Chapter 8 Identification of Potential Demonstration Projects

Working with stakeholders and through the needs assessment process, potential demonstration projects, practices, or improvements were identified. The potential projects identified in this section are a starting point of addressing watershed goals and objectives to meet consumptive and non-consumptive needs. They will also be used to educate stakeholders from all areas within the Basin. Scoping and planning for implementation of some of these potential projects has begun as part of Phase I and will continue in subsequent phases as the list is refined.

During the process of identifying potential projects, the WMPC also developed project selection criteria as summarized below.

- The WMPC will acknowledge broad stakeholder support in its consideration of projects.
- Projects should reflect the goals of the WMPC and the Upper Gunnison River Water Conservancy District
- Projects must address an assessed need from the watershed management planning process
- Projects must have landowner approval and cooperation, or agency approval and cooperation on public lands
- Projects should benefit multiple users or Basin wide water supply as a whole
- Projects should not diminish the existing ecological function of the area where it is proposed, and will preferably enhance it
- Recognizing that project designs are site specific, the demonstration projects should be relevant for other Basins in terms of design approach and scientific rigor
- The projects should be supported by good scientific and technical analysis and the best available knowledge of Basin hydrology.
- The projects should have a strong likelihood of implementation

A. Summary of Potential Ohio Creek Projects Identified Through the Needs Assessment Process



• Berry Gulch Reservoir – This project involves a potential off channel reservoir site. Surveying is under way and additional evaluations will be necessary by engineering contractor.

Berry Gulch Potential Reservoir Site



Gooseberry Diversion Structure

• Perrier Diversion Structure Rehabilitation – The diversion does not adequately divert water at lower flows which often happens in this area. A newly designed structure by a channel restoration specialist will be needed.

• Gooseberry Diversion Structure Rehabilitation – The diversion does not adequately divert water at lower flows. A newly designed structure by a channel restoration specialist will also be needed in this area.

Carbon Creek Reservoir Site Evaluation

 Potential off channel reservoir site.
 Surveying of the site is underway and additional evaluation will be necessary by dam engineering contractors.



Carbon Creek Reservoir Site

- Harris Bohm Potato Diversion Rehabilitation – This diversion is unstable and requires regular maintenance. The water users plan to replace the structure in 2019 with a newly designed structure with funds from the District's Grant Program.
- Channel Restoration Upstream of Confluence with Mill Creek –The landowner is interested in addressing segments of Ohio Creek with bank instability on property located upstream of the confluence with Mill Creek. This project will require a contractor with channel restoration experience.



Harris Bohm Potato Diversion

B. Summary of Potential East River Projects Identified Through the Needs Assessment Process

- *E. Coli* Monitoring on the Upper East River Watershed This project would include additional water quality testing and monitoring in order to identify potential sources of loading and options to mitigate these impacts.
- Coal Creek/Lake Irwin Man-Made Outlet Project will involve developing a new outlet structure at Lake Irwin to optimize releases, meet instream flows, maximize water quality benefits, and help the Town of Crested Butte meet shortages. This project will require contractors with engineering expertise to identify potential design solutions.
- Protection of the Fen at Cement Creek This project will involve discussions with private landowners and USFS about options to protect the fen in order to maintain existing integrity of the fen and wetland community. These options could include conservation easements or environmental covenants.

• Recreational Management on the Upper Slate River – Increase recreational use on the Upper Slate River has resulted in potential disturbances to the Great Blue Heron Rookery, potential conflicts with recreationalists and landowners, and a range of other potential impacts including human waste and heavy use of distinct riparian areas. This project will involve working with the Slate River Working Group process and the facilitations of the floating management plan.



Recreational Management on the Upper Slate River



- Pumphouse Operations and East River Winter Dry-Down This project will address dry down in the late fall and early winter at the Pumphouse caused by diversions for municipal use and snowmaking. It will involve real-time monitoring of withdrawals to assure compliance with bypass flow and to assess instream flow attainment rates; the creation of snowmaking ponds so that water can be diverted during higher flow periods and stored to use during lower flows; and the exploration of options to create pools and channel configurations that provide additional habitat and refuge options for fish during low flow and freezing conditions.
- Dry-Down on Brush Creek The needs assessment of Brush Creek identified five locations where dry-up and near dry-up conditions occurs. Due to the outstanding fish habitat in both Brush Creek and the East River, additional investigation

should occur to identify solutions to improve habitat connectivity. This would include continued discussion with landowners/water right holders to identify potential strategies to improve stream flow and riparian conditions in this area.

- Removal of Old Bridge Abutments on Slate River/Coal Creek The project will include developing a project plan for removal and restoration of old bridge abutments near the 135 Bridge in Crested Butte. These abutments constrict the river, force excess sediment deposition, and reduce channel stability and habitat quality.
- Slate River Instream Flow (Slate River Segment 4-Coal Creek to East River) This project will involve identifying mutually beneficial designs to reduce maintenance needs, improve water delivery, and improve habitat and fish passage on this segment of the Slate River. This will include increased coordination with CWCB to more frequently attain the summer instream flow rate during dry years and the development of options to improve the function of diversion structures and in-channel conditions.
- Mine Reclamation at the Daisy Mine in Redwell Basin The Daisy Mine has been identified as a key contributor to water quality impairment in the Slate River. This project would aid in reclaiming the mine site in order to improve water quality on the Slate River.
- Bank Instability at Roaring Judy Fish Hatchery – This project would address issues identified with bank instability which threatens infrastructure. This infrastructure may also be impacting stream geomorphology and habitat. The project will involve additional assessment work to



Bank Instability at Roaring Judy Fish Hatchery

identify methods to protect

infrastructure and improve bank stabilization. This may include geomorphic assessment and development of riparian restoration strategies.

