



Using Stormwater Smart Outreach Materials

A How-to Manual for Local Communities

INCREASE
AWARENESS
of Stormwater Effects

PROMOTE
PRACTICES
to Manage Stormwater

INSPIRE
INVESTMENT
in the Community



USING STORMWATER SMART OUTREACH MATERIALS

Stormwater Smart is a collection of communications tools you can use to promote the value of sound stormwater management for creating a community where your residents want to live and work. The U.S. Environmental Protection Agency (EPA) has developed these tools for public works managers to use as part of the public education and outreach campaign of their stormwater permit programs. This collection includes brochures, infographics, one-pagers, and social media posts to educate the public, as well as a template for presentations to city officials and community leaders about the benefits of stormwater management.

Developed with coordinated content and artwork, these tools show what stormwater is and how it can pollute local waterways. They explain the value of green infrastructure for the community as well as how everyone can help manage stormwater as a community resource.

Stormwater Smart materials cover a wide range of topics and can be used on several platforms. They likely will help support efforts to meet your permit requirements, whether you are planning a new program as a new municipal permittee or want to enhance an existing program.

This how-to manual is divided into three sections that correspond to the main goals of the Stormwater Smart effort:

- Increase awareness.
- Promote practices to manage stormwater.
- Inspire investment.

Each section explains how the products support its main goal, as well as offers suggestions for how to use the products to convey information that resonates with residents and business owners and prompts them to join in the effort to be “stormwater smart.”

A good first step to using this guide and the Stormwater Smart products is to think about the people who live in your community. You know your community best. What would motivate them to care about water quality? How do they use and relate to the water bodies in the area? Are residents concerned about flooding, sewer backups, or property damage caused by severe weather? How can business owners demonstrate leadership by reducing their impacts on

stormwater pollution? Finally, how can you help everyone in your community understand the value of managing stormwater for a better quality of life?

Answering just a few questions can jump start your efforts to find ways to educate and engage everyone in the effort to meet permit requirements, make smart infrastructure investments, and value stormwater as an essential community resource.

EPA is making these materials available for download by any community to customize with logos and website information. Getting everyone to be “stormwater smart” leads to a healthier community and a stronger, resilient future.



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RAISE AWARENESS OF HOW STORMWATER FLOWS

Most people don't think about stormwater and how it affects their community as they go about their daily lives. In order to get residents and business owners to appreciate the need to manage stormwater, first you have to explain what it is and how stormwater gets polluted. Use the following tools to draw the connection between stormwater and healthy waterways and communities.

Know What Happens When It Rains Brochure

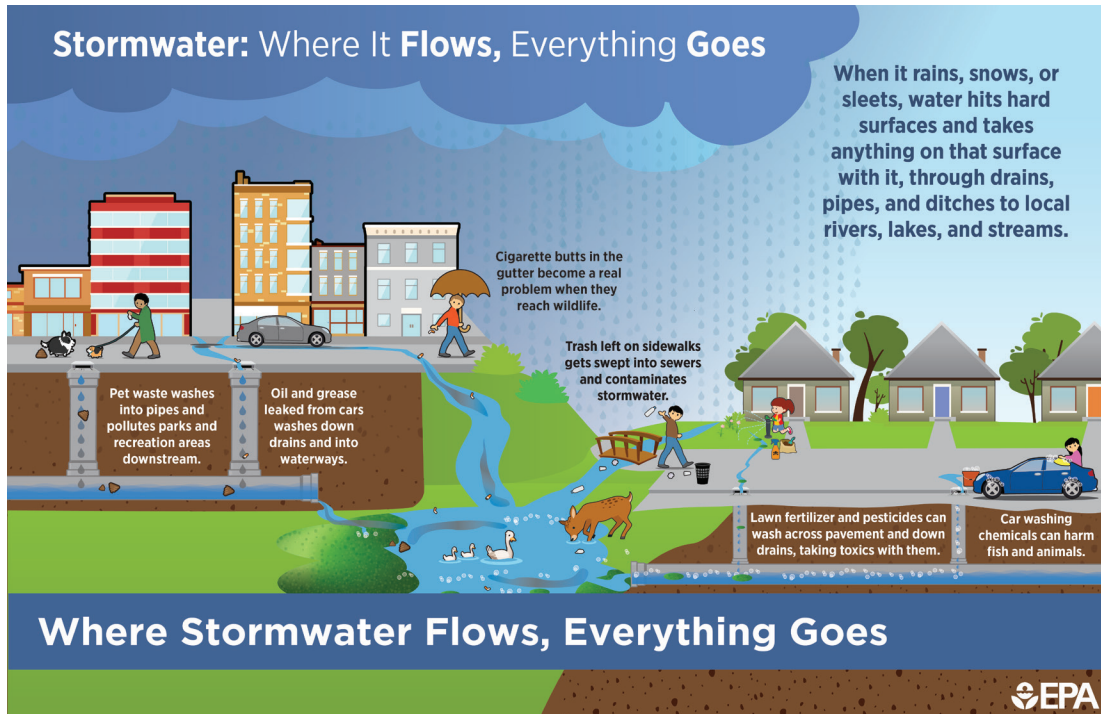
This brochure explains what stormwater is and how pollution travels downstream and into waterways. You can post the PDF to your organization's website or print the brochure and display it in the lobbies of your City Hall, libraries, schools, places of worship, or utilities. Consider handing it out at community events, or you can use portions of the text in a community newsletter or email to educate residents on stormwater basics and why it is important to manage stormwater. One place to start with stormwater pollution education is by partnering with local environmental, recreational, or "river keeper" groups. They may hold environmental fairs, Earth Day events, river cleanups, or other activities where you can distribute this brochure.



