

# Colorado Nonpoint Source Program 2016 Annual Report



The two-fold goal of Colorado's NPS workgroup is to *restore* to full use classifications for those waters impaired by nonpoint sources of pollution and to *protect* existing water quality from future impairments by using an open process that fully involves the public.



**COLORADO**  
Water Quality Control Division  
Department of Public Health & Environment

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**Summary of Colorado NPS projects Open and Active at the end of FFY16  
(October 1<sup>st</sup> 2015 to September 30<sup>th</sup> 2016)**

	<b>Project Title (and Federal Funding Fiscal Year)</b>	<b>Project Sponsor</b>	<b>Basin</b>	<b>Project Type</b>	<b>NPS Award</b>	<b>(Expected) Completion Date</b>	<b>Estimated % Complete</b>
<b>1</b>	Fountain Creek Watershed Plan (FFY14)	Pike Peak Area Council of Government	Arkansas River	Watershed Plan	\$40,000	January 2019	25%
<b>2</b>	Upper Cache la Poudre Watershed Plan (FFY15)	Coalition for the Poudre River Watershed	South Platte River Basin	Watershed Plan	\$70,418	December 2019	10%
<b>3</b>	Evans Gulch Watershed Plan (FFY12)	Trout Unlimited, Inc.	Arkansas River Basin	Watershed Plan	\$30,000	March 2017	95%
<b>4</b>	Upper Yampa River Watershed Plan (FFY12)	Routt County Conservation District	Yampa River Basin	Watershed Plan	\$59,000	December 2016	95%
<b>5</b>	Program Outreach and Education (FFY15)	Colorado Watershed Assembly	Statewide	Outreach and Education	\$278,923	June 2017	continuous
<b>6</b>	Nonpoint Point Source Pollution Reduction in Lower Bear (FFY15)	Groundwork Denver, Inc.	South Platte River Basin	<i>E.coli</i> BMPs	\$71,588	December 2017	25%
<b>7</b>	NPS Water Quality Improvements in the Rifle Creek Sub-watershed – Phase I (FFY15)	Middle Colorado Watershed Council	Colorado River Basin	Agriculture BMPs	\$25,000	February 2018	50%
<b>8</b>	Uncompahgre Selenium Control (FFY13/15)	Uncompahgre Valley Water Users Association	Gunnison River Basin	Agriculture / Selenium BMPs	\$250,000	September 2019	10%
<b>9</b>	Tools to Address Agriculture Nutrient Nonpoint Source Contamination (FFY11)	Colorado State University	Statewide	Agriculture BMPs	\$219,026	February 2017	75

**Summary of Colorado NPS projects Open and Active at the end of FFY16  
(October 1<sup>st</sup> 2015 to September 30<sup>th</sup> 2016)**

	<b>Project Title (and Federal Funding Fiscal Year)</b>	<b>Project Sponsor</b>	<b>Basin</b>	<b>Project Type</b>	<b>NPS Award</b>	<b>(Expected) Completion Date</b>	<b>Estimated % Complete</b>
<b>10</b>	Lower Arkansas River Watershed Plan and Implementation (FFY14&15)	Lower Arkansas Water Conservancy Board	Arkansas River Basin	Agriculture / Selenium BMPs	\$115,856	June 2019	20%
<b>11</b>	Middle North Empire Creek Restoration (FFY15)	Clear Creek Watershed Foundation	South Platte River Basin	Legacy Mine Reclamation BMPs	\$196,204	December 2019	80%
<b>12</b>	Illinois Gulch Restoration (FFY15)	Trout Unlimited, Inc.	Colorado River Basin	Legacy Mine Reclamation BMPs	\$102,000	November 2019	5%
<b>13</b>	Evans Gulch Restoration (FFY14)	Trout Unlimited, Inc.	Arkansas River Basin	Legacy Mine Reclamation BMPs	\$253,000	June 2018	15%
<b>14</b>	Sugarloaf Mountain Mine Waste Erosion Mitigation (FFY14)	CO Mountain College - Natural Resources Management	Arkansas River Basin	Legacy Mine Reclamation BMPs	\$461,476	June 2018	40%
<b>15</b>	Mine-related TMDL Implementation (FFY13,14&15)	Division of Reclamation, Mining and Safety	Statewide	Legacy Mine Reclamation BMPs	\$407,388	July 2018	65%
<b>16</b>	Bullion King Mine Waste Remediation (FFY13,14)	San Juan Resource Conservation & Development Council	San Juan Basin	Legacy Mine Reclamation BMPs	\$221,355	February 2018	85%
<b>17</b>	Upper Uncompahgre Watershed Mine Remediation (FFY13)	Uncompahgre Watershed Partnership	Gunnison River Basin	Legacy Mine Reclamation BMPs	\$263,124	February 2018	80%
<b>18</b>	Coal Creek Restoration (FY10,12)	Coal Creek Watershed Coalition	Gunnison River Basin	Legacy Mine Reclamation BMPs	\$236,583	February 2017	90%

**Summary of Colorado NPS projects Open and Active at the end of FFY16  
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	<b>Project Title (and Federal Funding Fiscal Year)</b>	<b>Project Sponsor</b>	<b>Basin</b>	<b>Project Type</b>	<b>NPS Award</b>	<b>(Expected) Completion Date</b>	<b>Estimated % Complete</b>
<b>19</b>	High Park Burn Area Reclamation (FFY13)	Trout Unlimited – Flycasters Chapters	South Platte Basin	Burn Area Reclamation	\$200,000	February 2018	80%
<b>20</b>	Waldo Canyon Burn Area Reclamation (FFY13)	Coalition for the Upper South Platte	Arkansas River Basin	Burn Area Reclamation	\$200,000	February 2018	80%

**Summary of Colorado NPS projects that closed during FFY16  
(October 1<sup>st</sup> 2015 to September 30<sup>th</sup> 2016)**

	<b>Project Title (and Federal Funding Fiscal Year)</b>	<b>Project Sponsor</b>	<b>Basin</b>	<b>Project Type</b>
<b>1</b>	St. Vrain Watershed Plan (FFY14)	City of Boulder	South Platte	Watershed Plan
<b>2</b>	Middle Colorado River Watershed Plan (FFY11)	Colorado River Water Conservation District	Colorado River	Watershed Plan
<b>3</b>	Animas and Florida River Water Quality and Habitat Improvement Project (FFY11)	San Juan Resource Conservation and Development	Animas River Basin	Stream Restoration BMPs
<b>4</b>	Implementing Drainage Best Management Practices in the Lower Arkansas River Valley, Colorado (FFY10/11)	Otero County	Lower Arkansas River Basin	Agriculture BMPs
<b>5</b>	Identifying Arkansas River Selenium and Nitrogen Best Management Practices (FFY12)	Colorado State University	Lower Arkansas River Basin	Agriculture BMPs
<b>6</b>	Kerber Creek Restoration Project Phase 2 (FFY12)	Trout Unlimited	Kerber Creek Closed Basin	Legacy Mine Reclamation BMPs

Section 319 of the Clean Water Act requires states to: 1) assess waterbodies for Nonpoint Source (NPS) pollution impacts; 2) develop management plans to address those impacts; 3) implement those plans; and 4) report on NPS program implementation to the public and to the U.S. Environmental Protection Agency (EPA).

The Colorado Department of Public Health and Environment's (CDPHE) Water Quality Control Division (Division) annually prepares this report to inform the public, the U.S. Congress and EPA on the state's progress in the area of nonpoint source water pollution abatement. Although this report should not be considered a complete enumeration of all nonpoint source activities, it describes the most important features and accomplishments of Colorado's nonpoint source program for the Federal Fiscal Year 2016.

## Introduction

This annual report covers the activities implemented by the Colorado Nonpoint Source program during the period October 1st, 2015 to September 30<sup>th</sup>, 2016, which is federal fiscal year 2016. Colorado CDPHE's Division continues to implement the NPS program and direct funding into basins impaired by NPS pollution. In addition, the Division is continuing to work toward implementation of the watershed approach, which incorporates the use of EPA's key watershed planning components with NPS implementation, using the nine elements of watershed-based planning. Regulation № 93 - Section 303(d) List of Water Quality Limited Segments Requiring TMDLs, the *2012 Status of Water Quality in Colorado* 305(b) and the most recent *2016 Status of Water Quality in Colorado* 305(b) reports were also used to guide program implementation activities.

The Division is committed to a continual improvement in coordination among the Water Quality Programs including NPS, Total Maximum Daily Loads (TMDLs), Water Quality Assessment and Integrated Reporting, Source Water Protection, Groundwater and Clean Water State Revolving Loan Funds.

Starting in Fiscal Year 2013, the Division started administering the updated *Colorado Nonpoint Source Management Program*, which EPA approved in June 2012. The document is available upon request or online at: <http://www.npscolorado.com>. Nonpoint source assessment is integrated in the Status of Water Quality in Colorado 305(b) report and is periodically updated.

Any comments or questions on this report or on Colorado's nonpoint source program may be directed via e-mail to [tamara.allen@state.co.us](mailto:tamara.allen@state.co.us).

## Highlights from the 2012 Nonpoint Source Management Plan Activities Implemented in FFY16

*Objective 1 - To protect water quality from potential impact from nonpoint source pollution generated by anthropogenic activities.*

During FFY2016, the NPS program continued to provide technical support in the development of project implementation plans, and sampling and analysis project plans; conducting site visits; and promoting the development of watershed-based plans that address the nine elements of watershed planning.

As of the end of FFY2016, 2 watershed-based plans were finished, 2 started and 2 are being developed.

*Objective 2 -To restore water quality in streams, rivers, lakes, reservoirs and groundwater that are impaired due to nonpoint source pollution generated by anthropogenic activities.*

During 2016, the NPS program continuing implementing projects addressing legacy mining impacts and started shifting project implementation emphasis to addressing selenium loading impacts. A highlight of this accomplishment is the large project being implemented in the Lower Arkansas River basin, with the collaboration of many partners, federal, state, University, Conservancy District and local producers.

*Objective 3 - Implement the NPS program to achieve measurable water quality improvement*

During 2016, the NPS program continued to provide technical assistance to project sponsors in developing project sampling plans; coordinate with the Environmental Data Unit to collect water quality and aquatic macroinvertebrates data to evaluate project effectiveness; and support the TMDL program with coordinated sampling efforts. The program is also developing a draft process for documenting success stories.

*Objective 4 - Implement the Colorado NPS program to meet EPA Guidelines*

During 2016, the NPS program continued to implement the program following the 2013 EPA Nonpoint Source Program and Grants Guidelines for States and Territories; continued to obligate and expend grant funds in a timely manner; continued to update GRTS in a timely manner; and continued to maintain and improve partnerships with other federal and state agencies, with non-profit organization and watershed groups. In FFY16, the program continued the implementation of 8 watershed projects and started 5 new Watershed Projects, meeting the requirement that the majority of the funds awarded to the Colorado Nonpoint Source program are used addressing impaired waterbodies identified in 9 element watershed-based plans; the program also continued the development of 4 watershed-based plans and 1 outreach and education project.

Note - see Appendix A for complete reporting on NPS Program measures related to the implementation of these objectives

## Nonpoint Source program integration with other water quality programs

The Nonpoint Source workgroup is part of the Restoration and Protection Unit of the Watershed Section, housed in the Water Quality Control Division, Colorado Department of Public Health and Environment. The Watershed Section provides information and planning, financial and scientific support services to the commission, government agencies, performance partners and the public, so they can protect, improve and restore water quality in Colorado. It encompasses the Standards Unit, the Environmental Data Unit and the Restoration and Protection Unit.

### Water Quality Standards

Colorado's water quality standards identify the classified uses for the state waters, identify numeric and narrative standards to protect those classified uses and include anti-degradation provisions. A classified use is a specific type of use for an identified waterbody and can include domestic water supply, agriculture, recreation, aquatic life and wetlands. The commission assigns classified uses to stream segments and adopts water quality standards for many different pollutants to protect these waterbody-specific uses.

