Sustainable Cuyahoga Update

A toolkit of recommended best practices for communities in Cuyahoga County

2021

Message from Cuyahoga County Council

As a Cuyahoga County Councilwoman and a former Councilwoman to South Euclid, I understand the challenges cities in Cuyahoga County face in meeting their daily obligations to provide basic services for their residents. Since the publication of Sustainable Cuyahoga's first Toolkit in 2016 we have made great progress and encountered new challenges. I believe that the practices in this toolkit will enable us to meet those challenges and facilitate forward thinking towards our long-term sustainability goals. Climate change will force governments, businesses and individuals to use and produce energy differently and develop their communities in different ways. This guide provides solutions to the challenges that lie ahead, centered on the principles of: Environment, Equity and Economy. I am certain that the best practices suggested in this guide will help us to continue on the right path.

-Sunny M. Simon
Cuyahoga County Council

Introduction

In 2016, the Cuyahoga County Department of Sustainability released its first [Sustainable Cuyahoga Toolkit](#). This document provided best practice guidelines for communities seeking to implement new sustainability initiatives and expand upon existing programs. Since then, considerable progress has been made in communities throughout Cuyahoga County with regard to water quality, air quality, land management, energy use and conservation.

This updated 2021 Toolkit reflects many of these changes. By highlighting the success of existing programs, this guide provides information about available resources, suggestions regarding policy implementation, and strategies for regional collaboration.

Once again, we interviewed more than 40 local experts who contributed to this collection of bright ideas and recommendations. It is all assembled into a concise package with busy officials and community leaders in mind.

The growing risks associated with climate change have compelled cities and suburbs to act with renewed urgency. Since the original toolkit, Cuyahoga County has developed a [Climate Action Plan](#) to address environmental issues fairly and equitably.

You will find in these pages very real examples of communities overhauling existing systems in an effort to improve the sustainability of transportation, building infrastructure, energy, land use, and solid waste management.

Whether starting a sustainability journey or already taking action, you will find information on programs that deliver carbon reductions and increase resilience.

An important goal of this Toolkit is to share knowledge and encourage conversation — So we are interested in your feedback! We hope that you will appreciate the progress that has already been made throughout the 59 communities within Cuyahoga County, and we hope that you will take inspiration from these accomplishments.

Contents

Air Quality

The current condition of air quality in Northeast Ohio is mixed: Ozone — an air pollutant — is a present health risk. Ozone can temporarily increase to unsafe levels, as it did nine times in 2020 (four is the maximum allowed by law). With climate change models showing that Northeast Ohio can expect hotter,

drier summers, ozone is a present and future concern, particularly for sensitive groups such as children, seniors and those suffering from asthma.

Motor vehicles remain the largest source of ozone-producing chemicals. Although carbon dioxide emissions from vehicles did lessen in 2020, in part, due to telework during the pandemic, the Ohio EPA is scheduled to review the region's ozone in 2021. Northeast Ohio is expected to remain in "non-attainment" status for ozone, triggering additional pollution-control measures. The specter of poor air quality signals that the region has some make up work to do in order to once again clear the air.

With tougher, [Tier 3 (they require a 70% reduction of emissions per mile](#) relative to 2000 levels) vehicle emissions standards coming into enforcement, communities that are proactive in reducing air pollutants stand to benefit from a fiscal and a public health perspective.

What communities can do

Since the 2016 release of the Sustainable Cuyahoga report, public opinion has coalesced around tackling climate change and addressing environmental justice (EJ) concerns. Communities near highways and factories have had their air quality disproportionately impacted. Communities may want to consider where they would like to invest in multi-modal transportation to reduce single occupancy vehicle use with a focus on commuting by bike, transit and other low-carbon modes of transportation.

Communities can apply to [Northeast Ohio Areawide Coordinating Agency](#) (NOACA) for funding to improve air quality from the following programs:

Congestion Mitigation Air Quality (CMAQ)
New to CMAQ is $3 million for electric vehicle (EV) charging infrastructure. This pool of funds will be made available on a competitive grant basis.

Transportation for Livable Communities (TLCI) encourages "mode shift" activities like commuting by bike, walking and using transit. NOACA added an Implementation category to its existing TLCI Planning grants for this purpose. Budgeted at $2M annually, TLCI is 100% federal funding, with awards covering the entire project cost and no local match required. TLCI is competitive, but funds are often available. Since 2016, a long list of local communities have tapped TLCI to add low-cost high-impact amenities like bike lanes, cross walks, multi-use trails, and better bus stops.