Print on 8.5 x 14 (legal-sized) paper, double-sided, and fold in half.

Stormwater Flow Infographic

If you are looking to demonstrate how chemicals and other pollutants get into our waters, try posting this infographic on your website or having a poster made for local science teachers to post in their classrooms. Schools and libraries are good partners in education. Children often take messages home to their parents, and they have a vested interest in ensuring their rivers, lakes, and streams are kept clean for their enjoyment.



Sized to be printed on 11 x 17 paper or as a postcard.

One way to further engage students is to sponsor a poster contest at local schools. You can suggest that kids illustrate any of the stormwater pollution problems shown in this poster with a call to action about how to reduce pollution. Consider offering a prize, or you can display the winner's poster on your website or in prominent local places, such as public libraries. Schools can help you promote your contest and get students to participate as an assignment. You can also partner with your town's Parks and Recreation Department to display the infographic at nature centers, trail systems, parks, and similar venues.



TAKE IT A STEP FURTHER

Clean Water Minnesota inspired a local fourth grade teacher and faith leader to have students think critically about stormwater management where they live. The students at Frassati Academy created a song to make cleaning stormwater drains fun!

Social Media Posts/Graphics

You can post these social media graphics on your Facebook or Twitter to show how cigarette butts, pet waste, fertilizer, and soap can pollute waterways when stormwater flows. The graphics shown here can be posted with the suggested text underneath each. You can make your posts public so customers can share and retweet on their own Facebook or Twitter accounts; consider having a contest to see who can get the most “likes” or which post gets the most shares.



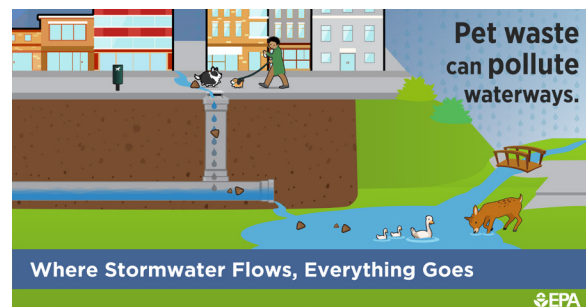
Where stormwater flows, everything goes. Soap from car washing products contains chemicals that can harm fish and other critters. Be #StormwaterSmart!



Where stormwater flows, everything goes. Oil and grease leaked from cars wash down drains and into waterways. Be #StormwaterSmart!



Where stormwater flows, everything goes. Cigarette butts don't break down, and they make animals sick. Be #StormwaterSmart!



Where stormwater flows, everything goes. Pet waste washes into sewers and downstream. Be #StormwaterSmart!



Where stormwater flows, everything goes. Lawn fertilizers and pesticides can wash across pavement and down drains, taking toxins with them. Be #StormwaterSmart!



Where stormwater flows, everything goes. Trash left on sidewalks gets swept into sewers and contaminates stormwater. Be #StormwaterSmart!

Sized for posting to Facebook and Twitter.

PROMOTE STORMWATER SMART PRACTICES

Taking steps to educate consumers and businesses about proper disposal of pet waste, pesticides, oil, and other pollutants is essential to managing stormwater in a community. Once you have educated consumers about what stormwater is and how it gets polluted, you can use the following tools to encourage stormwater smart steps to keep rivers, lakes, and streams clean.

Take Steps to Protect Our Waterways Brochure Series

Urban and suburban landscapes have different stormwater management needs and varying target audiences. For your convenience, EPA has developed resources for educating both types of communities on steps they can take to reduce stormwater pollution where they live. Like the other brochures, these can be placed in municipal or utility building lobbies, posted on websites, or handed out at community events such as street fairs, river fests, or home expos.



