Greener Parks for Health

Green Infrastructure as a Strategy for Improving Equity and Community Well-Being

Policy Action Framework

NRPA National Recreation and Park Association

Because everyone deserves a great park

WILLAMETTE PARTNERSHIP

ACKNOWLEDGMENTS

This *Greener Parks for Health Policy Action Framework* was informed by a policy scan at the federal, state and local levels for current opportunities and barriers for green infrastructure in parks. The scan intentionally focused on small and mid-sized cities and how policy impacts advance the multiple goals of equity, environment, economy and health. A summary of this scan can be found by visiting NRPA's Greener Parks for Health webpage.

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INTRODUCTION

Parks provide essential health and conservation benefits. From pocket parks to sprawling urban forests, parks are an integral part of our communities and bring people together. Greener parks can improve the quality of the air we breathe and the water we drink, reduce the impacts of flooding and advance community health and well-being.

What do we mean by "Greener Parks?"
Parks, trails and open spaces serve important functions for recreation and green space in communities, but incorporating green infrastructure into parks can help boost their overall benefit to communities through increased health, environmental, social and economic benefits. That's why we're referring to parks with green infrastructure features as "greener parks" in this policy action framework.

It is important to acknowledge that not all parks are distributed equitably throughout the United States. Current and historical unjust policies have shaped where parks are located, how green they are and how well they are maintained, which means we have not lived up to the promise of parks as gathering places and essential infrastructure for **all** communities. Park and recreation professionals have a responsibility to correct these inequities by ensuring the benefits of parks and outdoor spaces are distributed in a fair and just way. If done thoughtfully in collaboration with community members, greener parks can help correct past injustices and build equitable park access for improved community well-being and resilience moving forward.

Essential Infrastructure
NRPA defines essential infrastructure as the spaces, facilities and built environment features, such as parks, trails, open spaces and pools, that are absolutely necessary to maintain the health and well-being of the public.

Park and recreation professionals are on the frontlines of our most pressing health, social and environmental challenges, working to implement local solutions that improve community outcomes. They are a driving force for community vitality – managing greenspace and green infrastructure for climate-readiness and serving as stewards of community wellness hubs that provide connections to essential spaces, programs and services that advance equity and improve community well-being. The National Recreation and Park Association (NRPA) created this *Greener Parks for Health Policy Action Framework* to strengthen this work and highlight additional opportunities to promote parks as optimal spaces for green infrastructure development.

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What is green infrastructure?
Green infrastructure is a set of natural features (e.g., trees, bioswales and rain gardens) that provide environmental benefits to a community (e.g., reducing flood risk, storing and treating stormwater, reducing the urban heat island effect and filtering air). Done well, green infrastructure can also enhance human health and provide environmental and social benefits through increased economic development, reduced energy use and other functions that communities need.

THE POLICY ACTION FRAMEWORK

The *Greener Parks for Health Policy Action Framework* provides policy ideas, examples and case studies that municipal park and recreation professionals and their partners can use to advance greener parks for their communities. The framework provides recommendations that can help shape federal, state, community, and/or park and recreation agency policies, with a focus on small- and mid-sized communities, to advance interrelated equity, environmental, economic and health goals.

The *Greener Parks for Health Policy Action Framework* is organized by policy functions and provides actions for each function that can be taken at the federal, state or local level. The five policy functions are to:

→ Remove barriers and establish authorization

In instances where there are policy barriers that prevent green infrastructure development, the first step is removing those barriers and authorizing green infrastructure.

→ Require and incentivize

Once barriers are removed, governments can encourage green infrastructure development through policies that require sustainable development and offer incentives to local governments and agencies to use green infrastructure.

→ Fund

Green infrastructure projects need funding for capital construction and ongoing operations and maintenance. Governments can take advantage of existing funding sources and create new opportunities to help develop green infrastructure.

→ Build equity

Green infrastructure has the potential to compound the health, economic, environmental and social benefits for communities where it is installed. Policies can ensure that the design and implementation of green infrastructure meets community equity goals and prioritizes greener park development in under-resourced communities.

→ Increase resilience and connection to parks

Parks and green infrastructure enhance community resilience and support health and well-being during natural disasters, climate change, economic downturns and pandemics, and are active agents in post-disaster recovery and healing.

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Using the Framework

This framework serves as a resource to bring diverse groups together to work toward shared policy goals that position parks front and center in community resilience planning. Though our policy focus is specifically on parks, this framework was crafted to provide an accessible resource for anyone interested in advancing green infrastructure to bring health, economic, social and environmental benefits to all communities.

Park and recreation professionals do not need to be advocacy experts to help shift policies that make a difference in their communities. To translate these broad policy goals into specific actions at the local level, we have developed two other resources to support park and recreation professionals in building community support for this policy agenda. The first of these is the *Greener Parks for Health Communications Toolkit*,[1] designed with resources to highlight values-based messages around the benefits of greener parks. The second is the *Greener Parks for Health Advocacy Toolkit*,[2] which contains specific message platforms to encourage park and recreation professionals to engage their communities, elected officials and other stakeholders to further this policy agenda.

An Inclusive Vision for Change

We envision a future where everyone has equitable access to safe and inclusive green spaces, and where parks are viewed as essential community infrastructure that provides economic, environmental, social and health benefits to all neighborhoods for all people. Park and recreation professionals are key leaders in advancing this effort, but will depend on effective community-led planning and decision-making processes and active cooperation among other municipal agencies and community partners.

Guiding Values and Principles

The following values and principles support this policy action framework:

- **Multi-benefit approach.** Policies should aim to achieve maximum improvements for communities.
- **Sustainable development.** Like all projects, green infrastructure requires adequate funding and planning for long-term maintenance to ensure its value as essential community infrastructure and its functionality in managing stormwater. Funding and planning should span from planning and development through operations and maintenance (O&M), following federal policies through to their local implementation, and take into consideration the long-term impacts of development in a community.
- **Equitable and community-centered process.** Communities — the people who live, work and play near parks — should participate in planning and decision-making with respect to where green infrastructure is developed and how it is designed, as well as be prioritized for job training and development. The equitable development of green infrastructure requires meaningful community relationships, engagement and active listening at every step of the process. This also requires diverse representation among public sector managers and leaders.
- **Partnership and interagency cooperation.** Greener parks depend on leadership buy-in and collaboration among multiple partners and agencies. Elected leaders should prioritize working with external partners and coordinating approaches across municipal agencies to maximize effectiveness and efficiency, and ensure green infrastructure is a consideration in community-wide economic, environmental and community health planning.
- **Public health.** Assessing human health impacts in all policies can ensure that green infrastructure will positively impact the lives of people and the environment.
- **Optimistic realism.** Our recommendations are grounded in reality and aspirational in scope. They include policies that are already in use and opportunities for development in the near future.
- **Resilience.** Communities face economic, environmental and social disruptions, such as natural disasters, public health crises and economic downturns, therefore all strategies should build resilience — the ability to minimize harm from such events, and the ability to recover while maintaining quality of life, environmental health and economic prosperity.

