will take place on already developed land that has a buffer between the construction area and the Animas River. Permits will presumably address any potential for runoff or other water quality impacts. Human health and safety is not expected to be impacted during construction or when the pavilion is finished; one project benefit is that farmers will have access to a shaded area.	High

5.3.4 ALTERNATIVE E | SAN JUAN VALLEY SOIL HEALTH RESTORATION PROJECT (SAN JUAN COUNTY SOIL AND WATER CONSERVATION DISTRICT)

Alternative E is a project proposed by the SJSWCD to educate farmers on and implement best practices to improve agricultural soil health, thereby reducing surface water runoff and its impact on local waterways. Those best practices would be implemented on between five and 15 farms in San Juan County.

Project Description

Even after Animas and San Juan River water quality returned to conditions safe for irrigation and livestock watering, farmers and ranchers reported difficulty selling their products due to an enduring stigma from the GKM Blowout and consumer hesitancy to trust the quality of produce grown with Animas or San Juan River water. The San Juan Valley Soil and Health Restoration Project would implement soil health improvement practices on farmland in the San Juan River Valley, with a focus on agricultural lands impacted by a lack of irrigation water during the GKM Blowout. SJSWCD would implement the project and consult the San Juan Watershed Group, as needed. The goal is to assist farmers improve soil health, focusing on one of the communities most affected by the spill.

The project would work with individual farmers to develop and implement a soil health improvement plan using the Five Healthy Soil Principles, including: keep soil covered; minimize soil disturbance and external inputs; maximize biodiversity; maintain a living root; and integrate animals into land management. Soil health practices would be targeted to meet individual farmer goals and improve watershed health by increasing overall soil organic matter, improving infiltration and the soil's water holding capacity, and reducing erosion. Cover cropping would be a key element in all five principles. Benefits of those improved soil health practices include lower soil temperature, improved water retention, and reduced erosion, all of which improve surface water quality while increasing crop yields and reducing costs for farmers.

Based on similar work on the Animas River, SJSWCD estimated that improving farming practices in that watershed could decrease nitrogen loads to the river by 6.7 pounds per year, phosphorus loads by 1.0 pounds per year, and sediment loads by 0.5 tons per year for each 10 acres improved. Outcomes of a similar magnitude could be expected for improvements in farming practices along the San Juan River.[21] The project also has the potential to address *E. coli* impairments, as pastures with degraded soil health can be a source of *E. coli*. Project benefits could start accruing as soil health practices were implemented and continue for at least two years on each farm. However, SJSWCD aims to educate farmers and enable them to continue these practices indefinitely after the project ends.

This project is expected to take place on a combination of private and tribal agricultural land, with participating farmers implementing a suite of regenerative agricultural practices alongside their standard farming practices. A group of farmers in the Shiprock area has already expressed interest in the project, and additional farmers would be identified during the planning phase. Because the project would be implemented across multiple farms, there may be overlap between the planning and implementation phases, with some practices being installed on the ground at certain farms while others are still in the planning phase.

The project would begin during Summer 2022 with a pilot program consisting of five farmers. In partnership with SJSWCD (and potentially a consultant), the farms would conduct initial soil health assessments, develop soil health improvement plans, and plant the first season of cover crops in Fall 2022. The following year, the farms would implement the second year of cover crops and soil health practices, and newly recruited farms would begin the process. In 2024, the second group of farms would implement second year plantings and soil health plans, and, if needed, additional farms would be identified to meet acreage and implementation goals. SJSWCD would conduct soil testing on every five acres before and after implementation to monitor changes and post-implementation modeling exercise to estimate the benefits to surface water quality (e.g., using the Spreadsheet Tool for Estimating Pollutant Loads developed by the USEPA). In total, the project time frame would span Summer 2022 through Summer 2024 and could last through Summer 2026 depending on the amount of interest from local farmers.

Project costs are scalable and depend on the number and acreage of participating farms. Costs include cover crop seed for two years, compost, mulch, rental or purchase of equipment, personnel, farm consultants, and mileage reimbursement. The total project cost requested from ONRT is approximately

[21] The San Juan Watershed Group has a separate pending grant application that would fund specific pollutant load reduction calculations for agricultural best management practices along the San Juan River.

$280,000, and includes implementation on 15 farms, modeling the water quality benefits, contingency, and New Mexico GRT as applicable. The Toohnii Binaneestʔąʔ Ałtaasʔéí Alliance (ToohBAA) farm collective, a group of farmers in the Shiprock, NM area, has received $32,000 that could be used as a cash match towards project implementation and farmer outreach and education. SJSWCD estimates that additional in-kind matches from individual farmers who implement the soil improvement plan actions would be valued at more than $25,000.

Trustee Evaluation Against Criteria

Exhibit 5-7 summarizes the evaluation of Alternative E and provides a general assessment rank for each evaluation criterion. The project location is adjacent to the San Juan River and would improve farming practices in the San Juan River Valley. The project's scope is consistent with regional, state, and federal policies, and the project proponent is a local public body (San Juan Soil and Water Conservation District). In terms of costs, funding is requested in the amount of $269,814.60. This amount includes supplies such as seeding and compost, equipment, and soil testing, as well as staff and consultant time to work with the farmers on individual plans. A total cost of approximately $280,000 would include New Mexico GRT and costs for modeling the water quality benefits. Planning and administrative costs account for less than 27 percent of the total budget, and thus there is a relatively low ratio of planning to restoration costs. The project proponent provides significant leverage, including a cash match from ToohBAA ($32,000) for implementation, outreach, and education, and in-kind support from the farmers who will be implementing the improved soil practices. At a volunteer rate of $28.54 per hour,[22] this in-kind support is estimated at more than $25,000. The estimated costs are in the range expected for this type of project, and the project is scalable based on the number of interested farmers. The project proponent brings significant leverage with matching funds and in-kind support.

