

WELCOME . . .



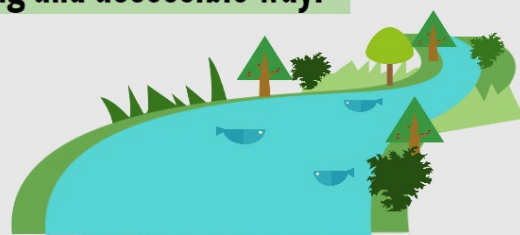
UNIVERSITY OF
MARYLAND
ENVIRONMENTAL FINANCE CENTER



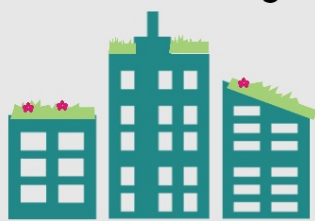
to the UMD Environmental Finance Center's Green Infrastructure Financing Map!

Here, you will find incredible green infrastructure financing stories from diverse communities across the country showcased in an interesting and accessible way.

Green infrastructure is an approach to resource management decision-making that considers the interaction between natural areas and the built environment and looks to use natural systems to address environmental, economic, and social priorities.



At the regional scale, this tends to refer to the network of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At a more local or site scale, green infrastructure often refers to stormwater management systems that mimic nature by soaking up and storing water.



The benefits of green infrastructure extend beyond the environmental. From a financing perspective green infrastructure can reduce implementation costs; deliver benefits that serve multiple community priorities; engage the private sector and spur behavior change through the marketplace; and provide return on investment to local economies.

To illustrate this, with generous support from the Environmental Protection Agency, the EFC has developed this interactive map that uses infographics to share the stories of 20 communities from across the country that represent a diverse collection of sizes, geographies, resource protection drivers, and financing approaches.

See something here you would like to try in your community? Want to learn more? Our full list of references with detailed information on each community is available on the EFC's website at

The state of green infrastructure is constantly and quickly evolving. These stories are a snapshot of community efforts at the time of the date stamp at the bottom of the graphic. If your community is represented here and something needs correcting or updating, we want to know. Contact Jennifer Cotting, EFC's Research Associate for Green Infrastructure.

We recognize that hundreds more communities across the country are turning to green infrastructure and supporting those efforts in very creative ways. If you think your community should be featured here, we'd love to hear from you. Again, contact Jennifer Cotting, EFC's Research Associate for Green Infrastructure, with your story.



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October 2014



AURORA, IL

Location: Fox River

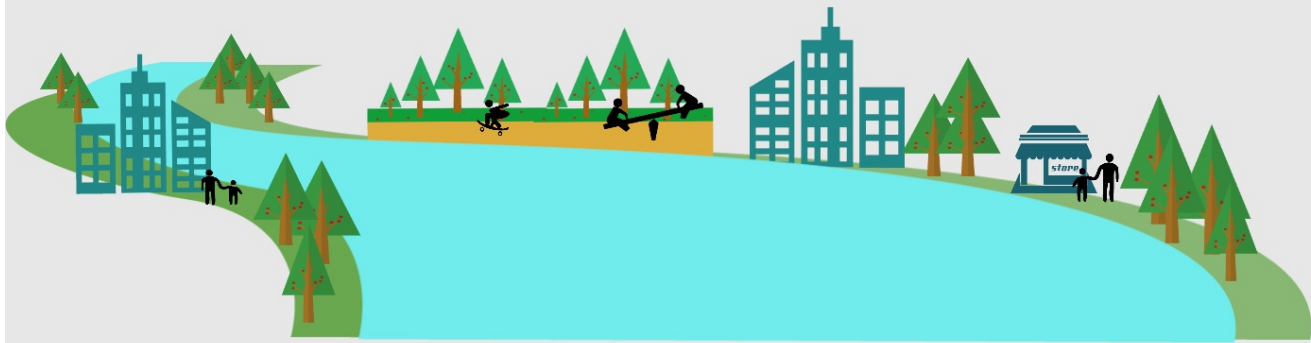
Area: 39.38 square miles

Founded: 1837

Population: 199,963

INCENTIVIZING INVESTMENT

River Edge Redevelopment Zone

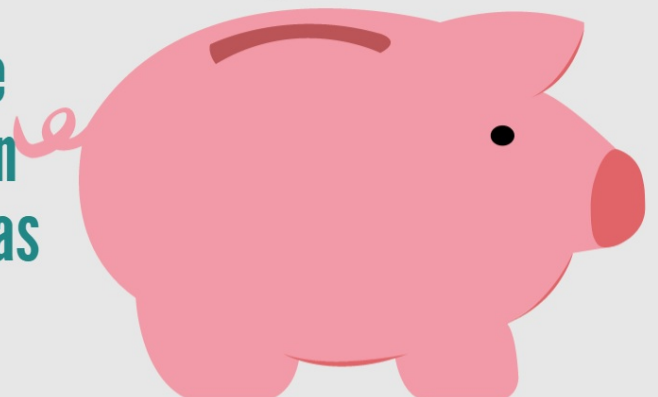


Zoning overlay along Fox River provides state & local tax credits for locating businesses or development, creating jobs, or remediating environmental hazards in the area

RiverEdge Park

\$15 million
in grants leveraged

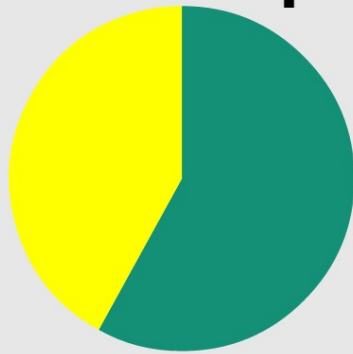
for 30-acre, \$18.5 million park at the core of the 10-year revitalization plan offering public space and natural areas for entertainment and recreation



DEMONSTRATING IMPACT

Green Infrastructure Implementation Project

Concentrating . . .
planning, outreach,
rain garden,
a wetland bioswale,
and bioinfiltration



Projected to remove
more than

13,000

pounds of total suspended
solids from the Fox River
each year

in **1** square mile of the city

■ EPA 319 Grant (58%) ■ City of Aurora (42%)

STORMWATER FEES

Stormwater Management Fee Fund

Capitlized by . . .