In Colorado, when a narrative or numeric standard is exceeded, the associated use is determined to be in non-attainment and the cause and source affecting the waterbody is determined. The cause is the pollutant that contributes to the non-attainment. For example, if the aquatic life standard for zinc is exceeded, then the aquatic life use would be in non-attainment and the cause would be zinc. The source is the activity or facility that contributes the pollutant. An example of a source is resource extraction if metal exceedances are found in a historic mining district.

The Nonpoint Source workgroup prioritizes funds and restoration efforts based on waters that have been determined to be in non-attainment of water quality standards.

### Monitoring and Assessment

The Environmental Data Unit implements the statewide sampling plan strategy, which evaluates the status of water quality in the state by collecting water quality data at continuous and trend sites. It also implements sampling strategies based on program questions/needs and addressing data gaps to support decision making. The unit conducts water quality assessments that are used for basin standards and classification rule making actions, to determine effectiveness of existing source control infrastructure, and to target future source control implementation. The units also prepares the biennial Integrated Report which includes a report on the status of water quality in the state and a list of impaired waters, Regulation #93 - 303(d) List of Impaired Segments . The 303(d) list of impaired waters tabulates all those segments that require a TMDL and constitute the priorities for the NPS workgroup.

### TMDLs

TMDLs are included in technical reports that define how much of the pollutant causing the impairment can be allowed in a stream or lake to still ensure that water quality standards are attained. The allowable amount of the pollutant is then divided between all the different sources of the pollutant, both point and nonpoint. There is a public notice process associated with TMDL development that provides the opportunity for input as the technical report is produced. Once the TMDL report is approved by EPA, the TMDLs defined in the report are the basis for implementing necessary actions to bring the stream or lake back into attainment. As an alternative to implementing controls to meet existing water quality standards, TMDLs can also result in a re-evaluation of standards and sometimes classifications. Implementation actions can be defined in a TMDL implementation plan, in a locally driven watershed plan or in a locally driven regional water quality management plan (208 plan).

### GIS and the Hybrid IR Data System

In FFY16, the CDPHE applied for and received an EPA Exchange Network grant to develop the Hybrid IR Data System, a GIS based system that stores data related to waterbodies in the state. Currently, not all data related to waterbodies are being stored in the EPA ATTAINS data exchange. The Hybrid project will modify this system to incorporate the missing elements, such as TMDL and Nonpoint Source programs relevant information.

The overall vision for the project is to be able to connect Clean Water Act program data via a common waterbody unit. Such design will allow for organized data reporting into EPA's ATTAINS. In addition, it will create an internal and public communication component, increased availability of timely, high quality data to other Exchange Network partners and customers, will improve decision-making, and create increased efficiency of data submission process meeting CWA reporting requirements.

## Implementation of the Nonpoint Source program

The program is implemented at two tiers: 1) The program level identifies and prioritizes NPS issues, coordinating resources and partners to address these issues, protecting existing water quality, and tracking progress in water quality improvement; and 2) The project level implements program priorities through on-the-ground watershed restoration efforts and through information/educational campaigns that broaden public awareness of NPS issues.

The first tier is specific to the NPS workgroup ongoing commitment to address the national performance expectations established by EPA, which are established annually between the EPA and the Division, in the Performance Partnership Agreement (PPA). The agreement includes several NPS-specific Program Activity Measures (PAMs) related to the Division's implementation of the NPS workgroup. These measures relate to two broad requirements related to overall water quality



improvement. These include reporting on the annual reduction of NPS related phosphorus, nitrogen and sediment loads as well as the restoration of impaired waterbodies<sup>1</sup>.

Tier two activities represent the implementation of the tier one goals. These activities include outreach, technical assistance, and funding for local groups to plan, design and implement various efforts to address NPS issues that are causing or contributing to degraded water quality. In most cases, the NPS workgroup's annual project solicitation process is directed toward fostering and developing tier two activities. By establishing priorities based on the Division's identification of impaired waterbodies, the NPS program is actively pursuing local support and development of projects that will address tier one objectives.

Clean Water Act (CWA) Section 319(h) funding sources are allocated under two categories: 1) Watershed Funds: for projects that address impaired waters requiring TMDL development and that are identified in a watershed-based plan; and 2) Program Funds: all other activities, including protection of existing water quality, education and information dissemination, development of watershed-based plans, assessing measurable results, etc. The categories are implemented following the Triennial Review Regulatory Basin rotation schedule, as adopted by the Water Quality Control Commission (WQCC). The program works through a set of overarching principles that emphasize voluntary and incentive-based participation, locally-led projects, partnerships, measurable water quality improvement, and effective and efficient program administration.

## Achieving Measurable Water Quality Improvement

The Nonpoint Source program has established a strategy to evaluate water quality improvements associated with implementation of best management practices addressing nonpoint source pollution. Every watershed implementation project required to collect water quality data and submit those data to STORET; ancillary data such as aquatic macroinvertebrates and habitat integrity can also be used to help in this evaluation. Prior to data collection, project sponsors are required to prepare Sampling and Analysis Project Plans (SAPPs) and submit them to approval by the NPS program prior to commencement of data collection.

Project sponsors are required to conduct, at a minimum, water quality sampling, analysis and assessment during the contract period. The in-house Measurable Results project supplements project related sampling requirements by also providing pre and post contracting data, sampling for aquatic benthic macro-invertebrates and associated evaluation of physical and aquatic habitat, and preparation of Sampling and Analysis Project Plans (SAPPs). The NPS program follows the sampling methodology described in the WQCD Methodology to Determine Aquatic Life Use Attainment for Streams and Rivers (2011).

All NPS water quality and aquatic macro-invertebrates data generated by the NPS program are uploaded to STORET; this includes data generated by project sponsors and data generated by the MRP. The Colorado Data Sharing Network provides data uploading and mapping support for project sponsors, if requested. Those data are incorporated in the state water quality data analysis and assessment conducted by the Environmental Data Unit and incorporated in the biennial Integrated Report (IR) and in the Standards Triennial Review process.

### Measurable Results Activities

**Monitoring and assessment activities evaluating the following projects:** Kerber Creek Restoration-Phase II, Florida River Aquatic Habitat Improvement; Clear Creek Sediment Basins, Coal Creek Restoration and Middle North Empire Creek Restoration.

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<sup>1</sup> - For more information about the PPA and PAMs, please consult the EPA's National Water Program Guidance at [http://water.epa.gov/resource\\_performance/planning/FY-2012-National-Water-Program-Guidance.cfm](http://water.epa.gov/resource_performance/planning/FY-2012-National-Water-Program-Guidance.cfm)

## Load Reduction Reporting

Colorado regularly reports on load reductions associated with the regulations that govern loading of nutrients (total phosphorus and total nitrogen) into lakes and reservoirs. Colorado also reports on sediment loads into rivers and streams that are reduced or minimized based on BMPs implemented by project sponsors.

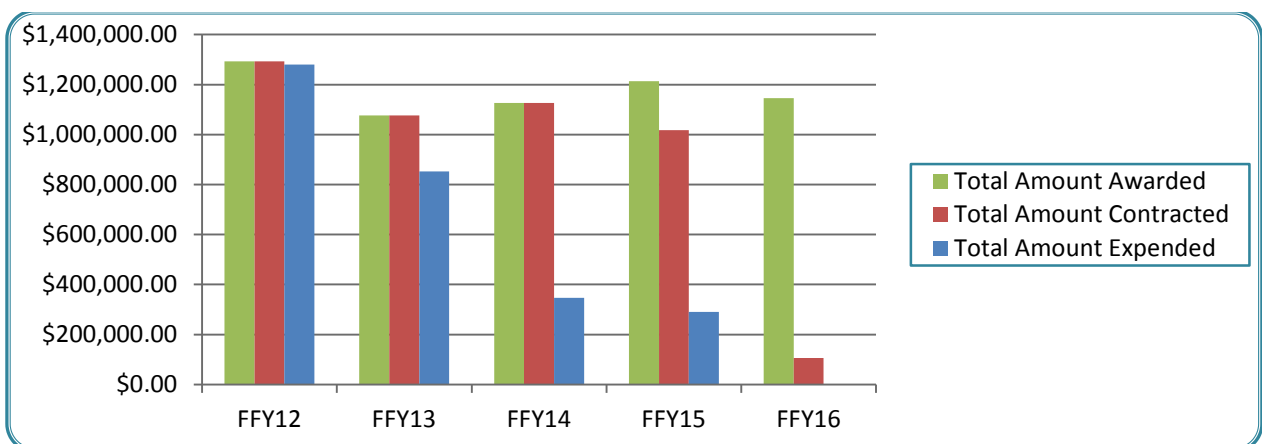
In order to enhance and expand on current load reduction reporting, the NPS program is developing a systematic approach: 1) developing protocols to capture load reduction data and to meet the required GRTS reporting minimum elements in a more comprehensive manner; 2) developing a simple system that allows project sponsors and other users to capture and submit those data to the NPS program; and 3) develop and adopt a load reduction model. This approach will be used to fulfill the minimum reporting requirements in GRTS and to help the NPS program evaluate success, through measurable results.

### Financial Summary

During FFY2016, Colorado NPS program received \$1,966,000 in federal section 319(h) grant funds under US EPA Grant # C9-99818616 and PPG allocations. The total amount for projects was \$1,146,000. Colorado continues to award the federal funds to local sponsors, which can be local government entities, watershed groups and others. Federal funds are used at the local level to implement projects that address water quality impairments, to develop watershed-based plans and for education and dissemination of information related to nonpoint sources of pollution.

In addition to the 2016 funds, Colorado continues to manage four other annual grant awards, which have been expended to a varied degree. The following table summarizes grant awards per year and the approximate percentage that has already been expended in each grant.

Report: Progress on Nonpoint Source Federal Grants - September 2016						
Federal Grant Year	Total Amount Awarded	Total Amount Contracted	% Contracted	Grant End Date	Total Amount Expended	% Expended
FFY12	\$1,293,117.00	\$1,293,117.00	100%	7/11/2017	\$1,279,896.00	99%
FFY13	\$1,077,117.00	\$1,077,117.00	100%	7/29/2018	\$852,686.00	79%
FFY14	\$1,125,927.00	\$1,125,927.00	100%	7/29/2019	\$346,189.00	31%
FFY15	\$1,213,517.00	\$1,018,209.00	84%	8/14/2020	\$290,027.00	24%
FFY16	\$1,146,000.00	\$105,734.00	9%	8/21/2021	\$0.00	0%
<b>Total Current Grant Amount</b>	<b>\$5,855,678.00</b>	<b>\$4,620,104.00</b>	<b>79%</b>		<b>\$2,768,798.00</b>	<b>47%</b>



Additionally, during the period 2012 to 2016, NPS funds leveraged \$2,862,079 in local non-federal match; \$2,969,019 in Colorado Water Resources and Power Development Authority (SRF-related funds), and \$236,301 in Water Quality Improvement Funds, for a total combined non-federal match of \$6,067,399. The program was able to leverage more than 100% of the federal grants received.

## Partners Highlights

### Source Water Assessment and Protection Program

The Source Water Assessment and Protection (SWAP) program works closely with public water systems and stakeholders to protect surface water and groundwater based sources of drinking water. A statewide grant funding program provides financial assistance to help facilitate the technical development of protection plans that result in Best Management Practice implementation. Approximately, two hundred and twenty six (226) drinking water systems have either completed a protection plan and/or have a strategy in place to complete a plan. The population served by these drinking water systems with developed protection plans is approximately 2.35 million people.

The NPS and SWAP programs collaborate when developing both watershed and protection plans to engage local stakeholders regarding the importance of protecting the health of the watershed to benefit water quality. The top four categories of dispersed (nonpoint source) contaminants to potentially impact drinking water sources in Colorado are roads, septic systems, evergreen and deciduous forest practices, and agricultural (pasture and hay) impacts. The SWAP and NPS programs are currently working together to develop strategies to leverage statewide planning efforts to minimize impacts to drinking water sources

### Groundwater Protection Program

The Agricultural Chemicals and Groundwater Protection Act took effect on July 1, 1990 and established the Groundwater Protection Program. Its purpose is to reduce agricultural chemicals' negative impacts on groundwater and the environment. Agricultural chemicals covered under this legislation include commercial fertilizers and all pesticides. The goal is to prevent groundwater contamination before it occurs by improving agricultural chemical management. The Agricultural Chemicals and Groundwater Protection Program is administered as a joint effort between the Colorado Department of Agriculture (CDA), the Colorado Department of Public Health and Environment and Colorado State University Cooperative Extension (CSUCE).