If you've been thinking about reducing your environmental footprint, you can take steps to decrease the amount of pollution that flows from your home into local waterways every time it rains. Known as stormwater, once rain or snow hits the ground, it can carry dirt, chemicals, and other pollutants downstream from your home and yard to the rivers and lakes in your community. Here are just a few steps you can take to be stormwater smart at home.

In the Garden

Rain garden
Fertilizer away from drains

In the Driveway

Biodegradable soap
Direct spray

In the Yard

Rain barrel
Leaves away from drain

On the Sidewalk

The chemicals in drains
Go light on deicer

- Rain is great for your lawn, but excess rain can run off from your yard and walkways into the street, where it flows from the storm drain into local rivers, lakes, or streams, taking any chemical you've applied with it.
- Apply fertilizers and pesticides carefully on your lawn or garden and not on pavement.
- Avoid using fertilizers and pesticides completely if rain is in the forecast.
- Consider installing a rain garden, which is a depressed area planted with grasses or perennials that collects stormwater.
- Wash your car with biodegradable soap to avoid chemicals floating downstream, or visit a carwash.
- Direct water from downspouts and car washing to grassy areas, so it can soak into the ground rather than hit the pavement.
- Don't hose down your driveway and flush dirt down the storm drain.
- When watering your lawn, direct the spray toward your lawn and plants, not the pavement.
- Look for spots on the ground that indicate your car leaks oil or fluid. Don't let your leaks pollute!
- Use permeable pavers instead of hard stones or pavement in your yard to help water absorb into the ground.
- Don't rake leaves or yard clippings into the storm drain to avoid clogs and debris that could cause flooding.
- Install a rain barrel to help prevent rain from flowing into storm drains (and also save water for dry spells!).
- Pick up pet waste and keep trash and dirty water away from pavement and storm drains, where it can contaminate stormwater that flows downstream.
- During colder weather, avoid oversalting your sidewalks and use an appropriate amount of deicer—a little goes a long way.
- Sweep sidewalks and put the debris in the trash.

DID YOU KNOW?
If you use a rain barrel to collect water for plants, you can keep your landscape green for free. Every time it rains, you'll collect water that can be used later! Check out www.epa.gov/watersense for more tips to save water!

If you've been thinking about reducing your environmental footprint, you can take steps to decrease the amount of pollution that flows into local waterways every time it rains. Known as stormwater, once rain or snow hits the ground, it can pick up dirt, chemicals, and other pollutants and carry them downstream from your sidewalks, streets, and alleys to bodies of water in your community.

Rain is great for growing things in the city, but excess rain can run off from roofs, pavement, and other hard surfaces into the street, where it flows from the storm drain into local rivers, lakes, or streams, taking pollution from those surfaces with it. Here are just a few steps you can take to be stormwater smart, starting in your own neighborhood:

On the Curb

In the Alley

On the Sidewalk

In the Park

- If you park your car on the street, check for spots underneath it, which could be a sign of leaky oil or other fluids that can contaminate stormwater as it washes by. Don't let your leak pollute.
- Street sweeping is an important part of stormwater management; during posted sweeping hours, don't park your car on the street.
- Keep garbage cans covered to keep trash from blowing and avoid rainwater getting contaminated by your trash. Never dump garbage in alleys or gutters.
- Read the label to dispose of household chemicals and paints properly, and never dump them in the alley, on the sidewalk, or in the street.
- Keep raked leaves or yard clippings out of the storm drain to avoid clogs and debris that can reach waterways.
- Don't hose down sidewalks, that will flush dirt down through the storm drain system!
- During colder weather, avoid oversalting the sidewalk or use "green" deicer—a little goes a long way!
- Always pick up after your dog by putting waste in a bag and disposing it in an appropriate waste container, rather than dropping it in the storm drain.
- Never drop cigarette butts on the ground; put out cigarettes and drop the butts in a proper receptacle or trash can.
- Always put trash in its place and keep it away from storm drains.

DID YOU KNOW?
Everything you put on the ground can possibly contaminate local water bodies and affect public health.

Print on 8.5 x 14 (legal-sized) paper, double-sided, and fold in half.

Social Media Posts/Graphics

Post the social media graphics on the next page on your Facebook or Twitter to show residents simple steps they can take toward better stormwater management. You can post the graphics shown here along with the suggested text or draft your own. By making the posts public, customers can share and retweet on their own Facebook or Twitter accounts; consider a contest to see who can get the most “likes” or which post gets the most shares.



Where stormwater flows, everything goes. Avoid applying pesticides or fertilizer when rain is predicted and avoid spraying any chemicals on pavement. Be #StormwaterSmart!



Where stormwater flows, everything goes. Always pick up and dispose of pet waste in the proper container. Be #StormwaterSmart!



