Resources for Financing Resilient Stormwater Management

The following is a selected compilation of funding resources with potential application to climate adaptive stormwater management. This is a sampling to stimulate innovative financing methods to advance regenerative stormwater practices and proactive stormwater retrofit programs. If you find a particularly useful method or have a success story, please be in touch to share it with us. Thank you!

**Financial Planning and Funding Innovation Resources**

**EPA Water Finance Clearinghouse**

The Water Finance Clearinghouse is an easily navigable web-based portal to help communities locate information and resources that will assist them in making informed decisions for their drinking water, wastewater, and stormwater infrastructure needs. The Water Finance Clearinghouse includes two searchable databases: one contains available funding sources for water infrastructure and the second contains resources, such as reports, web links, webinars etc. on financing mechanisms and approaches that can help communities access capital to meet their water infrastructure needs.

**EPA Water Infrastructure and Resiliency Finance Center**

The Water Infrastructure and Resiliency Finance Center is an information and assistance center, helping communities make informed decisions for drinking water, wastewater, and stormwater infrastructure to protect human health and the environment.

- Water Finance Webinars and Forums

**EPA’s Flood Resilience: A Basic Guide for Water and Wastewater Utilities (PDF)** *(47 pp, 2.2 MB, About PDF)*

This guide helps water and wastewater utilities become more resilient to flooding and provides cost and financing information. Flood resiliency is the capacity of a utility to withstand a flood,
minimize damage, and recover quickly to provide reliable service. Increasing flood resiliency requires financial investment in mitigation measures.

**Financing Alternatives Comparison Tool**

The [Financing Alternatives Comparison Tool (FACT)](https://example.com) is a financial analysis tool that helps communities identify the most cost-effective method to fund a wastewater or drinking water management project. FACT produces a comprehensive analysis that compares various financing options for these projects by incorporating financing, regulatory, and other important costs.

**Green Infrastructure Cost-Benefit Resources**

Costs of new and refurbished infrastructure are a major challenge for communities. Green infrastructure can be a cost-effective approach to improve water quality and help communities stretch their infrastructure investments further by providing multiple environmental, economic, and community benefits. On this page, learn more about how other communities have realized cost savings through their green infrastructure programs as well as about tools you can use to inform your own cost-benefit analysis.

**Environmental Finance Centers**

The [Environmental Finance Center Network (EFCN)](https://example.com) is a university-based organization creating innovative solutions to the difficult how-to-pay issues of environmental protection and improvement. The EFCN works with the public and private sectors to promote sustainable environmental solutions while bolstering efforts to manage costs.

**Community Based Public-Private Partnerships and Alternative Market-Based Tools for Integrated Green Stormwater Infrastructure: A Guide for Local Governments**

Public Private Partnerships (P3s) have the potential to help many communities optimize their limited resources through agreements with private parties to help build and maintain their public infrastructure. P3s have successfully designed, built, and maintained many types of public infrastructure, such as roads, and drinking water/wastewater utilities across the U.S.

**How to Pay for Green Infrastructure: Funding and Financing**

Georgetown Climate Center

Communities are increasingly turning to green infrastructure as a vital tool to help manage stormwater and improve climate resilience. However, many local governments seeking to establish green infrastructure programs face budget constraints that may limit the scope or effectiveness of program implementation. Fortunately, local governments have the opportunity to draw upon a wide range of funding sources, revenue models, and financing strategies to support
green infrastructure programs. This Funding and Financing Chapter provides strategic guidance on how to pay for green infrastructure.

**Environmental Impact Bonds: Realistic Expectations for a Promising Trend**

A $25 million dollar Environmental Impact Bond (EIB) issued by DC Water last year has captured the attention of environmental groups, investment firms, and policymakers alike. The nation’s first of its kind, this bond was announced in September 2016 and was followed by a buzz of excitement and inquiry. But what exactly is an EIB, and how plausible is its application for your organization’s project?

**Paying for Stormwater - The Benefits of a Utility**

A stormwater utility can be an effective and dedicated source of funding to pay for stormwater management programs and related infrastructure investments. In this webcast, we’ll first hear a presentation on the key considerations when establishing a stormwater authority, followed by two municipalities who will share their efforts in creating a stormwater utility.

**Climate Adaptation and Water Utility Operations**

EPA works with water sector utilities (drinking water, wastewater, and stormwater utilities) to provide and protect safe drinking water, water quality, ecosystem health, and public health.

**Financing Integrated Green Stormwater Infrastructure to Improve Community Health, Resiliency -- Getting the Best Deal for the Money!**

This article discusses needs and effective financing solutions for building a comprehensive integrated green stormwater infrastructure program that combines the strengths of green and grey solutions to provide multiple community benefits, including mitigation and rehabilitation of critical infrastructure damaged by extreme wet weather events.

