

SPOKANE URBAN RUNOFF GREENWAY ECOSYSTEM

STATE PROGRAM: Washington Department of Ecology

ASSISTANCE RECIPIENT: City of Spokane

ASSISTANCE AMOUNT: \$599,000

PROJECT DESCRIPTION

The City of Spokane received \$599,000 in ARRA funds from the Washington State Department of Ecology's Water Pollution Control Revolving Fund to construct a demonstration project of street-side rain gardens to control pollution from stormwater runoff. The Spokane Urban Runoff Greenway Ecosystem, or SURGE, will examine the suitability of planning, designing, and retrofitting the existing urban landscape of curb and gutter systems using low-impact and green infrastructure practices to mimic the natural hydrologic process by capturing, treating, and infiltrating stormwater runoff. As part of the city's extensive Sustainability Strategic Plan, the ARRA funds were used to construct the West Broadway SURGE project, which demonstrates Spokane's ongoing commitment to adopting green practices that support a more sustainable approach towards wastewater treatment.

"The Broadway Avenue SURGE project is a low-cost solution to capture, treat, and infiltrate runoff as close to where it falls as possible," says Mayor Mary Verner. "The storm gardens will enhance the beauty of Broadway Avenue and improve water quality by reducing the contaminants going to the Spokane River.

The project consists of a network of rain gardens constructed between the curbs and sidewalks to intercept stormwater runoff. Rain gardens are an excellent example of green infrastructure design particularly suited for the inland Northwest, as they are capable of properly treating stormwater runoff flows from both rain and snow events. Street-side depressions, planted with native vegetation, are designed to capture runoff from impervious areas like roofs, streets, and parking lots, allowing it to naturally be absorbed into the ground. In all, 37 rain gardens were constructed along with five drainage structures and over 1,200 square yards of pervious sidewalk. Each rain garden is comprised of a layering of structural soil, which includes a mix of gravel, top soil, and



The logo features a stylized white letter 'S' with a fish swimming inside the top curve and another fish swimming inside the bottom curve. To the right of the 'S', the text 'Clean Water' is written in a large, white, serif font, and 'State Revolving Fund' is written below it in a smaller, white, sans-serif font.

Clean Water State Revolving Fund

moisture retaining gel to support the growth of tree roots; a layer of treatment soil consisting of topsoil, sand, and organic matter to provide biological treatment to stormwater; and a layer of composted mulch at the surface to regulate moisture, minimize weed growth, and further enhance biological treatment cleansing. The environmental, economic, and social benefits associated with the SURGE project are broad, ranging from improving the operation of Spokane's combined sewer system, providing a low-cost alternative to treating and managing stormwater runoff, and increasing urban green space that provides an enhanced aesthetic environment through the reduction of paved surfaces. The main purpose of this project is to improve water quality. By removing nitrogen and phosphorus loads from stormwater runoff, the water quality of Spokane's primary source of drinking water, its sole-source aquifer located directly beneath the city of Spokane, and the Spokane River, which runs through the heart of Spokane, is protected.

To read more about this case study, please visit https://www.epa.gov/sites/default/files/2015-04/documents/green_infrastructure_projects_and_state_activities.pdf.