Where stormwater flows, everything goes. Keep trash in its place and never dump down storm drains. Be #StormwaterSmart!



Where stormwater flows, everything goes. Direct water from downspouts and sprinklers to green areas only. Be #StormwaterSmart!



Where stormwater flows, everything goes. Don't oversalt your walk or driveway. Be #StormwaterSmart!



Where stormwater flows, everything goes. Follow "No Parking" signs on street sweeping days. Be #StormwaterSmart!

Sized for posting to Facebook and Twitter.

Stormwater Tip Sheets for Businesses

EPA has developed tip sheets to provide owners of auto shops, restaurants, construction sites, lawn care companies, or public parking lots with quick, easy-to-understand stormwater management tips. You can distribute these to your local business owners, hand out at small business events, or post to your website to show how employees can keep waterways clean through stormwater management practices. Your Stormwater Smart campaign can extend to local business as well. Consider partnering with the local Chamber of Commerce, or hosting a small business breakfast to engage the following types of business owners in taking the pledge to keep rivers, lakes, and streams clean by taking the actions on these tip sheets.

TAKE IT A STEP FURTHER

Similar to the Adopt-a-Highway program, your Stormwater Smart campaign can give small businesses a chance to show customers they care about the health of local waterways and the beautification of the community.



Auto Shops

Restaurants

Lawn Care

Parking Lots

Construction

Print on 8.5 x 11 (letter-sized) paper.

Construction in Your Neighborhood Tip Sheet

If you would like to educate residents on how to identify proper stormwater management practices in their neighborhood you can post this tip sheet on your website or print it out and use as a handout at community events like home and garden expos, give to home owner associations, or place in municipal and utility building lobbies. Local citizen meetings about new construction projects are also a good place to hand out this tip sheet.



Print on 8.5 x 11 (letter-sized) paper.

PROMOTE STORMWATER INVESTMENTS IN THE COMMUNITY

Explaining why it's important to invest in green infrastructure solutions to reduce stormwater pollution can be complicated. The following materials help educate your municipal officials, elected officials, and financial institutions about the benefits of investing in green infrastructure.

Invest in Your Community Brochure

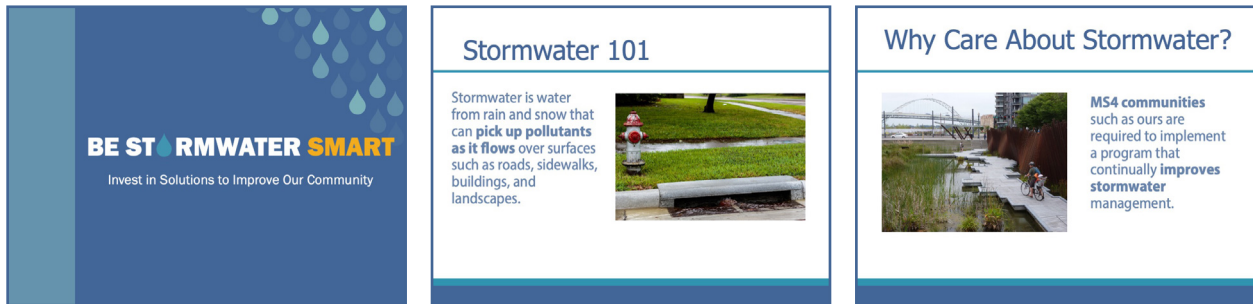
Educate officials with this brochure about the ways stormwater smart solutions and green infrastructure can bring value to the community. You can hand it out at city council meetings to accompany a presentation; make it available at community gatherings; or distribute to interest groups and stakeholders focused on environmental improvement projects in your community to inspire support and investment.



Print on 8.5 x 14 (legal-sized) paper, double-sided, and fold in half.

Be Stormwater Smart PowerPoint

To communicate with officials, you can customize this Stormwater Smart PowerPoint presentation with your community data, plans and activities to demonstrate the importance of enhancing stormwater management and green infrastructure in your community. This PowerPoint was designed to be used at city council meetings and other local government and leadership gatherings to make it easy to share the value of stormwater smart investments.



Stormwater Investment Benefits Infographic

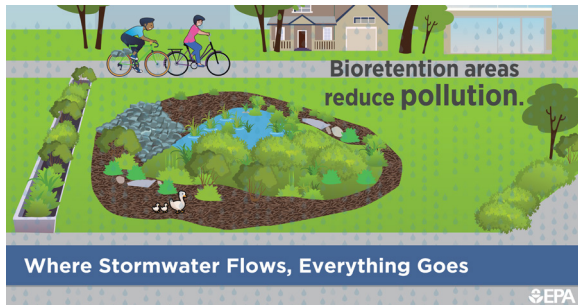
Pictures can help sell your story and help people understand why reducing stormwater pollution adds value to their neighborhood. Consider sharing this infographic on your website, making a poster for your lobby, or sending as a bill stuffer with water utility bills to educate customers.