[1] Robison, B. & Jacob, B. (2020). *Greener Parks for Health Communications Toolkit.* Retrieved from https://www.nrpa.org/GreenerParksforHealth/
[2] Jacob, B. & Robison, B. (2020). *Greener Parks for Health Advocacy Toolkit.* Retrieved from https://www.nrpa.org/GreenerParksforHealth/

POLICY RECOMMENDATIONS

Remove Barriers and Establish Authorization

Green infrastructure projects can be hindered at federal, state and local levels when viewed as less critical or not as useful as conventional gray infrastructure, without considering its capacities as a multi-benefit tool for communities. Explicit authorizations for green infrastructure in a variety of sectors can remove these impediments.

Gray Infrastructure
"Gray infrastructure refers to constructed structures such as treatment facilities, sewer systems, stormwater systems or storage basins. The term "gray" refers to the fact that such structures are often made of concrete."[3]

Table I. Recommendations at a Glance: Remove Barriers and Establish Authorization

LEVEL OF GOVERNMENT	ACTION
Federal/State	Clarify that green infrastructure is essential infrastructure
	Authorize the creation of local stormwater utilities
Local	Include green infrastructure in parks in regional or community-wide master and/or watershed management plans
	Authorize green infrastructure as a use of parkland
	Formalize interagency agreements for green infrastructure development and maintenance
	Authorize multi-jurisdictional funding for green infrastructure
	Authorize and fund private-public partnerships for green infrastructure

[3] NGICP and IGICP. (2019). "Glossary definition: gray infrastructure." Retrieved from http://ngicp.org/glossary/gray-infrastructure/

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Federal and State Policy Actions

Clarify that green infrastructure is essential infrastructure. When most people think of infrastructure, especially as it relates to water infrastructure, they picture concrete pipes, sewers and other forms of "gray" infrastructure. Federal and state governments should explicitly authorize infrastructure spending for green infrastructure in existing funding sources (e.g., U.S. Department of Transportation Infrastructure for Rebuilding America, Federal Emergency Management Agency (FEMA) Disaster Recovery Assistance, U.S. Department of Agriculture Rural Development program, etc.). This is important both in water-specific funding sources (e.g., Clean Water State Revolving Fund and Water Resource Development Act) and other sectors of funding (e.g., transportation, emergency management, energy, health and housing) where green infrastructure can offer community benefits beyond conventional gray infrastructure.

Authorize the creation of local water utilities. Some states have statutes that limit the formation of local stormwater or surface water management utilities. A stormwater utility has the ability to create a stable source of revenue for green infrastructure and can take a more holistic approach to stormwater management, work among sectors, and consider parks as part of a watershed-level green infrastructure strategy. These utilities are formed at the local level, but states are responsible for removing barriers to their formation.

Case Studies

Scottsdale, Arizona — The City of Scottsdale incorporated its water utility in 2016 and is financially self-supported through utility fees.[4] They use green infrastructure and other low impact development practices to help manage stormwater runoff and meet requirements of the city's Floodplain Ordinance.[5]

Missouri — Municipalities in Missouri are restricted in their ability to charge residents for water service unless utilities are explicitly authorized by the state. In 2013, the Supreme Court of Missouri ruled that Metropolitan St. Louis Sewer District's fee on impervious surfaces was a tax, and therefore struck it down.[6]

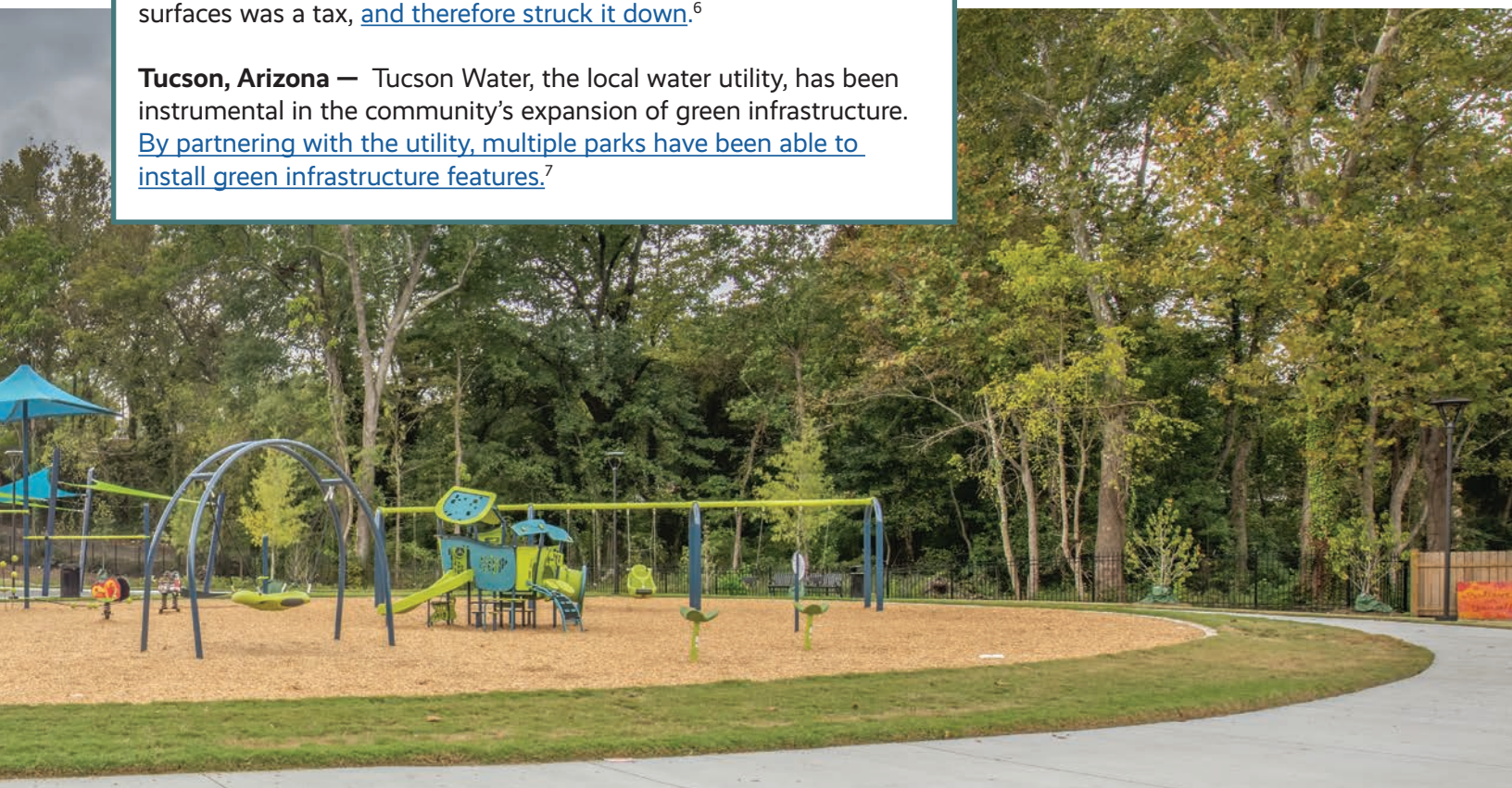
Tucson, Arizona — Tucson Water, the local water utility, has been instrumental in the community's expansion of green infrastructure. By partnering with the utility, multiple parks have been able to install green infrastructure features.[7]

