

ONE CLEAN WATER

Pittsburgh's Guide to Action

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Acknowledgments

The One Water approach offers a cohesive way of thinking about how people use water resources. Led by the US Water Alliance, this approach to water stewardship holds that all water has value and “must be managed in a sustainable and inclusive manner to build strong economies, vibrant communities, and healthy environments.” The partners wish to thank those community leaders dedicated to working in the arena of clean water and managing water through built and natural systems. They are showing us that the people of Pittsburgh are capable and credible partners in achieving a healthy One Water cycle. When it becomes standard operating procedure to include a resilient water strategy in every land-use project, and in management of open spaces and greenways, we will have succeeded. And if we make improvements at every scale, from the personal to the regional, we can develop a One Water system that is sustainable and even resilient to extreme weather and changing climate.

The authors would like to express our deep appreciation to our collaborators for their input on this Guide and their continued dedication to One Water principles:

- 3 Rivers Wet Weather
- 9 Mile Run Watershed Association
- Watersheds of South Pittsburgh
- Pennsylvania American Water

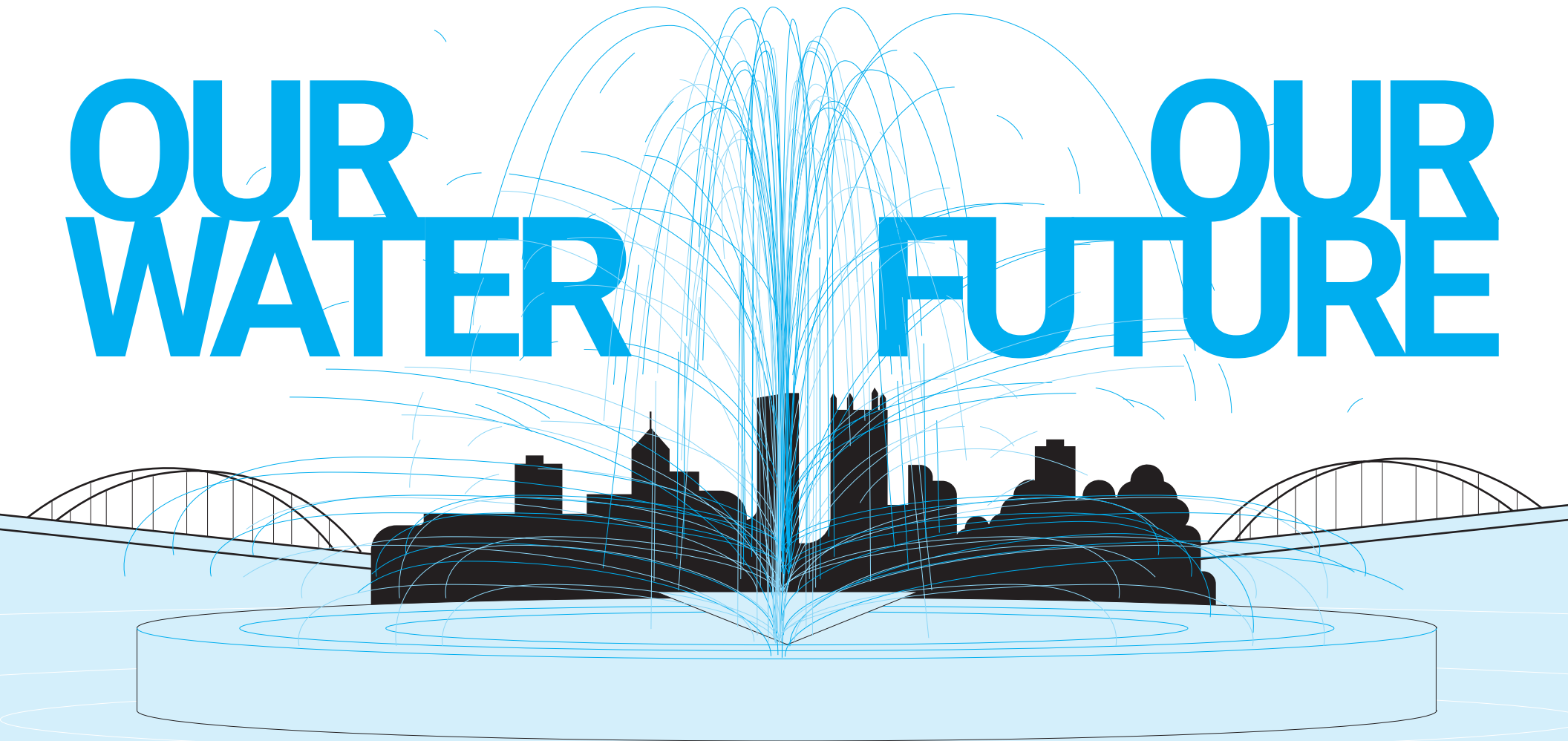
Colophon

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OUR WATER

