



COLORADO
Department of Public
Health & Environment



San Juan Watershed Program: Funded Projects 2017-2021

From 2017 to 2021, the Water Infrastructure Improvements for the Nation (WIIN) Act funded a long-term water quality program for the watershed. EPA, states, and tribes within the watershed—Arizona, Colorado, New Mexico, Utah, Navajo Nation, Ute Mountain Ute Tribe, and Southern Ute Indian Tribe—have worked together to assess, protect, and restore the condition of the watershed.






































































The table below highlights the projects funded under this program as of Spring 2022. The projects are organized based on their purpose (monitor, assess, inform, and act) and the uses of the waters they are intended to support.



























































































Agriculture
 Aquatic Life
 Cultural
 Drinking Water
 Recreation


























Monitor
 Assess
 Inform
 Act

Project Descriptions and Leading Entity ¹	Use(s)				
Assess and evaluate existing water quality standards for water used for livestock and agricultural irrigation to evaluate the need for new or revised water quality standards (NN).					
Evaluate the effects of metals in the Animas and San Juan Rivers water on the attainment of water quality standards for livestock watering and crop irrigation (NMED).					
Sample fish in the Animas and San Juan Rivers to determine the presence of select metals, organics, and emerging contaminants (NN).					
Investigate the sources, and their contribution, of contaminants of concern in tributaries to the San Juan River (NN).					
Evaluate the natural annual variability of benthic macroinvertebrates in the Upper Animas River and develop correlation relationships between benthic macroinvertebrate metrics and metals exposure (CDPHE).					

¹ Abbreviations: Colorado Department of Public Health & Environment (CDPHE); New Mexico Environment Department (NMED); Navajo Nation (NN); Southern Ute Indian Tribe (SUIT); Utah Department of Environmental Quality (UDEQ); and Ute Mountain Ute Tribe (UMUT)

Project Descriptions and Leading Entity ¹	Use(s)				
					
Assess water quality in the middle Animas River Canyon to understand appropriate stream segments for future water quality segmentation and standard setting (CDPHE).					
Conduct benthic macroinvertebrate monitoring to determine if a measurable improvement in aquatic insect abundance and diversity has occurred following the completion of the Bullion King Mine remediation project (CDPHE).					
Identify and delineate the extent of cultural uses of Animas River waters to understand how contaminants may affect tribal uses (SUIT).					
Evaluate connectivity between surface water and groundwater along the Animas River (NMED and CDPHE).					
Identify metals or other constituents of concern in the Lake Farmington Reservoir sediment and evaluate concentrations of deposited metals (NMED).					
Conduct a Lake Powell sediment coring study to better understand the concentration, loading, distribution, bioavailability, and source of metals in the lake and evaluate impacts on water quality, human health, and aquatic life (UDEQ).					
Analyze Lake Powell porewater samples to determine bioavailability of metals in bottom water environments of Lake Powell and the relationship between sediment and porewater chemistry (UDEQ).					
Maintain sondes throughout the watershed to provide real-time data that can inform management decisions, including closure of drinking water intakes (EPA on behalf of states and tribes, CDPHE).					
Monitor water quality in beaver ecosystems to determine the extent to which mining-related contaminants are reduced or removed from adjacent and downstream waters (CDPHE).					
Deliver suspended sediment concentration (SSC) and total metal concentrations and loads in near real time using acoustic Doppler velocity meters (ADVMS) to correlate sound waves to SSC. Develop correlation between SSC and total metals to compute total loads to Lake Powell (UDEQ).					
Use mobile sondes along the Animas River to relay data via cell phone or satellite signal to tribal servers for public access via a website (SUIT).					
Collect water, sediment, and biological samples to better understand the condition of the watershed (EPA on behalf of states and tribes).					
Maintain stream gages to monitor four San Juan tributaries to better understand water quality, real-time discharge, and how flows are informed by storm events and snowmelt (NN).					
Conduct detailed geochemical analyses to understand sources of nitrate and other nitrogen species in the watershed and understand how to better manage these sources (NMED).					
Conduct monitoring to determine sources of elevated aluminum in the Florida and Animas Rivers (SUIT).					
Collect fish tissue and benthic macroinvertebrate samples to understand if bioaccumulation of metals and certain organic compounds is occurring in the Animas River, and how it is affecting the river ecosystem (SUIT).					
Assess nutrient contributions from the Florida River to the Animas River (SUIT).					
Assess metal sources, mobilization, and potential for downstream toxicity in the East Fork Mancos River, which is impacted by drainage from historical mines and natural background metal concentrations (UMUT).					