- \$ \$6.90 bimonthly charge to each residential or business water and sewer service account
- \$ state loans
- \$ Clean Water Act grants



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BINGHAMTON, NY

Location: Broome County, NY

Area: 11.14 square miles

Founded: 1867

Population: 46,551



SHARING THE COST

50/50

... of green stormwater projects
with residents and businesses

STORMWATER MANAGEMENT FUND

NFWF sponsored program where the City splits the cost of GI projects with developers and landowners up to \$25,000 for going above and beyond the required level stormwater management



GREEN STORMWATER AND LANDSCAPING MATCHING FUND



Local foundation sponsored program where the City provides matching funds for residents, nonprofits, and small businesses who want to install small-scale GI practices such as rain gardens, rain barrels, shade trees, and pervious paving

RESPONDING TO FLOODING

A 2011 flooding event led to Erosion Control Ordinance Amendments in 2012 designed to ...

improve AESTHETIC and ENVIRONMENTAL quality through



Development projects must include



TREE INITIATIVES

Free Tree Planting Program



residents get a

\$35 coupon to plant trees in their yard

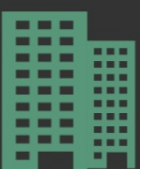


One urban tree can provide

\$300 worth of air and water filtration yearly

Parks and Recreation

will plant street trees in the Right-of-Way in front of private properties for free upon request



CHICAGO, IL

Location: Cook County

Area: 234 square miles

Founded: 1833

Population: 2,718,782



MAJOR PUBLIC INVESTMENT

Mayor's initiative to upgrade and improve water and sewer infrastructure

Will incorporate green infrastructure into existing capital projects using guidance from the City's Green Stormwater Infrastructure Strategy

\$50 MILLION
OVER **5** YEARS

LEVERAGING FOR GREATER IMPACT

\$6.1 million

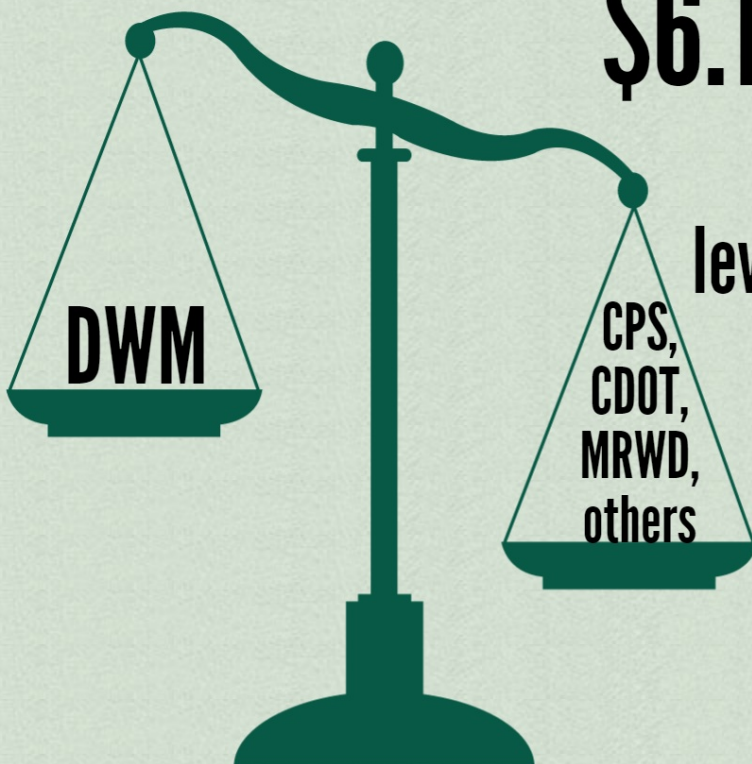
from Department of Water Management

leveraged with

close to **\$18 million**

including:

Chicago Public Schools
Department of Transportation
Municipal Water Reclamation Dept



39 Year One Projects Announced

- conversion of asphalt playgrounds into green schoolyards
- traffic calming practices that incorporate water treatment
- complete streets projects that include planter and tree pit infiltration, permeable pavers, and bioswales in road improvement projects

Green infrastructure can mean less flooding, better water quality, and healthier, safer neighborhoods.



\$1 MILLION: EPA SHORELINE CITIES

Two Great Lakes Restoration Initiative Awards . . .