OUR FUTURE



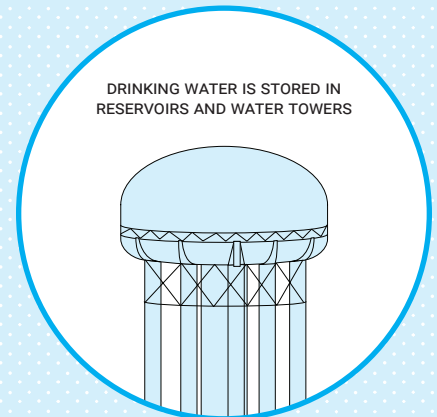
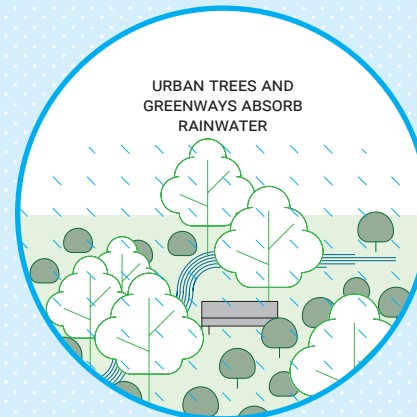
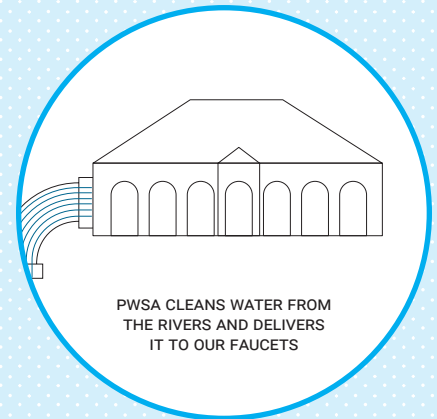
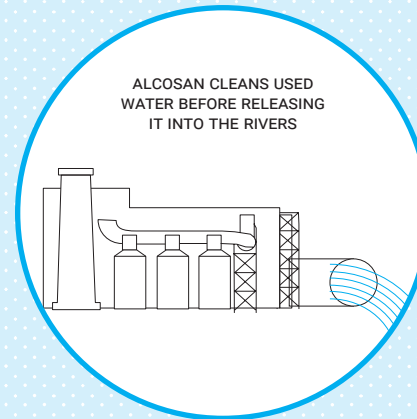
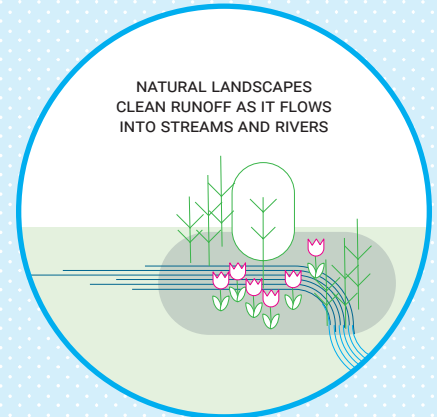
Pittsburghers are deeply familiar with both positive and negative water experiences. A visit to Point State Park celebrates our water resources. Walking by a stream or pond refreshes and brings peace of mind. On the other hand, solutions must be found to reduce sewage in the rivers, erosion and landslides hastened by saturated soils, and flooding on major roadways, and address other issues.

Many agencies across the public and private sectors are working to improve these conditions. Pittsburgh Water and Sewer Authority (PWSA), Allegheny County Sanitary Authority (ALCOSAN), and Pennsylvania American Water are tasked with ensuring clean and safe water in Pittsburgh and are investing millions of dollars in water infrastructure. This includes both grey infrastructure (pipes and underground storage-based systems) and **green infrastructure** (landscape/surface-based systems).

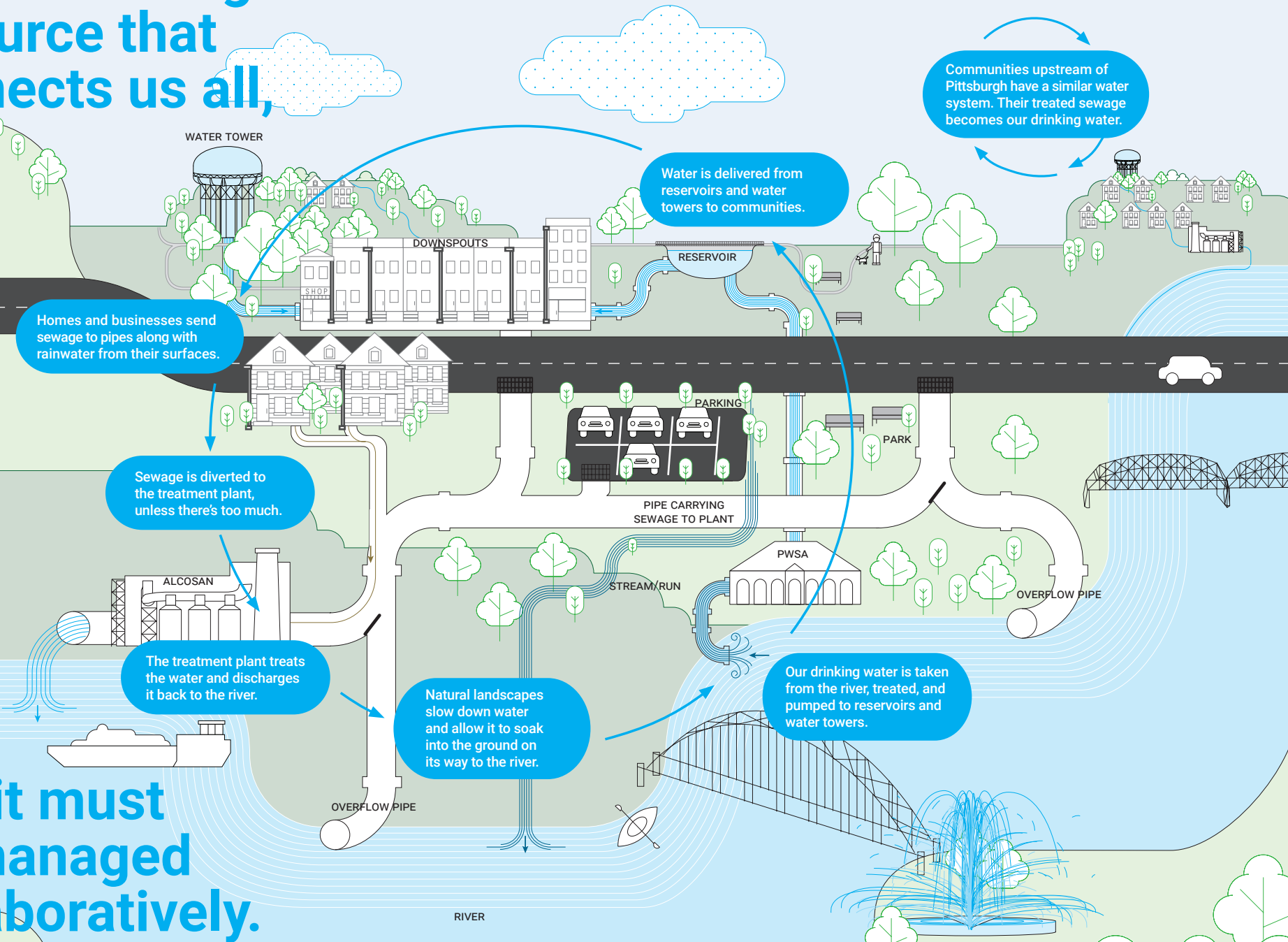
Green infrastructure is designed to capture rainwater where it falls, slow it down, and clean it while enhancing community spaces like parks. In addition to promoting **cleaner rivers and streams**, green infrastructure projects can also lessen the impact of flooding and erosion, while creating beautiful and relaxing green spaces.

