# Mississippi WMO collaboration

*Previously untreated runoff from 612 acres now flows from east to west through Columbia Golf Course and Columbia Park, where it is diverted to a treatment pond, a dry basin, and then an infiltration basin before it re-enters the stormwater sewer system and continues on for 1.2 miles to the Mississippi River. The Clean Water Fund-supported project is slated to wrap up this month.* **Photo Credits:** Mississippi WMO

## Minneapolis' public works, parks play vital roles in a $7.4 million project designed to produce cleaner stormwater; create habitat with native plants and trees; curb flooding in Columbia Golf Course, surrounding neighborhood

CLEAN WATER LAND & LEGACY AMENDMENT

MINNEAPOLIS — The Mississippi Watershed Management Organization's (MWMO) $7.4 million stormwater improvement project set to wrap up by mid-October will reduce residential flooding, curb pollutant-loading to the Mississippi River, enhance 19 acres of habitat, and create more reliable playing conditions at Columbia Golf Course and Columbia Park.

**"How can we think creatively about this and put together a plan on a pipeshed scale, where we could reduce localized flooding stress, and then move that water effectively down in the watershed without negatively impacting properties?"**

— Stephanie Johnson, Minneapolis Public Works, on project partners' considerations

An $800,000 Clean Water Fund grant from the Minnesota Board of Water and Soil Resources (BWSR) supports the work, necessitated in part because of failing infrastructure.

The project is a unique collaboration among the MWMO, Minneapolis Public Works Department and Minneapolis Park & Recreation Board.

"Everyone really worked to achieve this vision," said Andy Schilling, Minneapolis Park & Recreation Board design project manager. "With climate change, we're only going to have more of these infrastructure (challenges)."

The storm sewer was deteriorating and too small to handle the increased volume of runoff. A hard rain or spring snowmelt would flood city streets, restrict play on the 18-hole public golf course and render the park's athletic fields unusable. The city's storm sewer project in the neighborhood and the grant-funded project in the golf course and park were parallel but separate endeavors.

Work started in October 2020. Storm sewer replacement and initial grading finished by February. The second phase — final grading, golf course and park restoration and planting — started in April 2021 and ran through

## Details

**MAINTENANCE:** Under the maintenance agreement, the city will own and operate the stormwater infrastructure; MWMO will hire contractors to establish and maintain the vegetation for four years; the park and recreation board will then be responsible for the plantings.

**SPECIES TALLY:** The mix of Minnesota native plants installed includes 11 tree species, five shrub species, and 26 grass and wildflower species. The seed mix added more native species.

**PERMITS REQUIRED:** Canadian Pacific Railway utility license, Minnesota Pollution Control Agency construction stormwater permit, Minneapolis Park & Recreation Board construction permit; Minneapolis/park board burning permits.



*Work started in October 2020. Construction was coordinated with planned street improvements to save money and minimize traffic disruptions in the neighborhood. Restoration and planting followed storm sewer replacement and grading.*

the summer. Coordinating construction with planned street improvements cut costs and minimized traffic disruptions.

The MWMO contributed $3.6 million in levy-generated capital improvement funds. The city of Minneapolis contributed $2.9 million. A $100,000 Hennepin County Natural Resources Opportunity grant covered the balance. The park and recreation board allowed the project to be constructed on its property.

"We're really excited about how the project has been going, and I think it's a good example of strong partnerships," said Alicia Beattie, MWMO's capital projects and stewardship specialist. "It's a very complex project with a lot of different components."

Previously untreated runoff from 612 acres is now diverted through the golf course and park, where it flows from east to west through a treatment pond, dry basin and an infiltration basin before re-entering the stormwater sewer system. From there, it flows 1.2 miles to the Mississippi River.

"In this watershed (the land is) so developed that all the water eventually goes through pipes, and then into the river. That's why it's so important to treat that water," Beattie said. "The only way we can treat it is by naturally treating it through different practices on the landscape."

**Beattie**

The project will keep an estimated 100 pounds of phosphorus out of the river each year. One pound of phosphorus can produce 500 pounds of algae.

"I think the partnership really helped us as a city to take the pipeshed view. In the city of Minneapolis, we have limited space to implement stormwater management solutions. We've got a fully built-out city. There's just not a lot of open land available," said Stephanie Johnson, Minneapolis Public Works Department's director of surface water and sewers, who wrote the Clean Water Fund grant when she worked at MWMO.

**Johnson**

Some of the challenges, such as tunneling under the Canadian Pacific Railway and dealing with contaminated soils, were no surprise. Impossible to predict was the drought, which required contractors to spend more time to establish this season's newly planted trees, shrubs, wildflowers and grasses.

On land totaling 19 acres across the golf course and park, 128 species of native Minnesota trees, shrubs and perennials now grow. Contractors planted 98 trees, 155 shrubs and more than 4,300 grasses and wildflowers. Schilling said species native to Minnesota woodlands, oak savannas and prairies replaced some golf course roughs and degraded woodlands.

Golfers and park visitors are most likely to notice the plantings and related habitat benefits.

"It was soggy conditions in areas, and if we had a big rain event, the stormwater would not drain correctly in those portions of the golf course and we would have wet fairways," Schilling said. "It reduced playability from a recreational standpoint, including in the park's multi-use athletic field."

Lost play meant lost revenue for parks.

In the event of a once-every-100-years rainfall, the project is projected to reduce golf course flooding from three days to less than 12 hours.

"It's reducing that burden of localized flooding," Johnson said. What residents will see, she said, is that they can travel safely on the road.

The last element of the project, a pretreatment system to remove sediment and trash, was expected to be installed by mid-October. The grant expires on Dec. 31.

"I think the excitement around it has been fun," Johnson said. "With our infrastructure being buried, it's not as often a topic of conversation or appreciation of what the infrastructure has done for us."