

# THE ROLE OF PARKS & OPEN SPACE IN CLIMATE ACTION

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Operating at the intersection of adaptation and mitigation to solve complex climate challenges.



**SMITHGROUP**

# OVERVIEW

There is no denying that climate change is the greatest threat of our time. On a global scale, we see the devastating impact that human activity and the built environment have had on the planet. More frequent and intense fires, drought, storms, heat waves, rising sea levels and warming oceans are but a few of the destructive climate-related events destroying communities, habitats, ecosystems and economies, and negatively impacting personal health, well-being and livelihoods worldwide.

Addressing climate change is a collective responsibility. In August of 2023, a team of **SmithGroup** planners, strategists and landscape architects gathered with leaders from park systems across northwestern Ohio for a collaborative discussion and brainstorming event regarding the impact of climate change on parks and open spaces. This roundtable event—held at **Glass City Metropark** in Toledo, Ohio—provided a forum for organizations to discuss shocks and stressors impacting the region and share knowledge and practices they have put in place to respond to and mitigate a range of climate-related issues.

**Torey Carter-Conneen**, CEO of the **American Society of Landscape Architects** (ASLA) was in attendance and presented an overview of the organization’s **Climate Action Plan**—an integrated approach to decarbonization, resilience, biodiversity, environmental justice and community enhancement. This set the stage for a series of facilitated peer-to-peer breakout discussions focused on:



## CLIMATE ACTION PLANNING: RESILIENCE & CARBON



## ASSESSING & MITIGATING RISK



## PARTNERSHIPS & COMMUNITY ENGAGEMENT

This event sparked honest conversations about how parks fit into communities and how they can become critical components in reducing carbon emissions and a range of climate strategies moving forward.

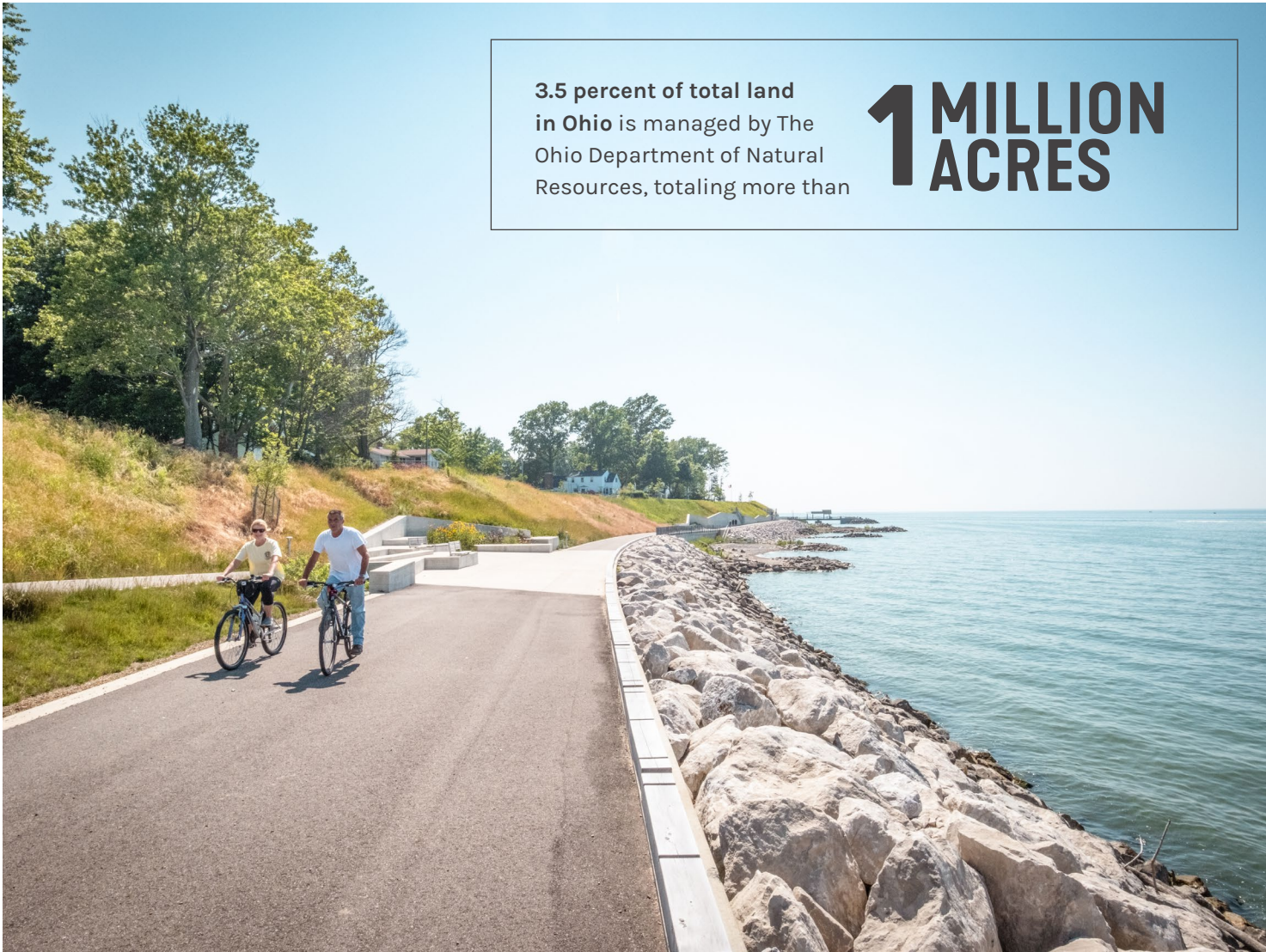
The summary that follows offers a high-level, collective overview of the challenges that participating park systems are currently facing, additional challenges that they see coming down the road and actions that they are taking to protect their assets and natural resources for continued enjoyment by future generations.