The project benefits would improve soil conditions on up to 15 farms across 225 acres, and model water quality benefits from reduced runoff contamination to the San Juan River. The project proponents would follow demonstrated regenerative agricultural and soil improvement practices, focusing on land left fallow due to lack of irrigation water during the GKM Blowout and after the blowout due to the enduring stigma. Specific plans would be tailored to each farm over two years, with assistance in planning, instruction, and planting. Soil tests and water quality modeling would follow. The farmers would take responsibility for continuing to implement practices that work best for their crops and land.

Based on the project proposal and subsequent communications, the project would be implemented in a timely manner. The project does not require permits and will be implemented primarily on private and tribal agricultural lands (though not limited to private lands, should public lands be identified). The project proponent has established relationships with potential partners, and a pilot program with five farmers would begin in Summer 2022. Benefits could start accruing after one growing season, to bring fallow land back into production. Therefore, the benefits to farmers should follow quickly after implementation. The benefits to water quality will likely take longer to estimate, after practices have been in place for multiple growing seasons.

Lastly, the likelihood for adverse environmental impacts is low. Testing will monitor changes in soil quality, including concentrations of nutrients typically found in surface water runoff and riverine

[22] The value of volunteer contributions in the United States was estimated in April 2021 by Independent Sector. More information is provided at the following link: https://independentsector.org/value-of-volunteer-time-2021/.

pollution. The sites selected for project implementation are already altered by current agricultural practices so it is unlikely that the farming practices envisioned here would lead to adverse environmental impacts greater than existing conditions. On the contrary, the proposed practices have been demonstrated to reduce nutrient loading to surface water and reduce the need for fertilizers, herbicides, and pesticides. In addition, some pollinator species may benefit from this project, and any downstream benefits to water quality may improve habitat and conditions for threatened and endangered fish species such as the humpback chub and razorback sucker.

Alternative E would benefit local farmers and compensate for agricultural losses and water quality impairments. For that reason, it is included as part of the Preferred Restoration Alternative. Because the project proponent has clearly articulated the project goal and benefits and has secured significant leverage in the form of matching funds and in-kind support from a partner organization and the farmers implementing the project, Alternative E ranks as a Tier 1 Preferred Restoration Alternative.

EXHIBIT 5-7 SAN JUAN VALLEY SOIL HEALTH RESTORATION PROJECT: ASSESSMENT AGAINST EVALUATION CRITERIA

EVALUATION CRITERIA	PROJECT DESCRIPTION	ASSESSMENT RANK
1. Geographically close to rivers.	The proposed project would improve farming practices in the San Juan River Valley.	High
2. Consistent with policies.	Based on the information provided, this project is consistent with relevant policies.	High
3. Availability of leverage.	The project proponent includes a $32,000 cash match from TоohBAA for implementation, outreach, and education. The work conducted by the farmers is in-kind support, estimated at > $25,000.	High
4. Low ratio of planning costs to restoration costs.	Based on the itemized budget, planning and administrative costs accounted for less than 27 percent of the total cost.	Medium
5. Relationship of costs to benefits.	The budget requests up to $269,814.60 from ONRT. With additional costs for New Mexico GRT and modeling, the total request is ~$280,000. The project would improve soil conditions on 15 farms across 225 acres and model water quality benefits.	High
6. Cost-effectiveness.	The estimated costs are in the range expected for this type of project, and the project is scalable based on the number of interested farmers. The project proponent brings significant in-kind support from the local farming alliance and the farmers.	High
7. Lead project proponent is state or local public body.	Yes. This project was submitted by the San Juan Soil and Water Conservation District.	High
8. Implemented in a timely manner.	The project would be implemented in a timely manner. The project proponent has established relationships with potential partners. A pilot program with five farmers would begin in Summer 2022.	High

EVALUATION CRITERIA	PROJECT DESCRIPTION	ASSESSMENT RANK
9. Likely to provide benefits quickly.	If the project proceeds as described, benefits could start accruing after one growing season to bring fallow acres back into production. Each farm will receive two years of instruction and assistance.	High
10. High potential for long-term success and low risk of failure.	This project would follow demonstrated regenerative agricultural practices and soil improvements, focusing on land that sat fallow due to lack of irrigation water during the GKM Blowout. Specific plans would be tailored to each farm and implemented over two years. Soil tests and water quality modeling would follow. Participating farmers would take responsibility for continuing to implement practices that work best for their crops.	Medium
11. Low potential for adverse impacts to natural resources or human health and safety.	There is a low potential for adverse impacts. Soil tests would monitor changes in soil quality, including nutrients that typically add to surface water pollution. It is unlikely that the farming practices envisioned here would lead to adverse environmental impacts (e.g., increased runoff, sedimentation, or pollution) greater than the impacts of current agricultural practices.	High

5.4 SUMMARY OF THE PREFERRED RESTORATION ALTERNATIVE

For each proposed restoration alternative, ONRT completed a screening and evaluation process that met the requirements of CERCLA (43 C.F.R. § 11.82(d)). Each restoration alternative received a rank of high, medium, or low for each evaluation criterion, based on the project's stated goals and methods and ONRT's assessment of how closely the project met the criterion. A summary of the evaluation is presented in Exhibit 5-8.

Together, Alternatives B, C, D, and E provide a suite of benefits and address agricultural, cultural, and recreational losses due to the GKM Blowout as well as ongoing impairments to water quality. All projects meet the evaluation criteria,[23] would be located in close proximity to the Animas or San Juan Rivers, are consistent with known policies, and provide leverage to ONRT dollars. Therefore, ONRT proposes a Preferred Restoration Alternative that includes Alternatives B, C, D, and E to compensate the public for the suite of injuries and service losses resulting from the GKM Blowout, as well as ongoing riverine impairments.

Alternatives C, D, and E have a high likelihood of quickly providing benefits after project implementation, potential for long-term success and low risk of failure, and low potential for adverse impacts to the environment and human health and safety. As a result, Alternatives C, D, and E are categorized as Tier 1 of the Preferred Restoration Alternative. However, it is not clear that Alternative B will be successful without additional improvements to the irrigation system's infrastructure. For this

[23] Based on the ranking procedure as described in Section 4.3.2, all projects met the evaluation criteria and received a rank of medium or high in nine or more of the criteria.

reason, Alternative B is categorized Tier 2, with funding contingent on the project proponent securing additional funding from other sources to implement those system upgrades.