New Air Quality Programs
Shared Mobility
Since 2016, Cuyahoga County has made shared mobility an exciting option for communities with the availability of stations for rent-by-app bikes and electric scooters. Making multi-modal options like scooters and bike lanes available in many places will further regional cooperation toward cleaner air, safer streets, and create

thriving places throughout. [See also the Land Use section and Transportation section for more ideas]

Gohio Commute

With an easy-to-use [web and mobile app](#), people can track their bike, transit and walk-to-work trips, participate in contests and win prizes. New in 2021 will be "school pools," where private groups match students up in car pools and van pools.

The annual Commuter Choice Awards

This [program](#) recognizes companies (and communities) for reducing their transportation-related carbon emissions.

Leadership and Education

1. Initiate a climate action plan like Lakewood did in May 2021.

2. Request an assessment of your community's vehicle-related carbon emissions from NOACA's Air Quality Department. [See Katie Moore in Contacts]

3. Sign your city up to track and compare its active transportation levels on Gohio Commute. [See Kate Moening in Contacts]

4. Ask the Cleveland Division of Air Quality for an air quality sensor and the training to make air quality monitoring a school science project. [See Christina Yoka in Contacts].

Municipal Operations

1. Retrofit or replace municipal vehicles to reduce their tailpipe emissions, and/or electrify part of a city fleet. Both activities qualify for a NOACA CMAQ grant (budgeted at $30 - 40 million annually). Communities are encouraged to apply for a CMAQ grant here.

2. Add a bike share or eScooter station — inquire at the Cuyahoga County Department of Sustainability for model ordinances, requirements and guidelines.

3. Adjust city operations on air quality advisory days — curtail or reschedule driving, street paving, refueling and mowing. The City of Columbus has a plan explaining what they do.

4. Sponsor a small-motor swap out — an exchange of gas-powered for electric lawn mowers and weed whackers. [Akron Regional Air Quality Management District](#) held a swap in Summit County in 2020 that included a $100 incentive.

Policy and Ordinances

1. Write an anti-idling policy like the City of Cleveland did, and have its focus be on protecting sensitive groups like school children, seniors, and the disabled. NOACA has an [anti-idling program](#) to get you started.
2. Set a goal to reduce your community's carbon emissions like Euclid did in 2020 and University Heights did in 2021 (See Energy section).
3. Write a local air quality ordinance that has an environmental justice focus. [See A National Scan below in Resources. Also, [New York City](#) has an EJ law governing air quality.]

Regional Collaboration

1. Support a goal to reduce the annual Ozone advisories to safe levels through NOACA's Long Range Transportation Plan.
2. Support a regional transit system that seamlessly connects the 5-county area.
3. Address the region's Environmental Justice zones identified by NOACA in its [2050 Long Range Transportation Plan](#) by encouraging the use of U.S. EPA environmental justice screening tools to set funding priorities and target regulatory and enforcement attention.
4. Support the strengthening of [Cleveland's air quality policy](#) to be more targeted to help sensitive groups, schools, nursing homes, and hospitals.

Key Contacts

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Resources

NOACA's CMAQ funding application

NOACA's regional EV study identified priority locations for EV charging stations and is the framework the agency will use to focus its investments.

Climate Mayors Electric Vehicle Purchasing Collaborative — bulk purchasing co-op for converting city fleets to EVs.

Local Policies for Environmental Justice: A National Scan

Cleveland-Cuyahoga County air quality complaint line — to report strange odors, unusual smoke: 216-664-7442

[Ohio Compliance Assistance and Pollution Office of OEPA](#) — offers assistance to facilities including grant programs to help with the industrial side to swap things out and reduce emissions.

Energy

The energy sector is responding to the goal to [decarbonize the economy by 2050](). New finance mechanisms and programs focused on energy efficiency (EE) and renewable energy have seen impressive growth in the past five years. With interest rates low and energy services companies offering guarantees of positive cash flow, resources are available to deliver energy

Through a power purchase agreement with AEP Renewables, Cuyahoga County installed 488 solar panels on the county Medical Examiner's office building.

conservation measures — with LED lighting retrofits leading the way. Cities are building their capital stack for EE and renewables by tapping into government-backed bonds and public finance options, evidenced by the $423 million of Commercial Property Assessed Clean Energy (PACE) loans that have closed in Ohio.