# STRESSORS, SHOCKS & CHALLENGES

Top issues impacting assets, resources, and the operational, maintenance and financial performance of parks in northwestern Ohio include:

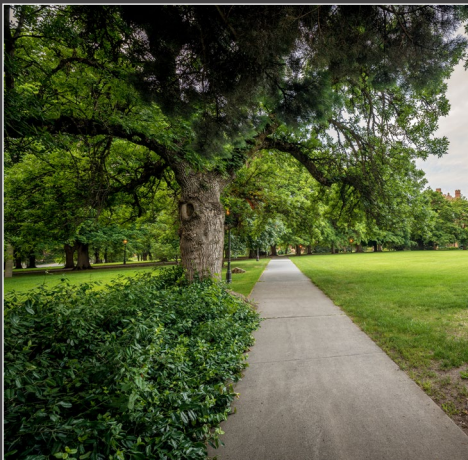
- Rising Temperatures
- Disease & Pest Outbreaks
- Fluctuating Water Levels
- Changing Plant Hardiness Zones
- Invasive Species
- Shoreline Erosion
- Extreme Weather Damage
- Degrading Water Quality





# CLIMATE ACTION PLANNING: RESILIENCE & CARBON

Participants engaged in exploring strategies that parks use to prepare for environmental stresses from climate change while reducing their carbon footprint. Discussions centered primarily on carbon management and climate action planning initiatives within park systems. Both are essential to maintaining healthy parks and are critical in ensuring that agencies are prepared to address and recover from environmental stressors brought about by climate change. Participants shared land-based solutions and strategies that their organizations have enacted to reduce greenhouse gas emissions and improve adaptation and resilience in the face of continuing (or worsening) climate changes.

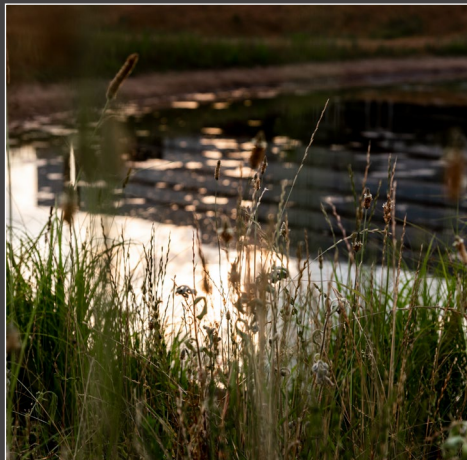


## TREES

Many park systems are expanding the variety of species of trees within park properties.