1 mile

segment of green infrastructure to be installed by CDOT could prevent

868,000 gallons

2000 sq ft

parking lot retrofit by Parks Department could prevent

4 million gallons

from entering the CSO system and Lake Michigan

OUTREACH PARTNERSHIP

The City has transitioned the Sustainable Backyard Program to the Center for Neighborhood Technology

- Engage and support residents and businesses in better managing wet weather
- Partnering with established, trusted nonprofit reduces the burden to the City

rain ready



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DUBUQUE, IA

Location: Mississippi River Watershed

Area: 31 square miles

Founded: 1833

Population: 58,253

BEE BRANCH WATERSHED

Bee Branch Watershed


Flood Mitigation Project



The watershed has experienced six Presidential Disaster Declarations between 1999 and 2011 resulting in close to \$70 mil in damages



a multi-phased, watershed-based plan estimated to prevent over \$582 million in damages over the project's 100-year design life



50% of Dubuque's residents live or work in the Bee Branch watershed

Bee Branch Creek Restoration Project

\$85 million, two-phase investment in a mile-long recreational park connecting Mississippi Riverfront attractions to existing trails and Dubuque's northeast end



which includes **1000** new trees & more than **85** properties deconstructed

Green Alleyways Program



20 year **\$57** million plan that will green more than **245** alleys with **\$9.4** in SRF sponsorship funding

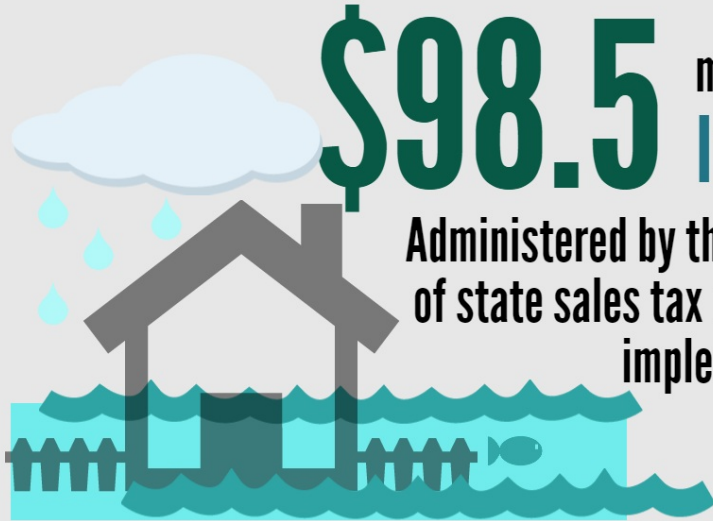
adjacent private property owners pay an average of \$800 to \$1000 of the cost and low-interest, long-term financing and hardship waivers available

DIVERSE & INNOVATIVE FINANCING

\$9.4
million

SRF Water Resources Restoration Sponsorship

WWTP upgrade requests that offer to sponsor a water quality improvement project receive a reduced interest rate that creates no additional financial burden to the utility for including the project



\$98.5

million over 20 years from

Iowa Flood Mitigation Program

Administered by the Iowa Dept of Homeland Security, a portion of state sales tax revenues can be recaptured by communities implementing long-term flood mitigation projects

Stormwater Utility

Currently \$5.98 monthly for the average residence and \$5.98 for each 2,917 sq ft of impervious surface for non residential properties. This will gradually be increased to \$9 monthly by 2021.

Funds from the State Flood Program are enabling Dubuque to complete this work 30 years faster and will spread needed utility increases over 7 years rather than 1 year



LEVERAGING PRIORITIES



Dubuque's green infrastructure approach

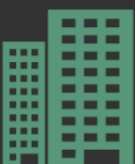
- delivers multiple benefits
- engages multiple agencies
- reduces implementation costs
- enables partnerships that expands capacity
- makes funding requests more competitive

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GREENVILLE, SC

Location: Greenville County

Area: 26.14 square miles

Founded: 1663

Population: 61,397



\$1 Million



TO REMOVE HIGHWAY OVERPASS

LED TO MORE THAN

\$137 Million

IN PRIVATE SECTOR INVESTMENT
IN THE COMMUNITY

A highway
overpass left

Reedy River Falls

underappreciated and
highly polluted



LEADERSHIP



The mayor saw daylighting the falls as an economic development opportunity

PARTNERSHIP

He engaged the Garden Club whose outreach created Community demand for Removing the Bridge

GARDEN CLUB FUNDRAISING &



HOSPITALITY TAX

Covered the cost of \$13.4 million award winning pedestrian bridge and park

FALLS PARK ENDOWMENT

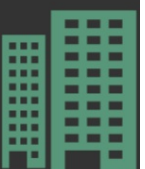
manages donations from corporations, businesses, foundations, and the general public



to provide amenities, services, and maintenance not covered by the parks department



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LANCASTER, PA

County: Lower Susquehanna Watershed

Area: 7.34 square miles

Founded: 1742

Population: 60,000

COMPARING COSTS

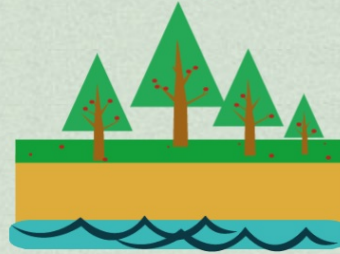
The City must divert **750** million gallons from the Combined Sewer System

Gray Alone



\$300
million

Green Approach



\$140
million




GREEN ROOFS & URBAN TREES

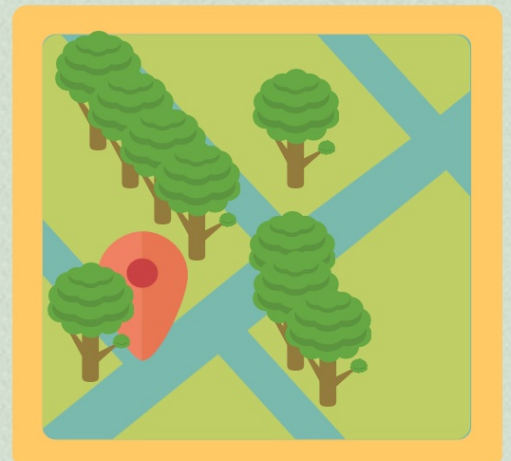
The City currently boasts more than 1 acre of greenroofs