Informed citizens play an essential role in advocating and planning for equitable water infrastructure. If we work with community organizations, professionals, and agency staff, together we can develop an integrated system that protects water, people, and public green space. We need many voices to express how green infrastructure can benefit our families and communities. This guide explains some basics on how our water system works, and ways that you and your neighbors can be part of the movement to improve it.

Drinking water, sewage, rain, and river water are managed as separate things by different agencies, and are governed by different regulations.

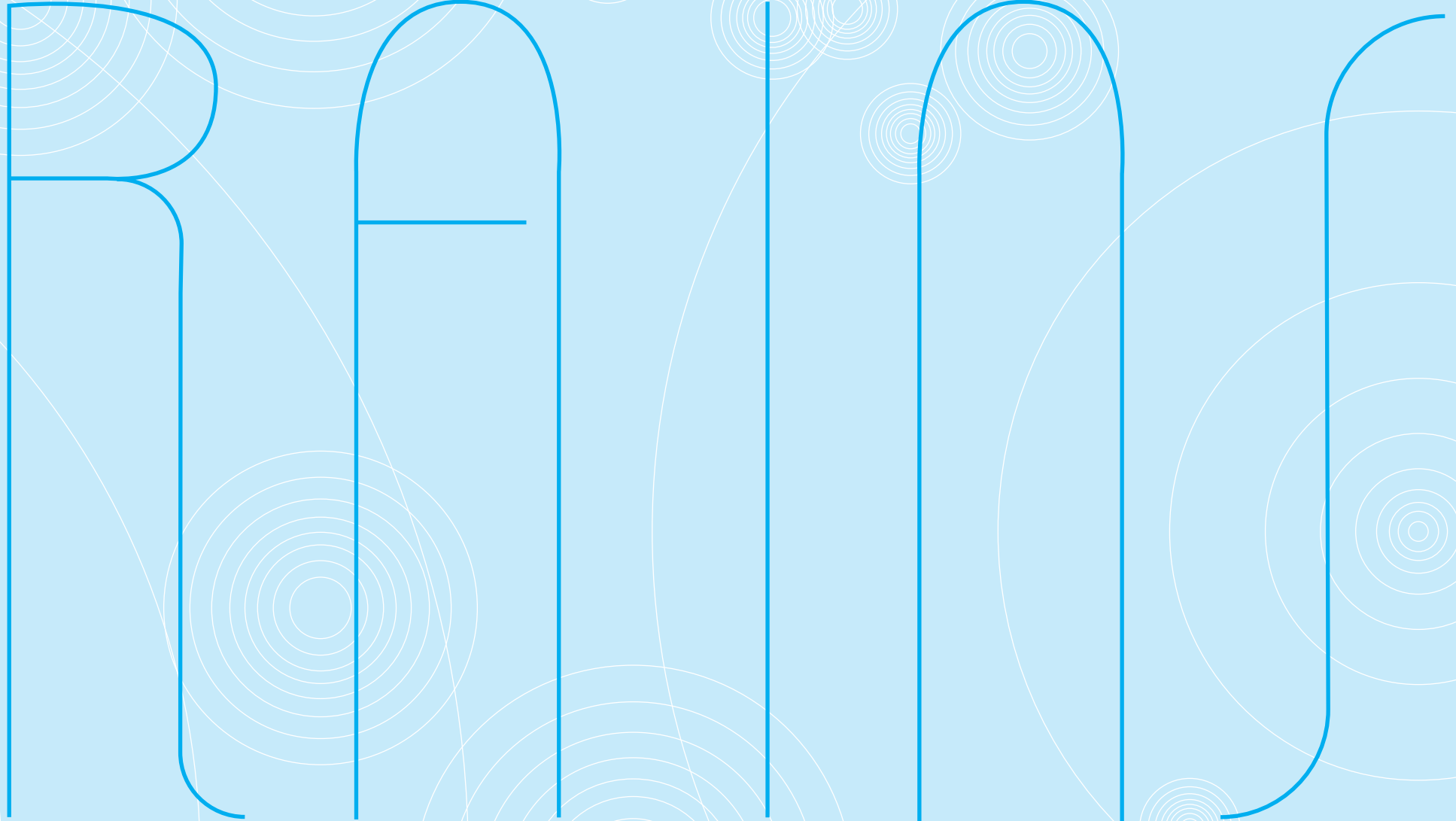


Water is a single resource that connects us all,

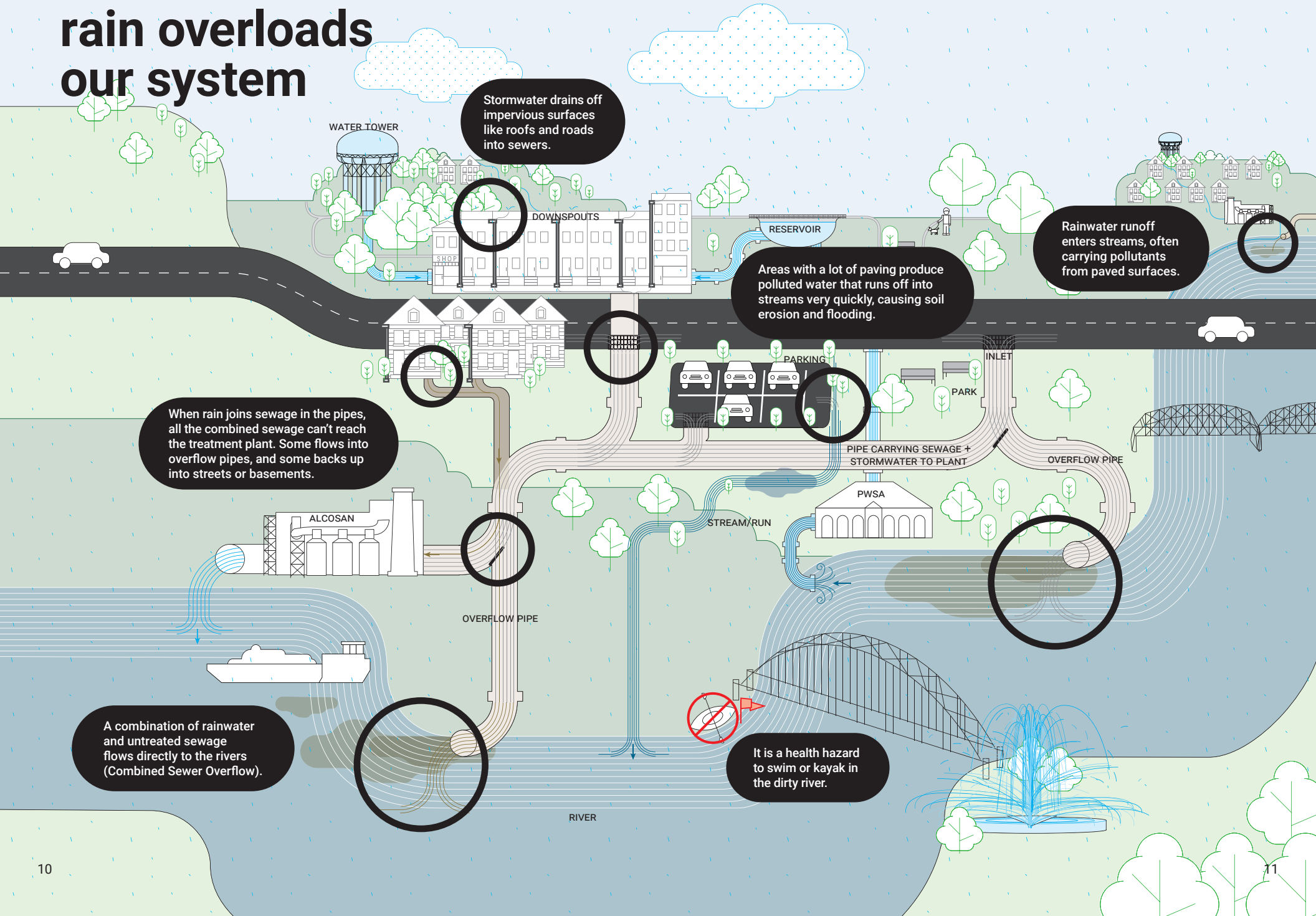


and it must be managed collaboratively.

when it



Even a little rain overloads our system



Stormwater drains off impervious surfaces like roofs and roads into sewers.

Areas with a lot of paving produce polluted water that runs off into streams very quickly, causing soil erosion and flooding.

Rainwater runoff enters streams, often carrying pollutants from paved surfaces.

When rain joins sewage in the pipes, all the combined sewage can't reach the treatment plant. Some flows into overflow pipes, and some backs up into streets or basements.