Sized to be printed on 11 x 17 paper or as a postcard.

Social Media Posts/Graphics

You can post the social media graphics below on your Facebook or Twitter to show residents how stormwater management adds value to the community. You can use the graphics shown here along with the suggested text.



Where stormwater flows, everything goes. Bioretention basins reduce pollution and beautify the landscape. Be #StormwaterSmart!



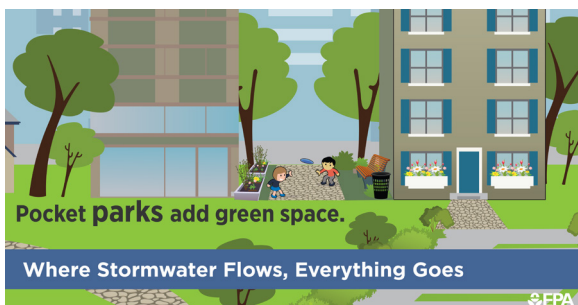
Where stormwater flows, everything goes. Local governments and utilities can make smart investments in stormwater management. Be #StormwaterSmart!



Where stormwater flows, everything goes. Enhancing paved parking lots with more landscaping helps soak up stormwater. Be #StormwaterSmart!



Where stormwater flows, everything goes. Permeable paving and rain gardens help reduce flooding. Be #StormwaterSmart!



Where stormwater flows, everything goes. Pocket parks add green spaces and enhance neighborhoods. Be #StormwaterSmart!



Where stormwater flows, everything goes. Rain gardens and permeable pavers help soak up stormwater. Be #StormwaterSmart!

Sized for posting to Facebook and Twitter.

Green Infrastructure in Action Case Studies

Case studies are a great way to show real world examples of successful implementation of stormwater management and green infrastructure projects in other communities to strengthen support for your own project goals. These work well as an addition to your presentations to local community leaders, or you can make them available on your website.

Monona, Iowa, Aquatic Center Permeable Pavers Parking Lot

The City of Monona in Iowa completed a project to replace the Monona Aquatic Center gravel parking lot with permeable pavers to reduce stormwater runoff. This project helped to improve local water quality, enhance aesthetics, and reduce site maintenance. This case study summarizes the project along with results and lessons learned.

CASE STUDY | Taking Steps to Protect Our Communities
IOWA AQUATIC CENTER MAKES A SPLASH WITH PERMEABLE PAVERS

After rainstorms in Monona, Iowa, stormwater runoff used to flow off the gravel parking lot and driveway of the Monona Aquatic Center, picking up pollutants as it flowed into a local river tributary. The City of Monona used funds from Iowa's Clean Water State Revolving Fund, a state-wide clean water loan program, to finance a green infrastructure project to replace the lot with permeable pavers to absorb the stormwater runoff. This project helped to improve local water quality, enhance the parking lot, and reduce site maintenance.

BACKGROUND
 Originally, the Monona Aquatic Center's gravel and parking lot were made of gravel. During heavy rainstorms, stormwater would travel from the parking and driveway areas, picking up sediment, debris, and oil and chemical fuel, and then be carried runoff to a nearby river. The gravel surface, which at the time was considered an impervious surface, during the summer, the heat from the gravel would warm up the stormwater runoff, which would increase the temperature of the local river tributary and disrupt aquatic life.

The parking lot was also unpleasant for guests of the Aquatic Center because it was so messy looking. The gravel surface could be hot and uncomfortable for visitors in the summer months. The city wanted to replace the lot and the project to help improve the water quality of nearby streams and rivers in conjunction with the local fishery that

AT-A-GLANCE
PROJECT NAME: Monona Aquatic Center
TIMELINE: 2014
LOCATION: Monona, Iowa
POPULATION: 1,000
PROJECT FOOTPRINT: 1,000 square yards of permeable pavers
GREEN INFRASTRUCTURE: Permeable pavers
RESULTS: Reduced runoff rates during a 50-year storm event from one cubic foot per second to 0.2 cubic feet per second, reduced parking striae, and improved visibility
BENEFITS: Improved water quality, enhanced aesthetics, reduced maintenance, increased parking

IMPAIRED WATERWAYS
 into bodies of water that do not meet water quality standards.

SEPTEMBER 2022

The original gravel parking lot at the Monona Aquatic Center.

Workshop Association, the city began to plan improvements to the Aquatic Center parking lot in 2014.

