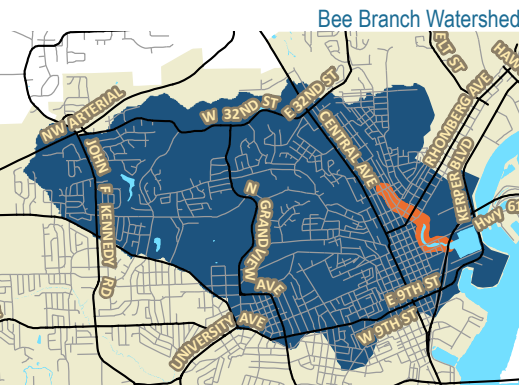




GREEN ALLEY PROGRAM

The Bee Branch Watershed Flood Mitigation Project

The purpose of the Bee Branch Watershed Flood Mitigation Project is to prevent flooding, improve water quality, stimulate investment, and enhance quality of life within the Bee Branch Watershed. This \$200 million, 12-phase infrastructure project represents a multi-faceted approach to addressing the severe and frequent flash flooding experienced in the watershed.



The combined phases will:

- reduce the volume of stormwater,
- slow the rate of stormwater through the upper watershed,
- increase the safe conveyance of stormwater through the flood-prone area, and
- provide floodwater protection to the City's water treatment plant on Hawthorne Street.

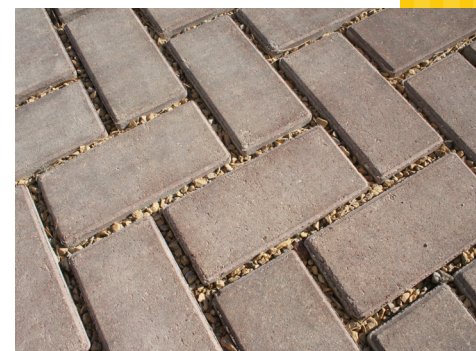


An example of a completed Green Alley in Dubuque.

Impervious Surface Reduction (Green Alleys)

The "Impervious Surface Reduction" phase of the project focuses on reducing the volume of stormwater in the watershed. An impervious surface does not allow rain water to soak into the ground. Examples include traditional concrete, asphalt, and packed gravel surfaces (driveways, alleys, sidewalks) as well as rooftops. By reducing the amount of impervious surfaces in the watershed, more stormwater can soak into the ground instead of creating excessive run-off that can exceed the capacity of the storm sewer system during major rain events. Pervious surfaces also reduce pollutants on the roadways from running off into the storm sewer system and ultimately the Mississippi River. In short, the goal of impervious surface reduction is to reduce the volume of stormwater contributing to flooding by allowing it to soak into the ground.

The main way impervious surface reduction will be achieved in the Bee Branch Watershed Project is by converting approximately 240 alleys to "green alleys." Green alleys feature a special permeable pavement surface. For this project, specially designed interlocking concrete pavers will be utilized. The surface has openings or pores that allow water to pass between, or infiltrate, the pavers and percolate through two to three feet of stone aggregate and then into the soil below. The alley is also "pitched" or graded to allow water that does not soak in to run to the center of the alley, flow to the street, and then into the storm sewer system.



Interlocking pavers allow water to infiltrate into the soil below.

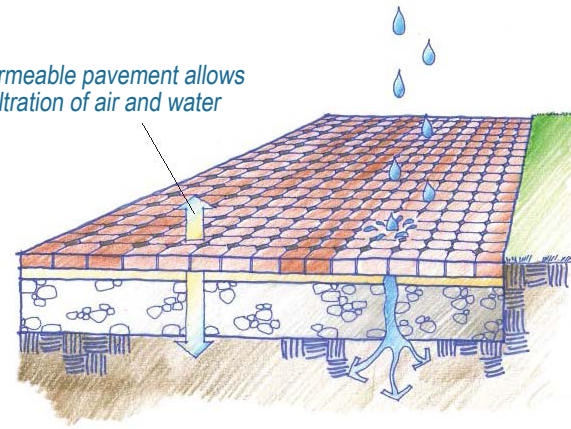
More About Green Alleys

The goals of converting the existing alleys in the watershed to green alleys are to prevent adjacent properties from flooding, reduce the rate and quantity of stormwater runoff throughout the watershed, recharge/replenish the ground water, and filter soil, pollutants, and debris.