The GI plan calls for 30 acres long-term

That's more than 1 square foot per person



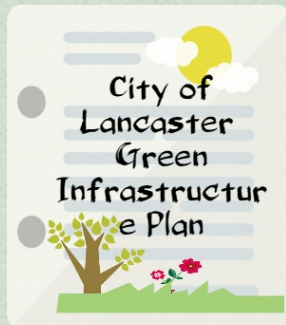
-  Goal to increase tree canopy from 28% to 40%
-  Tree inventory identified 100s of potential planting sites
-  Native trees available at wholesale prices for residents who commit to maintaining them



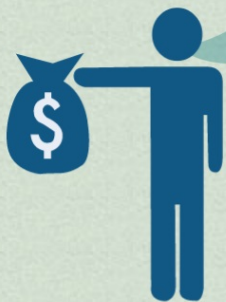
FINANCING COMPONENTS

Planning

Plans that reflect the community's collective vision make sure resources are invested wisely



According to the EPA, Lancaster's planned and coordinated GI program will cost 45% less than ad-hoc GI projects



Outreach

Coordinated, comprehensive website and outreach campaign



facilitates private sector engagement in implementation of practices

Grants



Pursuing grants and other funding programs stretches local dollars further



Stormwater Fee

Average resident pays less than

\$50 annually

and can install GI practices to earn up to

50% fee credit



Partnerships

Coordinating with other departments, like the school district, ensures a holistic approach. Working with groups like Live Green and the Lancaster County Conservancy engages and mobilizes citizens while reducing municipal burden

LEADING BY EXAMPLE

The City is setting the tone with:

- ✓ ordinances that limit runoff
- ✓ incorporation of GI in capital projects of all types



- ✓ initiatives that expand the City's use of GI
- ✓ demonstration projects that engage and educate the public

... and is being recognized for their accomplishments



The Chesapeake Stormwater Network the Best Urban BMP in the Bay Awards (BUBBAs)



1st Gold Level Certification from PA Municipal League's Sustainable Pennsylvania Community Certification Program

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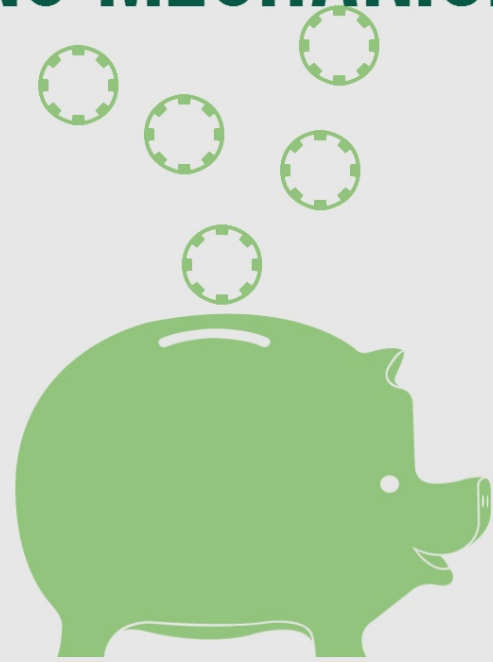
LENEXA, KS

Location: Johnson County
Area: 34.45 square miles
Founded: 1869
Population: 48,190



MULTIPLE FINANCING MECHANISMS

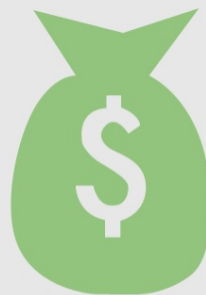
- local development charge
- state and federal grants
- protective ordinances
- comprehensive planning
- stormwater utility
- outreach and education



SYSTEM UPGRADES



Voter
approved
1/8 cent
sales tax



Generated
\$15+ million
between 2000-
2010

SYSTEM MAINTENANCE

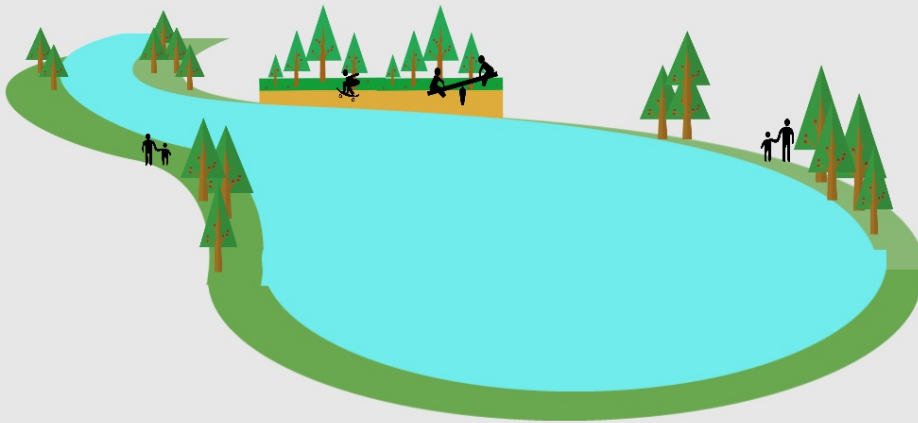


**\$66 annual
fee for
residential
properties**



**Non-residential
based on
amount of
runoff**

RAIN TO RECREATION

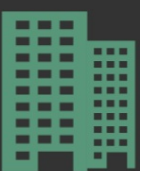


**Core project was creation of a 35-acre lake and 240
acre park that serves multiple community priorities**



**Additional focus on engaging private property owners
through voluntary programs like:**

-  **Kansas Healthy Yards certification program**
-  **free technical assistance for rain barrel installation**