Communities have the option to offset the impact of fossil fuels with renewable energy credits (RECs) — with 50% or 100% renewable energy, on-bill options commonplace in Northeast Ohio. Cuyahoga County is working with communities to install solar panels delivering clean energy below current retail rates. On the horizon, utilities such as AEP are extending their offer for 100% Ohio-generated renewable energy to communities in our region, like they have in Central Ohio. Ohio has deployed funds and invited local communities to apply for electric vehicle (EV) charging stations (See the Transportation section).

This section provides options on energy efficiency and renewable energy programs that are actionable today. Options to reduce energy use from buildings, the second largest contributor to climate change (See Green Building and Historic Preservation for more resources) are also here.

Leadership and Education

1. Form a sustainability committee to prioritize energy reduction and expanded renewable energy options such as solar on residential rooftops. Shaker Heights' Sustainability Committee is hosting a citywide solar tour and partnered with Cuyahoga County Department of Sustainability to hold a solar power workshop for residents.

2. Consider joining your city to [Power A Clean Future Ohio](#) — a network of environmental policy experts who offer cities free consulting. When Euclid set a goal to reduce its carbon emissions (30% from 2010 levels by the year 2030), it received data and analysis from the network on where to focus its carbon reduction activities.

They started with a LED streetlight replacement project (258 lights on Euclid Avenue, 234 on Lakeshore Boulevard, and 22 on E185th Street at a replacement cost of $242/ea.).

3. Review NOPEC and other energy brokers like Independent Energy's offer of renewable energy in community aggregation plans — look for a plan with a 50% and 100% option. Cleveland recently re-wrote its community aggregation RFP with language that widened the field.

Solar panels installed on a home in Lakewood.

4. Encourage residents who ask what they can do for the environment to explore the option of generating their own renewable power by joining a solar cooperative. [Cuyahoga County manages a solar coop with Solar United Neighbors](#) that has negotiated solar panel projects for 150 homes across the county, saving them an average of 15% on the cost and educating hundreds more on the potential for solar power. Cities like Parma have hosted public meetings to educate and enroll solar coop members at city hall, a library and/or community centers.

Municipal Operations

1. Receive a free, comprehensive energy assessment of municipal buildings that are greater than 10,000 square feet from the [Greater Cleveland Partnership (GCP) Energy Team](#). The GCP Energy team will help you learn how your building uses electricity, natural gas and/or steam and identify areas that can be improved and should be prioritized, which could save you an average of 20-30% on your operating costs.

2. Take measurable steps to reduce carbon emissions from municipal operations. Cuyahoga County offers a [program to finance solar panels for governments and non-profit organizations](#) that provides a procurement agreement and a framework for net metering. The program has supplied roof-mounted solar power at a lower cost per kilowatt hour than conventional power on three county buildings. Cleveland Heights and Lakewood have also taken advantage of the program to install solar panels, with no upfront cost, on municipal buildings.

3. Install EV charging stations — Shaker Heights and Lakewood have tapped a [NOPEC](#) Energized Community (NEC) Grant that can be used for energy efficiency and/or energy infrastructure to install EV charging stations. Also, public funds for EV charging stations are available through the State of Ohio's fund from the VW diesel

settlement, and NOACA which is making $3 million in CMAQ funds available for EV charging stations (see Air Quality section).

4. Include commercial Property Assessed Clean Energy (PACE) to finance the cost of renewable or energy efficiency projects with no out-of-pocket costs. The term is based on the useful life of equipment and can be up to 25 years. The [Northeast Ohio Advanced Energy District](#) expects to close $24 million in loans in 2021. Projects range in size from $100K to replace a roof on the East Cleveland Public Library to $7 million to convert a former NASA building into a boutique hotel in Fairview Park.

5. Replace aging fluorescent lighting with energy efficient LEDs — PJM provides rebates that reduce the cost. Work with the [Greater Cleveland Partnership](#) (GCP) to apply for the PJM Energy Efficient Resource. GCP has submitted 248 projects (11,900.47 KW) to PJM for lighting retrofits for a total value of $543,200 in cash rebates back to those projects since the original publishing of this toolkit (2016). Also, NOPEC helped East Cleveland Library (pictured above) complete a $250,000 commercial PACE project: LED lights, occupancy sensors, windows and a boiler

replacement.

6. Work with your local utility to reduce energy from street lights — they offer zero-cost replacement if a street light fails when replacing a halogen with energy-efficient LED lamps.

7. Develop a balance sheet to replace a municipal fleet with a purchase of electric vehicles. The Climate Mayors, a national non-profit, has an EV Purchasing Collaborative.

Policy and Ordinances

1. Consider a climate action plan and a clean energy goal. City of Cleveland produced a Clean and Equitable Energy Future feasibility study with pathways to 100% clean energy by 2050. It includes a goal to reduce the energy burden on low-to-moderate income households from 6% to 3% (of annual income).