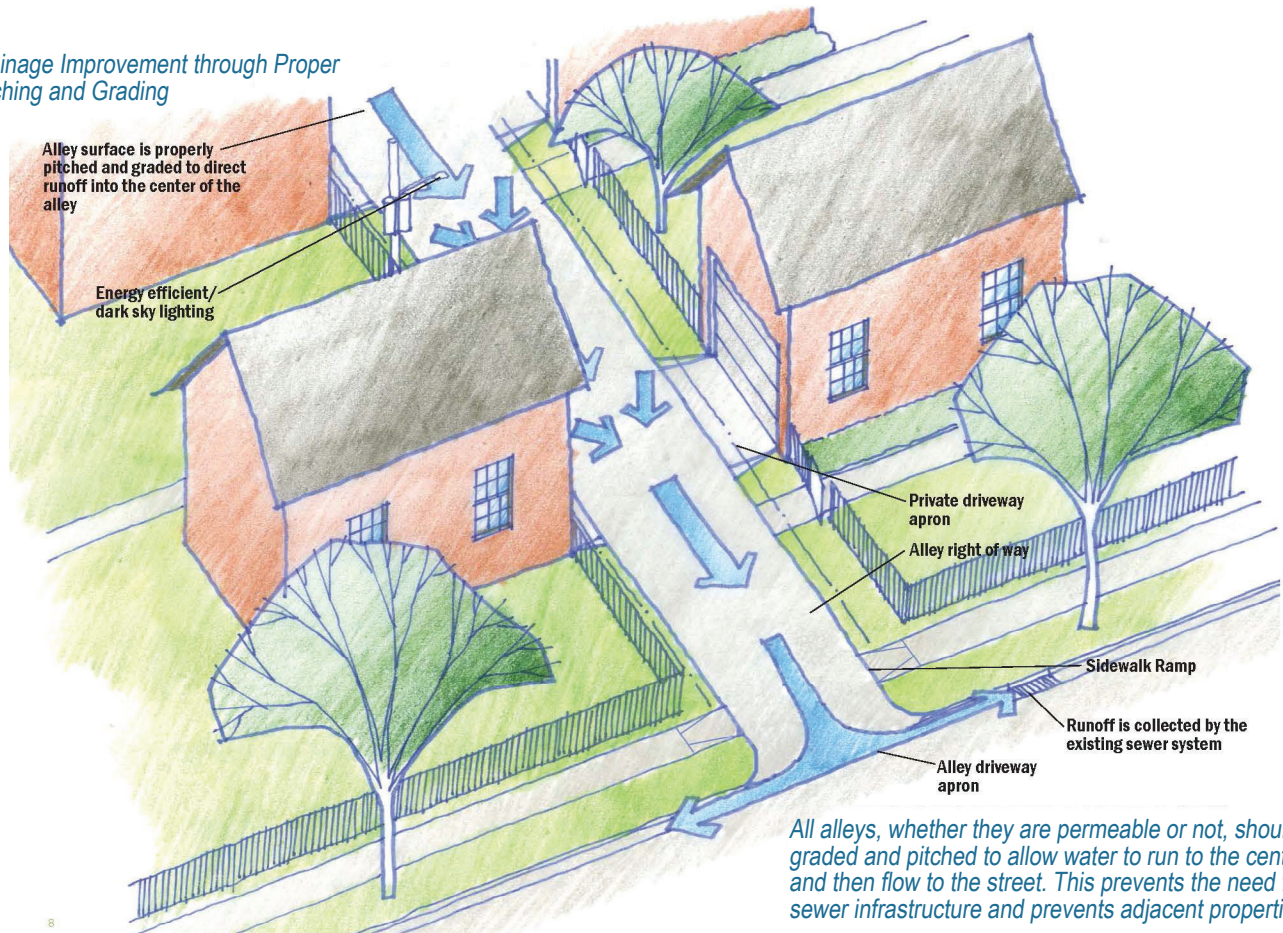
Permeable/green alleys are being used successfully throughout the country and were tested in several downtown Dubuque locations before being selected for the Bee Branch Watershed Project. Other communities using permeable surfaces to address stormwater management include: Charles City and West Union, Iowa; Chicago, Ill.; St. Louis, Mo.; Seattle, Wash.; and Portland, Ore.

