



Grounds and Maintenance Policy Program

Create a grounds and maintenance policy program that ensures that municipally maintained parks, gardens, and landscaped areas are managed in the most efficient and environmentally friendly manner.

WHAT IS IT?

Grounds and maintenance, also known as resource management, are integral parts of urban parks. Strategies, including manual, built, and technology solutions, can be implemented to make maintenance more efficient and reduce the impact on the environment.

Urban parks can prioritize the use of native plants as part of their grounds program. Native plants are plants that are naturally occurring in a given region and reduce fertilizer use, pesticide use, and water demand compared to non-native species. Many native midwestern plants also have deep root systems, which can increase the water capacity of soil and reduce surface runoff during storms. Planting native species can also counteract the habitat destruction caused by urban sprawl, mimicking native habitats to support biodiversity.

Domestic wastewater, greywater, and stormwater can be reclaimed and used for irrigation in urban parks. Cities can partner with sewage treatment districts and municipal wastewater plants to use wastewater for landscape irrigation, saving potable water for residential use. Collecting and processing greywater can also mitigate the harmful effects of stormwater runoff; up to 90% of rainwater falls on hard surfaces in cities and is drained into waterways without treatment, carrying pollutants like trash, organic matter, grease, and heavy metals into local creeks and rivers. Overall, use of recycled water can increase water conservation and build preparedness in the case of drought.

In response to flooding and heavy storms, cities have also begun integrating green infrastructure solutions into their urban park designs. Green infrastructure refers to solutions that utilize natural elements, such as vegetation and soil, to bolster resiliency, stormwater management, and flooding. Examples of green infrastructure include: rain gardens, green roofs, permeable pavement, stormwater planters, bioswales, and living shorelines. Many of these solutions utilize layers of soil and plants to collect and filter excess stormwater, diverting runoff and reducing flooding. When implemented in urban parks, green infrastructure further decreases soil erosion, pooled water, and other storm impacts which can mitigate maintenance costs.

Technology solutions can optimize urban park maintenance as well, allowing cities to take a data-driven approach to maintenance. Cities are implementing sensor technology that employs a centralized system to monitor resources levels, such as using sensors to measure soil moisture that informs irrigation needs or sensors in waste bins to indicate when they are full.

Another solution is geographic information systems (GIS), which can enable a location-based approach to park management through spatial analysis, mobile field operations, and data-driven efficiency. GIS allows for the visualization and tracking of urban park elements and the accessibility of tracked information through mobile applications. Finally, smart irrigation systems can reduce the amount of water wasted in irrigating urban parks. ICT-enabled irrigation systems reduce the amount of water used depending on the amount of precipitation in the region.

In Ohio, Cleveland Metroparks is a separate subdivision of the state that manages a system of nature reservations (the “Emerald Necklace”). Their 2020 Action Plan outlines park management practices. To integrate community-oriented restoration and maintenance, Cleveland Metroparks has a volunteer program called Watershed Volunteer Program (WVP) that trains community members to be Certified Water Stewards in restoration projects throughout Northeast Ohio. Some of their work includes Green Infrastructure Projects (rain garden installation and maintenance and permeable pavement monitoring), Watershed Restoration (native seed collection and cleaning workshops, invasive plant removal, streamside and wetland restoration projects), and Stream Quality Monitoring (macroinvertebrate and water chemistry monitoring). This project is supported by the Ohio Environmental Education Fund in partnership with the Northeast Ohio Regional Sewer District.

WHY IS IT IMPORTANT?

- Depending on the amount of land area, municipal parks can have a significant maintenance and resource cost. By integrating natural, built, and technology-driven solutions, cities can reduce maintenance hours, labor costs and water use.
- As climate change impacts worsen, drought is an increasing concern for communities across the United States. Water-smart park management solutions can decrease the amount of water allocated for park maintenance.
- Municipal parks can provide ecosystem benefits of habitat restoration and flooding management. By implementing natural solutions, like native plants and green infrastructure, cities can improve biodiversity and reduce the impact of flooding to urban areas.

BENEFITS



Reduced water cost and use by utilizing recycled and reclaimed water



Promote balanced ecosystems by managing native plant and wildlife populations



Community engagement in park maintenance through volunteer programs



Increased sense of community through shared, accessible green space



Reduced maintenance costs by making the process more efficient

HOW CAN COMMUNITIES IMPLEMENT THIS POLICY?

Cities can use a variety of strategies to improve park maintenance, including community engagement, design improvements, and smart technology.

- **Include maintenance in Urban Parks Strategic Plans through local stakeholder engagement.** By engaging diverse community stakeholders, such as municipal parks and recreation departments, non-profits, foundations, schools, and private businesses, cities can increase support and participation in parks management. These stakeholders can find opportunities to contribute to park maintenance or financial sponsorship.
- **Develop volunteer opportunities through local institutions.** Many local nonprofits, foundations, and schools provide opportunities for community service. By creating events through these partnerships, the city can benefit from litter removal and encourage community use of parks in the future. Further, the city can co-create a training workshop curriculum for volunteers to become official 'stewards' to encourage community-created park improvements and maintenance projects.
- **Design urban parks to maximize environmental benefits.** Cities should consider utilizing native plants to decrease water and fertilizer use. Additionally, parks should integrate green infrastructure for stormwater management and reduction in future flooding related maintenance costs.
- **Utilize recycled water to irrigate parkland.** Cities should evaluate opportunities to utilize recycled water to irrigate municipal parks. This can reduce water waste and use to reduce the environmental impact of park irrigation.
- **Explore opportunities to integrate technology into maintenance optimization.** Cities should leverage existing tools or identify opportunities to procure new technology for maintenance. By using GIS mapping, sensors, or smart irrigation systems, cities can reduce maintenance costs and water usage for all urban parks, resulting in cost savings and lower environmental impact.