The combined cost of the Preferred Restoration Alternative is more than $1.3 million, which is greater than the recent settlement amount of $1.0 million (Chapter 1.2) that ONRT is making available for restoration. As such, ONRT is unable to fund the Preferred Restoration Alternative in full based on the requested cost proposals, and must scale the funding for one or more restoration alternatives to match the available funding. Based on a preliminary evaluation and discussions with the project proponents about which costs are scalable, ONRT proposes the following:

- Alternative B (Agricultural Irrigation System Upgrade Project; Tier 2): Funding is contingent upon system upgrades. ONRT proposes to reserve $250,000 to fund the purchase and installation of two pumps.
- Alternative C (Cedar Hill Boat Ramp on the Animas River; Tier 1): ONRT proposes to fund this project in full at $160,000.
- Alternative D (Festival and Farmer's Market Pavilion at Gateway Park; Tier 1): ONRT proposes to partially fund this project at $300,000.
- Alternative E (San Juan Valley Soil Health Restoration Project; Tier 1): ONRT proposes to fund this project in full at approximately $280,000.

This proposal would leave $10,000 in settlement funds to be utilized for contingency purposes as needed among the four projects that comprise the Preferred Restoration Alternative. Implementation of the Preferred Restoration Alternative may vary slightly from this proposal based on factors that affect the available funding and timing. The actual costs associated with the projects could vary based on field conditions, final design plans, construction costs, and the availability of matching funds, among other factors. The timelines proposed by the project proponent are tentative and could require revision based on the time necessary to implement contracts, as well as permitting or other delays. In addition, ONRT will consider all comments received on this Draft RP and determine the impact, if any, on the available funding and timing for restoration project implementation.

EXHIBIT 5-8 EVALUATION RANKING SUMMARY OF RESTORATION ALTERNATIVES B, C, D, AND E (THE PREFERRED ALTERNATIVE)

EVALUATION CRITERIA	RANKING SUMMARY PER RESTORATION ALTERNATIVE[1]			
	B	C	D	E
1. Geographically close to Animas and San Juan Rivers.	High	High	High	High
2. Consistent with regional planning, federal, and state policies.	High	High	High	High
3. Availability of funds/support to leverage ONRT dollars.	High	High	High	High

EVALUATION CRITERIA	RANKING SUMMARY PER RESTORATION ALTERNATIVE[1]			
	B	C	D	E
4. Low ratio of planning costs to restoration costs.	High	High	High	Medium
5. Relationship of expected costs to the expected benefits.	High	High	Medium	High
6. Cost-effectiveness compared to other projects that provide similar benefits.	Medium	High	Medium	High
7. Lead project proponent is a state agency or local public body.	High	High	High	High
8. Implemented in a timely manner.	Medium-High	High	Medium	High
9. Likely to provide benefits quickly after project implementation.	Medium	High	High	High
10. High potential for long-term success and low risk of failure.	Low	High	High	Medium
11. Low potential for adverse impacts to natural resources or human health and safety, including long-term and indirect impacts.	Medium	Medium-High	High	High

Table Note.
1. **Alternative B** is the Agricultural Irrigation System Upgrade Project (proposed by the Hogback Community), **Alternative C** is the Cedar Hill Boat Ramp on the Animas River (proposed by San Juan County), **Alternative D** is the Festival and Farmer's Market Pavilion at Gateway Park (proposed by the City of Farmington) and **Alternative E** is the San Juan Valley Soil Health Restoration Project (proposed by the San Juan County Soil and Water Conservation District).

REFERENCES

Abell, R. 1994. San Juan River Basin Water Quality and Contaminants Review. Volume I. Museum of Southwestern Biology. Department of Biology. University of New Mexico. April.

Allison, C.D. and Ashcroft, N. 2011. New Mexico Range Plants. Circular 374. Cooperative Extension Service. College of Agricultural, Consumer and Environmental Sciences. New Mexico State University.

AZGFD (Arizona Game and Fish Department). 1998. Dine teachings on wildlife. A guide for teachers. Window Rock unified school district No. 8. Fort Defiance, Arizona.

BOR (Bureau of Reclamation). 2003. Appendix J Biological Assessment. Navajo Reservoir Operations, Colorado River Storage Project Colorado-New Mexico-Utah. Upper Colorado Region. Western Colorado Area Office. July.

CH2M. 2017. City of Farmington operations team emergency response – Gold King Mine incident Water Heroes award submission Water Environment Federation. http://fmtn.org/DocumentCenter/View/15138/WEF_Water-Heroes_Farmington_CH2M_2017?bidId=. Accessed November 2, 2021.

Church, S.E., von Guerard, P., and Finger, S.E., eds. 2007. Integrated investigations of environmental effects of historical mining in the Animas River watershed, San Juan County, Colorado: U.S. Geological Survey Professional Paper 1651. https://pubs.usgs.gov/pp/1651/. Accessed November 2, 2021.

City of Farmington. 2017. Draft City of Farmington Water System Source Water Protection Plan. Public Water System #102-24. Prepared by Daniel B. Stephens & Associates, Inc. April. https://www.fmtn.org/DocumentCenter/View/13657/Draft---COF-Water-System-Source-Water-Protection-Plan?bidId=. Accessed January 24, 2021.

Davis, T. 2020. Gold King mine spill left lingering troubles on Navajo Nation. The Albuquerque Journal and The Salt Lake Tribune. https://www.sltrib.com/news/nation-world/2020/08/08/gold-king-mine-spill-left/#:~:text=%7C%20Aug.,%2C%202020%2C%208%3A51%20a.m.&text=5%2C%202015%2C%20U.S.%20Environmental%20Protection,Animas%20and%20San%20Juan%20rivers. Accessed November, 2 2021.