LONG CREEK, ME

Location: Long Creek Watershed

Area: 3.45 square miles

SHARED PLAN. SHARED PERMIT



The Long Creek Restoration Plan was the result of the two-year collaborative effort of four municipalities, area business, nonprofits, and state agencies

Upon EPA approval of the plan, the four municipalities created a watershed management district



By 2009, Maine required all property owners in the watershed with 1 impervious acre or more be permitted

The state offered a voluntary group permit option for property owners in the watershed

FUNDING & FINANCING

District members represent 91% of the impervious cover in the watershed



Participating landowners commit to paying

\$3000 per impervious acre for the next **10** years

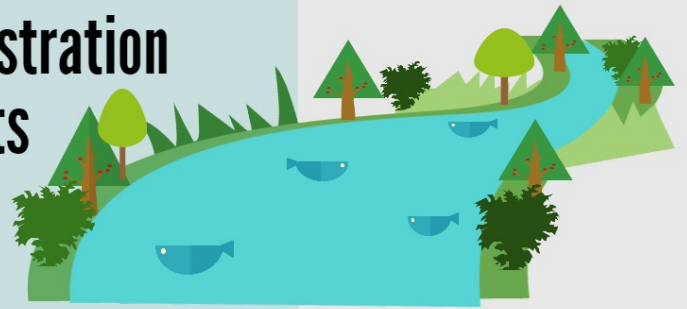
credits are offered for landowners who install BMPs or take on maintenance or 'good housekeeping' tasks

Participants are saving up to half of what they'd spend on an individual permit



Funding programs have been leveraged too . . .

\$2 million in ARRA funding for **2** demonstration projects



that provided proof of concept for pervious paving and streamside plantings

EPA 319 & MEDEP Other grant support includes . . .



which made plan development and stakeholder engagement possible

WATERSHED-SCALE PLAN

\$1.4 million over **10** years


Cumberland County Soil and Water Conservation District

manages plan implementation which includes . . .

Measures taken so far seem to be working. Stream monitoring for aquatic bugs indicate improved water quality

 prioritized restoration and retrofit projects

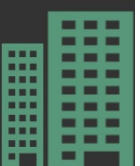
 landowner education and incentives

 coordination of street sweeping, storm drain cleaning, land use planning, recordkeeping and reporting

 pursuit and administration of additional funding

 monitoring program

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LOS ANGELES, CA

Location: Los Angeles County

Area: 530 square miles

Founded: 1781

Population: 3,884,307



PROPOSITION 0



In 2004, voters passed Proposition 0 to fund projects that prevent and remove pollutants from waterways and the ocean

PROP 0 enabled the City to raise
\$500 million



in general obligation bonds to ...

- 💧 meet federal regulations of the Clean Water Act
- 💧 protect public health and the environment
- 💧 improve City water quality

HOW DID THE BOND WORK?

The bonds were issued over a period of

5 years



to be paid off in

24 years

This increased property taxes by

1% per **\$100** of assessed value

Which resulted in an average annual tax of

\$35

for a home valued at

\$350,000



PARTNERSHIP GOT IT PASSED



Supporters created a non-profit to help with outreach efforts &

used clever advertisements to spread the word about the benefits of

Clean Water

The measure passed by

76% following a campaign of just

6 months

LEVERAGING FUNDS

Implementation projects stretched local dollars further by leveraging multiple funding sources and local priorities

South LA Wetlands Park

9 acre passive and active recreation site that includes a constructed wetland that collects trash and can treat up to

680,000

gallons of urban runoff a day

That's enough to fill an Olympic-size swimming pool



Prop 0 funds were supplemented with

- \$ settlement agreement dollars
- \$ transit authority funds
- \$ an EPA brownfields grant
- \$ other bond funding

Cesar Chavez Groundwater Improvement

This repurposed landfill site is now home to a

41

acre recreational complex that includes

Other funds included ...

- \$ Urban planning grants
- \$ Waste Management Board funds
- \$ Capital Improvement spending

10,800

acre feet of annual groundwater recharge which reduces spending on imported water



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NEW ORLEANS, LA

Location: Mississippi River Delta
Area: 350.2 square miles
Founded: 1718
Population: 343,829

PLANNING AHEAD

Greater New Orleans Urban Water Plan

A \$2.5 million dollar HUD supported effort by the City, local stakeholders, and water management experts from the Netherlands that outlines a vision for moving forward



Accumulated runoff causes major issues, but doubling pumping capacity would only eliminate 40% of excess water!

New Orleans receives an average of 60" of rain annually and the stormwater system needs significant attention

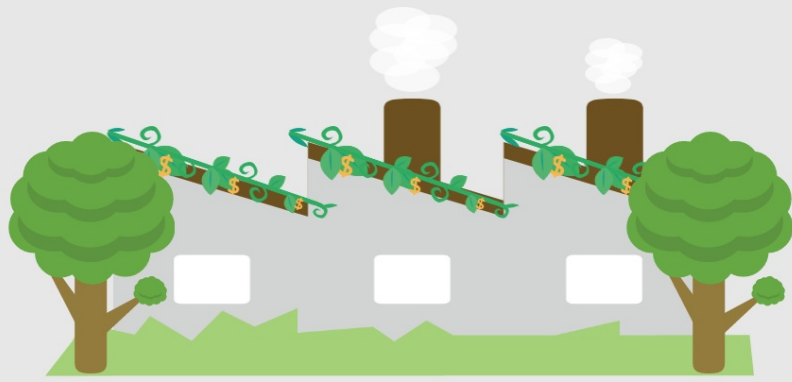
WHAT'S IN THE PLAN?