The program employs three primary functions to protect groundwater in Colorado:

- 1) Regulation and inspection of agricultural chemical bulk storage and mixing/loading areas;
- 2) Groundwater monitoring; and
- 3) Education and training.

### DRMS

DRMS provides for the reclamation and restoration of land and water resources previously degraded by the adverse effects of past mining practices through the characterization of environmental problems associated with mine waste, mill tailings and acid mine drainage and provides reclamation options to address these environmental problems.

The Division has been able to secure funding from the Colorado Water Resources and Power Development Authority, the entity that administers the State Revolving Funds, for nonpoint source activities. These funds are being leveraged with NPS program funds to restore water quality in areas impacted by NPS pollution. Currently, the following projects have or are being partially supported with these funds, with DRMS Severance Fees and with private money:

### *Saints John Mine - highlighted below*

Pennsylvania Mine Reclamation

[npscolorado.com](http://npscolorado.com)

### Saints John Creek Project Highlight

**Project Cost:** \$470,000

**Federal Partners:** United States Forest Service

**State Partners:** Colorado Division of Mining, Reclamation and Safety

**Local Partners:** The Tolen Family and the Conservation Seeding and Restoration Inc.

**Private Partner:** Freeport MacMoRan

#### Background

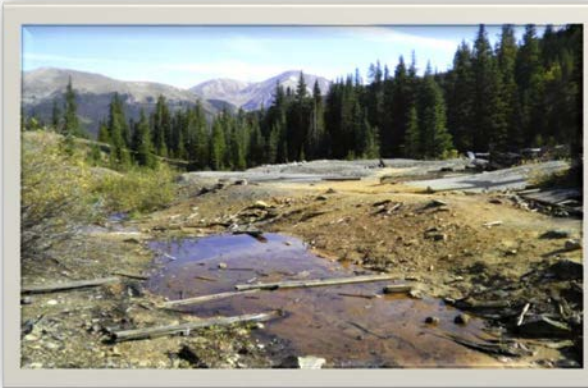
The Saints John Mine is located in Summit County, above Saints John Creek, which is tributary to the Snake River. The mine and associated mills and smelters operated intermittently from the 1860s to the 1930s. The area experiences heavy recreational use associated with Forest Development Road 275 (Saints John Road). Prior to reclamation, prominent site features included a draining adit and associated waste rock dumps, mill tailings deposits and impoundment, and historic mill ruins on the right bank of Saints John Creek.

#### Water Quality Impact

Water samples indicated that mill tailings were contributing over three pounds of zinc and other heavy metals to the creek daily.

#### Project Description

Over 23,000 cubic yards of tailings were excavated and placed in a consolidation area. Care was taken to preserve the historic mill ruins while excavating the tailings. After the removal was completed the consolidation area was capped with on-site cover material and revegetated with a native seed mix. The reclamation work included the revegetation of a 3-acre wetland. A total of 18,800 plants were installed in the restored wetland. Approximately 2 acres of the wetland restoration area were planted with herbaceous plants. Approximately 1.5 acres of the 3 acre restoration area were planted with willow cuttings.



### Wetlands

Colorado's Division of Parks and Wildlife (CDPW) undertakes a number of activities aimed at conserving the state's wetlands. One program, the Wetlands Wildlife Conservation Program (WWCP), focuses on preserving, restoring, enhancing, and creating wetlands throughout the state. This program particularly focuses on (1) protecting the role of wetlands in Colorado as important feeding, breeding, migratory, and brooding habitat for water birds, and (2) providing recreational uses, such as hunting, fishing, and bird watching, through wetlands (CDPW 2008). The CDPW has created 11 focus area committees under the WWCP, 8 of which are currently active (CDPW 2010a). The committees provide a mechanism through which conservationists can share information on local wetlands, discuss wetland needs, and generate ideas for wetland protection and restoration projects. The CDPW reports that since WWCP's implementation in 1997, the program has enhanced or created 220,000 acres of wetlands and adjacent habitat (CDPW 2010c). (Statewide Water Quality Management Plan Current Statewide Water Quality Final Draft - June 1, 2011)

## National Water Quality Initiative

The NPS program and NRCS are continuing to collaborate in the NWQI with respect to the Grape Creek / DeWeese Reservoir watershed. Efforts in the Upper Poudre River and the Fruit Growers Reservoir watersheds have not been successful. Some results of that collaboration are described in the project highlight below:

### Upper Grape Creek - NWQI Project Highlight

The Natural Resource Conservation Service (NRCS) has been working with local producers in the Upper Grape Creek watershed, which includes DeWeese Reservoir, signing them up for the NWQI and to implement best management practices. The BMPs being implemented are nutrient management, irrigation water management and prescribed grazing. The reservoir has been placed in the 303(d) list of impaired segments for violation of dissolved oxygen standards. Low DO has been associated with excessive nutrient concentrations (specifically phosphorus).



As part of this collaborative effort, the Division has been conducting water quality monitoring in the Grape Creek watershed since the inception of the initiative in 2012. The monitoring is being conducted at seven monitoring locations. The Division evaluated monitoring data from 2012 to 2015, although one station had data from 2010 and two had only data from 2014 and 2015. Total nitrogen and total phosphorus data were compared to the water quality standards found in WQCC Regulation 31, using calculated annual medians for each year for each station. Nitrate ( $\text{NO}_3$ ) concentrations ranged from 0 mg/L (in 2001 except for June) to 2 mg/L, mostly being 1 mg/L from 2001 to 2004. In 2004, after the implementation of BMPs,  $\text{NO}_3$  concentrations were below 1 mg/L. Phosphorus values ranged from 0 mg/L to 3 mg/L, mostly being 2 mg/L. Phosphorus concentrations were around 2 mg/L in the 2004 sampling.

These data results suggest a decrease in total phosphorus and in total nitrogen concentrations, potentially associated with the BMPs implemented by NRCS and local producers.

U.S. Forest Service - place holder - waiting for clearance to release report

## Water Quality Planning

### Integrating TMDLs and NPS Activities: Priority Watersheds

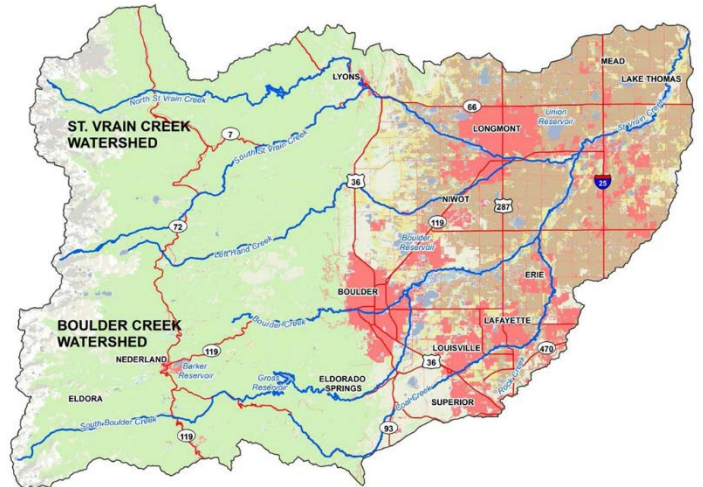
The NPS program prioritizes watersheds in the state based on the water quality standards as approved by the Water Quality Control Commission. The criteria for selecting *Priority Watersheds* are: 1) identification of segments listed in Regulation № 93 - Section 303(d) List of Water Quality Limited Segments Requiring TMDLs and 2) identification of watersheds containing those segments that are or have in the past used CWA 319 funds for nonpoint source activities. Priority Watersheds are defined at the 12-digit Hydrologic Unit Code basin map.

The NPS program supports the development of TMDLs by supporting local organizations such as watershed groups involved in collecting data and characterizing watersheds with impaired segments. These efforts are supported mostly via the development of watershed plans. The program also

implements TMDLs, especially in watersheds dominated by nonpoint sources of pollutions (Load Allocations) and in areas dominated by impacts from legacy mines.

## St. Vrain / Boulder Watershed Plan Project Highlight

**Partners and Funding:** The project is funded primarily with a section 319(h) grant of \$49,995 with non-federal matching funds of \$44,548. Federal Partners: U.S. Geological Survey, Local Partners: City of Boulder, Boulder County, Keep It Clean Partnership, City of Longmont, Town of Superior, City of Lafayette, St. Vrain and Left Hand Water Conservancy District



**Project Description:** The St. Vrain and Boulder watersheds encompass diverse land use characteristics with headwaters in pristine mountain settings flowing into the foothills and urbanized areas, and then through agricultural areas in the plains before joining the South Platte River. The 980-square-mile St. Vrain Basin includes two major sub-watersheds: Boulder Creek and St. Vrain Creek. The two streams join to form the main stem of St. Vrain Creek, just east of the Boulder-Weld County line, and flow into the South Platte River downstream of Platteville, Colorado. Colorado's 2012 303(d) List of Impaired Segments and Monitoring and Evaluation (M&E) List identified 23 segments in the overall watershed that do not attain (or potentially do not attain) stream standards. The plan primarily focuses on E. coli, nutrients, metals, and aquatic life impairments within the watersheds and focuses implementation elements on E.coli.

An on-going coordinated monitoring program was adopted by the Keep It Clean Partnership as part of this watershed plan and is a key tool to refine the understanding of pollutant sources, trends and effectiveness of BMPs in the future. This information will be used to refine updates of the watershed plan.

### Water Quality Protection

#### [NPSCOLORADO.COM](http://NPSCOLORADO.COM)

The website [npcolorado.com](http://npcolorado.com) continues to provide support to the nonpoint source community interested in partnering with the state to address nonpoint sources of pollution. It maintains and updates education material, announcements and events, and general information to the nonpoint source community. It also provides programmatic information such as program documents, application, reporting and monitoring forms, sampling and analysis project plan guidance, a measurable results toolkit, etc.

#### Program Outreach Support

The objective of this project continues to be to work in partnership with the Nonpoint Source Program to develop project-specific fact sheets, to produce and enhance the statewide newsletter and to expand collaborative efforts between the Colorado Watershed Assembly (CWA), the NPS program and citizen stakeholder groups through improved and focused outreach capabilities. The Assembly provides leadership to grassroots and nonprofit community groups to help them protect, conserve and enhance watersheds. The anticipated outcomes are a network of informed watershed groups, stakeholder

involvement in watershed plan development and implementation projects that address water quality impairment.

### Information and Education Outreach Grant Program

For several years, the nonpoint source program has set aside a small percentage of funds from the regular Section 319(h) allocation for small, highly focused educational efforts. These small-scale projects typically leverage the modest amounts of money into major community-outreach efforts with statewide applications. Fund availability is marketed to schools, nonprofit organizations and local watershed groups and is typically a maximum award of \$5,000 per project.

### Watershed Conference: Sustaining Colorado's Watersheds

About 230 people associated with 120 entities from all parts of Colorado, representing many different interests attended this conference in October 2015. Attendance included individuals representing local watershed groups, scientists from many disciplines, federal, state and local agencies, several water conservation districts, water user associations, water education audience, private, industry and environment groups.

## Water Quality Restoration

### Implementing TMDLs with NPS activities: Mine-related priority

Colorado's 2012 Nonpoint Source Management Program (the Plan) defines the strategy for the program, implementing the priorities linked specifically to a state's List of Waters Still Needing Total Maximum Daily Loads (TMDLs), also known as the 303(d) list of impaired segments. More than half of the funds allocated to Colorado in the past four years has been used to implement watershed-based plans in watersheds where streams are identified on the 303(d) list.

