Winona Elementary School Front Landscaping Project

CWCB Final Grant Report

Prepared by: Melissa Carroll, Resource Energy Manager, Thompson School District
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Project Completion Summary

The Thompson School District (TSD) as a whole spends approximately 20% of its annual utility budget on over 100 million gallons of potable water used both indoor and outdoor. In an effort to reduce utility costs, be better stewards of water resources, and support the 2021 Sustainability Management Plan, TSD is converting unnecessary irrigated turf area into low-water, native landscaping. With grants through Northern Water and the Colorado Water Conservation Board (CWCB) in 2023, TSD piloted a project of about 3,000 square feet in front of Cottonwood Plains Elementary School (CPES) where irrigated turf was replaced with a variety of low-water, native plants, walking paths, and boulders. The success of the pilot project has sparked the interest for similar projects at other school sites. This report details the low-water, native landscaping conversion project of around 12,000 sq ft at Winona Elementary School.

Winona Elementary School (WES) is located in southwest Loveland. Beyond the traditional preschool through 5th grade uses, WES is also used for before and after school programs and community activities. In 2023, modular classroom structures were demolished from in front of WES due to lack of need and diminishing quality of the structures. As a result, 12,000 square feet of unlandscaped area was exposed. TSD took this opportunity to expand the low-water, native landscaping efforts using the Cottonwood Plains Elementary School design as a template. Pathways, boulders, native plants, and inorganic mulch were selected to fill the full-sun area.

At the beginning of July, the contractors began preparing the site. They removed the existing erosion protection mats, weeds, debris, and excess dirt. Next, they brought in the two types of gravel - pea gravel for the plant space and crusher fines for the pathway. Concrete was poured to outline the pathways and act as a barrier between the types of gravel. The contractors installed the plants and boulders with drip irrigation lines running to each of the plants. A dryland prairie grass mix was added near the building where the ground was too sloped to adequately hold gravel. Health of the plants will be monitored over the next 3 years of establishment period to ensure that they are receiving adequate water and drainage.

Some high intensity rainfall events during the summer months highlighted flaws in the existing roof drainage system that resulted in erosion of the sloped ground near the building and effectively washed away the newly seeded dryland prairie grass mix. The contractor redesigned the drainage system by installing an in-ground pipe from the top of the slope (at the output of the roof drain) to the collection location at the bottom of the slope. Additionally, the contractor added concrete edging to the existing drain channel to prevent it from being filled in with dirt and gravel during storm events. Finally, the contractor reseeded the dryland prairie grass mix.

To support the outreach and education aspects of this grant, plant labels were added. With this area being intended for students, staff, and community members to walk through every day, the plants were labeled to help educate on low-water, native plant opportunities. Labels were created by a local small business and installed onsite. The labels include the common name and scientific name of the plants. Students and staff were encouraged to walk through the space at the beginning of the school year to explore landscaping changes.

Additionally, a webpage was created on the school's website with information about the landscaped area including links to information about the plants, the importance and benefits of using low-water, native landscaping, and the funding sources. A link to the webpage is shared on the District website and is used as a resource for other schools that are interested in learning more about landscaping options. By using low-water, native landscaping on this site rather than installing Kentucky Bluegrass, the District is expected to save around 405 kgal a year.

Through this effort, WES has identified additional areas that they would like to convert to low-water, native landscaping in the future to continue to support outdoor learning spaces. Additionally, other schools are reaching out to pursue similar improvements. As more unnecessary turf areas are transitioned to landscaping similar to this one, we can expect to see a more Colorful Colorado and a more water conscientious state.

Challenges and Solutions

One challenge this project faced was due to a combination of heavy rainfall events and poorly designed roof downspout runoff channels that washed off the newly seeded dryland prairie grass mix from the sloped section near the building and filled the collection channel with dirt and gravel. As a solution, the contractor connected pipes to the downspouts and buried them in the sloped area to bypass the surface runoff from the roofs. Additionally, the contractor added concrete edging to the existing concrete collection channel to prevent it from being filled with eroded dirt and gravel.

Another challenge this project faced was miscommunication regarding the concrete edging along the pathways. The contractor installed the 6" x 6" concrete edging without expansion gaps to match the Cottonwood Plains Elementary School example. However, the pathways at WES were very long and straight compared to the short, windy paths at Cottonwood Plains. Therefore, the lack of expansion gaps resulted in multiple cracks. This miscommunication was addressed and expansion gaps were added.

Matching Commitments

All matching contributions were met for this grant and outlined in the invoice reimbursement trackers submitted to CWCB. TSD requests that CWCB release the remaining 10% of the budget with the satisfaction of this report and final invoice reimbursement tracker.

Supporting Links

TSD Sustainability Management Plan

Project webpage

Project Photos

Before:

Finished Project:

THOMPSON
SCHOOL DISTRICT

THOMPSON
SCHOOL DISTRICT


Standing Ovation

THOMPSON
SCHOOL DISTRICT

THOMPSON
SCHOOL DISTRICT

Students and teacher interacting with the space:

THOMPSON
SCHOOL DISTRICT


Option 1 - re-grade and dry land grass
79'-0"
Option 1 - Pea gravel, plantings and breeze path
Cercocarups intricatus
Schizachyrium scoparum Standing Ovation"
Boulders
Artemisia tridentata
Breeze
Chrysothamnus nauseosus var. nauseosus (baby blue form)
45'-0"
inona
chool