2024 MN Watersheds Project & Program of the Year

Detailed Award Information Form

1) Award Category (check one)

Project *X* Program

2) MAWD Region (check one):

One Two Three *X*

3) Watershed District: *Capitol Region Watershed District*

4) Project/program name: *Highland Bridge (Ford Site) district stormwater system*

5) Nominator (if different from above watershed district)

6) Project/Program Summary (Limit 150 words) to be read at the awards program during the annual meeting banquet:

Nearly 10 years ago, Capitol Region Watershed District and the City of Saint Paul developed a sustainable stormwater feasibility plan that envisioned water as the backbone of the redevelopment of the former Ford Twin Cities Assembly Plant, a 122 acre property along the Mississippi River. In 2018, the property was sold to a local developer who implemented the new sustainable community with water as its centerpiece now known as Highland Bridge.

The $13M district stormwater system at Highland Bridge was completed in 2022. The stormwater BMPs include five large iron-enhanced biofiltration basins, five underground storage and filtration systems, two large rate-control ponds, and central water features. The project filters 64 million gallons of runoff annually, reduces sediment by 28 tons/yr, total phosphorus by 147 lbs/yr, and peak discharges 98% in the 2-year event. Water is celebrated throughout the development including a re-imagined Hidden Falls Creek at Unci Makha park which draws residents, neighbors and visitors to recreational water features that lead to the Mississippi River.

7) Define need:

Before redevelopment, untreated stormwater runoff from the 122-acre site primarily drained to the storm sewer system, which flows to Hidden Falls and the Mississippi River. The hard surfaces like roofs and parking lots at the site sent runoff downstream without treatment, polluting the Mississippi River with is impaired for nutrients and turbidity. In addition, the site was a former industrial site of Ford Motor Company and was not providing any benefits to the community.

8) Goal/purpose of the project/program:

The goal of the project was to implement new district stormwater systems to capture and clean 64 million gallons of runoff annually, preventing an estimated 28 tons of total suspended solids and 147 pounds of phosphorus from entering the Mississippi River each year. The project reduces sediment by 94%, total phosphorus by 75%, and peak discharges to the downstream waterfall and stream channel by 98% in the 2-year event. Further, the project aspired to *Bring Water Back* to this area of St. Paul by re-establishing the headwaters of Hidden Falls Creek. CRWD and its partners focused on using *rain as resource* to create a walkable, livable, energy efficient and beautiful community that captures and filters stormwater.

9) Describe project/program:

Responding to the closure of the Ford Twin Cities Assembly Plant in Saint Paul, Capitol Region Watershed District and the City of Saint Paul developed a sustainable stormwater feasibility plan in 2016 for redeveloping the 122-acre property, now known as Highland Bridge. Prior to development in the 1920s, the site contained the headwaters of Hidden Falls Creek that fed Hidden Falls (waterfall). The stream was buried in a pipe to facilitate the construction of the assembly plant.

The study developed master plan concepts for managing stormwater across the entire site. Two stormwater management concepts were compared - a conventional approach with distributed underground infrastructure and a district approach incorporating a green infrastructure corridor. Each option was evaluated against the city's and watershed district's goals for stormwater management, sustainability, redevelopment, creek restoration, and place-making.

In addition to a traditional cost-benefit analysis, the study involved a life-cycle cost and impact assessment that monetized socioeconomic benefits. The team assessed factors such as water quality and quantity; flood risk reduction; recreation and property values; and water, carbon, and energy footprints, which revealed that a green infrastructure corridor more than doubled the value compared to the conventional approach.

Construction of the district stormwater management system was completed in 2022. The district system treats stormwater from public and private parcels and is placed in publicly- and privately-owned spaces throughout the site to expand the public realm and provide connections to the existing waterfall and ultimately the Mississippi River. The final BMPs include 5 large biofiltration basins, 5 underground storage and filtration systems, and 2 large rate control ponds. The project reduces total suspended solids by 94%, total phosphorus by 75%, and peak discharges to the downstream waterfall and stream channel by 98% in the 2-year event.

10) Describe public benefit:

The City of Saint Paul and CRWD planned for a comprehensive (district) stormwater management approach, a central water feature and a re-established Hidden Falls Creek, eliminating the need for individual treatment systems scattered across the site. This method, known as shared stack green infrastructure, reduces the overall cost of managing stormwater on the site while adding beauty, wildlife habitat, and recreational opportunities.

The community also benefits from a shared regional stormwater approach. Several large clean water practices, both at the surface and underground, capture and filter stormwater runoff from the 122-acre site to reuse in the central water feature and Hidden Falls Creek. The stormwater systems include underground storage, filtration chambers, and extensive rain gardens.

Gateway Park (in the northwest corner of the site) has large biofiltration basins. The basins look like rain gardens, but below the plants and soil, there are drainage pipes and iron-enhanced sand to remove dissolved phosphorus, a pollutant in the water that fuels algae growth. Iron filings mixed into sand create a bond with phosphorus, removing it from the water before it drains to the Mississippi River.

