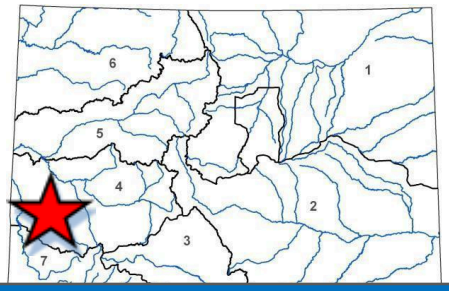
COLORADO
Colorado Water Conservation Board
Department of Natural Resources

Managing Forests to Conserve Snow and Soil Moisture
Dolores Watersheds Collaborative

September 2025 Board Meeting

Water Plan Grant Program



LOCATION	
County:	Montezuma
Basin:	Southwest

DETAILS	
Total Project Cost:	$1,474,685.00
Water Plan Grant Request:	$879,470.00
Recommended Amount:	**$879,470.00**
Match Commitment:	$595,215.00
Grant to Match Ratio:	60/40
Project Type:	Study
Primary Project Category:	Watershed Health & Recreation
Measurable Result:	30 acres of habitat restored or preserved; study with potential to inform water-saving forest treatments on 150,000 acres of ponderosa pine forest in southwest Colorado

The Dolores Watersheds Collaborative (DWC), a not-for-profit forest and watershed organization, is seeking Colorado Water Plan grant funding to support the "Managing Forests to Conserve Snow and Soil Moisture" project.

As 2025 starkly demonstrates, southwestern Colorado is experiencing decreased snowpack, soil moisture, and increased wildfire, leading local water managers, watershed health proponents, and federal forest managers to coalesce around forest health projects that increase source water protection. As over 70% of Colorado's water originates as snow in forested mountains, there is an urgent need to adjust forest management strategies to incorporate interdisciplinary knowledge including hydrology, forestry, and ecology. To address these community needs, this project aims to generate hydrologically-informed forest treatments in the Dolores watershed.

Specifically, the project will leverage three years of existing local data from "Snowtography" stations to train a high-resolution ecohydrologic model called SnowPALM, which will be used to predict snowmelt timing and volume. This model will be applied in collaboration with local stakeholders and the San Juan National Forest to design two hydrologically-informed forest treatment scenarios, which will then be implemented and compared against a "no-treatment" control and a "treatment as usual" site. New Snowtography stations and vegetation plots will be installed in these sites to monitor the first year of post-treatment impacts on snow accumulation, retention, and soil moisture. The deliverables include technical memos and a consensus document detailing the agreed-upon treatment outcomes, along with a project story map and presentations to disseminate the findings.

The project's findings have the potential to inform water-saving forest treatments on approximately 150,000 acres of ponderosa pine forest in the San Juan National Forest, helping to delay snowmelt, conserve soil moisture, and improve watershed resilience. Furthermore, the locally-trained ecohydrologic models and the collaborative process for integrating stakeholder input can serve as a replicable roadmap for designing similar forest management strategies in other watersheds with comparable characteristics across the region. This project advances the Colorado Water Plan by addressing the urgent need to adjust forest management strategies to increase snowpack and decrease wildfire risk while fostering collaboration among diverse water users.

Grant dollars would be used to hire a postdoctoral researcher to develop and train a SnowPALM model, establish Snowtography and forest plots, develop and implement forest treatments, and conduct outreach and stakeholder coordination. Project funders include Colorado's Strategic Wildfire Action Program (an effort of the Colorado Department of Natural Resources), The Nature Conservancy, and Durango-based Mountain Studies Institute. The U.S. Department of Agriculture's Agricultural Research Service, the San Juan National Forest, Dolores Water Conservancy District, and University of Arizona have all made significant in-kind commitments to the project. The project also has support from Southwest Basins Roundtable and the Town of Dolores.

Funding Recommendation:
Staff recommends a Water Plan Grant award not to exceed $879,470.00 to Onward! A Legacy Foundation doing business as Dolores Watersheds Collaborative for Managing Forests to Conserve Snow and Soil Moisture.