



# Bee Branch Watershed

## FLOOD MITIGATION PROJECT

December 2020

The Bee Branch Watershed Flood Mitigation Project is a multi-faceted approach to address the severe and frequent flash flooding experienced in the Bee Branch Watershed.

Flood disasters have repeatedly impacted residents and employees of businesses within the watershed. Between 1999 and 2011, six Presidential Disaster Declarations were issued with total damage estimates of almost \$70 million.

The project consists of several infrastructure improvements that will reduce the volume of stormwater, slow the rate of stormwater through the upper watershed, and increase the safe conveyance of stormwater through the flood-prone area.

The City has received \$162.6 million in the form of grants, forgivable loans, and other financial savings to help fund the \$237 million project.

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*The installation of the sixth and final pipe was completed on Oct. 30. The pipes are 8-foot in diameter and approximately 200-feet long.*



*The microtunneling machine reaching the other side.*

## RAILROAD CULVERTS PROJECT UPDATE

The Bee Branch Railroad Culverts Project is a critical phase of the overall flood mitigation project. Six 8-foot diameter steel pipes were recently installed under the Canadian Pacific Railway tracks to allow stormwater to drain more efficiently from the upstream portion of the creek to the downstream portion. In order for the railroad to continue operating during construction, the pipes were installed via microtunneling. The operation began in early-July and was finished in late-October.

The tunneling for each pipe began on the east side of the railroad tracks and progressed approximately 40 feet per day toward the receiving pit located on the west (Garfield Ave.) side of the project. As the microtunneling machine inched its way through the soil, 20-foot long sections of pipe were inserted behind it. On average, it took approximately one week to install each 200-foot long pipe.

Each pipe required considerable prep work including cutting the holes through the sheet pile walls to allow the microtunneling

machine to pass. This often took a day or more to cut. In addition, the contractor was required to stop tunneling when trains passed overhead.

The new stormwater pipes are expected to be functioning in the summer of 2021 after the upstream and downstream connections are finished. This includes a large buried concrete transition structure south of Garfield Ave. where water from the creek and the 22nd St./Kaufmann Ave. storm sewer system come together before entering the newly installed pipes. Downstream, a structure will be built to transition water from the pipes into the creek as well as a small pumping station to control the water level of the upstream creek and storm sewer.

**Upon completion, these improvements will increase the flood mitigation system's capacity to protect the area from a 75-year rain event to a 500-year rain event.**



A rendering of the entrance and exit to the pedestrian tunnels under the railroad tracks on the east (16th St.) side of the project.

## TRAIL UNDER THE TRACKS

Upon completion of the Bee Branch Railroad Culverts Project, the existing Bee Branch storm sewers under the Canadian Pacific Railway tracks, which served the area for over 100 years, will be converted into a multi-use trail. The two paved pedestrian tunnels will connect the upper and lower sections of the Bee Branch trail system.

According to City of Dubuque Engineer Deron Muehring, the culverts are in great shape. They will be paved to create a smooth rideable surface and lighting and cameras will be installed. The tunnels will provide a safe crossing for trail users, eliminating the need to use the at-grade track crossing at E. 16th St. which sees an average of seven to nine trains daily.

The City was awarded a \$175,000 Land and Water Conservation Fund Grant for the project. It is expected to be finished in late summer of 2021.

## STORM SEWER IMPROVEMENTS

During rain events, stormwater can resemble a river as it runs down Kaufmann Ave. and E. 22nd St. Over the last several years, improvements have been made to reduce flash flooding along the corridor. New concrete box culverts and additional storm intakes have been installed from Elm St. to Francis St. to increase stormwater capacity.

Work on the project continued this year, extending the new culvert from Francis St. up past N. Main St. stopping short of Kleine St. In addition, the project required underground utility work, the installation of three large trench grate intakes across the roadway, and total street and sidewalk reconstruction. Work on the project began in mid-July and was completed in late-November.

Looking to the future, plans include extending the storm sewer up to Kane St. However, the project schedule is contingent on funding and has not yet been determined. Currently, there is no street construction planned for 2021.



## PROJECT SCHEDULE

The Bee Branch Project is a multi-phased investment. The following improvements will slow the rate of stormwater through the upper watershed, increase the safe conveyance of stormwater through the flood-prone area, reduce the volume of stormwater, and provide floodwater protection to the City's water treatment plant on Hawthorne Street. As each phase is completed, there is greater protection from flash flooding.

### INFRASTRUCTURE IMPROVEMENT

### STATUS

Carter Road Detention Basin	Completed in 2003
West 32nd Street Detention Basin	Completed in 2009
Lower Bee Branch Creek Restoration	Completed in 2011
Historic Millwork District Complete Streets	Completed in 2012
Upper Bee Branch Creek Restoration	Completed in 2017
22nd St./Kaufmann Ave. Storm Sewer Capacity Improvements	Completed in 2020
Bee Branch Creek Railroad Culverts	Est. Completion - 2021
Bee Branch Healthy Homes Resiliency Program	Est. Completion - 2021
17th St./W. Locust St. Storm Sewer Capacity Improvements	Est. Completion - 2021
Flood Mitigation Gate & Pump Station Replacement	Est. Completion - 2023
Flood Mitigation Maintenance Facility	Est. Completion - 2028
North End Storm Sewer Capacity Improvements	Est. Completion - 2028
Water Plant Flood Protection	Est. Completion - 2030
Green Alley Reconstruction	Est. Completion - 2038





Teens from the MFC sample macroinvertebrates.