Stormwater Management that . . .

- 🔹 Delays stormwater with bio-retention and infiltration
- 🔹 Stores stormwater better & longer through canal improvements, new canals and ponds
- 🔹 Uses stormwater to connect and enhance neighborhoods
- 🔹 Drains stormwater through existing and upgraded infrastructure when necessary

The plan places significant emphasis on using water as an asset, instead of treating it as a nuisance.





The plan also includes green infrastructure
Including green roofs, permeable pavement, and bioswales in a large industrial park in Jefferson Parish

WHAT ARE THE POTENTIAL BENEFITS?

Improved & new waterways are estimated to increase property values by

\$183 Million



The plan will save more than

\$10.8 billion

in avoidable flooding costs over fifty years

The plan could generate a total economic benefit of up to

\$22.3 billion



The plan could support up to

101,790 jobs

HOW ARE THEY GETTING STARTED?

Greater New Orleans' green infrastructure approach enables access to a diverse array of state and federal funding programs



... and the Sewerage & Water Board of New Orleans has

\$500,000

formally committed a year for **5** years

to green infrastructure implementation

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NORFOLK, VA

Location: Elizabeth River
Chesapeake Bay

Area: 96 square miles

Founded: 1682

Population: 136,836

MAKING NORFOLK MORE RESILIENT

Downtown Norfolk experiences routine flooding... even in the absence of weather events



Normal tides in Norfolk have risen 1 1/2 feet over the past century!

REVENUE STREAMS

Grants



Stormwater Utility



Residents pay

\$10.37 monthly



Nonresidential pays

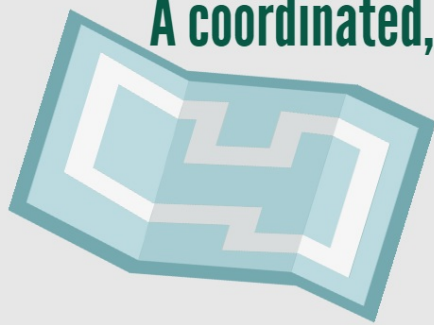
\$7.45 monthly

per 2000 sq ft of imperviousness

PLANNING AND GOAL SETTING

Formal plans help a community make sure limited resources are concentrated on agreed-upon community goals.

Hampton Roads Green Infrastructure Plan



A coordinated, regional and multijurisdictional roadmap that guides planning in a way that protects: open space, water quality & habitat



A FOCUS ON URBAN TREES



Celebrate Trees!

- Mayor's initiative to engage the community in tree planting
- supports efforts to increase tree canopy to 40%
- encourages citizens to celebrate special occasions with tree plantings



A canopy of 100 mature trees captures more than 100,000 gallons of rainfall per year

Living Legacy Groves Fund

uses private donations from businesses and residents to support the planting of native trees in planned groupings in public parks and open space

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OMAHA, NE

Location: Papillion Creek Watershed

Area: 130.6 square miles

Founded: 1854

Population: 434,353



WATERSHED FEE

Nebraska law currently prevents Omaha from putting a stormwater fee in place



To cover the costs associated with new development and redevelopment projects, the City collects a watershed fee from developers for each unit of residential development or each acre of commercial/industrial development in the Papillion Watershed

REGIONAL APPROACH

The Papillion Creek Watershed connects:

portions of **3** counties, **1/3** of the state's population
11 local governments and,

The Papillion Creek Watershed Partnership ...
created a watershed management plan
to establish regionally common goals and
guide a collaborative approach to
managing water quality and quantity

Better Water Quality

Reduced Runoff

OTHER \$\$ COMPONENTS

Grants

funding from EPA to the City, the University of Nebraska, and others enables assessment of BMPs and adaptive management of the green infrastructure network



Outreach

and education efforts, such as the

World of Water

Ordinances

amendments to ordinances are broadening the use of LID practices and improved runoff controls



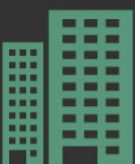
website and festival engage community members and assist them in taking action

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PHILADELPHIA, PA

Location: Delaware Watershed

Area: 141.6 square miles

Founded: 1682

Population: 1,533,165



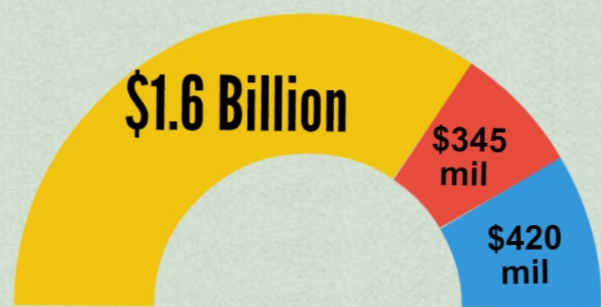
GREEN CITY, CLEAN WATERS

Philadelphia Water Department realized that a GI approach to stormwater was the only way to meet all the City's watershed goals without causing severe economic hardship for ratepayers



HOW DOES IT BREAK DOWN?