[4] Campbell, C.W., Dymond, R., Key, K. & Dritschel, A. (2017). "Western Kentucky University Stormwater Utility Survey 2017." Retrieved from https://www.casqa.org/sites/default/files/downloads/10_wku-swusurvey2017b.pdf

[5] City of Scottsdale. (2020). *Environmental Initiatives & Compliance.* Retrieved from https://www.scottsdaleaz.gov/planning-development/environmental-initiatives-compliance

[6] Lippman, R. (2013). "State Supreme Court Strikes Down MSD Stormwater Fee." *St. Louis Public Radio.* Retrieved from https://news.stlpublicradio.org/post/state-supreme-court-strikes-down-msd-storm-water-fee#stream/0

[7] City of Tucson. (2020). *Neighborhood Scale Green Infrastructure.* Retrieved from https://www.tucsonaz.gov/water/nsgi



Local Actions

Complete a green infrastructure master plan and/or include greener parks as part of community master plans and resilience plans. These master plans, especially when connected with other citywide plans (e.g., land use, transportation, open space), provide an overarching framework and authority for city departments to invest in green infrastructure. They often serve as a basis for soliciting investments by other levels of government.

Authorize green infrastructure as a potential use for parkland. Some agencies prohibit "non-park uses" in parks, which can include green infrastructure. While these restrictions can provide protections for a park's traditional uses, these policies also can limit the implementation of green infrastructure. Local governments can revise policies to protect parks as places of recreation while also prioritizing multi-benefit land use through cross-agency collaboration on green infrastructure projects.

Traditional Park Uses
Green infrastructure can enhance a park's features and complement more traditional park uses, such as recreation, exercise, gathering space and habitat protection.

Case Studies

Lenexa, Kansas — After devastating floods in the 1990s, Lenexa completed a community-scale master plan focused on reducing flood risk. The stormwater management strategy focused on parks from the beginning, with green infrastructure in parks featured as an important contributor to community safety.[8]

Worcester, Massachusetts — Worcester has included green infrastructure as a community-wide stormwater management practice for decades, and the local park and recreation agency includes green infrastructure as part of its Open Space and Recreation Plans.[9]

Baltimore, Maryland — Baltimore's Climate Action Plan specifically calls out green infrastructure features as a way to "Build a Greener City" and mitigate the effects of climate change.[10]

Formalize interdepartmental and intergovernmental agreements between departments for green infrastructure development and maintenance. While many municipalities coordinate across agencies informally, developing more formal agreements can help sustain collaboration during the turnover of elected officials, city councils and/or staff. Agreements, especially between park and recreation, water utilities/public works, transportation, environmental and health agencies, can help distribute maintenance and construction obligations or share specialized staff, providing cost savings as well as more integrated projects.

Case Studies

Gary, Indiana — The City of Gary created the Department of Environmental Affairs to help identify and implement green solutions and best practices across all city agencies and departments, making it easier to coordinate projects among parks, development and local utilities.[11]

Tarpon Springs, Florida — In Tarpon Springs, the city designated the Project Administration Department to coordinate cross-department development and planning on engineering projects around the city, including green infrastructure.[12]

Photo credit. Photo courtesy of Marco Lenti on Unsplash

[8] Lenexa Kansas. (2018). *Flood Prevention.* Retrieved from https://www.lenexa.com/government/departments___divisions/rain_to_recreation/flood_prevention
[9] The City of Worcester. (2020). "Open Space & Recreation Plan." *City Parks*. Retrieved from http://www.worcesterma.gov/city-parks
[10] Baltimore Office of Sustainability. (2020). *Climate Action Plan*. Retrieved from https://www.baltimoresustainability.org/plans/climate-action-plan/
[11] City of Gary. (2020). *Environmental Affairs*. Retrieved from https://gary.gov/environmental-affairs/
[12] City of Tarpon Springs. (2019). *Project Administration.* Retrieved from https://www.ctsfl.us/projectadmin.htm

Authorize multi-jurisdictional funding for green infrastructure projects. By authorizing funding collaboratives, park and recreation professionals can participate in broader planning approaches across agencies or municipalities for stormwater management. Counties, regions or watersheds provide a more effective scale of work to address complex interrelated environmental challenges. Parks and green infrastructure bond measures, which have been used to fund the multiple needs of communities, require intergovernmental agreements to share resources across municipal boundaries.

Authorize and fund public-private partnerships to support green infrastructure development and workforce training. Public-private partnerships can broaden a municipality's ability to deliver and maintain green infrastructure in ways that benefit communities, for example, promoting priority hiring and contracting with businesses and nonprofits owned by people of color and women. Green infrastructure can also create opportunities for new partnerships to enhance workforce development and new career pathways.