Since the majority of completed TMDLs addresses legacy mining impairments, the focus of the NPS program efforts has been directed toward implementing activities that address the NPS mine-related load (load allocation) reductions. To accomplish this, the NPS program continues to work closely with the Inactive Mine Reclamation Program of the Division of Reclamation, Mining and Safety (DRMS) to identify priorities regarding restoration and implementation activities. The NPS program also works with local watershed groups that have identified legacy mining impacts in approved watershed plans, with extra emphasis toward priority basins and watersheds.

### Colorado River Basin

According to the regulations structure of the Water Quality Control Commission, the regulations that apply for this basin are covered under Regulation #33 (Upper Colorado, which includes the Green River Basin) and Regulation #37 (Lower Colorado).

**The Colorado River Basin** encompasses approximately 17,830 square miles and includes drainages for the Colorado and the Gunnison Rivers. (Note: the WQCC address the Gunnison River regulations in conjunction with the San Juan/Dolores River Basins, so information related to the Gunnison River is found below, in the San Juan/Dolores sub-section). The Colorado River's headwaters are within the Rocky Mountain National Park and from there the river flows southwest for approximately 230 miles through Grand, Eagle, Garfield, and Mesa Counties before exiting the

<b>Water Quality Assessment Results (2016 WQCC Integrated Report) Regulation #33</b>			
EPA IR Category		Rivers and streams (miles)	Lakes and Reservoirs (acres)
1	Fully Supporting	5,765	13,100
2	Some uses supporting	1,228	7,439
3a	Not assessed	1,341	12,172
3b	Insufficient data (M&E list)	964	0
4a	TMDL completed and approved	21	0
4b	Impaired, no TMDL necessary	0	0
4c	Impairment is not caused by pollutant	0	0
5	Impaired, TMDL necessary	1,339	3,896

state into Utah. Major tributaries to the Colorado River include the Fraser, Blue, Eagle and Roaring Fork Rivers.

Arsenic, aquatic life and temperature are the most common listings for rivers and streams; arsenic, dissolved oxygen and mercury in fish are the most common listings for lakes and reservoirs.

**Area of environmental concern:**  
 Valuable habitat for Endangered and Threatened fish species  
 (designated by Colorado Division of Parks and Wildlife)

Colorado River from the Grand Valley Diversion Dam to the Gunnison River

**The Green River Basin** covers roughly 10,500 square miles in northwest Colorado and south Central Wyoming. The Yampa River collects water from roughly 8,000 square miles with the headwaters located west of the Continental Divide in the White River Plateau. In the state of Colorado, the Yampa River flows through the town of Yampa, past Steamboat Springs, and then heads west past Craig. The Little Snake River joins the Yampa River 5 miles before entering Dinosaur National Monument. Within the Dinosaur National Monument area, the Yampa River flows into the Green River about 5 miles from the Colorado-Utah state line (CWCB 2004).

**The White River**, which is part of the Green River Basin, flows from its headwaters in the Flat Tops Wilderness Area west to the town of Buford. It then flows past Meeker and parallels Highway 64 to the Utah state line.

**Gold Medal Fisheries and Areas of High Recreational Value**  
 (designated by Colorado Division of Parks and Wildlife (CDPW)):

North Platte River from Routt National Forest to the Colorado-Wyoming border  
 Blue River from Dillon Reservoir Dam to the Colorado River  
 Gore Creek from Red Sandstone Creek to Eagle River  
 Colorado River from Windy Gap to Toublesome Creek  
 Fryingpan River from Ruedi Reservoir Dam to Roaring Fork River  
 Roaring Fork River from the Crystal River to the Colorado River  
 Gunnison River from Black Canyon to the North Fork of the Gunnison River

**Water Quality Assessment Results (2016 WQCC Integrated Report)  
 Regulation #37 - Lower Colorado River Basin**

EPA IR Category		Rivers and streams (miles)	Lakes and Reservoirs (acres)
1	Fully Supporting	8,296	1,010
2	Some uses supporting	3,608	616
3a	Not assessed	693	5,991
3b	Insufficient data (M&E list)	1,214	20
4a	TMDL completed and approved	0	0
4b	Impaired, no TMDL necessary	0	0
4c	Impairment is not caused by pollutant	0	0
5	Impaired, TMDL necessary	2,136	553

Arsenic, iron and selenium are the most common listings for rivers and streams; mercury in fish, acidity and selenium are the most common listings for lakes and reservoirs.



**Watershed Plans that have been developed for the Colorado River Basin since 2010**

Black Gore Creek  
Eagle River  
Middle Colorado  
North Platte River  
Roaring Fork  
Snake River  
Straight Creek  
Upper Colorado  
Upper Yampa

**Implementation Projects in the Colorado River Basin, since 2010**

Cinnamon Gulch  
Eagle River  
Illinois Gulch  
NPS WQ Improvements in the Rifle Creek Sub-Watershed  
Pennsylvania Mine  
Straight Creek

**Pennsylvania Mine Project Highlight**

**Project Cost:** \$2,000,000 of State and NPS Funds

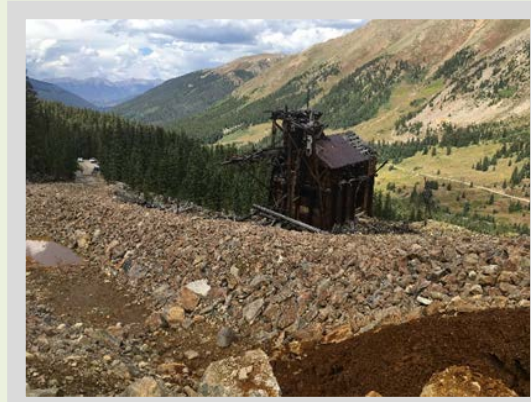
**Federal Partners:** United States Environmental Protection Agency (EPA) and United States Forest Service

**State Partners:** Colorado Division of Reclamation, Mining and Safety, CDPHE - Hazardous Materials and Waste Management Division and Colorado Water Resources and Power Development Authority

**Local Partners:** Summit Count, Blue River Watershed Group and Snake River Task Force

**Background**

The Pennsylvania Mine complex is located in Summit County, at the headwaters of Peru Creek, which is tributary to the Snake River. The vein on which the mine was developed was originally discovered in 1879 and was worked intermittently into the 1950's for gold and silver. Along the creek and near the mine ran the famous Argentine Pass road which was one of the first and most treacherous roads crossing the Continental Divide and is still an area for summer and winter recreation. This complicated site had been studied for about 30 years with little reclamation success. The mine is developed on 6 different "levels" designated A through F, with A being the highest in elevation and F at the bottom. Mine maps indicate that the levels are interconnected with vertical mine workings. Along with significant mine drainage, the worst of over 250 mines in the watershed, there were also waste rock and tailings piles prior to reclamation.



**Water Quality Impact**

Based on estimates from numerous reports including a Total Maximum Daily Load, the mine complex contributed approximately 15,000 lbs/yr of zinc to Peru Creek. Due to the impaired water quality from heavy metals and low pH, surface waters do not support aquatic life.

**Project Description**

Following installation of an access culvert, it was necessary to provide underground rehabilitation and stabilization of approximately 600 feet of Mine Level F. EPA assumed responsibility of discharge water during this phase. Underground rehabilitation included scaling and mucking of 250 cubic yards of material along with installation of steel sets, split sets, spilling rods and welded wire mesh. Partners have proceeded to install two bulkheads or concrete plugs, in series, in the adit to reduce discharge to Peru Creek.



## South Platte River Basin

According to the regulations structure of the Water Quality Control Commission, the regulations that apply for this basin are covered under Regulation #38 (South Platte and Republican).

**The Platte River Basin** encompasses approximately 20,306 square miles and includes drainages for the North Platte River and the South Platte River covering the northeastern part of Colorado. The North Platte River drains the area bounded on the west by the Park Mountain Range and on the south by the Rabbit Ears Mountain Range. The Front Range divides the North Platte River and the South Platte River drainages. The South Platte River originates southwest of Denver and flows through the Denver metropolitan area and into the high plains region of Colorado. Tributaries to the North Platte River include the Laramie River and Sand Creek. Tributaries to the South Platte River include the North, Middle, and South Forks of the South Platte River, Bear Creek, Clear Creek, St. Vrain Creek, Big Thompson River, and Cache La Poudre River (CWCB 2004).

### Water Quality Assessment Results (2016 WQCC Integrated Report) Regulation #38

EPA IR Category		Rivers and streams (miles)	Lakes and Reservoirs (acres)
1	Fully Supporting	3,170	5,120
2	Some uses supporting	13,300	34,915
3a	Not assessed	969	40,345
3b	Insufficient data (M&E list)	1,072	2,811
4a	TMDL completed and approved	133	1,724
4b	Impaired, no TMDL necessary	0	0
4c	Impairment is not caused by pollutant	0	0
5	Impaired, TMDL necessary	3,345	12,971

### Gold Medal Fisheries and Areas of High Recreational Value

(designated by Colorado Division of Parks and Wildlife (CDPW)):

North Delaney Butte Lake, South Fork from Highway 285 to Antero Reservoir  
 Middle Fork from Highway 9 to the confluence of the Middle and South Forks and the South Platte River  
 Middle and South Forks to Elevenmile Reservoir (including Spinney Mountain Reservoir)  
 Chessman Reservoir Dam to the North Fork

*E. coli*, copper and arsenic are the most common listings for rivers and streams; dissolved oxygen, acidity and arsenic are the most common listings for lakes and reservoirs.

### Watershed Plans that have been developed for the Platte River Basin since 2010:

Barr-Milton Reservoirs  
 Big Thompson River  
 Big Dry Creek  
 Boulder Creek  
 Chatfield Reservoir  
 Cherry Creek  
 Clear Creek  
 Lefthand Creek (including James and Little James Creeks)  
 Lower Bear Creek  
 Lower South Platte  
 St. Vrain Creek  
 Upper Cache la Poudre River  
 Upper South Platte

### Implementation Projects in the Platte River Basin, since 2010:

Clear Creek Tributaries Sediment Controls  
 High Park Burn Area Reclamation  
 Middle North Empire Creek Restoration  
 NPS Pollution Reduction in Lower Bear Creek  
 Upper South Platte Nonpoint Source Initiative  
 Wildfire Restoration - High Park

## Clear Creek Sediment Control and Metals Removal Project Highlight

**Project Cost:** \$204,135

**Federal Partners:** US Forest Service and US Federal Highway Administration

**State Partners:** Colorado Department of Transportation (CDOT) and Colorado Division of Reclamation, Mining and Safety

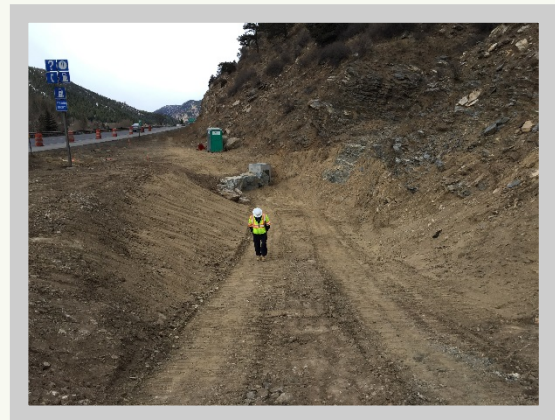
**Local Partners:** Clear Creek Watershed Foundation, Clear Creek County and AFS Walstrum Quarry

**Background:** The Clear Creek Tributaries Sediment Control and Metal Removal Project is located alongside Clear Creek in Clear Creek County, a short distance upstream of Idaho Springs. Much of the heavy metal loading throughout the Clear Creek basin is the result of natural geologic conditions and historic mining activities. The upper Clear Creek watershed has experienced widespread mining activity throughout the basin beginning in 1859. There are a number of small, steep watersheds draining from the north side of Clear Creek with abandoned mine sites. Frontal weather systems and intense, short duration thunderstorms can mobilize substantial loads of contaminated sediments from mine waste and mill tailings in the drainage ways. Hoosao Gulch is a prime example of an inaccessible drainage with an abundance of mine waste in the upper, roadless portion of the watershed and a large mill tailings pile near its mouth. There is another Unnamed Tributary near the confluence of Mill Creek with Clear Creek at Dumont Colorado that also has numerous inaccessible mine waste piles in its drainage way.