The central water feature receives filtered stormwater before flowing south to the re-established Hidden Falls Creek in Unci Maka Park. This area was the ancestral home of the Dakota people. Both offer recreational opportunities for visitors, provide habitat for wildlife, and add beauty to the site. The entire site then flows through a 90-foot tunnel underneath Mississippi River Boulevard and over the existing Hidden Falls to Hidden Falls Regional Park and ultimately to the Mississippi River. Adjacent to the creek, a paved pedestrian and bike path follows the creek through the tunnel and ends at a plaza overlooking Hidden Falls.

11) Watershed plan reference (where is the problem/solution identified in the watershed plan, does it address stated problems, objectives and goals):

CRWD's 2021-2030 Watershed Management Plan (WMP) identifies the Highland Bridge Project in its goals and implementation plan. In chapter 2, "Watershed Issues and Goals," under section 2.2, CRWD identified redevelopment opportunities to integrate otherwise infeasible or challenging stormwater management improvements in collaboration with developers and other District partners. It seeks to work with these partners to identify, evaluate, and carry out opportunities for regional stormwater management systems on at least one large-scale redevelopment project over 10 years (e.g., former Ford Redevelopment Site). Stormwater management at the Highland Bridge Project is also listed as an implementation activity in the WMP under section 3.5.9, Implementation 332B/432B.

12) Was project goal achieved? If so, how was the success measured?

The project met and in some facets exceeded the project goals. Combined, the stormwater systems at Highland Bridge capture and clean 64 million gallons annually. This prevents an estimated 28 tons of total suspended solids and 147 pounds of phosphorus from entering the Mississippi River each year. The projects protect the downstream Hidden Falls with a 98% reduction in peak flows.

Before redevelopment, polluted runoff would travel to the river without any treatment. This project reduces total suspended solids by 94% and total phosphorus by 75%, a significant improvement for water quality. By cleaning and reusing stormwater in the central water feature, rain becomes a resource and a recreational amenity instead of a waste project. The

project was able to Bring Water Back to this area of St. Paul and reestablish the headwaters of Hidden Falls Creek.

13) Watershed or water body name to be protected or improved by project or program (if applicable)

This project helps to improve water quality and stream flows of Hidden Falls Creek and the Mississippi River. This project also reimagines the historic Hidden Falls Headwaters using treated stormwater.

14) Watershed or water body information (e.g., size, watershed area, classification, description):

Capitol Region Watershed District encompasses 40.6 square miles in portions of St. Paul, Falcon Heights, Lauderdale, Maplewood, and Roseville. Specifically, the Ford Redevelopment Site is 122 acres.

15) Project partners (financial or inkind support)

The total cost of stormwater management facilities and associated water features was approximately $13 million. CRWD contributed $1.7 million and the State through a Point Source Implementation Grant contributed $7 million. Private funds contributed small portion to the project. The balance of the cost was paid for by the City of Saint Paul.

16) Start date: 2020

17) Project status:

On-going Project/Program No

Completed: Yes Completion date: 2022

Project cost (this can be provided as total cash cost or a breakdown can be provided to show the cost of various project elements and partners):

Total infrastructure cost for the development was approximately $84 million with the following infrastructure cost breakdown:

-Streets: $27,375,017
-Site Utilities: $17,772,268
-Mass Earthwork: $6,682,505
-Storm Utilities: $16,488,059
-Green Spaces: $15,644,023


Montreal

SAINT PAUL
MINNESOTA

DEPARTMENT OF PARKS & RECREATION
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October 18, 2023

Dear MN Watersheds Awards Committee,

I am writing in support of Capitol Region Watershed District (CRWD) nominating the Highland Bridge Project for the 2023 Minnesota Watersheds Project of the Year Award. CRWD is a special purpose local government unit created to protect, manage, and improve resources within its boundaries including natural areas, wetlands, creeks and lakes that drain to the Mississippi River. Its projects are highly beneficial to the community and watershed health of the City of Saint Paul.

The Highland Bridge Project is a new community with carefully planned energy, waste, transportation, landscape, and water infrastructure. Before redevelopment, stormwater runoff from the 122-acre site primarily drained to Hidden Falls, which flows to the Mississippi River. Hard surfaces at the site, like roofs and parking lots, sent runoff downstream without treatment.

Now, the Highland Bridge community has been transformed into a beautiful landmark on the once-industrial stretch of the Mississippi River bluffs. Polluted runoff no longer flows down to Hidden Falls Creek. Instead, treated stormwater fills a central water feature and to a re-imagined Hidden Falls Creek on the site, which ends at the Mississippi River. All water features are surrounded by paths, rain gardens, and inviting nature stretches.

The new shared district stormwater system at Highland Bridge captures and cleans runoff, decreasing the amount of phosphorus entering the Mississippi River by 75%. By cleaning and reusing stormwater in the central water feature, rain becomes a resource instead of a waste product, and has created a significant improvement in the water quality in this area of the river. The Highland Bridge Project is beneficial not just to our immediate community of Saint Paul, but to all who rely on the Mississippi.

Thank you for your consideration of the Highland Bridge Project for this year's project of the year award.

Sincerely,

Andy Rodriguez (Oct 18, 2023 12:44 CDT)

Andy Rodriguez
Director of Saint Paul Parks & Recreation Department