PLANNING AND FINANCING
 To finance the project, the city wanted to take advantage of funds available through Iowa's Clean Water State Revolving Fund. The city already had a loan from this fund to work on a wastewater treatment plant project. Through the loan, the city could add a "booster" project to a separate stormwater project. A sponsored project did not add to the overall cost of the original wastewater treatment plant project but was financed through the loan interest and fees, requiring no additional cost for water utility customers. In 2014, the city completed an application for the Aquatic Center parking lot to be a sponsored project with the information from a previously completed environmental assessment of Silver Creek and with support from local stakeholders. The city received a sponsored project loan of \$145,000, which covered most of the construction and engineering costs for installing permeable pavers at the Aquatic Center parking lot.

The city and local engineering firm proposed several potential options, including a stormwater pond near the site and extensive stabilization. However, these options did not address both problems of improving the parking lot and improving water quality. The project began with installing the parking lot with permeable pavers. Permeable pavers are interlocking bricks laid over layers of stone or gravel. Stormwater flows between the pavers and through the stone. This was an innovative solution because permeable pavers are primarily used on surfaces like patios. The engineer redesigned the site to make it less steep and to fit the permeable pavers. The city also installed permeable pavers during rainstorms, the space between the pavers allows runoff to soak into the gravel above and through the pavers. The gravel pavers help to make sure that all stormwater parking lot runoff. After deciding on the permeable paver solution, the city and local engineering firm proposed several potential options, including a stormwater pond near the site and extensive stabilization. However, these options did not address both problems of improving the parking lot and improving water quality. The project began with installing the parking lot with permeable pavers. Permeable pavers are interlocking bricks laid over layers of stone or gravel. Stormwater flows between the pavers and through the stone. This was an innovative solution because permeable pavers are primarily used on surfaces like patios. The engineer redesigned the site to make it less steep and to fit the permeable pavers. The city also installed permeable pavers during rainstorms, the space between the pavers allows runoff to soak into the gravel above and through the pavers. The gravel pavers help to make sure that all stormwater parking lot runoff.

The project was completed when the permeable pavers were installed above the gravel and stone parking lot.

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Can be printed 8.5 x 11 (letter-sized) paper.

Cleveland, Ohio, Rain Gardens and Bioretention Features in Vacant Lots

To prevent stormwater from polluting Lake Erie, the Cleveland Botanical Garden and a local sewer utility installed rain gardens and bioretention features in vacant lots in the Slavic Village area of Cleveland, Ohio. This case study explains how green infrastructure helped to improve local water quality, add green space, beautify empty land, and improve safety and quality of life.

CASE STUDY | Taking Steps to Protect Our Communities
THERE'S LOTS TO LOVE ABOUT THE GREENING OF VACANT SPACES IN CLEVELAND

To prevent stormwater from polluting Lake Erie, the Cleveland Botanical Garden and a local sewer utility installed rain gardens and bioretention features in vacant lots in the Slavic Village area of Cleveland, Ohio. The Slavic Village rain gardens and bioretention areas have helped to improve local water quality, add green space, enhance aesthetics of otherwise empty land, and improve safety and quality of life for residents of Cleveland. This case study demonstrates the challenges of implementing green infrastructure and how those challenges can be met to achieve community goals.

BACKGROUND
 For the past few decades, Cleveland has faced two significant challenges: a steady decline in population and continued pollution of Lake Erie from stormwater runoff and sewer overflows. Population decline has led to a reduction in municipal revenues throughout the city, often leading to vacant lots. By 2008, an estimated 2,000 vacant lots accounted for 1,800 acres of unused space in Cleveland. Additionally, the city demolishes about 1,000 residences each year, leaving empty lots that can attract trash and pests.

Cleveland has a combined sewer system, where wastewater and stormwater runoff share the same underground pipes. Heavy precipitation can overwhelm the system, causing sewage overflow to be released into local waterways. These combined sewer overflows (CSOs) can dump nutrient pollution, high levels of pathogens such as E. coli, and chemical such as pesticides into public water bodies.

Cleveland saw the dual problems of vacant lots and CSO pollution as an opportunity to reuse the empty spaces to control stormwater with green infrastructure, improve the Cleveland

AT-A-GLANCE
PROJECT NAME: Slavic Village Vacant Lot Reuse
TIMELINE: 2011 - 2014
LOCATION: Cleveland, Ohio
SQUARE FOOTAGE: Nine 3,000-square-foot lots for the Botanical Garden and approximately 45,000 square feet of lots for the city
BUDGET: \$100,000 for the Botanical Garden and \$200,000 for the city lots
GREEN INFRASTRUCTURE: Rain gardens, bioretention
RESULTS: More than 600,000 gallons per year of stormwater retained
BENEFITS: Improved water quality, enhanced aesthetics, public safety

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A vacant lot in Cleveland, Ohio, before the installation of rain gardens and bioretention features.

