USDA United States Department of Agriculture

Natural Resources Conservation Service (NRCS)

Conservation Implementation Strategy Project

Rapid Creek Water Restoration 2

This Project At-A-Glance

Partners

Pennington County Conservation District

National Wild Turkey Federation

South Dakota Department of Game, Fish, and Park

Pennington County Weed and Pest

West Dakota Water Development District

Funding for this project is provided by the EQIP Program and partners with financial and in-kind contributions.

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The Conservation Implementation Strategy (CIS) is a new phased-in approach to deliver conservation programs to farmers and ranchers across South Dakota. Funding for CIS comes through the Environmental Quality Incentives Program (EQIP). Funding and support from other agencies and groups can be leveraged and coordinated to focus on mutual issues of the highest priority.

Background

Rapid Creek is a tributary to the Cheyenne River and the Cheyenne River is a tributary to the Missouri River. Rapid Creek is 87 miles long. Efforts by the City of Rapid City to mitigate the impact of stormwater runoff to Rapid Creek have not kept up with the rate of development in the city limits, which contributes to the erosion and water quality of Rapid Creek. The Pennington County Conservation District would like to help improve conservation practices that we can control. We need to start somewhere and we believe this is a starting point in the process. We have also discussed that in the future other options such as partnering with organizations that can contribute funding within the city limits.

Goals

This is the second and last step of a larger effort of restoring Rapid Creek and the surrounding area. Rapid Creek needs to be restored because of current management practices, the storm water run-off from Rapid City, and invasive species such as Russian Olives that are taking over. Our main objective with this proposal is to reduce the sheet erosion, reduce plant pest pressure, increase soil health and organic matter, and improve water throughout Rapid Creek and the Cheyenne River.

Desired Outcomes

The main resource concerns to be addressed with this project are bank erosion from streams, shorelines, or water conveyance channels. After stream barbs are installed it will slow the flow of water and reduce bank erosion.

Secondly, reducing tillage and fertilization will slow runoff and contaminates going into Rapid Creek hence improving the water quality and soil organic matter.

Third, if the invasive species are removed, water will be conserved. Invasive species are known to consume excessive amounts of water from the ground.

Fourth, improving uplands grazing through grazing management practices will increase ground cover, while also increasing water filtration and susceptibility to drastic weather changes.

Fifth, creating buffer strips along Rapid Creek would allow a higher volume of water to filtrate through the ground more and also help filter some of the pollutants in the water.

Sixth, incorporating pollinator habitats will enhance the overall biodiversity and reduce pest population, protect soil and water quality by mitigating runoff, and protecting against soil erosion.

Seventh, installing pivots, irrigation pipeline, and irrigation sensors will improve irrigation efficiency and reduce erosion caused by flood irrigation.

Lastly, helping cost-share cover crops will help the soil health which in return will improve the infiltration.

South Dakota
Natural Resources Conservation Service

www.sd.nrcs.usda.gov

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Resource Concerns: Bank erosion, sheet soil erosion, undesirable plant productivity and health, excessive plant pest pressure, compaction, organic matter depletion, concentration of salt and other chemicals, drought susceptibility and moisture management, terrestrial habitat for wildlife and invertebrates, pathogens and chemicals from manure, biosolids, or compost applications transported to surface water, and inefficient irrigation water use.

Core Practices	Supporting Practices
Buffer Strips (332)	
Conservation Crop Rotation (328)	
Creek Crossings (578)	
Forage and Biomass Planting (512)	
Grazing Management (590)	
Irrigation Pivots (449)	
Livestock Shelter (576)	
Pollinator Habitat (327)	
Residue Management - No-Till (329)	
Stream Barbs (580)	

Time Table of Project

- **Batching Date: April 1, 2022**