**Water Quality Impact:** During snow melt and storm events metal laden sediments and particulate phosphorus are mobilized and transported to Clear Creek which is impaired for heavy metals thus not fully supporting the cold water aquatic life beneficial use. Clear Creek also serves as a primary drinking water source for major municipalities in the Denver metro area including Golden, Arvada, Westminster, Northglenn and Thornton.

**Project Description:** This project partners constructed two high priority sediment basins designed to capture and remove metal and phosphorus laden sediments in order to prevent these contaminants from reaching Clear Creek. These structural best management practices have proven to be an effective form of mine runoff management and control and were recognized as a high priority in CDOT's Sediment Control Action Plan for the I-70 Corridor east of the Eisenhower Tunnel. The detention basins, which are just sating to fill, are also designed to facilitate efficient maintenance operations by Colorado Department of Transportation (CDOT).



## Arkansas and Rio Grande River Basins

According to the regulations structure of the Water Quality Control Commission, the regulations that apply for this basin are covered under Regulation #32 (Arkansas) and Regulation #36 (Rio Grande).

**The Arkansas River** is the sixth-longest river in the United States at approximately 1,460 miles (Kammerer 1990). It is a major tributary to the Mississippi-Missouri system. It begins in Colorado's central Rocky Mountains and flows generally to the east and southeast through the Great Plains of northern Oklahoma and Kansas and, finally, through Arkansas to the Mississippi River. The mouth of the river is near the town of Napoleon in southeastern Arkansas.

The river is spatially the largest river in Colorado, covering 27% of the state's surface area, an area of 28,268 square miles. It begins at Mt. Elbert, which is at 14,433 feet, and its tributaries begin near Leadville, Colorado (Lake County). The river drops to 3,340 feet at the Colorado-Kansas state line, near the town of Holly in Prowers County (CWCB N.d). The Arkansas Basin includes waterbodies in the following counties: Lake, Chaffee, Custer, Fremont, El Paso, Pueblo, Huerfano, Las Animas, Otero, Bent, Prowers, Kiowa, Cheyenne, Lincoln, Teller and Elbert.

### Water Quality Assessment Results (2016 WQCC Integrated Report) Regulation #32

EPA IR Category		Rivers and streams (miles)	Lakes and Reservoirs (acres)
1	Fully Supporting	1,435	865
2	Some uses supporting	6,030	17,330
3a	Not assessed	549	23,343
3b	Insufficient data (M&E list)	9,563	213
4a	TMDL completed and approved	113	0
4b	Impaired, no TMDL necessary	0	0
4c	Impairment is not caused by pollutant	0	0
5	Impaired, TMDL necessary	4,029	31,927

Selenium, arsenic and manganese are the most common listings for rivers and streams; selenium, copper and dissolved oxygen are the most common listings for lakes and reservoirs.

#### Watershed Plans that have been developed for the Arkansas River Basin since 2010:

Fountain Creek Master Plan  
Identifying Selenium and Nitrogen Best Management Practices  
Lake Fork of the Arkansas  
Lower Arkansas River  
Purgatoire River

#### Implementation Projects in the Arkansas River Basin, since 2010:

Addressing Nutrients and Selenium Impacts  
Evans Gulch Restoration  
Sugarloaf Mountain Mine Waste Erosion Mitigation  
Waldo Canyon Burn Area Reclamation

**The Rio Grande River Basin** encompasses approximately 7,500 square miles, including the San Luis Valley. The river's headwaters are in the San Juan Mountains near the Continental Divide, from which it flows southeasterly. The river's south fork and mainstem join on the west side of the valley at the town of South Fork, Colorado. The river then flows to the east through the town of Del Norte and continues southeasterly across the valley through the cities of Monte Vista and Alamosa, Colorado. At Alamosa, the river turns south and runs nearly 40 miles, passing through a break in the San Luis Hills and then entering a deep canyon above the New Mexico state line (CWCB 2009b).

The San Luis Valley is an open, nearly treeless, inter-montaine valley. It is the predominant feature of the Rio Grande River Basin (CGS 2003). In size, the San Luis Valley extends approximately 90 miles from north to south and 50 miles from east to west. (CWCB 2009b).

**Water Quality Assessment Results  
(2016 WQCC Integrated Report)  
Regulation #36**

EPA IR Category		Rivers and streams (miles)	Lakes and Reservoirs (acres)
1	Fully Supporting	1,060	2,702
2	Some uses supporting	1,739	2,150
3a	Not assessed	1,153	5,568
3b	Insufficient data (M&E list)	328	1,370
4a	TMDL completed and approved	94	885
4b	Impaired, no TMDL necessary	0	0
4c	Impairment is not caused by pollutant	0	0
5	Impaired, TMDL necessary	1,188	733

**An area known as the Closed Basin** occupies the northern part of the San Luis Valley. Kerber Creek is located in this closed basin. A low topographic divide and a hydrologic divide separate groundwater in the Closed Basin from that in the rest of the Valley. The divide extends southeast from near Del Norte, Colorado, to a few miles north of Alamosa, Colorado, and then easterly to the east side of the San Luis Valley. The principal tributary to the Rio Grande River in Colorado is the Conejos River. It rises in the southwestern portion of the San Juan Mountains of Colorado, is augmented by the San Antonio and Los Pinos Rivers, and flows northeast to join the Rio Grande at Los Sauces, Colorado. Other major streams in the basin include Saguache, San Luis, Trinchera, Culebra, and Costilla creeks, along with many dozen lesser streams that contribute to the system (CWCB 2009b).

Arsenic, iron and zinc are the most common listings for rivers and streams; mercury in fish, iron and ammonia are the most common listings for lakes and reservoirs.

**Gold Medal Fisheries and Areas of High Recreational Value**

(designated by Colorado Division of Parks and Wildlife (CDPW)):

Rio Grande River from the Highway 149 Bridge at South Fork downstream to the Rio Grande Canal diversion structure at Del Norte

Other high value recreational areas in the Rio Grande River Basin include the Great Sand Dunes National Park and the Weminuche

**Watershed Plans that have been developed for the Rio Grande Basin:**

- Alamosa River
- Kerber Creek
- Upper Rio Grande to Alamosa County Line
- Willow Creek

**Implementation Projects in the Rio Grande Basin:**

- Kerber Creek Restoration
- Lower Willow Creek Restoration

## San Juan / Dolores Rivers Basins

According to the regulations structure of the Water Quality Control Commission, the regulation that apply for this basin is covered under Reg. #34 (San Juan /Dolores).

**The San Juan River Basin** is in the southwest corner of Colorado and covers an area of approximately 10,169 square miles. The flow of the San Juan River is generally to the west, flowing into the Colorado River in southeast Utah. Major tributaries to the San Juan River include the Piedra, Los Piños, Animas, Florida, La Plata, and Mancos Rivers and McElmo Creek. In the southern portion of the basin, the Upper San Juan River and its tributaries flow through two Native American reservations, the Ute Mountain Ute Reservation and the Southern Ute Indian Reservation (CWCB 2004).

**A portion of the Dolores River** is also located within the San Juan River Basin; it flows to the west and northwest, where it eventually joins the Colorado River in eastern Utah. The major tributary to the Dolores River within the San Juan River Basin is the San Miguel River, located downstream of McPhee Reservoir.

### Water Quality Assessment Results (2016 WQCC Integrated Report) Regulation #34

EPA IR Category		Rivers and streams (miles)	Lakes and Reservoirs (acres)
1	Fully Supporting	2,373	414
2	Some uses supporting	717	3,126
3a	Not assessed	1,883	2,881
3b	Insufficient data (M&E list)	969	3,765
4a	TMDL completed and approved	108	0
4b	Impaired, no TMDL necessary	0	0
4c	Impairment is not caused by pollutant	0	0
5	Impaired, TMDL necessary	430	7,594

Iron, copper and zinc are the most common listings for rivers and streams; mercury in fish and dissolved oxygen are the most common listings for lakes and reservoirs.

### Gold Medal Fisheries and Areas of High Recreational Value

(designated by Colorado Division of Parks and Wildlife (CDPW)):

A portion of the Animas River south of Durango  
Numerous reaches in the San Juan River Basin for  
whitewater rafting

### Watershed Plans that have been developed for the San Juan / Dolores Rivers Basins since 2010:

- Animas River above Silverton
- Dolores River below McPhee Reservoir
- East Fork of the Dolores River
- Lower Animas River
- Mancos River
- Stollsteimer
- Upper Pine in Upper San Juan

**Implementation Projects  
in the San Juan / Dolores Rivers Basins, since 2010:**  
Bullion King Mine Waste Remediation

## Animas and Florida River Water Quality and Habitat Improvement Project Highlight

**Project Cost:** \$300,593

**Federal Partners:** USDA Natural Resource Conservation Service and DOI Bureau of Reclamation

**State Partners:** Colorado Department of Transportation and Colorado Division of Reclamation, Mining and Safety

**Local Partners:** Animas Watershed Partnership, Five Rivers Chapter of Trout Unlimited, Southwestern Water Conservation District, La Plata Conservation District, San Juan Watershed Group San Juan Soil and Water Conservation District, City of Farmington, City of Durango and Durango /La Plata County Airport Commission



**Background:** Similar to the larger Animas Watershed, the Florida Watershed supports a variety of land uses including irrigated agriculture. The main crop is grass and/or alfalfa hay irrigated by the range of systems from traditional flood irrigation to modern center pivots. Livestock include cow-calf and sheep operations, commercial and recreational horse properties, as well as lesser numbers of other livestock. The project site is along the Florida River near the Durango/La Plata County Airport. The river banks in this reach are flanked by irrigated pastures that support year round use by livestock (horses and cows) with free access to the river banks and channel. The predominant vegetation on the river banks is herbaceous with minimal river shading. The pastures are irrigated using traditional flood irrigation practices. The Florida River watershed in the vicinity of the project site comprises the Source Water Protection Area for seven public water suppliers.

**Water Quality Impact:** Flood irrigation between March and October produces significant overland flow to the floodplain and river channel. This frequent surface flow results in sheet and rill erosion that delivers sediment, nutrients and manure to the floodplain and river. Livestock access also leads to degraded riparian vegetation as well as a direct inputs of pollution.

**Project Description:** The project partners installed best management practices to protect the river and improve water quality and irrigation efficiency. Approximately 10,000 feet of fence was installed by 4 landowners to protect 2.2 miles of the Florida River channel which was more than double the initial planned river length. Effective siting of the fencing created approximately 48.3 acres of native riparian buffer. The landowners also converted approximately 30 acres from flood to gated pipe irrigation. The riparian areas have recovered significantly in a short amount of time with only limited re-vegetation focused on willow plantings.



## Gunnison River and Lower Dolores River Basin

According to the regulations structure of the Water Quality Control Commission, the regulation that apply for this basin is Regulation #35 (Gunnison).

The Gunnison River originates at Almont, Colorado, at the confluence of the Taylor and East Rivers. It then flows past the city of Gunnison and passes through three reservoirs: Blue Mesa, Morrow Point and Crystal Reservoirs. The Gunnison River then meets the North Fork of the Gunnison River west of the town of Hotchkiss. The Uncompahgre River is a major tributary to the Gunnison River; it joins the Gunnison near the town of Delta (CWCB 2004). The Gunnison River has elevation changes greater than 9,500 feet from the headwaters to the Uncompahgre Plateau in the southwest portion of the basin (CWCB 2006a, 2006b).