Some are also establishing and utilizing native tree, planting and seed nurseries to aide in construction, renovation and reforestation efforts.

Park systems across northwest Ohio continue to plant new trees across properties, with a goal of adding 1 million new trees within local communities and 10 million trees statewide.



## PLANT TYPOLOGIES

Anticipating that plant hardiness zones will continue to evolve some parks are adding assisted species migration practices to their planting strategies—incorporating more plantings from traditionally southern zones to help accelerate tree and plant growth in a manner beneficial to the ecosystem.

Many park systems are also incorporating more local genotypes within parks to further strengthen the resiliency of existing natural landscapes.



## STRATEGIES

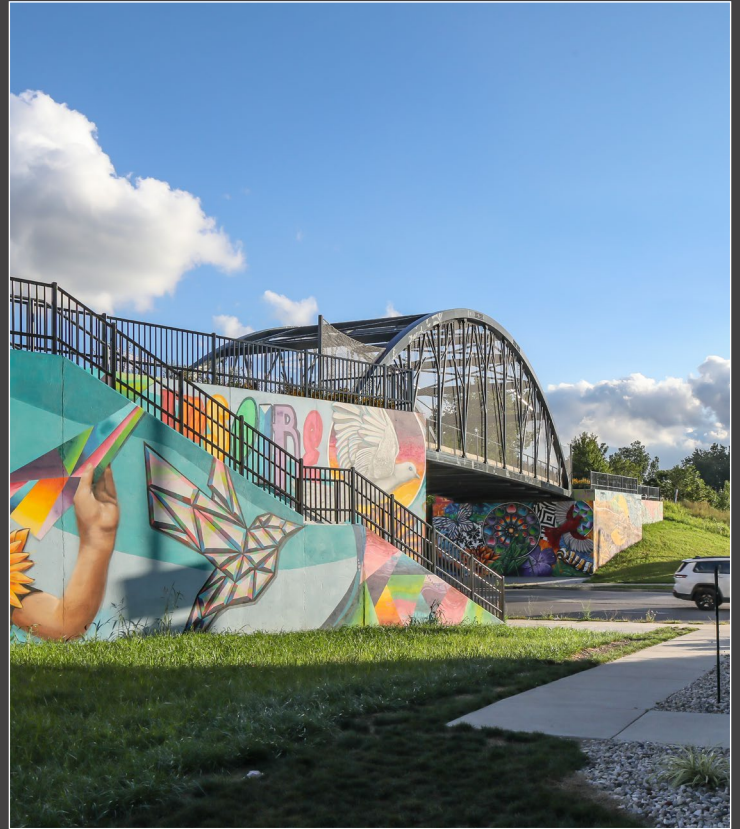
Implementing planting strategies that address environmental and contextual sensitivities while also aiding in near- and long-term sustainability and resilience goals. This might include incorporating new or transitioning existing grounds to prairies (which are fast-growing and offer near-term benefits) as well as continuing to plant new trees (which are slow-growing and take longer to mature and provide additional shade canopies), among other strategies.



## PROGRAMMING & METRICS

Creating programs and establishing metrics to holistically measure impact, success and community benefits of changes and enhancements.

- One park system has developed sophisticated models and processes to help monitor and protect natural infrastructure. With hundreds of monitoring plots across northwestern Ohio, the park deployed an adaptive management strategy that responds to habitat monitoring and uses data to empirically show shifts in species over an extended period of time.
- Another park system recently completed a carbon and soil analysis study across all of its properties—forests, prairies, wetlands, etc.—to better understand how each habitat functions in carbon sequestration and establish baseline benchmarking data. The data will be used in conjunction with other resource-related strategies to help the park system prioritize land protection, land management, planting and conservation strategies, and more.



## OPPORTUNITIES

Several parks are studying additional opportunities for incorporating multi-modal transportation options within parks and adjacent communities.

Several parks would like to identify opportunities to incorporate new or additional green infrastructure within their park properties.