Renewable Energy Growth in Cuyahoga County

Cumulative Megawatts of Renewable Energy:
- '10: .24 MW (9 facilities)
- '11: 1.42 MW (40 facilities)
- '12: 8.31 MW (89 facilities)
- '13: 9.57 MW (104 facilities)
- '14: 11.05 MW (121 facilities)
- '15: 12.77 MW (138 facilities)
- '16: 14.42 MW (165 facilities)
- '17: 15.02 MW (178 facilities)

Cumulative Megawatts (MW)

(#) Number of Facilities

Source: Public Utilities Commission of Ohio (PUCO): Approved cases of Renewable Energy Installations

2. Join Sierra Club's Ready for 100 Campaign that requires a community's energy to be derived from 100% renewable energy from new wind and solar generation facilities in the state. Columbus recently joined the campaign and adopted an ordinance to generate 100% of its power from solar and wind. Columbus
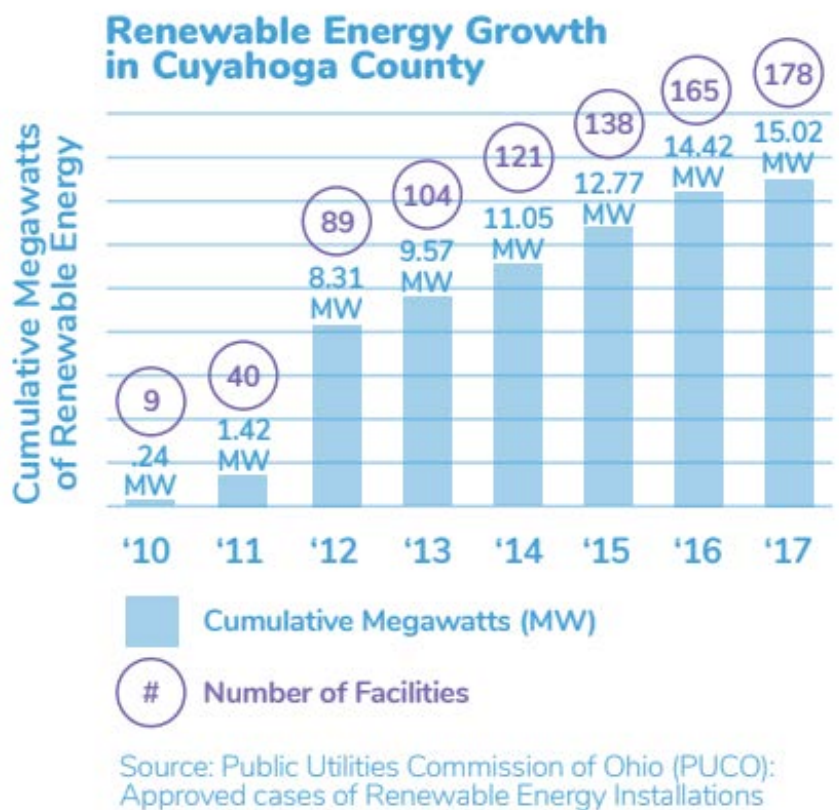
is partnering with utility AEP Energy's Integrated Renewable Energy program to supply its renewable energy from projects in Ohio.

3. Set a goal to reduce energy use in municipal buildings. City of Brookpark consolidated its city hall and recreation center and paid for energy conservation measures like a new roof, lighting and controls with a low-interest loan and a guaranteed performance contract.

Regional Collaboration

1. Support the [Cuyahoga County microgrid project](#) that will create a utility to generate clean, local energy. Benefits to communities include greater resilience and access to back up power without the premium that utilities charge for interconnection to the grid. In combination with the County's solar financing for governments and non profit organizations, communities will be in a position to set a goal to produce renewable power affordably. The County is starting with five projects in 2022.

2. Consider the 100% Ohio renewable energy program that the utility AEP is offering to communities through its [AEP Integrated Renewable Energy](#) program.

3. Look into The [Ohio Energy Loan Fund](#) application process — it has been streamlined with the elimination of yearly renewal and removal of the $200K cap. Hiram College recently was awarded a $5 million loan.

4. Encourage businesses and residents to offset their fossil-fuel electricity use with 100% clean, renewable energy (in the form of renewable energy credits). The Public Utilities Commission of Ohio [(PUCO) Apples-to-Apples website](#) allows individuals to compare the offerings of 50% and 100% renewable power. Businesses can do more to ensure that their RECs are helping to generate new, clean energy. Nestle, for example, requires renewable power that is new (not replacing someone else's RECs if they stop buying it) generation.