Case Studies

Louisiana — Collaborative funding models can attract interagency funding and open the door to non-government partners and collaborators for larger projects. Quantified Ventures worked with the State of Louisiana and the Environmental Defense Fund to develop an Environmental Impact Bond (EIB) to raise money for wetland restoration in Lafourche Parish, a community prone to flooding.[13]

California — Nonprofits such as California's Local Government Commission (LGC) offer technical assistance to local governments that would benefit from added capacity to plan, design and implement green infrastructure.[14] As a nonprofit, LGC is able to work outside of traditional bureaucratic boundaries, especially when it comes to fundraising for projects.[15]

Prince George's County, Maryland — The Clean Water Partnership is a community-based public-private partnership that uses green infrastructure as a tool to improve water management. By partnering across several types of organizations, the group can share financial and legal risks, drive costs down through technological innovations, obtain greater efficiencies through market forces, and stimulate economic development by creating new sustainable business opportunities and jobs, and building community wealth.[16]

Youngstown, Ohio — In Youngstown, the Community Foundation of the Mahoning Valley created the Healthy Community Partnership as an initiative to advance community-led, holistic planning to achieve critical health outcomes. They formed action teams made up of diverse stakeholders in a variety of topic areas, including parks and green space, and provided funds for the implementation of the priorities recommended by the action teams. The Parks and Green Space Action Team implemented several green infrastructure ideas for the improvement of parks and vacant land.[17]

[13] Qualified Ventures (2019). *Wetlands Environmental Impact Bond*. Retrieved from https://www.quantifiedventures.com/wetlands-environmental-impact-bond
[14] Local Government Commission. (n.d.) Retrieved from https://www.lgc.org/
[15] Local Government Commission (2019). *Green Stormwater Infrastructure Press Release*. Retrieved from https://www.lgc.org/resource/green-stormwater-infrastructure-project/
[16] The Clean Water Partnership. (2020). Retrieved from https://thecleanwaterpartnership.com/
[17] Healthy Community Partnership (n.d.) *Parks and Green Spaces Action Plan*. Retrieved from https://hcpmahoningvalley.com/parks-and-green-spaces/

Require and Incentivize

Prioritizing, incentivizing and even requiring green infrastructure gives agencies at all levels of government explicit reasons to consider green infrastructure in parks as an effective response to health, equity and environmental challenges in their communities. Where possible, the federal and state governments can lead by example. Increasingly, local governments will need to develop their own policies to promote green infrastructure in their communities.

Table II. Recommendations at a Glance: Require and Incentivize

LEVEL OF GOVERNMENT	ACTION
Federal/State	Prioritize multi-benefit approaches to infrastructure as a best management practice
	Encourage green infrastructure development in Clean Water Act standards and permits
	Provide funding and support for local-level green infrastructure
Local	Develop local water quantity and quality measures that encourage green infrastructure development

Federal and State Policy Actions

Prioritize multi-benefit approaches to infrastructure as a best management practice (BMP) for stormwater management and sustainable development. Green infrastructure brings unique health, economic, social and environmental benefits to communities that extend beyond the capacities of conventional gray infrastructure. Beyond simply authorizing green infrastructure, federal and state agencies can give preference to using green infrastructure by prioritizing a multi-benefit approach when developing and funding infrastructure projects. Federal agencies such as the U.S. Departments of Transportation and Housing and Urban Development can seek assessments demonstrating the multiple health, economic, environmental and social benefits, which would provide an evidence base for the prioritization of green infrastructure. Climate resilience considerations and incentives for green infrastructure could be incorporated into the FEMA, Economic Development Administration and other sources of disaster-preparedness funding. At the state level, this can be done through stormwater standards and manuals or by executive order.

Case Studies

Delaware — In 2013, then-Governor Jack Markell issued Executive Order 41, which directed all state agencies to prioritize green infrastructure based on its environmental and economic benefits to the state.[18]

Massachusetts — At the state level, Massachusetts incentivizes and promotes green infrastructure as a best management practice (BMP) to fight climate change, enabling municipalities such as Worcester to adopt similar BMPs in their own plans. Through consideration of climate resiliency as a criterion for prioritizing state-level water projects, local governments automatically begin to consider climate resiliency as they apply for state funding.[19]

Florida — The Florida Department of Economic Opportunity created the Adaptation Action Areas (AAA) program that encourages local governments to address climate change impacts in their comprehensive plans. AAA offers guidance on adaptation strategies including green infrastructure that coastal communities can use to mitigate flooding and improve water management.[20]

[18] State of Delaware Executive Department. (2013). "Executive Order 41." Retrieved from https://archivesfiles.delaware.gov/Executive-Orders/Markell/Markell_EO41.pdf
[19] Mass.gov. (2020). *Recommendations for Addressing Climate Change Impacts to Stormwater Best Management Practices*. Retrieved from https://www.mass.gov/service-details/recommendations-for-addressing-climate-change-impacts-to-stormwater-best-management
[20] Adaptation Clearinghouse. (2015). "Adaptation Action Areas Guidebook: A Planning Guidebook for Florida's Local Government." Retrieved from https://www.adaptationclearinghouse.org/resources/adaptation-action-areas-guidebook-a-planning-guidebook-for-florida-s-local-government.html

Enforce the Clean Water Act and develop water quality standards and permits at the federal and state levels that encourage green infrastructure as a solution. Nationally, the Environmental Protection Agency's issuance and oversight of combined sewer overflow (CSO) consent decrees with local governments has spurred significant investment in green infrastructure. Currently, CSO enforcement has been deprioritized, which will limit the number of new CSO communities making change to these investments. Though a federal program, states are in charge of most Clean Water Act implementations (e.g., setting water quality standards, National Pollution Discharge Elimination System permits, post-construction stormwater general permits, Clean Water Act Section 401 certifications and other actions). States can include the flexibility to use green solutions over gray in their Clean Water Act programs, which gives them an opportunity to direct local governments toward green infrastructure development, especially where aging gray infrastructure requires replacement.