DOI (United States Department of the Interior). 2015. Reclamation managing water in the West technical evaluation of the Gold King Mine incident. Bureau of Reclamation, Technical Service Center, Denver, Colorado. October.

DOI. 2016. Reclamation managing water in the West San Juan River water quality before, during, and after the Gold King Mine Spill. Bureau of Reclamation, Technical Service Center, Denver, Colorado. June.

Duval, B.D., Cadol, D., Martin, J., Timmons, S. 2018. Persistent effects of the Gold King Mine spill on biota: Animas and San Juan Rivers, Northern New Mexico. Open File Report 601. New Mexico Bureau of Geology and Mineral Resources.

IPCC (Intergovernmental Panel on Climate Change). 2013. Climate change 2013: the physical science basis. Contributions of Working Group I to the Fifth Assessment Report of the IPCC. Stocker, T.F. et al., editors. Cambridge University Press, New York. http://www.ipcc.ch/report/ar5/wg1/. Accessed January 10, 2022.

IPCC. 2021. The Intergovernmental Panel on Climate Change. https://www.ipcc.ch/. Website Accessed January 11, 2022.

Jones, W.R. 2007. History of mining and milling practices and production in San Juan County, Colorado, 1871–1991. Chapter C in Integrated Investigations of Environmental Effects of Historical Mining in the Animas River Watershed, San Juan County, Colorado, S.E. Church, P. von Guerard, and S.E. Finger (eds.). Professional Paper 1651. U.S. Department of the Interior and U.S. Geological Survey. 43–86. Available: https://pubs.usgs.gov/pp/1651/. Accessed March 10, 2021.

MSI (Mountain Studies Institute). 2016. Lower Animas River Watershed Based Plan.

Nania, J., Cozzetto, K., Gillett, N., Duren, S., Tapp, A.M., Eitner, M., and B. Baldwin. 2014. Considerations for climate change and variability adaptation on the Navajo Nation. The University of Colorado at Boulder. https://www.colorado.edu/law/sites/default/files/Considerations%20For%20Climate%20Change%20and%20Variability%20Adaptation%20on%20the%20Navajo%20Nation.vf_.pdf. Accessed March 9, 2021.

NMBGMR (New Mexico Bureau of Geology and Mineral Resources). 2021a. Overview of Fresh and Brackish Water Quality – San Juan Basin. New Mexico Institute of Mining & Technology.

NMBGMR. 2021b. Climate Change in New Mexico over the Next 50 Years: Impacts on Water Resources. DRAFT. https://geoinfo.nmt.edu/ClimatePanel/report/Climate_Change_and_Water_Resource_Report-Revised_After_Public_Comments.pdf. Accessed January 11,2022.

NMDGF (New Mexico Department of Game and Fish). 2015. State Lifts Catch and Release Recommendation for Animas and San Juan Rivers. https://www.wildlife.state.nm.us/state-lifts-catch-and-release-recommendation-for-animas-and-san-juan-rivers/. Accessed March 11, 2021.

NMDGF. 2022. Biota Information System of New Mexico. Federal or State Threatened/Endangered Species. San Juan County. https://bison-m.org/. Accessed January 11,2022.

NMED (New Mexico Environment Department). 2020. Environment Department highlights progress, additional work needed on 5th anniversary of Gold King Mine spill. News Release. August. https://www.env.nm.gov/wp-content/uploads/2020/08/2020-08-04-GKM-5th-anniversary.pdf. Accessed November 2, 2021.

NMED. 2021. Clean Water Act 303(d)/305(b) Integrated Report. 2020-2022 Integrates List Summary Spreadsheets. New Impairments. https://www.env.nm.gov/surface-water-quality/wp-content/uploads/sites/25/2020/10/2020-2022-CWA-303d_305b-New-Impairments.pdf. Accessed July 16, 2021.

Newton, B.T., E. Mamer, and S Timmons. 2017. Hydrogeology and Geochemistry of the Animas River Alluvial Aquifer after the Gold King Mine Spill, San Juan County, New Mexico. New Mexico Bureau of Geology and Mineral Resources.

Office of the State of Engineer. 2021. 50 Year Water Plan. Water Planning. New Mexico Interstate Stream Commission. https://www.ose.state.nm.us/Planning/50YWP/index.php. Accessed January 11,2022.

Smith, N.L. 2016. Irrigation canals reopen on Navajo Nation. Farmington Daily Times. April 27. https://www.daily-times.com/story/news/local/navajo-nation/2016/04/27/irrigation-canals-reopen-navajo-nation/83565332/. Accessed January 17, 2022.

USCB (United States Census Bureau). 2020. QuickFacts. www.census.gov. Accessed January 7, 2022.

USDA (United States Department of Agriculture). 1980. Soil Survey of San Juan County New Mexico Eastern Part. United States Department of Agriculture Soil Conservation Service in Cooperation with the United States Department of the Interior of Indian Affairs and Bureau of Reclamation and the New Mexico Agricultural Experiment Station.

USEPA (United States Environmental Protection Agency). 2012. Water Quality Standards Handbook. Chapter 2: Designation of Uses. https://www.epa.gov/sites/default/files/2014-10/documents/handbook-chapter2.pdf. Accessed January 3, 2022.

USEPA. 2013. Saving Water in New Mexico. EPA-832-F-13-009. www.epa.gov/watersense. Accessed January 10, 2022.

USEPA. 2015. Gold King Mine Watershed Factsheet. https://www.epa.gov/sites/default/files/2015-08/documents/goldkingminewatershedfactsheetbackground.pdf. Accessed July 16, 2021.

USEPA. 2016a. One Year After the Gold King Mine Incident: A Retrospective of EPA's Efforts to Restore and Protect Impacted Communities. https://www.epa.gov/sites/default/files/2016-08/documents/mstanislausgkm1yrreportwhole8-1-16.pdf. Accessed October 5, 2021.