Local artist Dan Leick painting his storm drain mural at N. Grandview Ave. and Rosedale St.



Students from St. Mark's Youth Enrichment spend the morning learning about freshwater mussels and watershed stewardship.



Storm drain mural in front of Marshall Elementary School by local artist David Barba.

## CONSERVATION, STEWARDSHIP, & COMMUNITY ENGAGEMENT

The primary purpose of the Bee Branch Creek Greenway is flood protection, but it also provides recreational and educational opportunities for residents and youth. Over the past year, a number of exciting conservation and stewardship efforts have taken place at the creek and throughout the watershed.

In early June, the City's Parks Division hosted a five-day creek cleanup event. Individuals and families took turns volunteering. Together, they picked up 201 pounds of trash from the banks of the Lower Bee Branch Creek. This trash was flushed to the creek during rain events. When it rains, stormwater picks up litter and debris carrying it into storm drains which flow directly to the creek and ultimately to the Mississippi River.

We can all do our part to prevent stormwater pollution by picking up litter and ensuring trash stays in the garbage and recycling bins where it belongs. Other things we can do include reducing the use of lawn chemicals, picking up pet waste, and not blowing grass clippings or leaves into the street. Recently, local artists painted four sidewalk murals near storm drains in the Bee Branch Watershed. They serve as colorful reminders that storm drains are a direct connection to our local waterways. The murals are located at Windsor Ave. and Merz St., Rhomberg Ave. and Marshall St., N. Grandview Ave. and Rosedale St., and on Loras Blvd. An additional mural will be painted at E. 13th St. and White St. in the spring of 2021.

Also in June, the City partnered with the National Mississippi River Museum & Aquarium, Iowa Department of Natural Resources, and the U.S. Fish and Wildlife Service's Genoa National Fish Hatchery to begin a freshwater mussel habitat suitability study. Over 2,500 juvenile fatmucket mussels were released in the Upper Bee Branch Creek. The growth of the mussels and water quality measurements are currently being tracked. The mussels increase biodiversity and the ecological health of the waterway. As they pump and filter water through their gills in order to feed and breathe, mussels remove bacteria and excess nutrients from the creek. They also provide an opportunity to engage youth and the community in conservation efforts.

Since the mussels' release, several youth groups have engaged with the mussels including fourth graders from St. Mark's Youth Enrichment, teens from the Multicultural Family Center's Summer Teen Employment Program (STEP), and students from Wahlert Catholic High School. Activities included macroinvertebrate sampling, recording mussel growth, and picking up trash. They also learned about flood mitigation, watershed stewardship, sources of stormwater pollution, and the life cycle of freshwater mussels.

The effort to promote stewardship in the Bee Branch Watershed is part of the City's Beekeepers initiative. Its focus is on watershed health and safety, pollution prevention, fostering good habits, responsible behavior, and cultivating an appreciation for and a connection to our natural resources. The student group from St. Mark's Youth Enrichment were the first to take the Beekeepers pledge, something anyone can do!

### The Beekeepers Pledge

*I pledge to protect the Bee Branch Creek and Mississippi River. I will....*

- Clean up after my pets to prevent water and soil pollution.
- Always put trash in the garbage can.
- Do my best to reuse, reduce, and recycle!
- Participate in watershed projects.
- Help care for growing things like trees, flowers, and plants.
- Protect wildlife such as birds, butterflies, bees, and fish.

*It is my responsibility to care for our rivers, soil, and sky. No job is too big, no action is too small, the care of our Earth is a job for us all.*

Learn more about the Beekeepers initiative at [www.cityofdubuque.org/beekeepers](http://www.cityofdubuque.org/beekeepers).

The Bee Branch Creek Greenway protects our friends and neighbors from devastating flash flooding and serves as a beautiful linear park. A range of gift options are available including benches, bike rest stations, trees, brick pavers, and more. Each option includes a custom engraved message to be displayed at the amenity.

### NAMING OPPORTUNITIES



Memorial Bench



Creekside Bench



#### Bench / \$5,000

Laser-cut decorative memorial benches provide comfortable seating along the Upper Bee Branch Trail. Designs include biking along the Bee Branch or a Great Blue Heron.

Several creekside limestone benches have been placed along the Lower Bee Branch Trail. It's the perfect place to sit, enjoy the water, and watch the ducks. Name a bench for your loved one and create a special spot in the greenway just for them!

#### Bike Rest Station / \$1,000

Several bike racks located along the creek provide cyclists an area to keep their equipment safe while enjoying the park. A personalized plaque at a bike station is the perfect gift for biking enthusiasts.



#### Memorial Tree / \$500

The gift that grows and grows! Over 1,000 new trees and shrubs have been planted along the greenway. Name a tree in memory or celebration of your loved one and look forward to sitting its shade for years to come.



#### Personalized Brick Paver / \$100

A personalized brick paver is the perfect way to honor someone. Whether they grew up in the neighborhood or have a special connection to Dubuque, it is a meaningful gift that will stand the test of time.

### How To Make a Gift

To make a gift this holiday season, call the City of Dubuque at 563.690.6068 or visit [www.cityofdubuque.org/ar3](http://www.cityofdubuque.org/ar3).