**Resilience Bonds – Financing infrastructure through resilience bonds**

Resilience bonds involve making investments that serve the interests of local jurisdictions and insurance companies to address risk and reduce the costs of climate impacts. “One way for cash-strapped local governments to increase both protection and insurance against disasters is through a new financial tool called resilience bonds. In a new report, my co-author James Rhodes and I lay out how these would work. The idea is to link insurance coverage that public sector entities can already purchase (such as catastrophe bonds) with capital investments in resilient infrastructure systems (such as flood barriers and green infrastructure) that reduce expected
losses from disasters. This connection between insurance and infrastructure is important because just as life insurance doesn’t actually make you physically healthier, catastrophe bonds do not reduce physical risks and only payout when disasters strike.”

**Forest Resilience Bond**

This is an example of a targeted resilience bond program. The Forest Resilience Bond is a public-private partnership that enables private capital to finance much-needed forest restoration across the western U.S. Investors provide upfront capital with public and private beneficiaries then making contracted payments based on the water, fire, and other benefits created by the restoration activities.

**In Lieu Fee Programs**

This is one example of many in lieu fee programs, which can be operated by local governments, nonprofits organizations, and state of federal government agencies. “In-lieu fee (ILF) program means a program involving the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements for Department of the Army permits. Similar to a mitigation bank, an in-lieu fee program sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the in-lieu program sponsor

**Considering a Stormwater Authority? 12 Steps to Help Townships Make the Decision**

Evaluating stormwater management need: As you consider your township’s stormwater management needs, the following 12 steps will guide you in asking the right questions, organize your thinking, and help you collect the necessary data to make an informed decision.

**Payments for Ecosystem Services: A Best Practice Guide**

“PES schemes involve payments to the managers of land or other natural resources in exchange for the provision of specified ecosystem services (or actions anticipated to deliver these services) over-and-above what would otherwise be provided in the absence of payment. Payments are made by the beneficiaries of the services in question, for example, individuals, communities, businesses or governments acting on behalf of various parties. Beneficiaries and land or resource managers enter into PES agreements on a voluntary basis and are in no way obligated to do so.”
Federal Grants & Loans

Clean Water Act: Section 319 Grant Program

This US Environmental Protection Agency (EPA) funding program is designed to help states reduce nonpoint source pollution (pollution caused by rainfall running over the ground and carrying pollutants including trash, oil and grease, and fertilizers into nearby waterways). The program was authorized by Section 319 of the Clean Water Act which requires states to adopt a nonpoint source management program and assess nonpoint source pollution responsible for the water quality impairments. EPA provides funding to states under Section 319, and states can subgrants to local governments. EPA’s program guidance recognizes the “importance of green infrastructure … in managing stormwater” and supported awarding funding to green infrastructure projects.

The District of Columbia Department of Energy and Environment (DOEE) used Section 319 funding to partially fund remediation of the Watts Branch watershed in northeast D.C. Watts Branch suffered from severe erosion and sediment pollution due to frequent flooding. DDOE led a project to restore the stream bed and control flooding using tree and shrub plantings, regrading of the stream bed, and upstream low-impact development practices to manage impervious surface runoff. The project received over $910 million in Section 319 project implementation funds, which DDOE combined with National Fish and Wildlife Foundation funding and Washington, DC local funds.

The use of Section 319 grant funding has several limitations. First, each Section 319 grant requires a 40% non-federal funding match. Second, 319 grants may not be used for stormwater activities that directly implement a municipal separate storm sewer system (MS4) NPDES permit. If a local government has included stormwater retention and best management practices in its MS4 permit, the state should consult with the EPA on the eligibility of the green infrastructure project.


Clean Water State Revolving Fund (CWSRF)

Infographic: Learn how the CWSRF works.

Green Project Reserve (GPR)

The American Recovery and Reinvestment Act of 2009 (ARRA) and subsequent annual appropriations require all CWSRF programs to use a portion of their federal grant for projects that address green infrastructure, water and energy efficiency, or other environmentally innovative activities.

Green Infrastructure Policy for the Clean Water State Revolving Fund Program
This memorandum establishes a Green Infrastructure Policy that promotes increased CWSRF financing of green infrastructure projects nationally. See also, Financing Green Infrastructure: A Best Practices Guide for the Clean Water State Revolving Fund.

The CWSRF was established by the 1987 amendments to the Clean Water Act (CWA) as a financial assistance program for a wide range of water infrastructure projects, under 33 U.S. Code §1383. The program is a powerful partnership between EPA and the states that replaced EPA’s Construction Grants program. States have the flexibility to fund a range of projects that address their highest priority water quality needs. The program was amended in 2014 by the Water Resources Reform and Development Act.