USEPA. 2016b. News Release from Region 09 EPA awards $465,000 to Navajo Nation for water monitoring in the San Juan River. https://archive.epa.gov/epa/newsreleases/epa-awards-465000-navajo-nation-water-monitoring-san-juan-river.html. Accessed November 2, 2021.

USEPA. 2016c. Post-Gold King Mine Release Incident: Conceptual Monitoring Plan for Surface Water, Sediments, and Biology. March. https://www.epa.gov/sites/default/files/2016-03/documents/post-gkm-final-conceptual-monitoring-plan_2016_03_24_16.pdf. Accessed November 2, 2021.

USEPA. 2017. Frequent Questions Related to Gold King Mine Response. https://www.epa.gov/goldkingmine/frequent-questions-related-gold-king-mine-response. Accessed January 17, 2022.

USEPA. 2018. Final Report: Analysis of the Biological Data Collected from the Animas and San Juan Rivers Following the Gold King Mine Release. Office of Wetlands, Oceans, and Watersheds. U.S. Environmental Protection Agency.

USEPA. 2021. Bonita Peak Mining District Unincorporated, Co. Superfund Site. https://cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0802497.

USEPA. 2022a. Press Releases and Updates for Gold King Mine Response. https://www.epa.gov/goldkingmine/press-releases-and-updates-gold-king-mine-response. Accessed January 17, 2022.

USEPA. 2022b. San Juan Watershed Program: A Journey Through the Animas and San Juan River Watersheds. https://storymaps.arcgis.com/stories/0259de17c39b44379af76291caab2208. Accessed January 17, 2022.

U.S. EPA. 2022c. Fate & Transport Analysis. https://www.epa.gov/goldkingmine/fate-transport-analysis. Accessed January 17, 2022.

USFWS (United States Fish and Wildlife Service). 2002. Supplemental Map Report. San Juan Wetland/Riparian Project. Completed 9/02.

USFWS. 2021a. Information for Planning and Consultation (IPaC) resource list. Environmental Conservation Online System. https://ecos.fws.gov/ipac/. Accessed January 10, 2022.

USFWS. 2021b. Birds of Conservation Concern 2021. Migratory Bird Program. Department of the Interior.

USGS (United States Geological Survey). 1995. Ground water atlas of the United States. Arizona, Colorado, New Mexico, Uta. Colorado Platea Aquifers. HA 730-C.

USGS. 2001. Geologic Framework of the San Juan Structural Basin of New Mexico, Colorado, Arizona, and Utah with Emphasis on Triassic through Tertiary Rocks. Regional Aquifer-System Analysis. Professional Paper 1420. U.S. Department of the Interior.

USGS. 2021. Overview: Gold King Mine release (2015): USGS water-quality data and activities. https://www.usgs.gov/mission-areas/water-resources/science/gold-king-mine-release-2015-usgs-water-quality-data-and?qt-science_center_objects=0#qt-science_center_objects. Accessed November 2, 2021.

TechLaw. 2019. Final Aquatic Baseline Ecological Risk Assessment. Bonita Peak Mining District Superfund Site. San Juan County, Colorado.

TechLaw. 2020. Final Terrestrial Baseline Ecological Risk Assessment. Bonita Peak Mining District Superfund Site. San Juan County, Colorado.

APPENDICES

APPENDIX A: STAKEHOLDER LETTER

STATE OF NEW MEXICO
OFFICE OF NATURAL RESOURCES TRUSTEE

121 Tijeras Avenue NE, Suite 1000
Albuquerque, NM 87102
www.onrt.state.nm.us

MICHELLE LUJAN GRISHAM
Governor

HOWIE MORALES
Lieutenant Governor

MAGGIE HART STEBBINS
Trustee

July 15, 2021

Dear Stakeholder:

In August 2015, a blowout at the Gold King Mine in Colorado released millions of gallons of water laden with toxic metals and acidic waste into the Animas and San Juan Rivers. The plume of contaminated water adversely affected New Mexico residents, our natural resources, and agricultural and recreational tourism industries along those rivers. The New Mexico Attorney General and the New Mexico Environment Department subsequently sued the U.S. EPA and its contractors, who directly caused the blowout, as well as Sunnyside Corporation and its parent companies, Kinross Gold Corporation and Kinross Gold, U.S.A., Inc. (the three mining companies are collectively referred to as the "Mining Defendants"), seeking compensation for those injuries. The lawsuit alleges that the Mining Defendants are liable for creating the underlying conditions that made the blowout possible.

In January 2021, the State and the Mining Defendants reached a settlement that includes a payment of $1,000,000 by the Mining Defendants to the Office of the New Mexico Natural Resource Trustee ("ONRT") to implement natural resource restoration projects. The State's lawsuit against EPA and its contractors is ongoing. ONRT's use of settlement funds received from the Mining Defendants is governed by the provisions of the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and other applicable law.

ONRT is in the preliminary stages of soliciting restoration project ideas and goals, and we are asking you, as a stakeholder, for your input. Attached to this letter is a request for specific restoration projects that will compensate for natural resource injuries in New Mexico caused by the Gold King Mine spill. Projects eligible for funding should have a connection to the Animas and/or San Juan Rivers, and benefit surface water, wildlife, and/or aquatic and terrestrial ecosystems and/or benefit the services these natural resources provide, such as irrigation or outdoor recreation, and/or address any existing impairments to the rivers.

Projects providing additional funds or in-kind support to leverage ONRT investments will be prioritized. ONRT encourages non-governmental entities seeking restoration project funding to partner with local or state public entities. Examples of our past restoration projects can be found on the ONRT website here.

Ultimately, ONRT will prepare a draft Restoration Plan describing the projects evaluated and prioritized for implementation and will seek community input through a noticed public comment period. Any comments we receive at that time will be evaluated and incorporated, as appropriate, into the final Restoration Plan which will formally select one or more projects for implementation.