Approximately 240 alleys in the watershed will be converted to green alleys. Twenty-three alleys were completed in 2014 with another 50 planned for 2015 and 2016. The remaining alleys in the Bee Branch Watershed are scheduled to be reconstructed between 2024 and 2041. This conversion is expected to reduce stormwater runoff within the Bee Branch Watershed by up to 80%.

Permeable pavement allows infiltration of air and water



Alley Drainage Improvement through Proper Alley Pitching and Grading



All alleys, whether they are permeable or not, should be properly graded and pitched to allow water to run to the center of the alley and then flow to the street. This prevents the need for additional sewer infrastructure and prevents adjacent properties from flooding.

Project Funding

The total cost for the Bee Branch Watershed Flood Mitigation Project is just over \$200 million. The project funding includes federal, state, city and special assessments to property owners. The impervious surface reduction (green alley) phase is expected to cost \$57.4 million.

In early December 2013, the City was awarded \$98.5 million from the Iowa Flood Mitigation Board for the project in the form of state sales tax increment financing. These funds are based on increases to local state sales tax revenue and are

made in annual payments spread over the next 20 years. When combined with other state and federal grants and local donations for the project, the City has received over \$128.5 million to help fund the \$200 million project.

As with most projects funded in part by state and federal programs, a "local match" is provided. In this case, Dubuque's local match includes stormwater utility funds and special assessments to property owners.

Special Assessments

Whenever the City reconstructs a street or alley, the abutting property owners are assessed a portion of the cost, usually approximately 15% of the actual cost. The remainder of the cost (85%) is covered with city funds or grant funding. The reason abutting property owners receive an assessment for the project is because they also receive a corresponding benefit of the project that the rest of the citizens are not receiving. The benefits include reduced flooding and icing, an improved road surface, and better access to property. The assessment to a particular property is proportional to the size of their lot/property.



The assessment amounts will vary based on the frontage (width) and depth of the lot. For most of the alleys in the Bee Branch Watershed, an approximate “rule-of-thumb” cost to the property owner for paving will be \$25 per foot of frontage. For example, if you have a 50-foot-wide lot, the approximate cost could be calculated by multiplying \$25 times 50 for a net paving cost of \$1,250. However, these costs are influenced by the contractor’s bids and whether or not there are cost overruns during construction. It is also important to note that assessments may include additional utility costs if it is necessary to replace private water or sewer service lines. A preliminary assessment notice will be sent to all property owners before a public hearing with an estimate of the assessments at a City Council meeting. That number represents a “worst-case scenario” and includes additional costs for possible overruns and engineering costs. **Most final assessments for average-sized lots, without utility costs, are expected to be in the range of \$1,000 to \$1,500.**

Financial Assistance

The City of Dubuque offers financial assistance for owner-occupied properties. Guidelines for financial assistance are based on family size and gross household income. The amount of assistance ranges from 20% to 100%. For example:



A household of four with a total household income of \$41,000 would receive 54% off of their assessment



A household of two with a total household income of \$40,000 would receive 28% off their assessment



A household of one who makes \$18,500 or less a year would receive 100% off their assessment

Whether a household qualifies for financial assistance or not, residents with a balance of \$500 or more also have the option of financing the assessment over a period of 15 years at 3% interest. See payment example below:

Assessment	Monthly Payment
\$800	\$5.60
\$1,000	\$7.00
\$1,500	\$10.40

Sample Income Guidelines

Family Size	Income Limit	% Relief	Family Size	Income Limit	% Relief
1	\$37,000	20%	4	\$52,800	20%
	\$30,063	50%		\$42,900	50%
	\$23,125	80%		\$33,000	80%
	\$18,500	100%		\$26,400	100%
2	\$42,250	20%	5	\$57,050	20%
	\$34,328	50%		\$46,353	50%
	\$26,407	80%		\$35,657	80%
	\$21,125	100%		\$28,525	100%
3	\$47,550	20%	6	\$61,250	20%
	\$38,635	50%		\$49,766	50%
	\$29,719	80%		\$38,282	80%
	\$23,775	100%		\$30,625	100%

For a complete list of income guidelines, visit www.cityofdubuque.org/greenalleys or call 563.690.6068.