Health Impacts of Clean Water
Clean water for drinking and sanitization is incredibly important to reduce the spread of disease and protect public health. Green infrastructure features like bioswales and permeable pavement can trap heavy metals, fertilizers and other pollutants, naturally filtering them out of stormwater runoff and helping protect water sources.[21]

Provide funding, resources, technical assistance, capacity building and planning for local-level green infrastructure implementation. Federal and state programs already provide technical assistance to small and low-income communities for their community facilities and infrastructure planning (e.g., U.S. Department of Agriculture Rural Development, Environmental Protection Agency, and state infrastructure grant and loan programs). These same programs could be expanded to provide the kinds of technical assistance and planning small communities need to implement green infrastructure approaches (e.g., providing a green infrastructure "circuit rider" to support rural towns). States can help build local capacity to apply green infrastructure strategies.

Local Policy Actions

Require local water quality and quantity protections with flexibility to use green infrastructure in parks. In some instances, local governments may have water management goals beyond what the state requires, especially where the state may not support green infrastructure. In these cases, local governments can use their own policies to prioritize green infrastructure through local development laws and ordinances. For example, several cities require no net impact in stormwater runoff quantity or quality from new development and redevelopment. Those policy requirements can allow for flexibility in implementation so that developers, businesses, and others can meet the requirements through coordinated investment in green infrastructure at local and regional levels.

Case Studies

Tacoma, Washington — Tacoma requires stormwater impact offsets for all new development in the city. Rather than requiring on-site management, these fees go into a centralized pool of funding that the local stormwater utility can use to plan and implement green infrastructure features where they are most needed in the community.[22]

St. Louis, Missouri — The Urban Greening Program (UGP) in St. Louis is a partnership between the local Sewer District and Development Corporation that incentivizes property owners to install green infrastructure on their properties as a means to meet local stormwater management requirements. Although the program is focused on private property owners, UGP encourages developers to turn vacant lots and paved surfaces into neighborhood pocket parks, bringing multiple benefits to the community.[23]

Lenexa, Kansas — Lenexa's Rain to Recreation program helps coordinate the city's response to stormwater challenges through green infrastructure advocacy. Their Stream Setback Ordinance and support for green infrastructure in private and public development has enabled Lenexa to meet its National Pollutant Discharge Elimination System permit requirements largely through implementation of green infrastructure.[24]

[21] Pennino, M. J., McDonald, R. I., & Jaffe, P.R. (2016) "Watershed-scale impacts of stormwater green infrastructure on hydrology, nutrient fluxes, and combined sewer overflows in the mid-Atlantic region." *Science of the Total Environment*, 565, 1044-1053.
[22] J. Brady, personal communication, March 5, 2020.
[23] Green City Coalition. (n.d.) *Urban Greening Program*. Retrieved from https://www.greencitycoalition.org/ugp.html#:~:text=Urban%20Greening%20Program&text=%E2%80%8BThe%20Urban%20Greening%20Program,provided%20by%20the%20Metropolitan%20St.
[24] Lenexa Kansas (2018). *Rain to Recreation*. Retrieved from https://www.lenexa.com/government/departments___divisions/rain_to_recreation

Fund

Funding mechanisms can be coordinated across levels of government and across agencies/departments to maximize the effectiveness and efficiency of green infrastructure development.

Table III. Recommendations at a Glance: Fund

LEVEL OF GOVERNMENT	ACTION
Federal/State	Expand funding in Clean Water State Revolving Funds specifically for green infrastructure
	Provide direct operations and maintenance (O&M) funds for green infrastructure maintenance
	Authorize health funding to develop green infrastructure in parks for community health benefits
Local	Capitalize O&M costs during green infrastructure development
	Find new sources of local-level funding for green infrastructure

Federal and State Policy Actions

Expand the use of funding and financing under the Clean Water State Revolving Fund (SRF) and other federal funding programs specifically for green infrastructure. The Clean Water SRF provides loans and grants for water quality projects, and several states include authorization and preferences for green infrastructure projects. The Environmental Protection Agency provides specific guidance for states on how to fund green infrastructure within existing SRF programs.[25]

Case Study
Lenexa, Kansas — The Land and Water Conservation Fund (LWCF) was established by Congress to help federal, state and local governments protect natural areas and waterways.[26] With a statewide focus in Kansas on mitigating flood damage, Lenexa has been able to access LWCF funds to develop green infrastructure in parks around the community.[27]

Provide direct O&M funding through federal agencies for green infrastructure. Federal and state infrastructure funders (e.g., U.S. Department of Transportation or FEMA) can expand their guidance to allow for more O&M costs to be eligible for the projects they fund. Federal and state funding sources can also create dedicated funds to support O&M costs when they are essential to providing desired outcomes (e.g., health, water quality, flood risk reduction and/or economic mobility).

Case Study
North Carolina — In 2018, North Carolina took an aggressive approach to screening all Medicaid recipients for several social determinants of health, including access to transportation, stable housing and food. By addressing these basic needs, some health outcomes can be improved.[28]

Authorize funding from public and private health insurance and healthcare systems — including Medicaid, Medicare and hospital community benefit funds — for green infrastructure to support quality of life improvements and preventive healthcare in vulnerable communities. Healthcare and public health funding sources have invested "upstream" to address the social determinants of health. In addition to existing funding recipients, states can authorize investments dedicated for social determinants of health to include green infrastructure in parks — especially those in underserved communities — as these spaces provide active transportation, air quality improvements, and other mental and physical health benefits.

[25] U.S. EPA Environmental Finance Advisory Board. (2014). *Utilizing SRF Funding for Green Infrastructure Projects.* Retrieved from https://www.epa.gov/sites/production/files/2014-04/documents/efab_report_srf_funding_for_greeninfra_projects.pdf
[26] National Park Service. (2020). *Land and Water Conservation Fund.* Retrieved from https://www.nps.gov/subjects/lwcf/index.htm
[27] J. Doty, personal communication, Febraury 24, 2020.
[28] Livingston, S. (2018). "Social Determinants are core of North Carolina's Medicaid overhaul." *Modern Healthcare.* Retrieved from https://www.modernhealthcare.com/article/20180803/TRANSFORMATION01/180809944/social-determinants-are-core-of-north-carolina-s-medicaid-overhaul

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Local Policy Actions

Capitalize on O&M as much as possible in budgets and look for ways to include long-term O&M for green infrastructure sites within implementation budgets. New guidelines from the Government Accounting Standards Board allow local governments to capitalize on some of the O&M costs of green infrastructure tied to meeting regulatory requirements. Local governments can continue to use policy to classify O&M as essential to infrastructure providing its public purpose, which can also build community support for funding O&M.