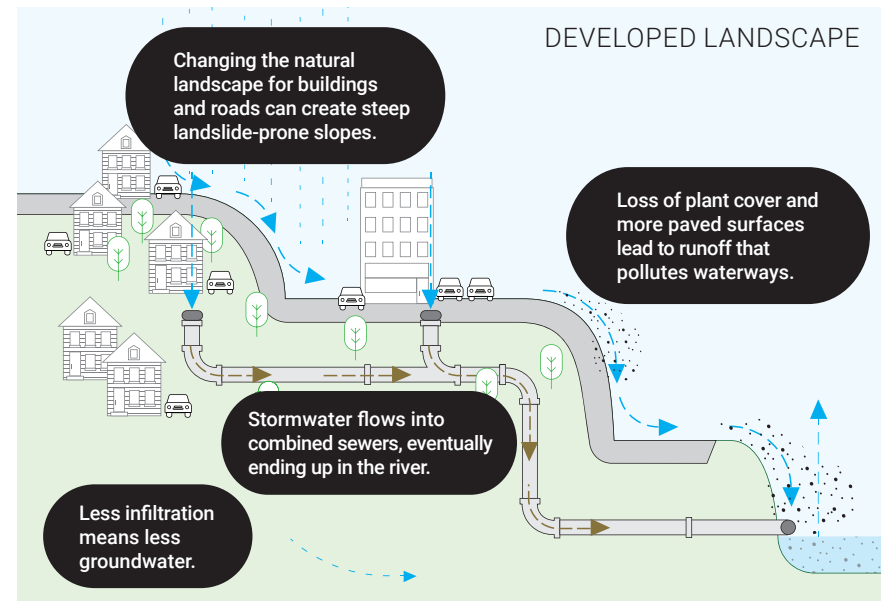
A combination of rainwater and untreated sewage flows directly to the rivers (Combined Sewer Overflow).

It is a health hazard to swim or kayak in the dirty river.

Green infrastructure helps solve this problem



In a **natural system**, the water cycle is managed by the landscape: vegetation, soils, and streams. Water is intercepted and consumed by plants and **infiltrates**, or soaks into the ground to replenish groundwater. Water also flows over the landscape to rivers and streams. This process cleans and filters water.

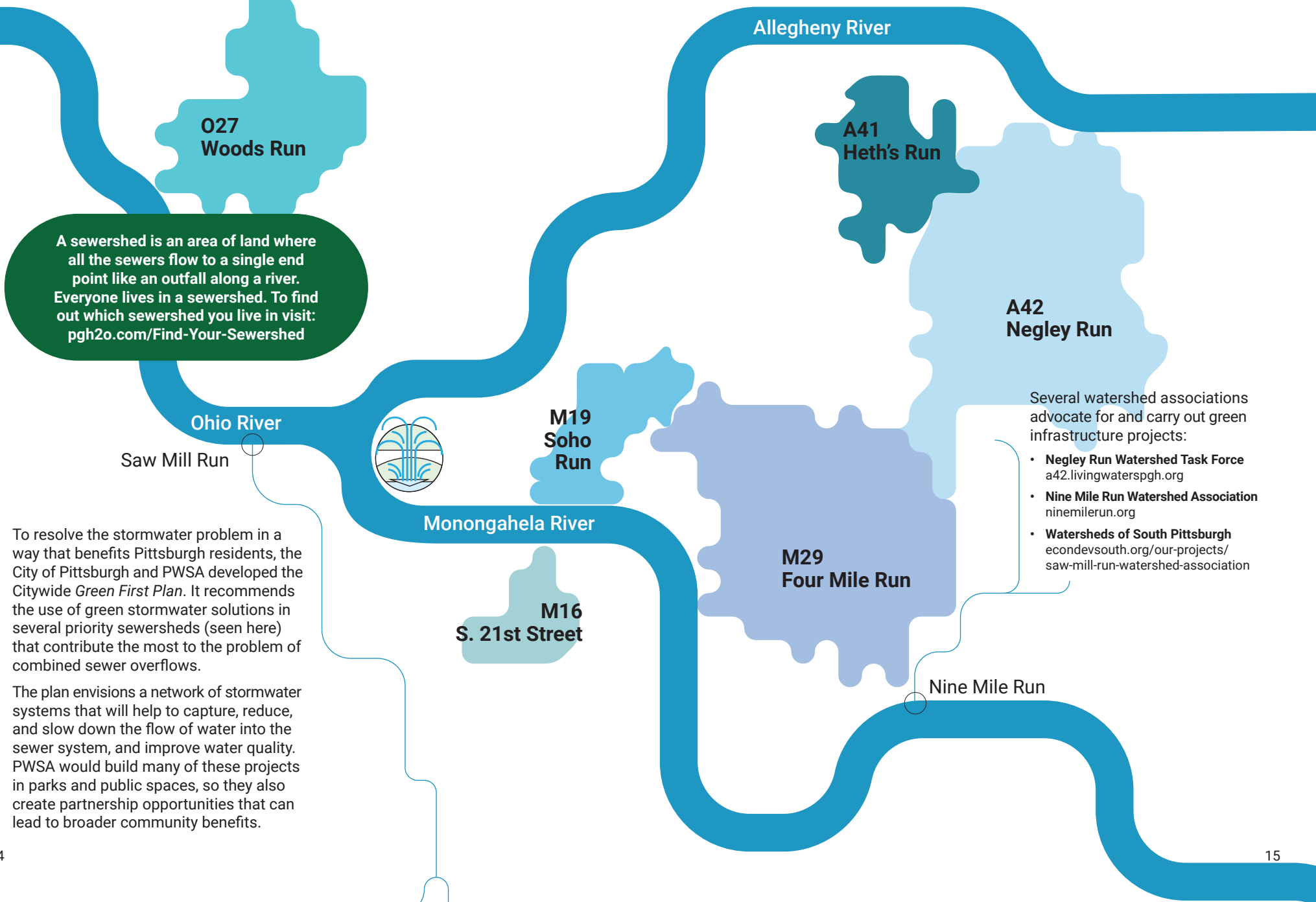


Development alters the landscape and thus the water cycle. Steeper slopes, less vegetation, and paved, or **impervious** surfaces increase surface runoff. **Runoff** is rain water that hasn't soaked into the ground. It becomes dirtier as the natural landscape is built upon, carrying pollutants into our waterways. Sewers rush this polluted water away.