Project Descriptions and Leading Entity ¹	Use(s)				
					
Conduct an assessment of per- and polyfluorinated alkylated substances (PFAS), pharmaceuticals, and personal care products to identify whether these contaminants are occurring within the Animas and Florida watersheds within the boundaries of the Southern Ute Reservation, and provide a baseline for future studies (SUIT).					
Conduct watershed-wide water quality, benthic macroinvertebrate, and physical habitat monitoring to better understand the condition of the watershed.					
Evaluate a watershed-wide modeling effort in the San Juan River drainage to provide a framework to identify areas of importance for resource prioritization and implementation of best management options to restore water quality (UDEQ).					
Develop a watershed plan for the Lower San Juan Watershed (UDEQ).					
Develop a comprehensive five-year Reservation-wide water quality assessment to enable a more efficient, targeted approach to implementing best management practices on the Reservation (SUIT).					
Develop a model to estimate metals concentrations in the Animas and San Juan Rivers. Explore the potential for the model to function as a predictive tool to forecast metals concentrations in the rivers based on precipitation data in the watershed (NMED).					
Complete a source assessment to address risks to human health and the environment posed by elevated levels of gross alpha and uranium in the Cottonwood Wash watershed (UMUT).					
Analyze water quality data from the watershed to better understand overall health and communicate findings to stakeholders (UDEQ).					
Develop a San Juan Watershed Assessment and Information Synthesis based on information available to date (EPA).					
Develop the EPA Program website, factsheets, resource library, and other comprehensive outreach materials to support the Program, and EPA (EPA).					
Develop UDEQ Program website (UDEQ).					
Develop a San Juan Watershed Assessment and Information Synthesis based on information available to date to communicate watershed condition relative to designated use (EPA).					
Establish and support a Silverton, CO-based communications and outreach liaison position (CDPHE).					
Support the Water Resources Research Institute in New Mexico in the development and execution of the third, fourth, and fifth annual conferences on the San Juan Watershed (NMED).					
Develop a public relations strategy and communicate the benefits of buying locally grown produce to stakeholders in the watershed through (NMED)					
Implement agricultural BMPs to reduce nutrient and sediment loading to the Animas-Los Pinos sub-basins and the greater watershed (SUIT).					
Implement Phase 3 of the Lower Animas Watershed Based Plan Implementation Projects to reduce pollutant loading for turbidity, nutrients, total phosphorus, temperature, and total dissolved lead, and help the river achieve its cool water aquatic life designated use (NMED).					
Develop reliable wells to reduce pressure on heavily used riparian areas, improve range conditions improve habitats, and restore the watershed (UDEQ).					
Explore the convening of a possible watershed group(s) to lead the San Juan Watershed Program at the end of WIIN Act funding (EPA, UDEQ).					

Project Descriptions and Leading Entity ¹	Use(s)				
					
Close an abandoned well that is contributing high concentrations of salts and elevated levels of arsenic to the San Juan River (NN).					
Reduce hazardous fuels and build forest resiliency in the Florida River of the Upper Colorado basin to increase forest health treatments in rural communities (CDPHE).					
Remediate the Thunder Mine site to reduce metal contributions to the East Fork Mancos River (UMUT).					
Plan and execute restoration activities along priority degraded reaches of Spring Creek to reduce nonpoint source pollution (SUIT).					
Identify, evaluate, and address mines within the Utah portion of the watershed that are impacting water resources through direct discharge or surface water contact with waste material (UDEQ).	