### Water Quality Assessment Results (2016 WQCC Integrated Report) Regulation #35

EPA IR Category		Rivers and streams (miles)	Lakes and Reservoirs (acres)
1	Fully Supporting	5,373	297
2	Some uses supporting	666	392
3a	Not assessed	1,533	19,698
3b	Insufficient data (M&E list)	861	1,110
4a	TMDL completed and approved	1,803	102
4b	Impaired, no TMDL necessary	0	0
4c	Impairment is not caused by pollutant	0	0
5	Impaired, TMDL necessary	507	899

Selenium, aquatic life and zinc are the most common listings for rivers and streams; dissolved oxygen, selenium and iron are the most common listings for lakes and reservoirs.

### Gold Medal Fisheries and Areas of High Recreational Value

(designated by Colorado Division of Parks and Wildlife (CDPW)):

The Gunnison River from the Black Canyon of the Gunnison National Park to the North Fork of the Gunnison River

### Watershed Plans that have been developed for the Gunnison River Basin since 2010:

Coal Creek (Crested Butte)  
Lake Fork of the Gunnison  
Lower Gunnison River  
North Fork of the Gunnison  
San Miguel River  
Slate River Watershed Plan  
Uncompahgre River

### Implementation Projects in the Gunnison River Basin, since 2010:

Coal Creek Restoration  
Upper Uncompahgre Watershed Mine Remediation



## Appendix A NPS program Implementation Matrices

<b>Objective 1 - To protect water quality from potential impact from nonpoint source pollution generated by anthropogenic activities</b>				
<b>Tasks</b>	<b>Tactics</b>	<b>Indicators of Success</b>	<b>Outputs</b>	<b>Percent Complete (an estimation)</b>
<p>1 - Provide financial and technical support to watershed groups to develop / update watershed-based plans. <i>(MP Matrices Appendix D Table 1, Task 1)</i></p>	<p>Continue to implement strategy to encourage partners to develop / update watershed-based plans.</p>	<p>All relevant stakeholders are involved; watershed is characterized and water quality issues are identified and prioritized; potential implementation projects and funding are identified.</p>	<p>Watershed Plans that are not older than 10 years (and preferably 5 years).</p>	<p>Ongoing effort. Two new watershed plans started and two continue developing. Two watershed plans concluded. (see Summary of Completed Projects table)</p>
<p>2 - Provide technical assistance, education and training at the local level. <i>(MP Matrices Appendix D Table 1, Task 2)</i></p>	<p>Education and training opportunities on water quality protection and watershed project planning; project effectiveness monitoring. This is achieved primarily via the PIP and SAPP development process.</p>	<p>Proposals and projects that more clearly align with the strategic goals of the WQCD and NPS program; projects are implemented correctly.</p>	<p>Increased technical knowledge; EPA grant requirements are met; measurable results are gathered.</p>	<p>Ongoing effort.</p>
<p>3 – Fund and implement projects that protect water quality, aquatic life and habitat integrity. <i>(MP Matrices Appendix D Table 1, Task 3)</i></p>	<p>Continue to implement strategy to engage partners to address protection of water quality, aquatic life and habitat integrity.</p>	<p>Water quality, aquatic life and habitat integrity are maintained or improved in project area. Number of projects accomplishing protection goals. Load reduction accomplished with the implementation of the BMPs.</p>	<p>BMPs implemented correctly and as designed.</p>	<p>Closing out one agricultural BMP implementation project; 2 wildfire BMPs implementation projects.</p>

**OBJECTIVE 2 - To restore water quality in streams, rivers, lakes, reservoirs and groundwater that are impaired due to nonpoint source pollution generated by anthropogenic activities.**

Tasks	Tactics	Indicators of Success	Outputs	Percent Complete (an estimation)
<p>1 – Prioritize restoration activities to meet NPS program priorities and WQCD strategy to address impaired waters. <i>(MP Matrices Appendix D Table 2, Task 1)</i></p>	<p>Identify pollution loading sources; utilize TMDLs when available; utilize watershed models and assessment tools to characterize watershed; identify and engage potential local partners.</p>	<p>Readily available information on where investment of limited resources will likely achieve water quality improvements; information accessible to potential local partners.</p>	<p>Prioritized list of impaired waters, restoration sites and potential local partners; data sets and data assessment reports.</p>	<p>Continue updating enhanced GIS cover with Watershed Plans complete – at HUCs 8, 10 and 12. Continue coordinating priorities with TMDL program and EDU. Developing new strategies to address other NPS priorities beyond legacy mining impacts. 95%</p>
<p>2 - Provide financial and technical support to watershed groups to develop / update watershed-based plans. <i>(MP Matrices Appendix D Table 2, Task 2)</i></p>	<p>Develop and launch strategy to encourage partners to develop / update WS-based plans that include EPA Nine Elements for a Watershed Plan to fully address impaired waters.</p>	<p>Every implementation project addressing impaired segments is identified in a complete and recently updated watershed plan.</p>	<p>Watershed Plans that address, at a minimum, all EPA Nine Elements for a Watershed Plan and that are not older than 10 years.</p>	<p>Ongoing effort, developing watershed-based plans in the following basins with impaired waterbodies: Evans Gulch, Lower Arkansas River Basin, Fountain Creek, Middle Colorado River.</p>
<p>3 – Fund and implement projects that address impaired waters, and improve aquatic life and habitat. <i>(MP Matrices Appendix D Table 2, Task 3)</i></p>	<p>Develop and launch strategy to engage partners to address prioritized list of impaired waters.</p>	<p>Meet targets agreed upon with EPA in the Performance Partnership Agreement.</p>	<p>Majority of incremental funds is applied to projects in priority watersheds; successfully implemented restoration projects, including targeted outreach and education tasks.</p>	<p>Every year as approved via the project solicitation process. 100% of total watershed project funds applied to impaired segments in 4 projects.</p>

**OBJECTIVE 2 - To restore water quality in streams, rivers, lakes, reservoirs and groundwater that are impaired due to nonpoint source pollution generated by anthropogenic activities.**

<b>Tasks</b>	<b>Tactics</b>	<b>Indicators of Success</b>	<b>Outputs</b>	<b>Percent Complete (an estimation)</b>
4 - Encourage land and resource management agencies, NGOs and others to identify and mitigate nonpoint source pollution impacts in the context of their program plans. <i>(MP Matrices Appendix D Table 2, Task 4)</i>	Strengthen working relationships with alliance, agencies, NGOs and tribes to encourage collaborative decision making and watershed-scale implementation of Best Management Practices. Emphasis placed on projects within priority impaired watersheds and to implement priority projects identified in a locally-driven Watershed Plans.	New strategies identified and implemented resulting in maintenance of water quality or reduced pollutant loadings.	Participation in planning efforts of federal and state agencies (e.g., planning, federal action reviews); leveraging of funding opportunities with other funding sources.	Ongoing effort, Partnering with Trout Unlimited on developing watershed-based plans and implementation projects that aligns with joint program priorities.
5 - Implement BMPs that restore water quality and aquatic life and habitat. <i>(MP Matrices Appendix D Table 2, Task 5)</i>	Proactively fund projects to maintain beneficial uses.	Pollutant load reduction; trends that indicate water quality and aquatic life and habitat improvement.	BMPs implemented correctly and as designed.	Ongoing effort.

**OBJECTIVE 3 - Implement the Colorado NPS program to achieve measurable water quality improvement.**

<b>Tasks</b>	<b>Tactics</b>	<b>Indicators of Success</b>	<b>Outputs</b>	<b>Percent Complete (an estimation)</b>
1 - Establish monitoring tools to evaluate environmental measures and indicators of success. <i>(MP Matrices Appendix D Table 3, Task 1)</i>	Continue to develop and implement Measurable Result Project to assist project sponsors in SAPP development, provide for pre- and post- project monitoring outside the timeline of the contract with the sponsor as necessary.	Field verified BMP placement for the appropriate pollution source; sampling effort identified and implemented; long-term sustainable monitoring strategy.	Toolbox of standardized monitoring methods and assessment techniques, SAPPs developed using NPS program template, completed end of project monitoring reports; accurate reporting of load reductions. Long-term monitoring reports; load reductions reporting.	Toolbox complete 100%. Finalizing implementation and application of monitoring tools; on-going field ground truthing and evaluation and updating - 80%.

**OBJECTIVE 3 - Implement the Colorado NPS program to achieve measurable water quality improvement.**

<b>Tasks</b>	<b>Tactics</b>	<b>Indicators of Success</b>	<b>Outputs</b>	<b>Percent Complete (an estimation)</b>
2 - Develop or support a watershed assessment tool that identifies or helps identify water quality trends (DSN or e-RAMS). <i>(MP Matrices Appendix D Table 3, Task 2)</i>	Develop and gather shapefiles, develop and/or support a data repository (DSN can be an option), identify, support and /or develop a GIS, web-based site; generate assessment and analyses; prepare watershed-based reports.	Data are identified and readily available for use; the assessment tool is functional; the NPS program posts electronic analyses at the npscolorado site.	A user-friendly Website-based, GIS-based watershed assessment tool that is accessible and open to all users.	In partnership with CSU CLEAN Center, continuing to develop a Watershed Restoration Assessment and Planning (WRAP) tool. This tool is open-source internet-based and resides with Colorado State University's (CSU) Environmental Risk Assessment and Management System (eRAMS) platform. It provides the capacity to extract, organize and analyze water quantity and quality data and information about readily available geospatial characteristics, for varying watershed scales. 65%
3 – Update BMPs library and create field BMPs template. <i>(MP Matrices Appendix D Table 3, Task 3)</i>	Develop a BMP implementation template; complete a review of categorical BMPs and update following the programmatic priorities and using project data; make library available on the npscolorado site.	Field BMP template is easily available and is used by project sponsors; BMP library is systematically updated.	Field BMP template; updated BMP library.	Most of the historical BMP information has been streamlined and re-organized in the new website. Still working on updating BMP references. 20%
4 – Ensure that project data are uploaded to DSN / STORET <i>(MP Matrices Appendix D Table 3, Task 4)</i>	Develop procedures to upload project data; support and advise data tracking and uploading to DSN / STORET.	Data are uploaded and used in the watershed assessment tool; interested public accesses and uses the data.	Data are uploaded in DSN / STORET	Ongoing effort; data are uploaded to STORET at the end of each project and program receives a confirmation / certification– 75%. Not funding further development of the Data Sharing Network.

## Objective 4 - Implement the Colorado NPS program to meet EPA Guidelines

Tasks	Tactics	Indicators of Success	Outputs	Percent Complete (an approximation)
<p>1 - Ensure that funds are awarded and spent appropriately within EPA and State guidelines. <i>(MP Matrices Appendix D Table 4, Task 1)</i></p>	<p>Develop and maintain spreadsheets to keep track of project and grant expenditures and match accrual; develop and maintain an internal process to submit complete invoices to the Fiscal Unit.</p>	<p>Colorado implements the NPS program on a 5-year cycle; FFY10 closed with a zero balance and exceed grant matching fund requirements (overmatched); project implementation plans are being developed and approved within the 1st year following the grant award; reimbursement requests from projects are approved and submitted for processing typically within 10 days of receipt from the project sponsor.</p>	<p>No funds are left un-spent; grants are over-matched.</p>	<p>Ongoing effort; grants are closed on the end dates; every year one grant closes and one grant opens – 100%. PIP approval and negotiation within timeframe – 100%. Reimbursements submittal within time frame – 90%.</p>
<p>2 - Ensure the Grant Reporting and Tracking System (GRTS) is up-to-date for all NPS projects. <i>(MP Matrices Appendix D Table 4, Task 2)</i></p>	<p>a - Pre-award information is entered within 90 days of grant award; b - fully contracted project information is entered within 90 days of contract execution; c - semi-annual reports are loaded into GRTS; d - load reduction information is entered by due date (February).</p>	<p>EPA Dashboard has no identified errors in end-of-year evaluation.</p>	<p>GRTS is complete and up-to-date by all EPA required due dates.</p>	<p>Ongoing effort; GRTS had zero errors in December; not all projects are being entered within the 90 days but no later than the end of December; Load reduction information in February; pre-award information in GRTS – 90%.</p>
<p>3 – Utilize GRTS enhanced functions to develop analytical and reporting documents. <i>(MP Matrices Appendix D Table 4, Task 3)</i></p>	<p>Attend annual GRTS training; ensure quality and completeness of data entered in GRTS; request assistance from Headquarters to develop Colorado-specific reports as needed; generate analyses and reports.</p>	<p>Reports are utilized in Annual Reports to EPA; also in updates to the IR and in updates to WQCC, unit workplans and NPS Management Plan; other status reports as appropriate.</p>	<p>Status and Analytical Reports as appropriate.</p>	<p>Ongoing effort; no GRTS Training Meeting this year; not fully doing this yet – 50%.</p>

