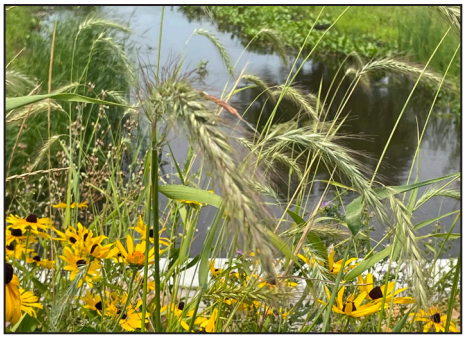
Mile-long stream restoration a rare opportunity in Maple Grove



CLEAN WATER LAND & LEGACY AMENDMENT

Watershed-Based Implementation Funding comes from the Clean Water Fund, which receives 33% of the state sales tax revenue from the Legacy Amendment. Those dollars may be spent only to protect, enhance and restore water quality in lakes, rivers and streams, and to protect groundwater from degradation.

MAPLE GROVE — With leveraged funding and land available at the site of a new residential development in Maple Grove, a project centered on a mile-long stretch of the South Fork Rush Creek just west of the Interstate 94/ Interstate 610 intersection restored not only the stream but also the surrounding ecosystem.

The 14-acre site includes a native prairie planting and restored wetlands. It reconnected the floodplain, re-sloped the nearly vertical, eroding streambanks and reshaped some of the meanders to reflect a more natural course.

"What made it unique is that this is a full stream restoration," said senior project manager John Smyth of Stantec. "We're not just addressing individual symptoms along the bank (fixing localized erosion spots). … We remeandered the stream to a more stable pattern. We had riffles, we (installed) a lot of in-stream structures."

Together, those elements will help to improve water quality by armoring the banks, curbing erosion, containing floodwaters and allowing runoff to filter through wetlands. Reducing sediment and the pollutants it carries — such as nitrogen and phosphorus — will benefit the South Fork Rush Creek, which flows to Elm Creek and then Hayden Lake in Elm Creek Park Reserve and through Mill Pond Lake before reaching the Mississippi River.

"What we're trying to do is work with the natural tendencies of rivers and streams to promote a stable form and habitat that should exist in that environment."

— Sean Collins, Stantec
senior water resources engineer

This segment of Rush Creek is impaired for chloride, E. coli, fish and macroinvertebrates. Elm Creek has additional dissolved oxygen and sediment impairments.

Sediment reductions are estimated at just over 367 tons per year — the equivalent of 13 dump truck loads. Annual phosphorus reductions are estimated at just over 423 pounds.

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Left: *The mile-long South Fork Rush Creek stream restoration, seen in August 2024, focused on water-quality and habitat benefits. The stream flows to Elm Creek and then Hayden Lake in Elm Creek Park Reserve and through Mill Pond Lake before reaching the Mississippi River.* **Center:** *Native plants, seen from the upstream end of the project at 101st Avenue in Maple Grove, bloomed in late July 2024. Within the 14-acre South Fork Rush Creek stream restoration site, 3 acres of enhanced pollinator seeding feature 19 species of wildflowers.* **Right:** *A constructed backwater pool contained water in August 2024.* **Photos courtesy of Derek Asche, City of Maple Grove**

The mile-long South Fork Rush Creek stream restoration in Maple Grove, seen in March 2024, was made possible because with every project, developers are required to provide dedicated parkland. This is the largest stream restoration of its kind involving the city.

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With every project, developers are required to provide dedicated parkland. The city seeks to incorporate resource protection or restoration when opportunities arise.

The $3.5 million restoration project drew from $314,150 in Watershed-Based Implementation Funding (WBIF) the Minnesota Board of Water and Soil Resources (BWSR) awarded to the Elm Creek Watershed Management Commission (WMC). That Clean Water Fund grant expires Dec. 31.

Maple Grove contributed $2 million through its trunk storm sewer fund, which comes from fees developers pay. The Elm Creek WMC contributed $860,000 in ad valorem levies (taxes based on assessed value) collected over two years.

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>
> — Derek Asche,
> Maple Grove water resources engineer

Sunram Construction of Corcoran was the contractor. Stantec was the project consultant and engineer.

"Another unique component of this project (was) some wetland complexes were constructed to match wetland habitat that was on the site, and to deal with things like stormwater outfalls and to add some habitat diversity to the floodplain," said Stantec senior water resources engineer Sean Collins.

Because some of the stream restoration involved adjacent wetlands, accomplishing no net loss of wetlands was one design challenge. Smyth said this season's heavy rains illustrated the effectiveness of the combined work within the stream corridor and the wetlands.

Within the stream, submerged logs wedged into the banks work with log vanes to help slow the flow of water. Constructed pools, runs and riffles mimic a natural stream, and provide habitat for spawning fish, macro invertebrates, insects and other wildlife that follow the corridor.

The invasive, non-native buckthorn and the emerald ash borer-infested trees removed from the site reopened an oak savanna habitat, clearing the way for some of the stream and wetland restoration.

"We kind of create that corridor for wildlife to move and survive within an urban environment," Collins said.

The cleared trees also supplied the raw materials

Left: *Toe wood, submerged logs anchored into the streambank, seen here in March 2024, helps to stabilize the banks and slow the flow of water in the restored segment of the South Fork Rush Creek.* **Center:** *A city trail project, which is adjacent to but not funded by the WBIF stream restoration, will become part of Three Rivers Park District's regional trails system. The path leads to a new steel-truss bridge that spans the restored segment of the creek.* **Right:** *Water flowed over a constructed riffle in March 2024 in a segment of the restored creek.*

for the in-stream structures and a wood-chip path. That city trail project — adjacent to but not funded by the WBIF work — will become part of Three Rivers Park District's regional trails system.

Those who follow the path to the new steel-truss bridge spanning the restored stream can overlook the prairie pollinator habitat, the rock riffles and wetland areas set against the backdrop of a planned 4-acre forest restoration featuring large oak trees. (The forest restoration will draw from a Minnesota Department of Natural Resources Conservation Partners Legacy Grant.)

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Related watershed work

Hennepin County Conservation Specialist Kevin Ellis summarized related water-quality and habitat improvement work within one Corcoran area landowner's 100-acre parcel in the Rush Creek headwaters:

Restoration of seven drained wetlands and conversion of 42 acres of row crops to a native prairie planting; funded via BWSR (Watershed-Based Implementation Funding) and the Elm Creek WMC, the landowner and county. Initial seeding was completed in fall 2023. The project will keep about 12 pounds of phosphorus out of the creek each year, estimates show.

Restoration of eight drained wetlands and 38 acres of row crops, projects that involved the U.S. Fish and Wildlife Service and Hennepin County.

"It was just an opportunity to do just a little bit more, and to do it in a way that we thought added a lot of value," Asche said of the adjacent projects.

While the stream restoration focused on the water-quality and habitat benefits, Collins said the adjacent recreational and educational opportunities translate to stewardship. Educational signs are planned.

"We've given them access so that they can come and see it and they can interact with it and see some of the habitat that was (created or preserved) and see the value in the resource," Collins said.