Find new funding sources for green infrastructure and distribute it equitably. Local governments have the ability to create new sources of revenue (e.g., business taxes or fees, sales taxes, property assessments, etc.). Some municipalities have created dedicated funding sources for green infrastructure through other innovative funding techniques like environmental impact bonds, outcomes-based investment financing and water utility fees. To ensure that these funds aren't being used to further inequity, park and recreation professionals can collaborate with housing, transportation and other sectors to develop holistic community projects that include green infrastructure among leading strategies to address community needs.

Case Study

Portland, Oregon — Portland's Clean Energy Fund is a business gross receipt tax that passed in 2019. These funds are dedicated to support clean energy and create clean energy jobs. Key equity provisions are included to ensure that groups benefiting from the fund are paying their workers livable wages, employing workers representative of the communities they serve, and striving to combat inequity.[29]

[29] Portland Clean Energy Initiative. (2019). Retrieved from https://bit.ly/2Xzihta

Build Equity

For decades, federal, state and local governments in the United States passed policies institutionalizing racism (e.g., redlining, park segregation, and redevelopment authorities that forced community displacement) that contribute to the current inequitable distribution of parks across communities. It is crucial that policy actions "thread the needle" of increasing community benefits without increasing the risk of displacement in communities that already have suffered decades of injustice. The policy actions below are focused on correcting some of these historic injustices and current inequities through community-centered approaches to development. The actions are intended to incorporate equity into **how** green infrastructure and park policies are developed, **who** benefits from those policies and **what** outcomes are important to consider to advance equity.

Redlining
Redlining was a process in which the Home Owners' Loan Corporation, a federal agency, gave neighborhoods ratings to guide investment. Because communities of color were considered higher risk under this rating system, it made it more difficult for those communities to get loans for homeownership or maintenance, and led to cycles of disinvestment during a time of significant investment in city infrastructure. The effects of redlining are still clearly seen in U.S. cities today.[30]

Table IV. Recommendations at a Glance: Build Equity

LEVEL OF GOVERNMENT	ACTION
Federal/State	Apply health- and equity-based frameworks to park and infrastructure policies
	Create workforce and economic development programs for green infrastructure careers
	Fund local-level, community-led partnerships to focus on resilience and green infrastructure
Local	Require participatory planning with demonstrated meaningful community engagement throughout the park and infrastructure development processes
	Invest in underserved communities without accelerating displacement

Federal and State Policy Actions

Engage equity- and health-based frameworks to require equity and health analyses of policies related to park and green infrastructure development. There are tools available to communities to consider equity as fundamental to policy decisions and enable assessment of unintended consequences of policy actions across sectors. For example, some communities use Title VI of the Civil Rights Act, which prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal assistance, to ensure their policies are not unintentionally discriminatory.[31] Another example is the Centers for Disease and Control Prevention Health in All Policies framework,[32] which provides principles for how policies can consider and enhance health. These broader frameworks can help inform the criteria decision makers use to inform equitable policy.

Case Study

Tacoma, Washington — The Kirwan Institute for the Study of Race and Ethnicity designed a custom city-wide equity index tool for Tacoma, which they use to prioritize all their park improvement projects, including new park development and green infrastructure upgrades.[33]

Tucson, Arizona – Tucson uses Trust for Public Land's ParkScore to identify which neighborhoods in the community could most benefit from park and green infrastructure development.[34 35]

Clackamas County, Oregon — Clackamas County conducted a Health Impact Assessment for a planned affordable housing development, with final recommendations including the incorporation of green infrastructure features for the health, social and environmental benefits that green infrastructure provides.[36]

[30] Jan, T. (2018). Redlining was banned 50 years ago. It's still hurting minorities today. *Washington Post*. https://www.washingtonpost.com/news/wonk/wp/2018/03/28/redlining-was-banned-50-years-ago-its-still-hurting-minorities-today/
[31] City of Tacoma. (2020). *Title VI Notice*. Retrieved from https://www.cityoftacoma.org/government/city_departments/community_and_economic_development/administration/title_v_i_notice
[32] Centers for Disease Control and Prevention. (2016). *Health in All Policies*. Retrieved from https://www.cdc.gov/policy/hiap/index.html
[33] City of Tacoma. (2020). *Tacoma Equity Index*. Retrieved from https://geohub.cityoftacoma.org/datasets/81d372ddd70a490fbad248e0cdea59d7
[34] I. Ogata, personal communication, March 5, 2020.
[35] The Trust for Public Land. (2020). *2020 ParkScore Index*. Retrieved from https://www.tpl.org/parkscore
[36] Iroz-Elardo, N. (2019). *Health Impact Assessment of Hillside Master Plan*. Retrieved from https://dochub.clackamas.us/documents/drupal/3b1d9600-2cb1-4aa6-bd57-8b69037a3cff

States should authorize and prioritize workforce and economic development programs to build a diverse green infrastructure workforce. Not all workforce programs are designed to develop career pathways for both youth and adults. To ensure that parks, water access and other infrastructure planning decisions are equitable, more diverse perspectives in those careers need to be reflected. States can intentionally invest in green infrastructure pathways, including community college programs, youth job corps, and apprentice and mentorship programs, to develop diverse leaders at the planning, design, construction and maintenance phases of green infrastructure development. Even better, these pathways can be designed to elevate community members to positions of civic leadership.

Case Study

Peoria, Illinois — Local governments and nonprofits already are taking the lead to create equitable workforce development models. The Well Farm at Voris Field was developed as a "stormwater farm" to decrease flooding and CSOs in Peoria, Illinois.[37] To help manage the farm, Peoria created PeoriaCorps, which pays 18 to 24 year-olds to participate in an apprentice-style program to learn green infrastructure maintenance and offers certification credits through the National Green Infrastructure Certification Program. By training local youths, Peoria is investing in creating jobs and ensuring a local workforce to maintain infrastructure.[38]

Duwamish Valley Youth Corps — The Duwamish Valley Youth Corps is a paid training program that engages young people in environmental justice and community health equity learning while offering hands-on green infrastructure training.[39]

Create dedicated funding sources needed to plan, build and maintain green infrastructure in parks for multi-sector and community-led partnerships. Federal and state agencies can help build partnerships at the local and regional levels to prioritize community voices in green infrastructure and parks decisions, through programs such as the Environmental Protection Agency's Environmental Justice grants.[40] Some states such as Oregon and California also fund regional planning partnerships for water.[41] [42] Capacity support for these collaborative efforts can be important for regional coalitions of communities seeking to share resources and expertise.