Botanical Garden (CBG) and the Northeast Ohio Regional Sewer District (NEOSD) initiated grants to use vacant lots for stormwater management and to improve local communities. CBG developed a plan for the city to identify vacant lots and working groups focused on how to re-use the large number of vacant lots in Cleveland for the community benefit. In 2011, NEOSD had started a program to improve green infrastructure as part of the Capital Construction Decade, which is a major program for NEOSD to reduce CSO pollution events using green infrastructure, such as green infrastructure such as underground storage tanks.

NEOSD also had a grant program to fund local development projects. NEOSD was interested in funding local development projects that would improve water quality and not require to install green infrastructure. The program has granted \$1.5 million to project owners during sewer fund. These projects have reduced stormwater runoff by up to 2 to 3 million gallons per year.

Both organizations identified the Slavic Village neighborhood, which is located in a combined sewer system, as a great place to demonstrate the benefits of green infrastructure. Slavic Village is a neighborhood in the Slavic Village section of Cleveland that was hit particularly hard by the 2008 recession and one area with the most vacant lots in the city. At that time, the regional U.S. Environmental Protection Agency (EPA) and U.S. Geological Survey (USGS) were working in the area to characterize soil quality and permeability. CBG and NEOSD partnered with these agencies to develop green infrastructure projects in the area. In addition to partnering with EPA and USGS, CBG and NEOSD worked with Slavic Village Development, a local organization that advocates for community development in the area, to select the best vacant lots for green infrastructure installation. The CBG and NEOSD project selected sites that were owned by the Cleveland Land Bank. All the selected sites had a right-of-way to direct water to green infrastructure on the lot, which reduced the need for additional construction to alter the lot. Additionally, CBG used to select sites that would not be developed

PLANNING AND FUNDING
 In addition to partnering with EPA and USGS, CBG and NEOSD worked with Slavic Village Development, a local organization that advocates for community development in the area, to select the best vacant lots for green infrastructure installation. The CBG and NEOSD project selected sites that were owned by the Cleveland Land Bank. All the selected sites had a right-of-way to direct water to green infrastructure on the lot, which reduced the need for additional construction to alter the lot. Additionally, CBG used to select sites that would not be developed

NEOSD'S GREEN INFRASTRUCTURE GRANT PROGRAM

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Syracuse, New York, Renovates Community Park With Green Infrastructure

Syracuse worked with Onondaga County, New York's Save the Rain program to plan, construct, and finance the renovation of the McKinley Park basketball court and parking lot with green infrastructure designed to reduce the volume of stormwater that flows into the combined sewer system along surrounding streets.

This case study explains details of the project and how it supported principles of social and environmental justice and enhanced community unity and pride.

CASE STUDY | Taking Steps to Protect Our Communities SAVE THE RAIN MAKES A SYRACUSE PARK A SAFER SPACE FOR KIDS

In 2017, Syracuse, New York, worked with Onondaga County, New York, Save the Rain program to plan, construct, and finance the renovation of the McKinley Park basketball court and parking lot with green infrastructure. The project was designed to reduce the volume of stormwater that flows into the combined sewer system along surrounding streets. By reducing impervious space and increasing rainfall capture, the project prevents sewer overflows while supporting principles of social and environmental justice and enhancing community unity and pride.

BACKGROUND
Onondaga County, New York's Save the Rain program is an award-winning stormwater management program that focuses on preventing rainwater from entering the combined sewer system. The program provides grants to local municipalities to plan and construct green infrastructure in their communities to reduce stormwater flow into the sewer system that could ultimately pollute Onondaga Lake.

Designed and installed in the early 1980s, Onondaga County's sewer system collects stormwater and sewage in one set of pipes called a combined sewer system. Major weather events can lead to combined sewer overflows from the system. Save the Rain goal is to encourage combined sewer overflow events by capturing stormwater before it enters the sewer system and protect the water from pollution.

Before the Save the Rain Program, nearly one foot of combined sewer overflows were left untreated on an annual basis. In 2006, Onondaga County began permitting stormwater management techniques, and a goal to capture

AT-A-GLANCE
PROJECT NAME: McKinley Park
LOCATION: Syracuse, New York
FINISHING: 2016 - 2017
COST: \$100,000
GREEN INFRASTRUCTURE: permeable pavement, porous pavement with an infiltration surface
CAPTURE AREA: 1,000 - 1,500 square feet
RESULTS: Reduces stormwater runoff by an estimated 240,000 gallons per year
SEWERED: 100%
POPULATION: 100,000
GREEN INFRASTRUCTURE: permeable pavement, porous pavement with an infiltration surface
RESULTS: Reduces stormwater runoff by an estimated 240,000 gallons per year

PLANNING
Save the Rain projects are identified through community need and a stormwater management model, which runs calculations to determine the impact of green infrastructure improvements to the combined sewer system. The McKinley Park project was a partnership between the City of Syracuse and Onondaga County to meet city and deliver mutual benefits to achieve the program's goal factors of environmental, social and economic improvements.