The City will invest
\$2.4 Billion in
green & gray
infrastructure over the
next 25 years



■ Green Infrastructure Projects (69%)
■ Grey Infrastructure Projects (14%) ■ Discretionary (17%)

THE VALUE OF PARTNERSHIPS

\$356 Million leveraged from a variety of partners including:

William Penn Foundation

PA DCNR

Army Corps of Engineers

PA DEP

US EPA



THE PLAN IS PROJECTED TO...



Add 250 green jobs per year

Raise Philly's total property value 2-5%



Remove up to 1.5 billion tons a year of carbon emissions



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PITTSBURGH, PA

Location: Three Rivers Watershed

Area: 58 square miles

Founded: 1717

Population: 306,211

LONG RANGE PLANNING

As little as 1/10 of an inch of rain can overwhelm the system and cause a sewage overflow!



Like many US cities, Pittsburgh has a combined sewer system subject to regulations designed to reduce overflows and improve local water quality

GREENING THE PITTSBURGH WET WEATHER PLAN

An integrated watershed approach that . . .

- ✓ is the result of a consensus-building process where nonprofits and public and private sector representatives devoted more than **1000** hours to discussion and plan development
- ✓ promotes green infrastructure and adaptive management to deliver greater benefits to the City
- ✓ recommends PWSA take on a leadership role, engage partners to expand capacity, and create a utility to provide a dedicated revenue stream

Open Space PGH

- seeks to optimize the use of vacant, green, and recreational space
- a decision-making guide focusing on ...

connectivity

enhancing global significance

public feedback

equitable access

diversifying the economy

Pittsburg's open space has been valued at over \$2 billion

Pilot Projects . . .

throughout the City help communities visualize what is possible

Project 15206 and the East End Rain Container Initiative:

Coordinated County grant supported effort to place trees, rain gardens and barrels, wetlands, and bioswales at **10** sites across **5** neighborhoods

Etna: EPA grant driven projects that removes **16.1** million gallons from the system annually

South Side: a charrette driven plan encouraging infiltration

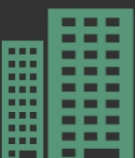
West End: federal and local funds leveraged to remove **250,000** gallons from the system annually

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PORTLAND, OR

Location: Multnomah County

Area: 145.1 square miles

Founded: 1845

Population: 609,456



GRAY TO GREEN

5 YEAR

\$48 MILLION

INITIATIVE TO EXPAND GREEN
INFRASTRUCTURE AND SUPPORT
GREEN JOBS



STORMWATER FEE

based on
impervious
surface
and
drainage
area

swales

ecorooft



trees

rain gardens

discounts
offered to
ratepayers
who
manage
runoff

1% FOR GREEN

One percent of the City's construction budget for projects not subject to Portland's stormwater manual used to fund green streets projects



RESULTS 950 Green Street Facilities

42 Acres of Ecoroofs



930,000 kilowatt hours saved annually



\$11,000,000

Saved in stormwater processing



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PUYALLUP, WA

Location: Puget Sound Watershed

Area: 12.2 square miles

Founded: 1890

Population: 38,147



PROTECTING WATER AND ECONOMIES

Salmon are a critical part of the local economy, food system, and cultural heritage, but . . .

- 💧 runoff is degrading water quality
- 💧 stormwater volume is impacting spawning conditions
- 💧 sedimentation is damaging hatcheries

. . . and, County planners anticipate a significant increase in population and impervious surface in the watershed

INCENTIVIZING BMPS

The City of Puyallup offers homeowners . . .

- 💰 free native plants and design support for riparian plantings
- 💰 reimbursement of up to \$75 for rain barrels
- 💰 cost-share for rain garden installation

62 gardens were installed
in the first **4** years of
the program



ENGAGING PARTNERS

Public and private sector stakeholders are collaborating around local water quality

City of Puyallup

Pierce County

Washington State University

Puyallup Nation

This expands capacity and enables partners to do more than they could ever do alone

LEVERAGING FUNDING SOURCES

Puget Sound grant to Puyallup Tribe will address sediment in hatcheries

\$1 million Ecology grant to WSU and the City for campus retrofits

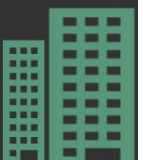
EPA support as a partnership community



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SPOKANE, WA

Location: Spokane River Watershed

Area: 60 square miles

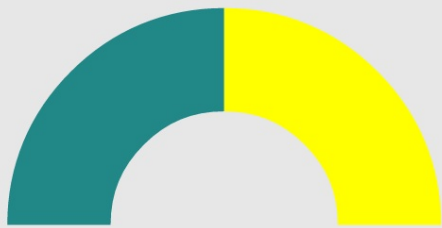
Founded: 1871

Population: 209,525

AWARD WINNING SURGE SRF PROJECT

\$599,000 from the Department of Ecology's Water Pollution Control Revolving Fund

for the SURGE project which created



HALF = 20-year low interest loan
HALF = forgiven loan

37 rain gardens

5



drainage structures

1,200 sq yards of pervious sidewalk

INTEGRATED CLEAN WATER PLAN

City plan is addressing stormwater and wastewater simultaneously to improve Spokane River water quality

Plan looks to incorporate green practices into all City infrastructure projects to reduce costs

Around 1 billion gallons of untreated stormwater enters the Spokane River from storm drains each year