Please note that the funds at issue are derived of the January 2021 settlement between the State and the Mining Defendants, and as such are non-recurring. Ongoing project operations and maintenance, if any, must be guaranteed by another entity. Per New Mexico's Anti-Donation Clause, ONRT funds cannot be given to individuals to compensate for personal losses.

As part of ONRT's project solicitation process, I invite you to participate in an informational meeting with other interested stakeholders to discuss further the project solicitation process, including the screening and evaluation criteria for project selection as well as restrictions on project funding, and to ask questions. The meeting is scheduled for July 28, 2021, from 3:00 – 4:30pm and will be held virtually via a webinar. Further details are in the attached Request for Projects. Please circulate to other potentially interested stakeholders.

We recognize that this limited funding will not fully repair or restore all the injuries caused by the Gold King Mine release but represents a significant first step toward that goal. We look forward to hearing from you.

Sincerely,

Maggie.HartStebbins Digitally signed by Maggie.HartStebbins
Date: 2021.07.15 14:07:27 -06'00'

Maggie Hart Stebbins
New Mexico Natural Resources Trustee
nm.onrt@state.nm.us

ATTACHMENT: REQUEST FOR PROJECTS

In August 2015, a blowout at the Gold King Mine in Colorado released millions of gallons of water laden with toxic metals and acidic waste into the Animas and San Juan Rivers. The plume of contaminated water adversely affected New Mexico residents, our natural resources, and agricultural and recreational tourism industries along those rivers. The New Mexico Attorney General and the New Mexico Environment Department subsequently sued the U.S. EPA and its contractors, who directly caused the blowout, as well as Sunnyside Corporation and its parent companies, Kinross Gold Corporation and Kinross Gold, U.S.A., Inc. (the three mining companies are collectively referred to as the "Mining Defendants"), seeking compensation for those impacts. The lawsuit alleges that the Mining Defendants are liable for creating the underlying conditions that made the blowout possible. In January 2021, the State and the Mining Defendants reached a settlement that includes a payment of $1,000,000 by the Mining Defendants to the Office of the New Mexico Natural Resource Trustee ("ONRT") to implement natural resource restoration projects. The State's lawsuit against EPA and its contractors is ongoing. ONRT's use of settlement funds received from the Mining Defendants is governed by the provisions of the federal Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and other applicable law.

ONRT is in the preliminary stages of seeking project ideas to address and improve the types of natural resources and resource services injured by the Gold King Mine spill. Spill-induced service losses and ongoing impairments to the Animas and San Juan Rivers are listed as part of Table 1 (below). Projects should address these service losses and/or ongoing impairments within the Animas and San Juan Rivers.

Continued Next Page

Table 1. Summary of Animas and San Juan River Impairments and Spill-Related Service Losses.

Type of Impairment or Service Loss	River System	Description/Details
Ongoing Impairment	Animas River	Lead, turbidity, nutrients (total phosphorous), *E. coli*, and temperature
	San Juan River	*E. coli*, sedimentation/ siltation
Gold King Mine Spill-Related Service Loss	Both (Animas and San Juan Rivers)	Ecological service losses associated with metals contamination of surface water and sediment resources
		Loss of surface water supplied to local communities from the Animas or San Juan Rivers due to increase of lead content during turbulent river flow
		Loss of surface water supplied for growth of agricultural crops
		Loss of recreational opportunities tied to the Animas and San Juan Rivers resulting from concerns related to water contamination

The deadline for submitting project proposals is August 31, 2021. Submit each project proposal to Will Fetner at nm.onrt@state.nm.us.

Questions related to this Request for Projects will be addressed during a webinar hosted by ONRT, scheduled for July 28, 2021, from 3:00 – 4:30pm. Project proponents are encouraged to attend this webinar by registering at the following link:
https://app.smartsheet.com/b/form/cce2519791fb4ac79553be7d56e9c2c5

Questions may be submitted in advance of the webinar by email to nm.onrt@state.nm.us.

The following sections include guidance on the information that should be included in project proposals and outline the screening and evaluation criteria that ONRT will use to evaluate each project. In the event clarifications are necessary, ONRT may ask a project proponent to provide additional information during the evaluation phase. That should not be construed as a project award. The evaluation and planning process explicitly includes a public comment process, so restoration project selection will occur after the draft Restoration Plan with proposed projects is reviewed by the public, ONRT evaluates all public comments received, and the final Restoration Plan is published.

A. INFORMATION TO BE INCLUDED IN ALL PROJECT PROPOSALS

1. General project description

a. Include information on project location, land ownership, the length of time needed for project design, planning, and implementation, and the entity responsible for planning and implementing the project.
b. Identify any permit requirements (e.g., Sections 401 and 404 Clean Water Act ("CWA") permits, Section 120 National Historic Preservation Act ("NHPA"), Section 7 Environmental Site Assessment ("ESA:)) and any evaluation or assessment of environmental impacts that has been undertaken.

2. Benefits

a. Specify the population and geographic area that the project will benefit.
b. Specify how the project benefits regional natural resources and/or resource services or addresses impairments, as listed in Table 1. Projects that benefit more than one resource, service, or impairment are preferred. For example, for surface water resources, how would the project improve the quality of surface water? How would the project improve wildlife aquatic habitat and to what degree? How would the project compensate for lost recreational or agricultural opportunities? Specify the wildlife species that may benefit from the project.
c. If possible, quantify the benefits to each resource (surface water, groundwater, wildlife habitat, etc.). Any models or calculations used to estimate the project benefits should be described.
d. Include an assessment of when the project benefits will begin to accrue, and how the benefits are expected to continue after the project's implementation phase is complete.
e. Identify the ecological consequences if the project is not implemented (e.g., to the resource, habitat, or species).

3. Project size

a. Provide pertinent size estimates to give an understanding of the scale of the project. For example, if the project benefits surface water, describe the estimated volume of water being benefitted. If the project is constructed as a wetland, provide the estimated acreage. If the project creates or improves habitat, specify the acreage that was created or improved. Any models or calculations used to estimate the project size should be described.