Photo credit. Photo courtesy of Brownsburg Parks

[37] City of Peoria. (2018.) *"Growing" Stormwater Solutions (and Local Residents' Skills).* Retrieved from https://peoriastormwater.com/peoria-stormwater-well-farm/
[38] City of Peoria. (2018). *PeoriaCorps.* Retrieved from https://peoriastormwater.com/addressing-issues/peoriacorps/
[39] University of Washington. (n.d.). *Duwamish Valley Youth Corps: Making a Difference.* Retrieved from https://deohs.washington.edu/srp/duwamish-valley-youth-corps-making-difference
[40] U.S. Environmental Protection Agency. (2020). *Environmental Justice.* Retrieved from https://www.epa.gov/environmentaljustice
[41] State of Oregon. (2020). Oregon Watershed Enhancement Board. Retrieved from https://www.oregon.gov/oweb/Pages/index.aspx
[42] California Water Boards. (2017). Watershed Management. Retrieved from https://www.waterboards.ca.gov/water_issues/programs/watershed/

Local Policy Actions

Require meaningful community engagement at every step of the green infrastructure development process and remove policy barriers to authentic community engagement.

Policies that impede authentic community engagement:

- Time limits on public comment periods
- Predetermined boundaries and constraints on park design
- Requirements on when, how or where public meetings can be held

Policies that encourage authentic community engagement:

- Priority hiring for staff with lived experience in the community for all positions
- Require written and web-based materials in multiple languages and offer translation services at all public meetings
- Funding for community leaders to conduct outreach far in advance of community engagement processes
- Requiring participatory planning and meaningful community engagement in design processes to create culturally appropriate park experiences
- Offering diverse methods for community members to provide feedback, including a mix of in-person public meetings, virtual stakeholder sessions, surveys and written/print communication
- Meet basic community needs like childcare, transportation and food/drink to reduce barriers

Case Study

Winchester, Kentucky — Winchester-Clark County Parks and Recreation intentionally designed their parks master planning process to be community-driven, working with different community groups and leaders to understand the needs and desires of the people living in their community and keep equity in the center of their approach.[43]

Diving Deeper on Inclusion and Community Engagement

NRPA has developed resources to help park and recreation professionals engage with their communities in inclusive ways. Check out our *Community Engagement Resource Guide*[44] and our *Parks for Inclusion Policy Guide*[45] to learn more about how to make parks welcoming for all communities.

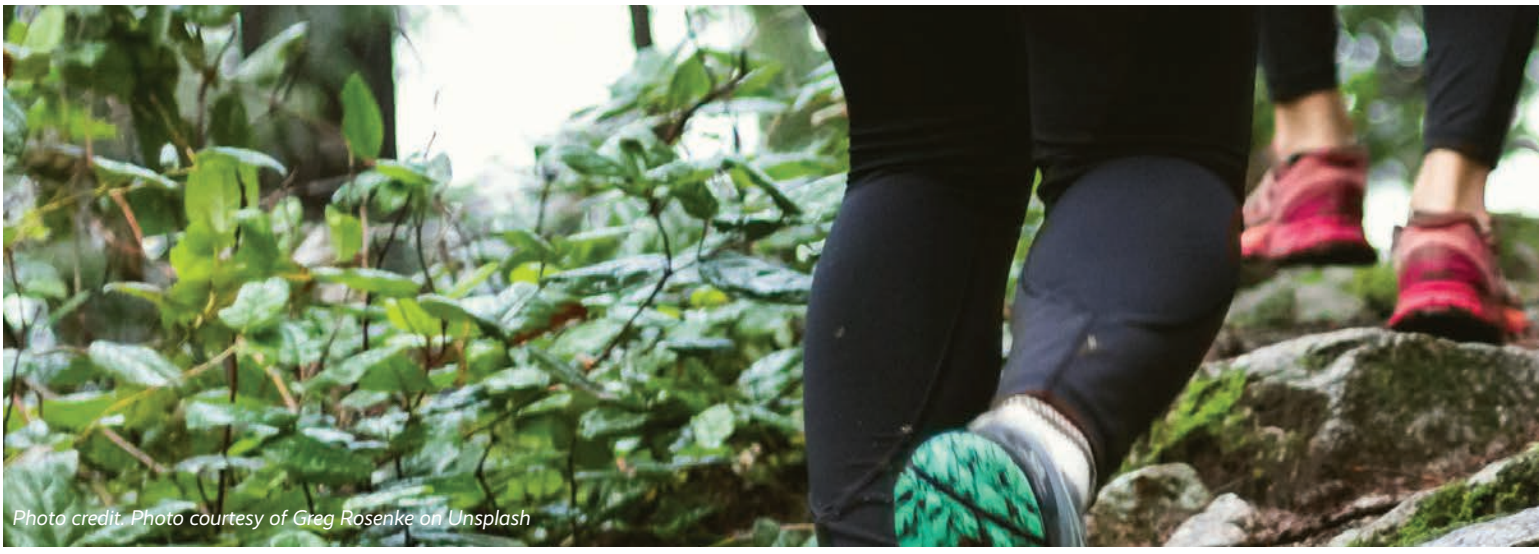

Photo credit. Photo courtesy of Greg Rosenke on Unsplash

[43] Joint Call to Action to Promote Healthy Communities. (n.d.). *Reimagining Parks, Health and an Entire Small Town*. Retrieved from https://www.usgbc.org/sites/default/files/2020-03/Reimagining%20Parks_Winchester%20KY_NRPA.pdf

[44] National Recreation and Park Association. (2020). *Community Engagement Resource Guide*. Retrieved from https://www.nrpa.org/publications-research/best-practice-resources/community-engagement-resource-guide/

[45] National Recreation and Park Association. (2020). *Parks for Inclusion Policy Guide*. Retrieved from https://www.nrpa.org/our-work/partnerships/initiatives/parks-for-inclusion/policy-guide/

What are Anti-Displacement Policies?
Anti-displacement policies are designed to counteract the effect of development that increases the cost of living in a specific area and to help protect people from being priced out of their communities. Anti-displacement policies can include providing access to low interest mortgages and small business loans to promote ownership, securing land for affordable housing, implementing rent control policies, and investing in workforce development programs. These policies also encourage communities to organize and participate in the infrastructure and economic development projects affecting them.