FAQS *frequently asked questions*

How long will the construction last? Alleys that do not contain water and sewer utilities will each require about a month to reconstruct, depending upon weather. Alleys that do contain sewer and water utilities could take a month and a half to two months to reconstruct. The City and the contractor will work with abutting property owners to facilitate access to garages and the rear of properties for as long as possible. It is anticipated there will be two- to three-week timeframes where access is prohibited to facilitate the installation of the pavement or utility.

My property doesn't flood and the water from our alley all soaks into the ground now. Why is my alley being reconstructed? All alleys and other impervious surfaces throughout the watershed contribute to the flooding problems throughout the watershed. When stormwater runs off your property, it enters the street and storm sewer system. The capacity of the system can be exceeded in major rain events. The project takes a comprehensive, watershed-wide approach to reducing the amount of stormwater that enters the system and to increase the capacity of the system to prevent flooding and private property and public infrastructure damage.

Where can I park during construction? During construction, abutting property owners will need to utilize available on-street parking or make other arrangements with neighbors to park. The City understands this is inconvenient for the short term. The contractor will try to facilitate access to abutting properties for as long as possible.

Where will my trash, recycling, and yard debris be picked up during construction? If these collections are made in your alley, you will have to place the materials out on the street, instead of the alley for a period of time. You will be notified when this will be necessary.

What will happen to my landscaping/ flowers near the alley? Because the right-of-way (ROW) is not private property, any landscaping in the ROW is subject to disturbance. The City and the contractor will work with the adjoining property owner to try and minimize disturbance when possible. However, any trees and shrubs in the right of way are subject to removal by the City.

What if my driveway and/or sidewalk connects to the alley? When constructing the green alley, the City will transition the pavement so that existing driveways and sidewalks are accounted for. If the existing driveway is gravel, the City will construct a concrete apron that extends to the property line. If the driveway is paved, the City will transition to the paved driveway/sidewalk as far as the property line. Any improvements requested beyond the property line will be the abutting property owners' responsibility.

Who owns alleys? All of the alleys in this project are in the public (City-owned) right-of-way (ROW), an area owned by the City to allow for the installations of utilities and roadways.

Will there be ice in the alley? There will be situations where ice will build up in alleys, but likely less than a traditional surface. The new permeable pavers will help reduce the ice, especially if the winter season has the freeze/thaw cycles Dubuque usually experiences. The stone aggregate beneath the pavers allows water to infiltrate even in the winter months.

Will the pavers settle or shift? By design, the pavers will initially settle about a half inch. They are installed with this initial settlement in mind. Additional settling or shifting is minimal because concrete collars or bands are installed along the edge of the alley to hold the pavers in place, and because of the significant amount of clean stone aggregate underneath the pavers.

These are engineered pavement systems and perform much better than the current patio pavers used today and the old brick streets from years ago.

What type of maintenance will the City provide in the future? The City will provide for regular alley sweeping and vacuuming in order to maintain the permeable nature of the pavers. Additionally, the City will replace loose or broken pavers if they should occur. The City will not plow alleys in residential neighborhoods.

Will stormwater be diverted through my property? The Green Alley project is not intended to divert water through your property. However, if the natural lay of the land currently has water running through your property, Iowa law requires you to continue to accept that water. The permeable pavements of the alleys should reduce the runoff that may travel through your property.

Will the Green Alleys eliminate street flooding? No. Streets are designed to convey stormwater, as well as vehicles. It is standard engineering practice to design a street to carry half a lane's width of water during significant storm events. However, other phases of the flood mitigation project are designed to increase the capacity of North End storm sewers and streets to help reduce the street flooding that can sometimes occur.

Are Green Alleys a beautification project? No. The Green Alleys are a stormwater management and water-quality project. The fact that the alleys look attractive is a bonus.

Questions or comments about this project?

Written comments can be submitted to the City Clerk's Office, the Engineering Department, City Manager, or your City Council representative. The Green Alley project contact in the Engineering office is: Jon Dienst, P.E., Civil Engineer, jdienst@cityofdubuque.org, 563-589-4270.

To receive email and/or text message alerts regarding the Bee Branch Watershed Flood Mitigation project, visit www.cityofdubuque.org/notifyme