Green infrastructure uses techniques that help to absorb, capture, and store stormwater runoff. They reduce pollution, promote healthy communities, and mimic the way the natural landscape functions.

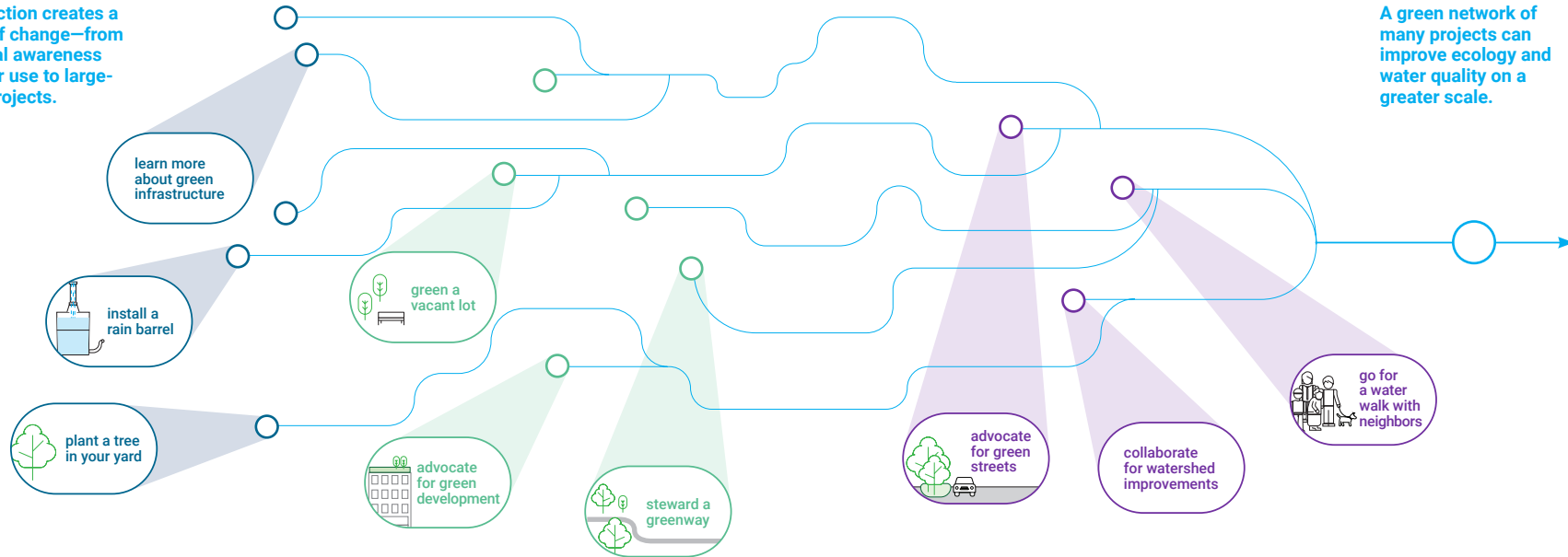
Where green infrastructure is needed most



Acting together

Every action creates a ripple of change—from personal awareness of water use to large-scale projects.

A green network of many projects can improve ecology and water quality on a greater scale.



Individual

You can have a positive or negative impact on the watershed where you live. Every person can be mindful of their water use. At home, installing a rain barrel or rain gardens can help solve overflows while reducing your water bill. Follow the simple guidelines in *A Homeowner's Guide to Protecting our Watershed* for taking care of your home and land in a water-wise way: 3riverswetweather.org/sites/default/files/homeowners%20guide.pdf

If you'd like to build something simple that soaks up rainwater and grows beautiful plants, check out the Allegheny County Conservation District's *Homeowner's Guide to Stormwater*: wcdpa.com/wp-content/uploads/Homeowners-Stormwater-Guide.pdf

Block or Project

You and your neighbors can improve your block and the health of our water by working together and taking advantage of City programs.

Wightman Park in Squirrel Hill is a good example of a project where neighbors became advocates for giving green infrastructure an important role.

- *Adopt-A-Lot* helps residents work on vacant lots to create edible gardens, flower gardens, or stormwater improvements. pittsburghpa.gov/dcp/adopt-a-lot
- *Greenways for Pittsburgh* outlines an official process for improving the forests through stewardship. Improving forest health greatly improves water quality. pittsburghpa.gov/dcp/greenways
- *TreeVitalize*, a program of the Western Pennsylvania Conservancy, has tree planting programs in the spring and fall. waterlandlife.org/trees/treevitalize-pittsburgh

Neighborhood and Watershed

Green infrastructure works best when it's designed and implemented as a system within a watershed, where all water flows to one point. Plans organized around watersheds and sewersheds that include multiple neighborhoods are most effective at improving water quality and addressing water issues holistically.

A good way to promote One Water principles is to work as a task force or watershed organization focused on a specific body of water. You can get involved in projects at a watershed scale. See some local examples on page 15.

