

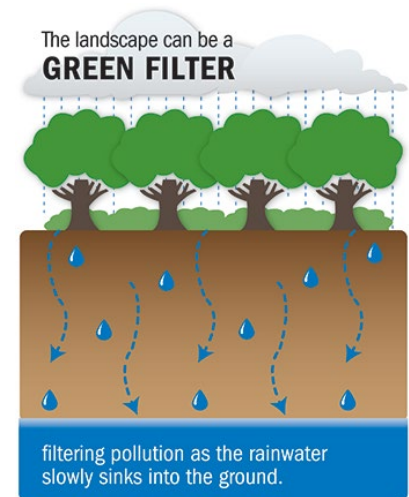
CREATING CLIMATE RESILIENT PARKS

Public agencies and recreation and open space organizations are using Green Infrastructure and Sustainable design principles in their local parks, waterways, trails and natural areas to mitigate climate change and make communities more climate resilient. Parks, trails, and other open spaces are ideal places to implement sustainability and climate adaptations because they are publicly owned and accessible to everyone. Communities with green and sustainable parks become more climate resilient when their parks, waterways and natural areas use green infrastructure. Benefits to the public include, reduced flooding, increased climate equity, reduction in carbon emissions with tree plantings, improved habitat, access improvements, and cost reductions.

There are many opportunities to include green and sustainable best management practices in site design and initial project planning to mitigate climate effects in your community. Find more information on [DCNR's Climate webpage](#) or [the Sustainable and Climate Resilient Community Parks](#) webpage.

CLIMATE RESILIENCY IN PARKS

Climate change has manifested in communities as rising temperatures, increased rainfall and flooding, change in weather patterns, and the movement of species. Evaluating climate impacts and climate equity in your community is a great place to start when planning for the future and creating climate resiliency. Climate resiliency is the ability to anticipate and respond to climate change related impacts. Open spaces and parks are a good example of climate resiliency and are a critical piece to fighting climate change and creating climate equity. Below are ideas and resources for creating climate resiliency in your community.



EQUITABLE ACCESS IN PARKS

Data from [Pennsylvania's 2020-2024 State Comprehensive Outdoor Recreation Plan \(SCORP\)](#) indicated that only half of survey respondents can walk safely to a public park or water-based recreation resource. Communities lacking access to public spaces are particularly vulnerable to climate change impacts because there is less natural or green infrastructure to reduce flooding, excessive heat, and pollution.

To increase access to outdoor recreation resources, and reduce the use of fossil fuels, provide opportunities for park users to arrive by bike, sidewalk/trail, or public transportation. In recreation and land conservation planning phases, also consider using the [Outdoor Recreation Access Mapping Tool](#) to help identify communities with the greatest needs.

NATURAL SYSTEMS AND GREEN INFRASTRUCTURE

The environment includes ecological systems that keep water clean, mitigate stormwater, reduce flooding and erosion, and keep air cleaner. One way to preserve these ecological services is to protect natural habitat through land conservation. It is also important to note that dedicating portions of a park to natural areas such as meadows and forests, park managers can steward shared natural resources and retain the community's natural systems, allowing the community to enjoy the benefits.

Green infrastructure is a natural or semi natural system engineered to reduce the rate and volume of stormwater runoff. Green infrastructure offers many benefits to communities that are similar to some of the benefits offered by natural systems. In comparison to traditional hardened or "gray" infrastructure, green infrastructure is cheaper to install and maintain, has a high return on investment while offering many environmental benefits. The benefits include, improved water quality, the ability to absorb and store greenhouse gases in soil and plant life, wildlife habitat, aesthetic beauty and benefits to mental well-being, flood reduction, cooling effects, and meets MS4 (municipal separate storm sewer systems) requirements.

Below are green infrastructure types that can be integrated into your site.

- Sidewalks with curb extensions, planters, trees, and pervious surface
- Stormwater basins with native grasses and flowers
- Rain gardens within parks, roads, and parking lots
- Water storage options like rain barrels and cisterns
- Downspout disconnection to a pervious surface or rain garden
- Stream bank tree plantings

You can find additional sustainable and climate adaptation ideas [here](#).

Linking and Layering Green Infrastructure projects for Resilient Landscapes



page 218—Community Greening Plan – A Green stormwater Infrastructure Plan for Harrisburg

BENEFITS OF TREES

Trees and other plants help cool the environment, making vegetation a simple and effective way to reduce excessive heat, improve air quality, store greenhouse gas emissions, and reduce flooding. Extensive use of trees to shade buildings, streets, trails, and parks can keep communities cool especially while recreating.

The addition of trees in public spaces, trails, and areas with high amounts of pavement provide aesthetic value, increased habitat, and reduced noise. Consider tree planting in community planning phases for future parks and trails. Build tree planting costs into your park and trail development projects and request to work around trees that are currently present.

The Bureau of Recreation and Conservation offers funding for tree plantings including a [riparian forest buffer program](#). Other resources include, DCNR's [TreeVitalize funding program](#), [the Keystone 10 Million Trees goal](#), and [the Tree City USA program](#).

MORE RESOURCES:

1. Green Buildings and Climate
<https://www.usgbc.org/articles/how-green-buildings-can-help-fight-climate-change>
2. Community-Based Public-Private Partnerships and Alternative Market-Based Tools for Integrated Green Stormwater Infrastructure: Guide for Local Governments.
https://www.epa.gov/sites/production/files/201512/documents/gi_cb_p3_guide_epa_r3_final_042115_508.pdf
3. EPA Green Infrastructure Webcast Series
<https://www.epa.gov/green-infrastructure/green-infrastructure-webcast-series>
4. EPA Green Infrastructure Modeling Toolkit to manage urban water runoff
<https://www.epa.gov/water-research/green-infrastructure-modeling-toolkit>
5. DCNR Mowing Calculator
http://www.docs.dcnr.pa.gov/cs/groups/public/documents/document/dcnr_20030458.xlsm
6. Trust for Public Lands Mapping Tools
<https://web.tplgis.org/>
7. Cost Benefit of Green Infrastructure
<https://www.epa.gov/green-infrastructure/green-infrastructure-cost-benefit-resources>
<https://coast.noaa.gov/data/docs/digitalcoast/gi-cost-benefit.pdf>
8. Tree Planting in Pennsylvania
<http://www.tenmilliontrees.org/>