# ASSESSING & MITIGATING RISK

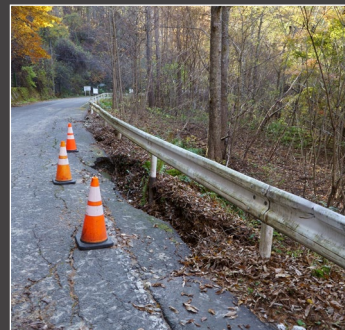
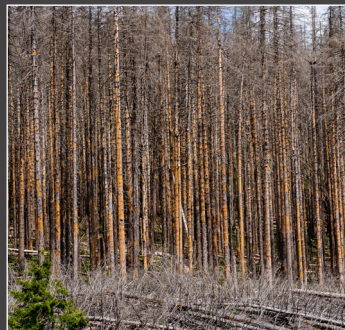
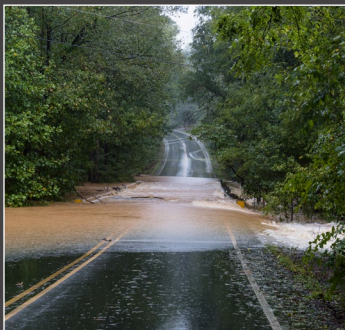
Climate change often leads to greater exposure to risks because of changing, unexpected or unpredictable natural conditions that may lead to dire outcomes. As climate conditions continue to intensify, it becomes increasingly likely that regions previously unaffected by extreme weather may be impacted by an adverse event. Such an event often leads to disruptions in the normal functioning of communities (including parks) and includes adverse human, material, economic and/or environmental effects that require emergency response to address immediate critical needs and recovery.

Climate risk management plans are intended to provide natural resource managers with ideas for concrete actions to minimize the risks associated with climate change.

These plans are not intended to serve as an exhaustive list of possible climate-smart practices; rather, they are intended to be used to help identify potential issues (sensitivities) and mitigating actions for particular locations and landscapes. They also help to identify where monitoring may be useful to inform management.

Participants delved into how to identify and respond to climate-related challenges that threaten the health and functionality of their parks. Some risks and hazards shared by participants include:

- Extreme weather (flooding, drought, etc.)
- Rising and changing invasive species and tree disease
- Aging infrastructure
- Intensifying harmful algal blooms



## WATER QUALITY CONCERNS

The inability for residents in the city of Toledo and surrounding neighborhoods to have access to safe drinking water for an extended period in the summer of 2014 due widespread harmful algal blooms made this a topic of much discussion. Not only do the blooms that covers western Lake Erie each summer threaten drinking water supplies; they also put the region's economy at risk, hampering tourism and recreational use.

As a result, water quality and increased pollution due to harmful agricultural practices remains a great concern, particularly in the city of Toledo. Approximately **48% of Ohio's watersheds** are degraded by nutrient loading from phosphorus and nitrogen, and Ohio's surface waters have reached a critical situation as well.



# PARTNERSHIPS & COMMUNITY ENGAGEMENT

Community engagement and partnerships are critical components in climate action planning and responding to climate change. Groups discussed the power of community involvement and collaboration with partner organizations in magnifying the impact of climate initiatives.

Participants shared experiences that have helped to strengthen ties within their communities and brainstormed ideas that could make parks even stronger. Examples of community-based initiatives that participants have implemented within their parks include the following.

## MATERIALS-BASED



### FREE TREES

Providing free trees and planting materials to members of the community for personal use. In fall 2020, Five Rivers Metroparks gave away 2,781 native tree seedlings as part of Healing Nature—a reforestation initiative designed to assist property owners and communities in Montgomery County, Ohio that were impacted by the 2019 Memorial Day tornadoes. All trees, shrubs and plantings came from the park’s propagation program.



### DROP-OFF COMPOST

Creating public drop-off areas for compostable materials. One park system has established a Class 3 composting facility and uses the material as mulch within parks across its system.

### LET’S GET LOCAL

Supporting local and small businesses by partnering with eateries and restaurants to provide on-site food service needs. Creating partnerships with local food banks and donating leftover food items from publicly sponsored events.



### TAKING PROGRAMS INTO OUR COMMUNITIES

Taking hands-on programs and initiatives into the community as opposed to inviting or relying on community members to come to a park for activities has proven to be successful in some instances. One organization created a garden club and located activities within a local neighborhood and has received positive feedback from residents.