If you have an idea for green infrastructure, speak to, and gather support from, your neighbors and Community Organization and meet with your neighborhood planner. They can organize meetings with PWSA, the Pittsburgh Parks Conservancy, and other organizations to identify funding or projects it can fold into.

If your neighborhood is developing a comprehensive plan, make sure green stormwater management is a priority. Connect

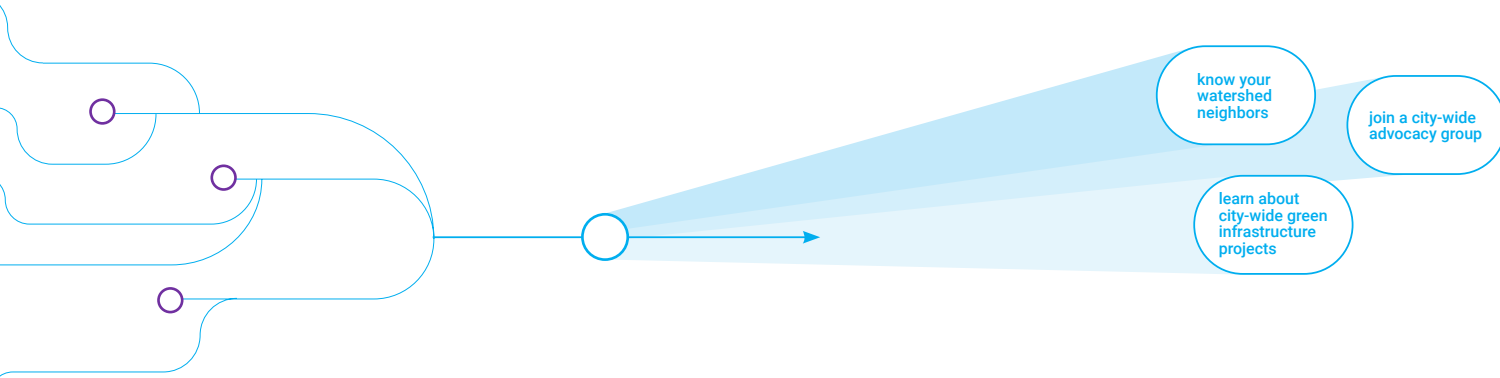
with the City's Community Affairs or your neighborhood planner: facebook.com/ocapgh or pittsburghpa.gov/dcp/neighborhood-planning

Reach out to City Planning and the Pittsburgh Parks Conservancy to ensure your stormwater goals are incorporated into park planning: facebook.com/PghDCP + pittsburghparks.org.

Watershed Plans

A common tool for working at this scale is a watershed plan. It is both a strategy and a work plan to reach water resource goals. Usually, stakeholders and management agencies will study the watershed; set goals for improving it; develop an implementation plan and carry it out; and monitor progress within a geographically-defined watershed. In Pittsburgh, sewershed planning, which includes planning for green infrastructure, is PWSA's responsibility. You can participate in the process by first finding what sewershed you live in: pgh2o.com/Find-Your-Sewershed.

Acting together: City-wide



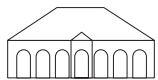
Pittsburgh Water & Sewer Authority (PWSA)

- Owns pipes under streets, catch basins and drainage structures
- Pumps and treats drinking water
- Delivers combined stormwater and sewage to ALCOSAN
- Reduces CSOs and improves water quality in the City of Pittsburgh.

Key Activities: PWSA is currently planning green stormwater projects in several priority sewersheds including Four Mile Run (M29), Negley Run (A42), Heth's Run (A41), and Two-Mile Run (A22).

Get involved: Whether you live in one of these sewersheds or are concerned about stormwater in your neighborhood, attend PWSA's project meetings to learn more, ask questions, and get involved.
pgh2o.com/gi-what-we-are-doing

Allegheny County Sanitary Authority



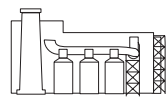
(ALCOSAN)

- Treats raw sewage and industrial waste from 83 municipalities in Allegheny County, including the City of Pittsburgh, at ALCOSAN's Ohio River Plant.
- Responsible for developing and implementing the Clean Water Plan, which is designed to reduce overflows of untreated wastewater containing sewage and other contaminants into streams and rivers.

Key Activities: The GROW grant program implements green infrastructure projects and is available to municipalities served by ALCOSAN.

Get involved: Sign up for SOAK Alerts to find out when overflows affect our waterways. Attend the open house, a family-friendly event about water quality in the region, hosted every fall at the ALCOSAN treatment facility. Learn more at 3riversproud.com

City of Pittsburgh



Several departments share responsibility for green infrastructure planning.

Key activities:

- **Department of City Planning (DCP)** – Guides creation of City plans and policies, including elements related to stormwater. Enforces the City's stormwater ordinance. Chief Resilience Officer guides the City's Resilience Strategy.
- **Department of Mobility and Infrastructure (DOMI)** – Manages, designs, improves, and operates Pittsburgh's system of sidewalks, curbs, streets, and bridges that transport people and goods.
- **Department of Public Works (DPW)** – Improves parks through capital projects and landscape management. Forestry Division cares for trees in parks and City streets.