A FOCUS ON URBAN TREES



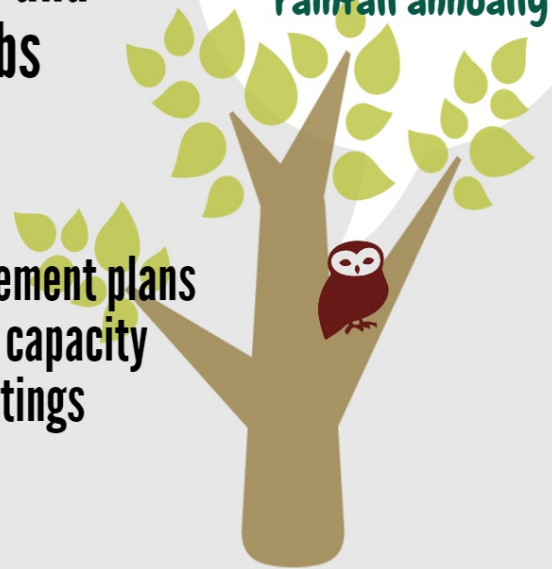
Forest Spokane

Initiative to plant 10,000 trees by 2016 offers grants to neighborhoods, schools and others to plant trees, shrubs, and bulbs

A canopy of 100 mature trees captures more than 100,000 gallons of rainfall annually

City Funds Leveraged

- ↑ incorporating trees into existing capital improvement plans
- ↑ partnering with like-minded nonprofits expands capacity
- ↑ citizens commit to caring for neighborhood plantings reducing the long-term burden to the City



STORMWATER UTILITY

Rate Structure

Rates are tiered based on drainage district

- (\$) Districts that contribute more pollution are charged a higher fee
- (\$) Districts that contribute more pollution are charged a higher fee



Residents pay

\$21 - \$63 annually



Nonresidential pays

\$21 - \$63 annually
for every 3160 sq ft of imperviousness

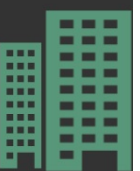


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TUCSON, AZ

Location: Gila River Watershed

Area: 350.2 square miles

Founded: 1718

Population: 343,829



Tucson's Green Street Plan

Because rainwater is limited, Tucson has invested in a green streets program to capture what water they can.



Tucson's plans focus on 3 principles of green infrastructure:

 Protecting and preserving natural spaces

 Serving multiple purposes

 Engaging the community



Experts believe green streets will reduce irrigation costs and cut down on water pollution!

Much of the green infrastructure in Tucson was installed by volunteers in their workplaces



GREY AND GREEN

The City is integrating green infrastructure into:

-  Curb cuts and basins in right of ways
-  Chicanes, medians and traffic circles
-  Street width reductions
-  Parking Lots



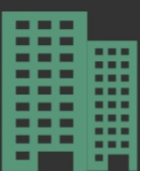
By considering where green infrastructure can fit into existing capital projects Tucson has made GI the norm for their roadways and other projects

WHO SUPPORTS THESE EFFORTS

Tucson draws from a diverse array of funders on the state and local levels



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WARRINGTON, PA

Location: Bucks County, PA

Area: 13.8 square miles

Founded: 1734

Population: 17,580



OPEN SPACE REFERENDUM

Residents voted to borrow



\$3 million

To be repaid through a small
property tax increase



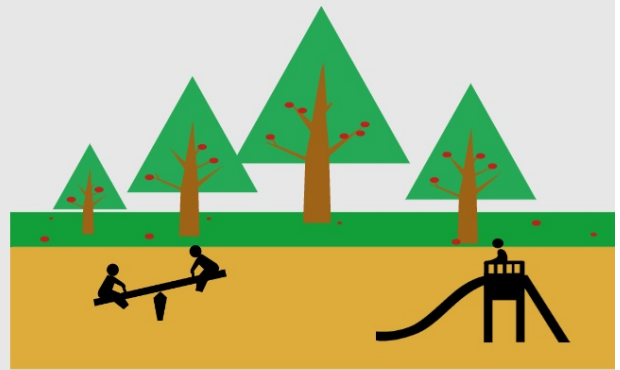
Why Open Space?



**COMMUNITY'S DESIRE TO
BALANCE GROWTH WITH
NATURAL AREAS**

4 Priorities

ACQUIRE undeveloped land
LINK trail system segments



IMPROVE existing parks
PRESERVE historic lands

LEVERAGING FOR GREATER IMPACT

Grants



\$350,000 from Bucks County and pursuing grants and other funding programs stretches local dollars further

Partnerships

Partnering with the land trust community can expand capacity and reduce the burden to the Township



Other Local Priorities

Considering open space planning in the context of other community priorities such as stormwater requirements and economic development goals can create efficiencies and reduce implementation costs

WASHINGTON, DC

Location: Potomac River

Area: 68.3 square miles

Founded: 1790

Population: 646,499



\$350 MILLION CENTURY BOND

1st

100-year
municipal bond
for water or
wastewater

100

year term
equitably
shares costs
with future
benefiters and
locks in lower
funding costs
for long-term

DC Water
'green bond'



CREDIT TRADING

Stormwater utility program offers first-of-its-kind credit trading

Voluntarily private sector implementers of BMPs can sell credits to other properties or developments in need of off-site solutions

DC WATER'S **BIG** PICTURE

DC Water is investing \$100 million ratepayer dollars in green infrastructure projects



As a part of the \$2.6 Clean Rivers Project which seeks to reduce CSO discharges by 96% over 20 years, using gray and green infrastructure



Since 1996, DC Water has reduced CSO overflow volume by 40%

GREEN INFRASTRUCTURE CHALLENGE

In 2013, DC Water awarded \$1 million in prizes innovative green infrastructure plans

Winning projects included a plan for managing stormwater in a 19th century neighborhood, and integrating green and bike infrastructure