## EDUCATION CONNECTION



### PROGRAMMING

Increasing educational programming within communities on topics such as the active management of plants and landscapes, tips and tricks for container planting, the benefits of adopting a natural approach to landscaping vs. manicured and chemically treated techniques. More effort needs to be devoted to increasing educational opportunities in urban environments.

### K-12 COLLABORATION

Partnering with local school systems to offer youth outreach activities, including after school activities, summer programs, youth leadership clubs, conservation clubs and more. Hosting programs that allow youth to learn about careers and job opportunities in parks should also be considered.

### COLLEGE/UNIVERSITY

Creating relationships with local institutions such as Ohio State University, University of Dayton, Miami University and others as scientific and educational resources that can be consulted when a park is considering adopting a new planting strategy, purchasing new planting materials and more.

### OHIO STATE UNIVERSITY AT MARION

Volunteers from local boy scouts, school groups and local jails have brought inmates on a work release program to help remove invasive species and woody plants from properties they have devoted to prairie development.



## COMMUNITY INITIATIVES



### PLANT OHIO

A planting program established to achieve a goal of planting 10 million trees statewide.

### THE GREEN RIBBON INITIATIVE

**The Green Ribbon Initiative** is a group of public and private organizations, landowners and individuals working to preserve, enhance and restore critical natural areas in the Oak Openings Region of Northwest Ohio and Southeast Michigan.

### LIGHTS OUT TOLEDO

Creating and participating in the local **Lights Out Toledo** initiative. Metroparks Toledo and the Black Swap Bird Observatory established this program to help make urban landscapes safer for migratory birds. Lights Out is a larger program coordinated by the Ohio Bird Conservation Initiative but is successful at the community level thanks to the collaboration and effort of dozens of local organizations.

### PARTNERSHIPS & GRANTS

Collaborating with neighboring cities/municipalities and partnering to extend amenities such as trail and multi-modal networks beyond city or county borders is a future goal expressed by several participating park systems. Partnering with the City of Toledo to pursue grants to actively aid in reforestation.

### WHAT CAN YOUR ZOO DO FOR YOU?

Columbus Zoo partners with a local mulch company to create **Zoo Brew** mulch—an all-natural compost comprised of zoo manure and animal bedding from the Columbus Zoo, horse manure, recycled food and vegetables, leaf humus and coffee grounds. Is there a way to replicate this program or something similar in other locations?

### SERVICE OFFERINGS & SAFE SPACES

Especially in urban locations—parks can serve as a safe place where residents can come to obtain information or support services that can't be fulfilled directly by a park system. For example, the United Way often uses facilities within Metroparks Toledo to host informational meetings or consultation sessions that help residents address a range of challenging personal and financial issues.



# KEY FINDINGS & TAKEAWAYS

This roundtable event led to a broad range of productive conversations, with several topics emerging as critically important to the group. These critical issues also sparked a lively discussion exploring how the landscape architectural community could unite with agencies and stakeholders to advocate for climate-related changes on a larger scale. Additional topics that stood out over the course of the day include the following.

- Issues such as repairing, maintaining and right-sizing infrastructure, removal of dams and the dangerous impact that current agricultural practices have on water quality must be addressed at the state level.
- Parks and their unique and varied properties can serve as a buffer for a broad range of climate mitigation strategies, but they can't solve the climate crises on their own.
- Ongoing education within local communities remains a must. While we are trained to be focused on climate mitigation, protecting our resources and resilience planning, much of the public is not. How can we continuously teach and inspire individuals to translate sustainable initiatives from their parks to their homes and personal properties?
- All of the park systems that participated in the roundtable event are currently implementing a range of natural solutions to aid in the conservation, restoration and management of land; to increase carbon storage; and to minimize greenhouse gas emissions across their properties and within their communities.
- No matter the park, the list of near-term and “dream big” projects is long and cannot be accomplished at once. Assess and categorize opportunities based upon what can be accomplished through retrofit efforts versus new construction and then get creative phasing in solutions where you can—perhaps be more thoughtful when selecting new plantings or when selecting and specifying materials such as asphalt, concrete, pavers and more.
- If all parties at the planning table agree that sustainability and addressing/mitigating climate change is critically important to protecting our communities, parks and natural resources, then that is truly where funds and focus need to be directed—prioritizing sustainability goals and efforts ahead of recreational priorities.
- While park systems are making progress in implementing helpful sustainability and resilience strategies, individuals must also remain active partners in advancing climate-related initiatives.