4. Cost of project implementation

a. Provide costs for project design, planning and implementation including labor, materials and any other additional costs that would be incurred.
    i. Note, cost estimates must be valid for a period of 12 months.
b. Provide contingency costs and estimate the New Mexico gross receipts tax associated with the project. More information on the gross receipts tax is available from the New Mexico Taxation & Revenue Department, here.

5. Longevity and maintenance needs.

a. Describe the longevity of the project once implementation or installation is completed.

b. Describe the operational, monitoring, maintenance needs and costs once project implementation is completed. Specify the entity that will assume operation and maintenance responsibility and costs.

6. Funding

a. Describe each source of additional funding available to implement the project and when that funding would become available. Indicate which phases of the project will be funded by each source (e.g., design, planning, implementation, and operations and maintenance phases).
b. Describe the source, type, and amount of additional funding or in-kind contributions that could be used to leverage ONRT funds, if applicable. To the extent certain design or planning elements have already been completed, these past costs can be noted as additional funding.
c. If project funding comes from multiple parties, please provide a breakdown of project funding sources.

7. Project timeline and reporting

a. Provide a reasonable timeline for the project, from contract execution to project completion (expanding on Item 1.a. above).
b. Identify the type of reporting/deliverables that will be provided to ONRT, such as design/engineering plans, quarterly progress reports, final close-out report, final as-built drawings, or monitoring reports.

B. RESTRICTIONS ON USES FOR SETTLEMENT FUNDS

1. The project must have a nexus to natural resources and/or the services natural resources provide to people, as described in Table 1.
2. ONRT funds will be finalized at the time of award and applicants must identify a source of funds for ongoing maintenance costs, as needed. Funds beyond allocated contingency costs will not be available.
3. Any funding provided directly to non-governmental entities will need to go through an additional, formal competitive solicitation process, consistent with New Mexico procurement rules.
4. Project funds will be disbursed on a reimbursable basis as costs are incurred throughout the implementation phase, or the implementation and monitoring phase, if funds for monitoring are included in the project.

C. RESTORATION PROJECT EVALUATION/SELECTION PROCESS

Under the ONRT Natural Resources Damage Assessment and Restoration ("NRDAR") program, restoration projects ultimately will be put forth to the public in a draft Restoration Plan that, among other things, describes the process followed to evaluate potential restoration projects that meet the screening criteria outlined below. Following a noticed public comment period during which comments related to the draft Restoration Plan will be received and evaluated, the final Restoration Plan will ultimately select the project(s) recommended for implementation.

After the restoration project request period has closed, project proposals will initially be reviewed for general suitability. This first set of criteria are **screening criteria**, which are

used to identify whether a given project meets the project requirements outlined by ONRT. Projects must pass the screening criteria before they can be considered further in the evaluation process. The second set of criteria are **evaluation criteria**, which are used to evaluate and rank the potential restoration projects and assist ONRT personnel in project selection from among the projects that meet the screening criteria. These criteria will enable ONRT to meet their evaluation responsibilities under CERCLA. All the criteria used in the screening and evaluation process will be detailed in the draft and final Restoration Plans. Below are the screening and evaluation criteria ONRT will use for project evaluation.

Screening Criteria – To be deemed acceptable, a project proposal must comply with all of the following criteria. Depending on the number of projects proposed, ONRT reserves the right to use additional criteria at the screening stage in order to reduce the number of projects evaluated during the evaluation stage to a reasonable number of alternative projects and available funds.

- Consistent with ONRT mission.
- Results in a net overall improvement of natural resources and/or benefit to the public in terms of increased resource services.
- Technically and administratively feasible as demonstrated through the use of established or previously implemented approaches.
- Unlikely to proceed without ONRT funding.
- Complies with applicable and relevant federal, state, local, and tribal laws and regulations.
- Has feasible and cost-effective provisions for operations, maintenance, and monitoring and a demonstrated source of funds for those ongoing costs, as relevant.
- Includes all the information necessary to evaluate the project.

Evaluation Criteria – Projects that meet the above screening criteria will be evaluated and ranked by the following criteria. ONRT does not anticipate that a successful project must achieve high marks for every criterion.

- Geographically close to the Animas River from the New Mexico-Colorado state line to the confluence with the San Juan River, and/or the San Juan River downstream to the Colorado state line.
- Consistent with regional planning and federal and state policies, if applicable.
- Cost-related criteria:
    - Availability of additional funds or in-kind support to leverage ONRT dollars.
    - Low ratio of planning and administrative costs to restoration costs.
    - Relationship of the expected costs of the proposed actions to the expected benefits.

    - Cost-effectiveness compared to other projects that provide similar benefits.
- Lead project proponent or partner is a state agency or local public body.
- Implemented in a timely manner.
- Likely to provide benefits quickly after project implementation.
- High potential for long-term success and a low risk of failure.
- Low potential for adverse impacts to natural resources or human health and safety resulting from the restoration project itself, including long-term and indirect impacts.

###

APPENDIX B: AGENCIES, ORGANIZATIONS, AND ENTITIES CONSULTED

STAKEHOLDER LIST FOR THE GOLD KING MINE RESTORATION PLAN

NMONRT consulted the following stakeholder agencies and organizations during the drafting of this restoration plan:

- Cities of Aztec, Bloomfield, and Farmington; Town of Kirtland
- Chambers of Commerce for the cities of Aztec, Farmington, and Kirtland
- Economic Development for Farmington and Four Corners.
- Irrigation Districts, such as the San Juan Agricultural Water Users Association and New Mexico Acequia Association.
- San Juan Soil & Water Conservation District.
- San Juan County.
- New Mexico Association of Soil and Water Conservation Districts.
- Navajo Nation.
- New Mexico State Agencies, including Department of Game & Fish; Environment Department (Surface Water Quality Bureau and Water Protection Division); Energy, Minerals, and Natural Resources Department; Economic Development Department, Outdoor Recreation Division; and State Land Office.
- Federal agencies, including the U.S. Army Corps of Engineers; U.S. Department of the Interior Bureau of Indian Affairs, Bureau of Land Management, Bureau of Reclamation, and Fish and Wildlife Service; and U.S. Department of Agriculture, Forest Service and Natural Resource Conservation Service.
- The Office of Representative Teresa Leger Fernandez.
- The Office of Senators Martin Heinrich and Ben Luján.
- The Offices of New Mexico state legislators.
- Community groups, including businesses and alliances focused on youth, outdoor recreation, and conservation, such as the Amigos Bravos, Animas River Community Forum, Animas Riverkeeper, Animas River San Juan Citizens Alliance, EndeavOR New Mexico, National Indian Youth Leadership Project, San Juan Citizens Alliance, San Juan Watershed Group, and Zuni Youth Enrichment Project.
- Non-governmental organizations and foundations, including the Nature Conservancy, National Forest Foundation, and Quivira Coalition.