• Address Dry-Down in the East River from the Slate to Alkali Creek – This project will include evaluating the possibility of returning tailwaters to the East Rivers on the north end of Crested Butte South subdivision. The will aid in improving the conditions of the wetlands adjacent to the East River and upstream of Cement

Creek Road. It could also help address dewatering of the East River and flooding in the CB South municipal area.

C. Summary of Potential Lake Fork of the Gunnison River Projects Identified Through Needs Assessment Process

• Pete's Lake Project – This project involves the protection and enhancement of the Pete's Lake wetlands in the Town of Lake City to provide improved habitat for birds and other wetland species, while simultaneously increasing water storage and creating additional recreational opportunities such as increased hiking/biking trails and fishing access.



• Town Ditch Project – This project would explore the potential to expand the Town Ditch system from the existing Town headgate on Henson Creek. This will help reduce the pressure on Town Wells and allow for denser development with the Town municipal water supply areas.



Town Ditch Project

- Town Ditch Project (2) The project would include investigating the expansion of the Town water supply area to include the needs of residences upstream of town to Vickers Ranch (which has its own water supply system). This area along the Lake Fork is extremely rocky with steep canyon walls, which makes it difficult to reach groundwater.
- West Slumgullion Creek Sediment Control This project would involve exploring engineering options to slow deposition of Slumgullion sediment into Lake San Cristobal.



Fleece Ilma Mine Site Sediment Control – The potential project would include working with land owner, DRMS, and EPA to determine ways to prevent sediment pond releases into Lake San Cristobal. The ponds are currently filling up with metal laden waters and sediment.



Fleece Ilma Mine Site Sediment Control

- Lake San Cristobal Outlet Management This project would involve • investigating water level management impacts and options at the Lake San Cristobal outlet to promote more natural draw down to support wetland processes and habitats at the conserved wetland area at the lake inlet. This wetland is an important habitat for a number of species of concern, and it is not currently known what impact maintaining the lake at full levels has on the flora and fauna.
- Town of Lake City River Restoration Project Phase III This project would involve completing the river restoration work in the Town of Lake City in order to provide bank stability, better fishing habitat, and improve water conveyance to an existing fishing pond.

- Lake Fork Fishing Access and Education Project This project involves developing signage form Sherman downstream to Blue Mesa Reservoir to delineate public and private land, mapping of public fishing access areas, and promotion of more catch and release areas. This would also include outreach to anglers, and this would be an important component of the project.
- Boaters Education Project The project would involve developing proper signage at river put ins and take outs to educate boaters about safety and trespass issues as well as optimal floating levels for different water craft. The area of focus for this project would be from the Town of Lake City at Memorial Park and along Henson Creek, downstream to Blue Mesa Reservoir. This project would include outreach to land owners regarding Right to Float laws and to gain more support for such recreational uses. Also, signage and infrastructure would be installed to indicate public sections of the river where boaters can stop.
- Lake Fork River Recreation Corridor Establishment Project This project would involve improving river access and recreational infrastructure from lower Henson Creek down through Town to the sewage treatment plant. This would include expanding the river interpretive trail, acquiring easements to the river, improving bank stability to facilitate easier access to the river, and signage to indicate private and public lands.

Chapter 9 Options for Improved Water Use Efficiency

A. Ohio Creek

• Water Distribution and Irrigation Scheduling Project – This project will include infrastructure improvements for ditches on Lower Ohio Creek to improve control and water management. Irrigation shortages and over irrigation were issues identified by stakeholders. This project will require a contractor with irrigation design experience.



• Dry Year Shortage Mitigation Project – The project would involve evaluating volumes and locations where storage can best support base flows for irrigation and ecological uses. This project will require contractors with engineering



Teachout Ditch Loss

hydrologic, ground water, and restoration experience to guide the effort.

• Teachout Mesa Ditch Conveyance Improvement – Water right owner would like to reduce ditch losses allowing more water to be delivered to the irrigated field. This project will require a contractor with experience designing irrigation systems. Trout Unlimited has secured \$50,000 to assist in a conveyance improvement trial. • Hyzer Videl Miller Irrigation Shortages – This project will involve modeling flows by year types to evaluate coordination and efficiency options to improve water availability upstream of the diversion.

B. East River

• East River No. 2 Diversion Structure – The project would address issues identified by stakeholders and would involve identifying solutions to improve administration of minimum bypass flows. The project would also include redesigning the structure and continuing to explore beneficial options for the Verzuh Young Bifano, Verzuh, and East River No. 2 ditches.

C. Lake Fork

• Elk Creek Ditch Improvements – This potential project will include identifying water management options and ditch improvements for Elk Creek, which currently suffers from regular dry-up during the irrigation season due to over-appropriation.