Using a combination of federal and state funds, state CWSRF programs provide loans to eligible recipients to:

- construct municipal wastewater facilities,
- control nonpoint sources of pollution,
- build decentralized wastewater treatment systems,
- create green infrastructure projects,
- protect estuaries, and
- fund other water quality projects.

Building on a federal investment of $42 billion, the state CWSRFs have provided more than $126 billion to communities through 2017. States have provided more than 38,440 low-interest loans to protect public health, protect valuable aquatic resources, and meet environmental standards benefiting hundreds of millions of people.

**Water Infrastructure Finance and Innovation Act (WIFIA)**

The WIFIA program accelerates investment in our nation’s water infrastructure by providing long-term, low-cost supplemental loans for regionally and nationally significant projects.

**Important Program Features**

- $20 million: Minimum project size for large communities.
- $5 million: Minimum project size for small communities (population of 25,000 or less).
- 49%: Maximum portion of eligible project costs that WIFIA can fund.

**EPA Urban Waters Small Grants**

The U.S. Environmental Protection Agency (EPA) Urban Waters Program aims to restore urban waters in ways that also benefit community and economic revitalization. With a focus on vulnerable populations and environmental justice, the EPA recognizes that healthy and accessible water in urban areas can help grow local businesses and enhance educational, recreational, social and employment opportunities in local communities. EPA will support
projects and build partnerships with a variety of federal, state, tribal, and local partners that foster increased connection, understanding, and stewardship of local waterways through the Urban Waters Program.

**HUD Community Development Block Grant Program**

The CDBG program is a flexible program that provides communities with resources to address a wide range of unique community development needs. Beginning in 1974, the CDBG program is one of the longest continuously run programs at HUD. The CDBG program provides annual grants on a formula basis to 1209 general units of local government and States.

Recipient communities may undertake a wide range of community-based activities directed toward neighborhood revitalization, economic development, and community services, facilities, and improvements. CDBG funding may be used for a wide range of community development activities including: acquisition, relocation, demolition and rehabilitation of residential and non-residential property; the provision of public facilities and improvements (such as water, sewer, streets, and neighborhood centers); and projects to help conserve energy or promote renewable energy. CDBG funds can also be used for historic preservation purposes. A certain portion of the funds can be used to pay for public services and to conduct planning activities. CDBG funds can also be used as non-federal match for other programs requiring state or local matching funds. Seventy percent of CDBG funds must be used to benefit low- and moderate-income persons.

CDBG can be used for a wide array of climate change adaptation related activities such as enhancing the resilience of public and affordable housing, enhancing streetscapes with tree canopy of green infrastructure strategies that will reduce flood and heat risks, enhancing public infrastructure to be more resilient to climate change, and relocating structures out of flood-prone areas.

**FHWA Transportation Alternatives Program**

The Transportation Alternatives Program (TAP) is administered by the U.S. Federal Highway Administration (FHWA) and helps states fund a variety of activities related to improving transportation assets, including on- and off-road pedestrian and bicycle facilities, environmental mitigation, and creating or improving recreational trails projects.

Transportation Alternatives funds can be used to mitigate stormwater runoff problems, so cities could install shade trees or permeable pavements near roadways. Additionally, funds under this program can be used to plan, design, or construct comprehensive streetscapes that incorporate trees, plants, and cool pavements to create more pedestrian-friendly (and cooler) streets if they result in safer streets for non-drivers, and of recreational trails.

TAP funds can also be used to pay for green infrastructure projects integrated into transportation improvements, including trails and sidewalks with permeable pavement. It can also be used to mitigate environmental impacts from transportation, including for green infrastructure projects that help to manage stormwater or abate water pollution from highway construction or run off.
**FEMA Hazard Mitigation Grant Program**

Administered by FEMA, the Hazard Mitigation Grant Program (HMGP, CFDA Number: [97.039](#)) provides grants to state and local governments to implement long-term hazard mitigation measures after a major disaster declaration. HMGP funding is only available to applicants that reside within a Presidentially declared disaster area. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster.

HMGP funding must reduce potential future disaster damage and cannot therefore be used for projects whose sole purpose is to improve water quality or address ecological or agricultural issues. Nevertheless, FEMA now explicitly encourages applicants for hazard-mitigation funding to propose projects that include green infrastructure or other nature-based solutions for flood reduction and stormwater management. To facilitate the required benefit-cost analysis for these types of projects, FEMA now also allows applicants to count some ecosystem services as benefits in addition to the more traditional loss-avoidance benefits.

**FEMA Pre-Disaster Mitigation Grant Program**

FEMA Pre-Disaster Mitigation Grant Program – The PDM program is designed to help communities prevent damage from disasters before they happen. Activities can only be funded if they are included in a Hazard Mitigation Plan, but funding can be applied to planning activities as well as project based activities.