## OTHER TOPICS FOR CONSIDERATION



### NEW & CREATIVE REVENUE STRATEGIES

Are there opportunities to monetize restoration initiatives within our communities? Perhaps parks systems could be stewards of implementing the carbon neutral goals of local organizations? What would it take to make an initiative like this a reality?

### COMMUNICATING OUR MESSAGES

In terms of generating exposure or excitement for an effort or initiative many park systems continue to rely on grass roots connections to get information into their communities. How can we effectively and efficiently amplify our message to reach larger target audiences?

### DRAWING PEOPLE TO THE PROFESSION

How can we create employment opportunities based upon what the next generation of the workforce is interested in?

### WATER QUALITY & AGRICULTURE

Increased pollution due to harmful agricultural practices remains a great concern, particularly in the city of Toledo. Approximately 48% of Ohio's watersheds are degraded by nutrient loading from phosphorus and nitrogen, and Ohio's surface waters have reached a critical situation, with nutrient pollution causing harmful algal blooms (HABs) in Lake Erie and inland lakes, among other problems.

- How do we create opportunities for governmental agencies, agri-businesses, farmers, landowners and other stakeholders to come together to constructively discuss and implement solutions that benefit communities while avoiding further damage to the environment?
- What role can park systems play in advocating for these necessary changes?
- How might the American Society of Landscape Architects assist the Toledo community and northwestern Ohio in preparing for and executing this initiative?

# LOOKING AHEAD

This collaborative event was designed to bring park leaders together to share experience and knowledge so that we can be more responsive to the climate-related challenges and opportunities impacting Ohio's parks, resources and systems. While each park system is unique in its mission, goals, strategies and plans, all of the organizations that joined in the roundtable discussion are passionately devoted to their communities and the natural resources in their charge. Moved by an unspoken mantra that we are stronger together than as individuals, participants proved eager and open to discussing a range of topics—from projects and benchmarking studies to operational and funding challenges or unique programs that they are hoping to enact—and share lessons learned. This event is only the beginning.

There are still many more actionable steps that we need to take at the individual level, community level and systems level. It is no longer enough to simply adapt to climate change. It is imperative that we mitigate the root causes of climate change. Moving forward, we must keep discussions that came out of this event at the forefront of our minds—always considering how the strategies and actions that we choose to enact can contribute to making (even minor) steps towards achieving complex climate-related goals.

**The changes we make today can make northwestern Ohio, its parks, and the Great Lakes a healthy place for people who live here now and for future generations.**



# THANK YOU, PARTICIPANTS!

This collaborative roundtable event was designed to share experience and knowledge so that we can be more responsive to the climate-related challenges and opportunities impacting Ohio’s parks, resources and systems. We thank you for joining us and look forward to partnering with this network to brainstorm and mitigate climate action challenges in Ohio and beyond.

- Erie MetroParks
- Five Rivers Metroparks
- Metroparks Toledo
- Mill Creek Metroparks
- Ohio Department of Natural Resources
- Outdoor Sylvania Community Parks
- Park District of Ottawa County
- Willoughby Metroparks Toledo



## RESOURCES & ATTACHMENTS

The following list offers information rich resources and tool kits that may prove useful to organizations in the creation and updating of climate action plans.

### **National Parks Service: Climate Friendly Parks Program**

The program provides parks with the tools and resources to address climate change and ensure the most sustainable operations across the agency.

### **US Climate Resilience Toolkit**

A catalog of 500+ digital tools can help you take steps to build resilience, from engaging a community to developing a climate action plan.

### **American Society of Landscape Architects: Climate Action Plan**

# Design a Better Future

**SMITHGROUP**

[smithgroup.com](http://smithgroup.com)

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