## Objective 4 - Implement the Colorado NPS program to meet EPA Guidelines

Tasks	Tactics	Indicators of Success	Outputs	Percent Complete (an approximation)
<p>4 - Provide educational and information materials to interested entities and project partners on a variety of water quality issues. <i>(MP Matrices Appendix D Table 4, Task 4)</i></p>	<p>a - Maintain website with educational materials; b – Maintain information dissemination efforts; maintain distribution list; conduct annual workshop.</p>	<p>Citizens and/or project partners have easy access to educational materials of water quality issues.</p>	<p>a - Updated website; b - Updated educational materials and information; annual workshop trainings.</p>	<p>On-going updates; updating and maintaining program website; updated and enhanced email distribution lists; continue coordinating Nutrient Regulation outreach to the NPS community; educational and information documents continue to be updated; NPS staff conducted the Annual NPS Workshop during the Sustaining Colorado Watersheds Conference – 90%</p>
<p>5 - Communicate Nonpoint Source program successes and lessons learned. <i>(MP Matrices Appendix D Table 4, Task 5)</i></p>	<p>Document “success stories” or “lessons learned”; project sponsors provide information and graphics in their final reports for these stories; project sponsors provide project summaries: “Fact Sheets”; project and TMDL effectiveness documented and communicated to the public.</p>	<p>Success stories increase public awareness of these programs; final PIPs and associated BMPs reflect past successes and lessons learned. Potential delisting of segments.</p>	<p>Success stories per PPA measure WQ10 published at the epa.gov site. Project Fact Sheets.</p>	<p>Ongoing effort; meeting PPA commitments; 1 draft Success Story submitted this year; developing new strategy for creating Success Stories– 80%.</p>
<p>6 - Address NPS CWA mandate regarding the Integrated Report. <i>(MP Matrices Appendix D Table 4, Task 6)</i></p>	<p>Include NPS data needs and considerations in basin-wide synoptic sampling and WQCD monitoring plans; include NPS data and assessments in the Integrated Report.</p>	<p>NPS data are available for the Integrated Report, Statewide Water Quality Assessments and TMDL development.</p>	<p>CWA mandate addressing NPS Assessments is met.</p>	<p>Every year during Environmental Data Unit data calls and every other year during IR preparation, the NPS program meets the required reporting. NPS Data were incorporated in the draft 2016 IR – 100%.</p>

## Objective 4 - Implement the Colorado NPS program to meet EPA Guidelines

Tasks	Tactics	Indicators of Success	Outputs	Percent Complete (an approximation)
<p>7 – Implement program efficiently and consistently. <i>(MP Matrices Appendix D Table 4, Task 7)</i></p>	<p>Develop and formalize the NPS program Procedures Manual; revise and update program documents and process.</p>	<p>Training tool for new employees; consistent and efficient implementation of the program.</p>	<p>Documents are revised and updated according to program priorities.</p>	<p>Ongoing phased effort to develop programmatic documents; continue working on procedures manual; several internal controls and other measures to ensure consistency are in place – 80%.</p>
<p>8 - Broaden the impact of the Colorado NPS program goals and objectives. <i>(MP Matrices Appendix D Table 4, Task 8)</i></p>	<p>Leverage partner’s resources to address quality concerns at the local level; increase communication with Alliance partners to capture broad participation via the Annual Report.</p>	<p>Greater accrual of match applied to NPS; water quality restoration/protection projects funded outside of NPS funds.</p>	<p>Track Federal contribution to NPS projects; increased matching funds from partners above the 40% required; update information in Annual Report regarding projects funded by partners and not necessarily with 319 funds.</p>	<p>Ongoing effort, several additional funding sources are now leveraging the NPS efforts: Colorado Water Resources and Power Development Authority; Private; new program implementation guidelines narrow program priorities – 80%.</p>
<p>9 - Implement appropriate strategy regarding stormwater-related projects. <i>(MP Matrices Appendix D Table 4, Task 9)</i></p>	<p>The NPS program will continue to consider eligible: a) stormwater-related projects that do not require a permit and b) watershed-based plans that might include stormwater permitted areas (for example urban areas under an MS4 permit).</p>	<p>Incorporation of a LID/GI strategy as described in the SWQMP.</p>	<p>Additional NPS funding and project solicitation guidance; specific activities in urbanized/developed areas that qualify for NPS funding are described in a document that is posted electronically at npscolorado site.</p>	<p>No activities during this reporting period.</p>
<p>10 - Continued Participation on CDPHE Multi-media Pollutants Task Forces. <i>(MP Matrices Appendix D Table 4, Task 10)</i></p>	<p>Attend Department meetings and participate in discussions regarding development of strategies to address multi- media pollutants.</p>	<p>Consistent participation and contribution in the meetings and discussions.</p>	<p>Meeting agenda, minutes and reports capturing development of multi-media strategy.</p>	<p>No longer participating in this task forces.</p>

**Objective 4 - Implement the Colorado NPS program to meet EPA Guidelines**

<b>Tasks</b>	<b>Tactics</b>	<b>Indicators of Success</b>	<b>Outputs</b>	<b>Percent Complete (an approximation)</b>
11 – Meet EPA program reporting. <i>(MP Matrices Appendix D Table 4, Task 11)</i>	Develop and update the Annual Report template to reflect updated tasks; write and submit the annual report according to EPA 319 Program Guidelines.	Annual Reports submitted to EPA on due date and available electronically on the npscolorado site.	Updated Annual Reports reflecting all tasks and information.	100% complete.



## Appendix B

### Complete list of Watershed-based Plans

Alamosa River Master Plan  
Animas River above Silverton  
Barr-Milton Watershed Plan  
Big Dry Creek (South Platte River)  
Big Thompson  
Black Gore Creek, Upper Colorado River Basin  
Boulder Creek Watershed Plan  
Chatfield Watershed Plan  
Cherry Creek (South Platte River Basin)  
Clear Creek (above mouth of canyon)  
Coal Creek (Upper Gunnison River)  
Dolores River Watershed Plan (below McPhee Reservoir)  
Eagle River  
East Fork of the Dolores River  
Evans Gulch (Upper Arkansas River)  
Fountain Creek  
Kerber Creek  
Lake Fork of the Arkansas River  
Lake Fork of the Gunnison River  
Lefthand Creek (includes James and Little James Creeks)  
Lower Animas River  
Lower Arkansas River  
Lower Bear Creek Watershed Planning and Assessment  
Lower Gunnison  
Lower South Platte River  
Mancos River  
Middle Colorado  
North Fork of the Gunnison River  
North Fork of the Republican River  
North Platte River  
Purgatoire River  
Roaring Fork (Upper Colorado)  
San Miguel River  
Slate River Watershed Plan  
Snake River (Upper Colorado River Basin)  
St. Vrain River  
Stollsteimer, Upper San Juan Rivers  
Straight Creek (Upper Colorado River Basin)  
Uncompahgre Basin  
Upper Animas River  
Upper Cache la Poudre  
Upper Pine, Upper San Juan Rivers  
Upper Rio Grande to Alamosa County Line  
Upper South Platte River  
Yampa River  
Willow Creek Master Plan

**Appendix C**  
**Approved TMDLs per basin – as of September 2016**

**Colorado River Basin**

<b>Water Body ID</b>	<b>Waterbody</b>	<b>Parameters/ Uses</b>	<b>Sources/Causes</b>
COUCBL06	Snake River, source to Dillon Reservoir – above Peru Creek	Cd, Cu, Pb, Zn, pH / Aquatic Life	Legacy mining, natural
COUCBL06	Snake River, source to Dillon Reservoir – below Peru Creek	Cd, Cu, Pb, Zn, pH, / Aquatic Life	Legacy mining, natural
COUCBL06	Snake River, source to Dillon Reservoir – above N. Fork	Cd, Cu, Pb, Zn, pH, / Aquatic Life	Legacy mining, natural
COUCBL06	Snake River, source to Dillon Reservoir – below N. Fork	Cd, Cu, Pb, Zn, pH, / Aquatic Life	Legacy mining, natural
COUCBL07	Peru Creek	Cd, Cu, Pb, Mn, Zn, pH, / Aquatic Life	Legacy mining, natural
COUCBL12	Illinois Gulch	Zn / Aquatic Life	Legacy mining, natural
COUCBL12	Iron Springs Gulch	Cd / Aquatic Life	Legacy mining, natural
COUCBL12	Illinois Gulch below Iron Springs Gulch	Cd / Aquatic Life	Legacy mining, natural
COUCBL18	Straight Creek	Sediment / Aquatic Life	
COUCEA05a	Eagle River, Belden to Gore Creek	Cu, Zn / Aquatic Life	Legacy mining, natural, point source discharge
COUCEA05b	Eagle River, Belden to Gore Creek	Cu, Zn / Aquatic Life	Legacy mining, natural, point source discharge
COUCEA05c	Eagle River, Belden to Gore Creek	Cu, Zn / Aquatic Life	Legacy mining, natural, point source discharge
COUCEA07b	Cross Creek, source to Eagle River	Cu, Zn / Aquatic Life	Legacy mining, natural, point source discharge
COUCUC06c	Un-named tributary to Willow Creek	NH <sub>3</sub> /AL	

**South Platte and Republican River Basins**

<b>Water Body ID</b>	<b>Waterbody</b>	<b>Parameters/ Uses</b>	<b>Sources/Causes</b>
COSPBO02b	Boulder Creek	<i>E. coli</i> / Recreation	infrastructure, allocated by catchment
COSPBO04a	Gamble Gulch	Cd, Cu, Zn, pH / Aquatic Life, Recreation	Legacy mining
COSPBO09	Boulder Creek, South Boulder Creek to Coal Creek	Ammonia	
COSPBO10	Boulder Creek, Coal Creek to St. Vrain Creek	Ammonia	
COSPCP07	North Fork Cache la Poudre River Hall Reservoir to Cache la Poudre River	Sediment	release from Halligan Res

Water Body ID	Waterbody	Parameters/ Uses	Sources/Causes
COSPCL02	Clear Creek, Silver Plume to Argo Tunnel	Cu, Pb, Zn / Aquatic Life	Legacy mining, natural, point source discharges
COSPCL03a	South Clear Creek	Zn / Aquatic Life	Legacy mining, natural
COSPCL03b	Leavenworth Creek	Pb, Zn / Aquatic Life	Legacy mining, natural
COSPCL06	Mad Creek	Zinc	Legacy mining, natural
COSPCL09a	Fall River	Cu / Aquatic Life	Legacy mining, natural, point source discharges
COSPCL09b	Trail Creek	Cd, Cu, Pb, Zn / Aquatic Life	Legacy mining, natural
COSPCL11	Clear Creek, Argo Tunnel to Farmers Highline Canal	Cd, Pb, Zn / Aquatic Life	Legacy mining, natural, point source discharges
COSPCL13b	North Fork Clear Creek	Cd, Fe, Mn, Zn / Aquatic Life	Legacy mining, natural, point source discharges
COSPMS04	Barr Lake and Milton Reservoir	Dissolved Oxygen and pH	
COSPSV03	St. Vrain Creek, Hygiene Road to South Platte River	Ammonia	
COSPSV04	Little James Creek	Cd, Fe, Mn, Zn, pH / Aquatic Life	Legacy mining, natural
COSPSV04a	Lefthand Creek above James Creek	Cd, Cu, Zn, pH / Aquatic Life	Legacy mining, natural
COSPSV04b	James Creek above Little James Creek	Cu / Aquatic Life	Legacy mining, natural
COSPSV04b	Little James Creek above James Creek	Cd, Cu, Pb, Zn / Aquatic Life	Legacy mining, natural
COSPSV04b	James Creek above Lefthand Creek	Cd, Cu, Pb, Zn / Aquatic Life	Legacy mining, natural
COSPSV04c	Lefthand Creek below James Creek	Cu / Aquatic Life	(Legacy mining, natural)
COSPUS01a	South Platte River, source to North Fork South Platte River	Sediment / Aquatic Life	roads, natural
COSPUS02b	Mosquito Creek	Cd, Pb, Zn / Aquatic Life	Legacy mining, point source discharges
COSPUS02c	South Mosquito Creek	Cd, Fe(trec),Mn. Zn / Aquatic Life	Legacy mining, point source discharges
COSPUS04	Hall Valley to Geneva Creek	Cu / Aquatic Life	Legacy mining, natural
COSPUS05a	Geneva Creek, source to Scott Gomer Ck	Cd, Cu, Mn, Zn / Aquatic Life	Legacy mining, natural
COSPUS05b	Geneva Creek, Scott Gomer Creek to N. Fork S. Platte River	Cd, Cu, Mn, Zn / Aquatic Life	Legacy mining, natural
COSPUS14	South Platte River, Bowles Avenue to Burlington Ditch	NO <sub>3</sub> / Water Supply	
COSPUS14	S. Platte River, Bowles Ave. to Burlington Ditch	<i>E. coli</i> / Recreation	