McKinley Park is located on the south side of Syracuse in a neighborhood with a high poverty rate. Creating a safe place to play in a new basketball court would provide the benefit of an improved community space for residents. The area is also a combined sewer. Because of its location, the park was a great candidate for making green infrastructure to help better manage stormwater before it rains into the combined sewer system.

To enhance McKinley Park's sports equipment, the project received a grant from the Jim and Joil Burnham Foundation's CourtKids Program, which provides funding for renovation of outdoor community basketball courts. It focuses on socio-economically disadvantaged areas around Syracuse and the surrounding region to give children the opportunity for healthy activities and improved play spaces. CourtKids provided a basketball hoop, service, and other equipment that was not directly contributing to the sewer infrastructure effort.

SEWERED
A watershed is an area of land that drains into a water body. The watershed area includes the land that drains into the watershed area.

Santa Fe, New Mexico, Uses Green Infrastructure as Part of New Community Trail

The City of Santa Fe utilized green infrastructure innovations to ensure water from occasional heavy storms would not flood a new pedestrian trail. This case study shows how proactively incorporating green infrastructure such as stormwater infiltration ponds, infiltration trenches, and bioswales of native plants in the community project helps mitigate flooding on the trail, reduce required

maintenance at the site, save water, and improve the local ecosystem.

CASE STUDY | Taking Steps to Protect Our Communities SANTA FE UNDERPASS BLAZES A FLOOD PREVENTION TRAIL WITH GREEN INFRASTRUCTURE

When it came time to build a new pedestrian and biking underpass at one of the busiest intersections in the metropolitan area, the City of Santa Fe, New Mexico, included green infrastructure innovations to ensure water from occasional heavy storms would not pool on the newly constructed trail. Proactively incorporating green infrastructure such as stormwater infiltration ponds, infiltration trenches, and bioswales of native plants in this community project helped mitigate flooding on the trail, reduced required maintenance at the site, saved water, and improved the local ecosystem.

BACKGROUND
Given the recent development of New Mexico, stormwater management might not be the first consideration for construction project teams in the region. The Santa Fe metropolitan area receives only 14 inches of rain per year, much less than the annual U.S. average of 48 inches. However, most of this rainfall occurs during intense storms in July and August, referred to as "monsoon season". The flow of monsoon or intense rainfall is not able to naturally stop. Without proper management, runoff can cause erosion of the local landscape and carry pollution into the Santa Fe River, enough for the river to be classified as impaired due to levels of sediment, nutrients, bacteria, and formal pollution. This stormwater should be treated before it reaches the Santa Fe River watershed. Additionally, unexpected monsoon runoff during the monsoon season can damage areas and public property. Streets and sidewalks can be covered in sand and question runoff, trees and power lines could fall down in bad storms, and low lying buildings may become flooded.

AT-A-GLANCE
PROJECT NAME: The Anaca Trail, Pedestrian and Bicycle Underpass
COMPLETED: 2017
LOCATION: Santa Fe, New Mexico
POPULATION: 70,000
PROJECT FOOTPRINT: Nearly 100,000 square feet
GREEN INFRASTRUCTURE: permeable infiltration ponds, infiltration trenches, bioswales
RESULTS: The site can collect up to 420,000 gallons of stormwater per year and reduce runoff from a 100-year storm event
BENEFITS: Low-maintenance, reduced maintenance, enhanced safety and aesthetics

MONSOON SEASON
The annual North American monsoon season in New Mexico and other areas of the Southwest. It typically starts through the end of July and continues through the end of September. The end of the monsoon season is accompanied by heavy rain, high winds, and lightning.

PLANNING AND FINANCING
A design group of consultants contributed input throughout the process, including the Santa Fe Transit Authority, which owned the land for the project. The Santa Fe School for the Deaf, which has a campus adjacent to the site, the City of Santa Fe's Bicycle Advisory Committee, and the Santa Fe Area Commission. During the initial design discussions, the project team recommended incorporating green infrastructure features to address the stormwater runoff that would collect and flood the stable areas of the trail during "monsoon" season.

Because the trail is located near a historic right-of-way, the team conducted a study of the surface and groundwater conditions, including aerial photos to identify areas of concern. The team decided to capture and filter water on-site.

Stormwater management is a major challenge for many communities. Raising awareness, promoting practices, and inspiring investment takes energy and commitment. This toolkit of communications materials can help you demonstrate how people living in your region can do their part every day to help manage stormwater and see it as a valuable community resource.