Invest in historically underinvested communities without accelerating displacement. First, take an equity-based approach when developing new parks and when choosing where green infrastructure will be integrated into existing parks. Develop green features where they can have the most impact: in communities experiencing a history of discrimination and current health inequities. Second, sequence green projects after anti-displacement policies are in place at the local level.

There are many additional wrap-around services to support a thriving community beyond land-based strategies that are critical to preventing displacement. Workforce development programs that favor local participants, community cohesion efforts that build upon the historical character of a community, and other policies should be considered when introducing green infrastructure into communities.

Case Study
Baltimore, Maryland — In Baltimore, analysis of five years' worth of capital investments showed that majority-white neighborhoods received almost twice as much money for development as minority-majority neighborhoods.[46] Local governments and agencies can do a similar analysis of their own historical budgets to see which neighborhoods have been receiving disproportionate capital or maintenance funding.

[46] Duncan, I. (2017). "Study finds deep racial disparities in way Baltimore allocates public construction dollars." *The Baltimore Sun*. Retrieved from https://www.baltimoresun.com/maryland/baltimore-city/bs-md-ci-capital-budget-race-inequality-20171211-story.html

Increasing Resilience and Connection to Parks

In 2020, the COVID-19 response is highlighting the essential role parks play in emergencies, including ones that require recovering from natural disasters such as fire, floods or earthquakes, and ones that require physical distancing during disease outbreaks. The policy actions below are intended to build on the essential, multi-use function of parks in ways that are connected to community and coordinated across government.

Table V. Recommendations at a Glance: Increasing Resilience and Connection to Parks

LEVEL OF GOVERNMENT	ACTION
Federal/State	Invest in resilience before an emergency occurs
	Include parks and green infrastructure in community resilience planning
Local	Incorporate emergency response and recovery clauses in interagency agreements
	Develop recovery plans that strengthen resilience and wellbeing

Federal and State Policy Actions

Invest in resilience before an emergency occurs. Federal and state governments should expand "pre-disaster mitigation" funding (e.g., the FEMA grants for flood risk reduction) that can be used to organize community partnerships, plan for the role of parks in reducing the impact of disasters, and plan for the role of green infrastructure in parks during recovery.

Include parks and green infrastructure in community resilience planning. Existing funding (e.g., Fire Adapted Communities[47] and the FEMA's flood insurance Community Rating System[48]) should incentivize green infrastructure as a community resilience tool. In the event of a natural disaster, pandemic or other catastrophic event, green infrastructure in parks should be considered as a way to bring green jobs to communities, improve local health outcomes, and mitigate the impacts of future disasters during the rebuilding and recovery phases.

Local Policy Actions

Incorporate emergency response and recovery clauses in mutual aid agreements and interagency agreements for green infrastructure in parks. Park and recreation agencies should have formal interagency agreements with other agencies to help plan, develop and maintain green infrastructure. By including emergency response and recovery clauses in those agreements, park and recreation agencies will be better poised to share resources (e.g., city water departments sharing equipment) and public spaces (e.g., shared use agreements for school yards) in case of a disaster.

Develop recovery plans that strengthen resilience and wellbeing. Municipalities, including park and recreation agencies, should have recovery policies in place to better and more equitably direct disaster response funds, recovery funds and other actions. Pre-disaster planning can prepare a community to take advantage of emergency response aid to increase resilience. During times of economic crisis, Congress has passed economic stimulus bills that include significant funding for infrastructure development. Communities with resilience strategies can act quickly to use these funds to invest in green infrastructure and other resilience projects.

Photo credit. Photo courtesy of Matthew Daniels on Unsplash

[47] Fire Adapted Communities. (n.d.). *Fire Adapted Communities*. Retrieved from https://fireadapted.org/
[48] Federal Emergency Response Agency. (2020). *National Flood Insurance Program Community Rating System*. Retrieved from https://www.fema.gov/national-flood-insurance-program-community-rating-system

Photo credit. Photo courtesy of Steven Lasry on Unsplash

APPENDIX A:

Methodology:

This *Greener Parks for Health Policy Action Framework* was developed from a policy scan that analyzed the federal-, state- and local-level policies that are currently affecting the development of green infrastructure broadly, and in parks specifically. For the federal- and state-levels, we examined multiple policy sectors (stormwater management, environmental, health, funding, etc.) to understand how they interact with each other to either encourage or hinder green infrastructure. For local-level policies, we concentrated on a dozen small- and mid-sized municipalities' policies around the country that face diverse challenges related to water and climate resiliency to identify creative mechanisms or barriers to green infrastructure implementation in parks.

Upon completion of the policy scan, a series of virtual roundtables and a cross-sector workshop was held to:

- Identify gaps in the initial policy scan
- Offer examples of identified best practices across all three levels of government
- Find opportunities for policy innovation, areas where we could create new policies to encourage the proliferation of green infrastructure in parks
- Categorize policies that offered the greatest opportunity for impact

ABOUT NRPA

The National Recreation and Park Association (NRPA) is a national nonprofit organization dedicated to advancing parks, recreation and conservation efforts that enhance quality of life for all people. Through its network of 60,000 recreation and park professionals and advocates, NRPA supports healthy and active lifestyles, conservation initiatives and equitable access to parks and public space. NRPA brings strength to our message by partnering with like-minded organizations including those in the federal government, nonprofit organizations and commercial enterprises. Funded through dues, grants, registration fees and charitable contributions, NRPA produces research, education and policy initiatives that ultimately enrich the communities that our members serve. For more information, visit www.nrpa.org.

ABOUT WILLAMETTE PARTNERSHIP

WILLAMETTE PARTNERSHIP

Willamette Partnership is a conservation nonprofit dedicated to solving complex environmental problems in ways that work for people. We are known for helping state and federal natural resource agencies, businesses, and conservation interests take advantage of opportunities to achieve conservation and economic outcomes. We work throughout the western U.S. with a focus on the Pacific Northwest. For more information visit, www.willamettepartnership.org.

Greener Parks for Health

Green Infrastructure as a Strategy for Improving Equity and Community Well-Being

Policy Action Framework

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