APPENDIX C: FREQUENTLY ASKED QUESTIONS

Gold King Mine Restoration Project Solicitation: Frequently Asked Questions

GOLD KING MINE RESTORATION PROJECT SOLICITATION

In a recent settlement, the New Mexico Office of the Natural Resource Trustee (ONRT) received damages in the amount of $1,000,000 for restoration of natural resources and resource services injured in the August 2015 Gold King Mine blowout. On July 15, 2021, ONRT sent a letter to local and regional stakeholders to solicit restoration project ideas and goals. To discuss the restoration project solicitation process and answer stakeholder questions, ONRT held a webinar on July 28, 2021. The presentation from the webinar is available for download here: PowerPoint Presentation (nm.gov)

During the webinar and throughout this process, interested parties have posed questions on the solicitation process and timing, types of restoration projects sought by ONRT, and types of partnerships allowed.

Answers to frequently asked questions are included below for distribution to all stakeholders and interested parties and will be updated at the discretion of ONRT throughout the solicitation process.

When is the deadline for project proposals?

ONRT originally set a deadline of August 31, 2021. After receiving feedback from multiple project proponents, ONRT has extended this deadline to Tuesday, September 14, 2021. **All proposal materials should be submitted to Will Fetner at nm.onrt@state.nm.us by 5:00 PM on September 14.**

How should the proposal be formatted?

There is no set format or form to complete. ONRT outlines the information to be included in all project proposals within the project solicitation letter, which can be accessed at this link (pages 5-6). In addition, ONRT requests that each project proposal addresses the screening and evaluation criteria, following the same order as the criteria are listed in the letter (pages 7-8).

What types of matching funds are allowed, and is there an expected matching funds contribution?

Though additional funds and in-kind support are not required, project proposals that provide leverage to ONRT investments will be prioritized. For example, additional funds or in-kind support may include funding received from another entity for a portion of the project, the value of volunteer labor, or the value of equipment already purchased and available for use. Funding received from other sources (e.g., Federal agencies, Tribes) counts as additional "matching" funds. Project proposals with a greater percentage of additional/in-kind support to total project costs will be prioritized in the evaluation process.

When will funding decisions be final?

ONRT anticipates releasing a draft of the restoration plan for public comment in November 2021. Restoration projects will be selected within the final restoration plan, which has an anticipated publication date of January 31, 2022. These dates are tentative. Decisions about project funding will occur in the first quarter of 2022, as ONRT begins contract negotiations for selected projects.

What types of projects will be considered?

Restoration projects should benefit natural resources and/or resource services in or in the vicinity of the Animas and San Juan Rivers. For example, projects could restore aquatic habitats, improve water quality for irrigation, or expand recreational access to the rivers.

What types of projects are NOT eligible?

Projects that do not address the injuries to natural resources, resource services, or ongoing impairments are not eligible. In addition, ONRT funds cannot be given to individuals to compensate for personal losses, in accordance with the anti-donation clause of New Mexico's constitution.

Would a project that involves remedial (cleanup) actions be considered?

Projects that require cleanup actions are not excluded from this funding opportunity. For example, ONRT will consider projects that seek to improve water quality by cleaning up hazardous substances other than those that caused injury in the Gold King Mine blowout. Such projects provide a net environmental benefit to injured resources.

However, as remedial actions are governed by Federal, state, and local laws, projects that include a remedial component would need to justify the use of ONRT restoration-focused dollars to complete site cleanup (e.g., the absence of a viable responsible party or other funding mechanism).

Can ONRT funds be used for design, permitting, and other pre-construction costs?

Yes, project proponents may include design, permitting, and any pre-construction activities as part of a project proposal. However, project proponents should be aware that the evaluation criteria include several cost-related topics, including a "low ratio of planning and administrative costs to restoration costs."

Are project proponents responsible for compliance with permitting requirements?

Yes, project proponents are responsible for compliance with all applicable Federal, state, and Tribal laws related to permitting. In addition, project proposals will be evaluated based on the completeness of information needed to evaluate the project's short- and long-term benefits and collateral impacts.

Is there a maximum length of time for project completion?

The project proponent should propose a realistic deadline (or series of deadlines, depending on the nature of the project) for completion of the restoration project. Upon project selection, a deadline will be discussed and agreed to as part of contract negotiations and should not exceed four years from the award date.

Are partnerships encouraged (e.g., between non-governmental entities and public entities)?

Based on New Mexico procurement requirements, partnerships between non-governmental entities and local/state public entities are strongly encouraged. One of the project evaluation criteria addresses this topic (i.e., "lead project proponent or partner is a state agency or local public body") to prioritize projects from local and state agencies. Any funding provided directly to non-governmental entities will need to go through an additional, formal competitive solicitation process, consistent with state procurement rules.

Could a project involve a partnership with the Navajo Nation?

Yes, a project proposal involving the Navajo Nation would be eligible for consideration under the same screening and evaluation criteria as other proposals, including compliance with all applicable federal and state laws, procurement codes, and regulations.

APPENDIX D: PUBLIC COMMENTS ON THE DRAFT RP AND TRUSTEE RESPONSES

This appendix will be added to the Final RP.