Get involved: Contact your neighborhood planner: gis.pittsburghpa.gov/pghneighplanner

More Local & Regional Resources



Pittsburgh Parks Conservancy (PPC)
pittsburghparks.org/park-events +
pittsburghparks.org/volunteer

3 Rivers Wet Weather
3riverswetweather.org

Our Water Our Rivers Campaign:
a program of Pittsburgh United
pittsburghunited.org/ourwater +
cleanriverscampaign.org

Pennsylvania American Water
environmental grant program
[amwater.com/paaw/news-community/
environmental-grant-program](http://amwater.com/paaw/news-community/environmental-grant-program)

Tree Pittsburgh
treepittsburgh.org

National Resources

Clean Water Action
cleanwateraction.org

Environmental Protection Agency (EPA)
epa.gov/environmental-topics/water-topics
Handbook for Developing Watershed Plans to Restore and Protect Our Waters (EPA)
[epa.gov/nps/handbook-developing-
watershed-plans-restore-and-protect-
our-waters](http://epa.gov/nps/handbook-developing-watershed-plans-restore-and-protect-our-waters)

US Water Alliance One Water Roadmap
[uswateralliance.org/sites/
uswateralliance.org/files/publications/
Roadmap%20FINAL.pdf](http://uswateralliance.org/sites/uswateralliance.org/files/publications/Roadmap%20FINAL.pdf)

How we got here

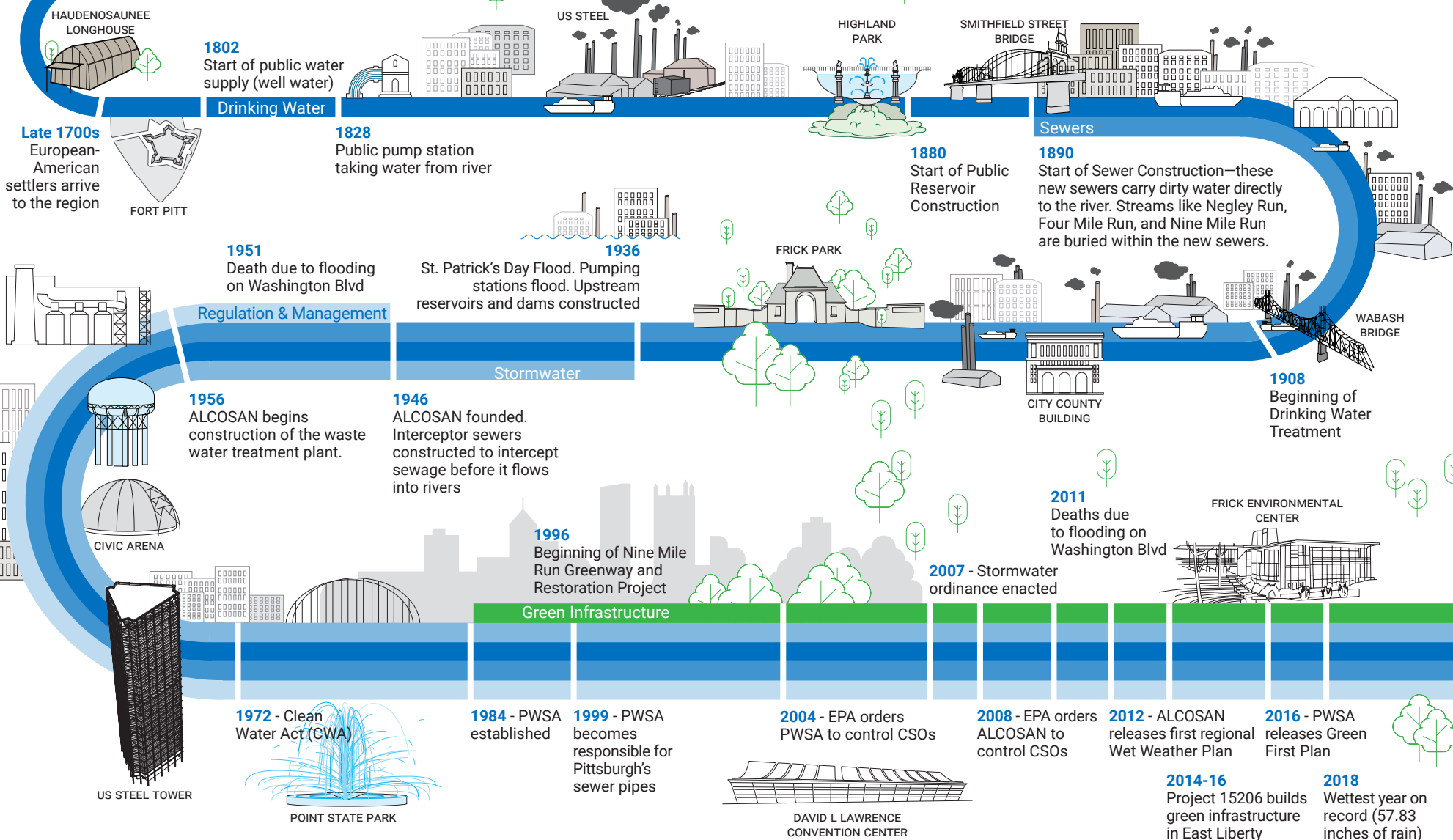
Pittsburgh's system to manage water has developed in a fragmented way over time.

11,700 years ago - end of last Ice Age. Mon and Ohio in present course. Melting waters create hills and valleys

~16,000 years ago - beginning of human settlement in SWPA at Meadowcroft

4.6 Billion Years ago - all water in existence today is created

2.6 Million years ago - beginning of last Ice Age. Pittsburgh is flat. Monongahela and Ohio rivers flow north to Lake Erie





PGH₂O



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piscsfoundation.org

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