Water Body ID	Waterbody	Parameters/ Uses	Sources/Causes
COSPUS15	South Platte, Burlington Ditch to Big Dry Creek	DO, Cd / Aquatic Life, <i>E.coli</i> / Recreation	

### Arkansas and Rio Grande River Basins

Water Body ID	Waterbody	Parameters/ Uses	Sources/Causes
COARMA18a	Boggs Creek	Se / Aquatic Life U / Water Supply	
COARUA01b	E. Fork Arkansas River above Birdseye Gulch	Pb, Zn / Aquatic Life	Legacy mining
COARUA02a	Arkansas River, Birdseye Gulch to California Gulch	Zn / Aquatic Life	Legacy mining
COARUA02b	Arkansas River above Lake Fork	Cd, Zn / Aquatic Life	Legacy mining, some minor point source
COARUA02c	Arkansas River, Lake Fork to Lake Creek	Cd, Zn / Aquatic Life	Legacy mining, some minor point source
COARUA03	Arkansas River, Lake Creek to Pueblo Reservoir	Cd, Pb, Zn / Aquatic Life	Legacy mining, some minor point source
COARUA05	Halfmoon Creek	Cd, Pb / Aquatic Life	Legacy mining, some minor point source
COARUA07	Evans Gulch	Zn / Aquatic Life	Legacy mining, some minor point source
COARUA08b	Iowa Gulch	Cd, Pb, Zn	Legacy mining, some minor point source
COARUA10	Lake Creek	Cu / Aquatic Life	Legacy mining, some minor point source
COARUA11	Sayres Gulch, & South Fork Lake Creek, Sayres Gulch to Lake Creek	Al, Cd, Cu, Zn, pH / Aquatic Life	Legacy mining, some minor point source
COARUA12a	Chalk Creek	Pb, Zn / Aquatic Life	Legacy mining
CORGAL03a	Alamosa River, Alum Creek to Wightman Fork	Al, Cu, Zn, pH / Aquatic Life	Legacy mining
CORGAL03b	Alamosa River, Wightman Fork to Fern Creek	Al, Cu, Zn / Aquatic Life	Legacy mining
CORGAL03c	Alamosa River, Fern Creek to Ranger Creek	pH / Aquatic Life	Legacy mining
CORGAL03d	Alamosa River, Ranger Creek to Terrace Reservoir	Cu, Zn, pH / Aquatic Life	Legacy mining
CORGAL05	Wightman Fork above Summitville	pH / Aquatic Life	Legacy mining
CORGAL08	Terrace Reservoir	Cu, Total Rec Fe	Various
CORGAL09	Alamosa River, Terrace Reservoir to Hwy 15	Cu / Aquatic Life	Legacy mining

<b>Water Body ID</b>	<b>Waterbody</b>	<b>Parameters/ Uses</b>	<b>Sources/Causes</b>
CORGCB09a	Kerber Creek above Brewery Creek	Ag / Water Supply	Legacy mining
CORGCB09a	Kerber Creek above Brewery Creek - mainstem	Cd, Pb / Water Supply	Legacy mining
CORGCB09a	Kerber Creek above Brewery Creek – Squirrel Creek	Cd, Pb / Water Supply	Legacy mining
CORGCB09a	Kerber Creek above Brewery Creek – Rawley Gulch	Cd, Pb / Water Supply	Legacy mining
CORGCB09a	Kerber Creek above Brewery Creek – Copper Gulch	Cd / Water Supply	Legacy mining
CORGCB09b	Kerber Creek, Brewery Creek to San Luis Creek	Cd, Cu, Zn / Aquatic Life	Legacy mining
CORGRG04	Rio Grande River below Willow Creek	Cd, Zn / Aquatic Life	Legacy mining
CORGRG30	Sanchez Reservoir	Hg / Aquatic Life	

### **San Juan / Dolores Rivers Basins and Gunnison River Basin**

<b>Water Body ID</b>	<b>Waterbody</b>	<b>Parameters/ Uses</b>	<b>Sources/Causes</b>
COGULG01	Gunnison River, N. Fork to Uncompahgre	Se / Aquatic Life	Agriculture, natural, minor point source
COGULG02	Gunnison River, Uncompahgre to Colorado	Se / Aquatic Life	Agriculture, natural, minor point source
COGULG04a	Gunnison River tributaries – Currant Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Callow Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Alkali Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Dry Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Peach Valley Arroyo	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Alfalfa Run	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Sulphur Gulch	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Lawhead Gulch	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Wells Gulch	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Negro Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural

<b>Water Body ID</b>	<b>Waterbody</b>	<b>Parameters/ Uses</b>	<b>Sources/Causes</b>
COGULG04a	Gunnison River tributaries – Deer Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – North Fork Kannah Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – upper Kannah Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Whitewater Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Cummings Gulch	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04a	Gunnison River tributaries – Sunflower Drain	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04b	Lower Kannah Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG04c	Red Rock Creek	Se / Aquatic Life / Water Supply / Agriculture	Agriculture, natural
COGULG09	Fruitgrowers Reservoir	Dissolver Oxygen	Agriculture, natural
COGUNF03	Lower N. Fork Gunnison River	Se / Aquatic Life	Agriculture, natural, minor point source
COGUNF05	Leroux Creek	Se / Aquatic Life	Agriculture, natural
COGUNF05	Jay Creek	Se / Aquatic Life	Agriculture, natural
COGUNF06a	Short Draw	Se / Aquatic Life	Agriculture, natural
COGUNF06b	Big Gulch	Se / Aquatic Life	Agriculture, natural
COGUNF06b	Cottonwood Creek	Se / Aquatic Life	Agriculture, natural
COGUNF06b	Bell Creek	Se / Aquatic Life	Agriculture, natural
COGUSM03a	San Miguel River below Idarado	Zn, Cd, Sediment / Aquatic Life	Legacy mining
COGUSM03b	San Miguel River, Marshall Creek to South Fork San Miguel River	Cd, Zn / Aquatic Life	Legacy mining
COGUSM06a	Ingram Creek	Cd, Zn / Aquatic Life	Legacy mining
COGUSM06b	Marshall Creek	Cd, Zn / Aquatic Life	Legacy mining
COGUUG30	Henson Creek	Cd, Zn / Aquatic Life	Legacy mining
COGUUG31	Palmetto Gulch	Cd, Zn / Aquatic Life	Legacy mining
COGUUN02	Uncompahgre River, source to Red Mountain Creek	Cd, Cu, Zn / Aquatic Life	Legacy mining
COGUUN03a	Uncompahgre River Red Mountain Creek to Montrose	Cd, Cu, Total Rec Fe / Aquatic Life	Legacy mining
COGUUN04b	Uncompahgre River, HWY 550 to Delta	Se / Aquatic Life	Agriculture, natural, minor point source
COGUUN04c	Uncompahgre River, Delta to Colorado River	Se / Aquatic Life	Agriculture, natural, minor point source
COGUUN6a	Red Mountain Creek, source to E. Fork Red Mountain Creek	Zn (sculpin) / Aquatic Life	Legacy mining

<b>Water Body ID</b>	<b>Waterbody</b>	<b>Parameters/ Uses</b>	<b>Sources/Causes</b>
COGUUN12	Uncompahgre River tributaries – Cedar Creek	Se / Aquatic Life / Agriculture	Agriculture, natural
COGUUN12	Uncompahgre River tributaries – Dry Cedar Creek	Se / Aquatic Life / Agriculture	Agriculture, natural
COGUUN12	Uncompahgre River tributaries – Loutzenhizer Arroyo	Se / Aquatic Life / Agriculture	Agriculture, natural
COGUUN12	Uncompahgre River tributaries – Montrose Arroyo	Se / Aquatic Life / Agriculture	Agriculture, natural
COGUUN12	Uncompahgre River tributaries – Dry Creek	Se / Aquatic Life / Agriculture	Agriculture, natural
COGUUN12	Uncompahgre River tributaries	Se / Aquatic Life / Agriculture	Agriculture, natural
COGUUN02	Uncompahgre River, source to Red Mountain Creek	Cd, Cu, Zn / Aquatic Life	Legacy mining
COGUUN03a	Uncompahgre River, Red Mountain Creek to Montrose	Cd/AL	Legacy mining
COGUUN03a	Uncompahgre River, Red Mountain Creek to Montrose	Cu, Fe(trec) / Aquatic Life	Legacy mining
COGUUN06a	Red Mountain Creek, source to East Fork Red Mountain Creek	Zn(sc)/AL	Legacy mining
COSJAF02	Animas River & tributaries, Denver Lake to Maggie Gulch	Al, Cd, Cu, Fe(trec), Pb / Aquatic Life	Legacy mining
COSJAF03b	Animas River, Cement Creek to Mineral Creek	Al, Cd, Cu, Fe(trec), Pb / Aquatic Life	Legacy mining
COSJAF04a	Animas River, Mineral Creek to Elk Creek	pH, Cu, Fe(trec), Zn / Aquatic Life	Legacy mining
COSJAF04b	Animas River, Elk Creek to Junction Creek	Zn /AL	Legacy mining
COSJAF07	Cement Creek, source to Animas River	Al, Cd, Cu, Fe(trec), Pb / Aquatic Life	Legacy mining
COSJAF08	Mineral Creek, source to South Mineral Creek	Al, Cd, Cu, Fe(trec), Pb / Aquatic Life	Legacy mining
COSJAF09b	Mineral Creek, South Mineral Creek to Animas River	pH, Cu, Fe, Zn / Aquatic Life	Legacy mining
COSJDO04	McPhee Reservoir	Hg (Phase 1) / Aquatic Life	
COSJDO09	Silver Creek from Rico's diversion to Dolores River	Cd, Zn / Aquatic Life	Legacy mining
COSJLP04	Box Canyon Creek	Sediment/AL	roads, logging
COSJLP04a	East Mancos River	Cu, Mn / Aquatic Life / Water Supply	Legacy mining, natural
COSJLP08	Narraguinnepp Reservoir	Hg (Phase 1)/AL	

## Staffing and Support

Funding for staffing and support is administered through the annual Performance Partnership Agreement and Grant. The 2016 staffing and support grant is \$820,000, which funds approximately 4.5 FTE. These FTEs include 4.2 FTE that directly deal with implementation of the NPS program. The remaining FTEs represent additional assistance from other units, such as monitoring and fiscal and contracting support.

### **NPS Program Staff**

Tammy Allen  
Restoration & Protection Unit Manager

Lucia Machado  
NPS Program Coordinator

Bonie Pate  
NPS Project Coordinator

Christa Trendle  
NPS Project Coordinator

Kenan Diker  
Agriculture Specialist  
NPS Project Coordinator