Key Contacts

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Resources

Cuyahoga County online dashboard from the County Climate Action Plan

provides data on where each of the 59 communities in the county generate greenhouse gas emissions.

Also, see the Green Building section for more Energy resources.

Food

Farmers at the Ohio City Farm, the largest (acreage) urban farm in the U.S.

T he COVID-19 pandemic highlighted how fragile the national food supply chain can become in moments of crisis. It showed how important it can be to invest in backup systems such as local farmers and urban food producers. Food security was bolstered by increases in food assistance programs like SNAP benefits and their increased use at farmer's markets in 2020. There was a doubling of participation in gardening classes in Northeast Ohio.

Cleveland is poised to build on early successes such as reformed zoning to allow for urban farms and that ushered in chickens and bees into local food and urban agriculture (2007 - 2010) production. Cities are finding new uses for vacant land that enable more food growing and aid in food security.

The urgency of need is still high as thousands of people in Cuyahoga County struggle with food insecurity. In a report co-authored by Case's Swetland Center, Cleveland's food insecurity rate grew by 30% between 2018 and 2020. An alarming 40% increase in childhood food insecurity during the last two years translates to one-third of Cleveland children not having access to enough food or the proper nutrition. The federal government signaled that it is ready to address food security with a reform of its SNAP (aka Food Stamps) nutrition standards and expansion of its benefits in August, 2021.

Leadership and Education

1. Support the producers and purveyors of local, nutritious food in your community. The North Union Farmers Market located in Chagrin Falls, Westlake (Crocker Park), Shaker Heights (Shaker Square), Beachwood (Legacy Village) and The Cleveland Clinic Main Campus farmer's markets match SNAP food benefits (up to $25 per person). East Cleveland's Coit Road Farmers Market has a program that matches SNAP (Supplemental Nutrition Assistance Program) dollar-for-dollar up to $40.

2. Help coordinate the efforts of food pantries to alleviate food insecurity — market food assistance services in your community in newsletters, calendars, emails and social media. Ted Copeland, owner of Perfect Pact USA, won a USDA grant to make Cleveland Heights-University Heights School District one of the sites for the Farmers to Families program that paid for some of the 1,000 truckloads of fruits and vegetables to reach Heights residents during the pandemic. The city and school district promoted it through their web sites and emails.

Farmers markets like this at Crocker Park have had steady growth and support food security.

3. Support innovative partnerships that address food insecurity. [OSU Agriculture Extension](#) piloted (in 2019) [WIC Perks](#) in partnership with Cuyahoga County WIC program and MetroHealth Health System, for example. The program operates at MetroHealth's farmer's market, providing WIC clients matching benefits ($20) as well as cooking utensils, recipes and demonstrations.

4. Support hands-on nutrition education, taste testing and demos, recipe development and cooking practice and training. Examples of this recommendation include:

- The Gateway 105 Farmers Market — a source for local food, cooking classes, SNAP & WIC enrollment, composting workshops and community gatherings on Saturdays during peak growing months in Cleveland's Glenville neighborhood.
- Cuyahoga County Master Gardeners Program — learn how to operate a community garden, about horticulture and landscaping in this 12 month, highly regarded program. 2020 saw a 100% increase in participation.
- OSU Agriculture Extension "Dig In: Community Garden Training" covers the basics of gardening, like picking out a good site, soil health, basic plant care, but also related topics such as community organizing. Class size doubled in 2020 due to interest in local food.
- South Euclid City Councilwoman Sara Continenza operates Food Strong, a non-profit organization that provides education programs for school children in growing food.
- The Rid All Green Partnership which converted acreage of vacant land into a verdant farm business in Cleveland has a five-month and a weekend series on commercial urban farming.

"Greater Cleveland has been at the forefront of food systems innovation through local efforts to advance urban farming, community gardening, fruit and vegetable incentive programming, and food retail development. These efforts, however, have not shifted inequitable trends related to economic opportunity, food security, affordable food access, and community health."

--*foodNEST 2.0, a project of the Mary Ann Swetland Center for Environmental Health at Case Western Reserve University*

Municipal Operations

1. Expand hours of operation and coordination to offer a rapid response to food insecurity. Cleveland Municipal School District, for example, provided free school lunch pick ups at schools during the pandemic, and used its school buses to pick up students each day to take them to the sites.

2. Add a local food requirement to your community's requisition and purchasing guidelines. The [benefits of local food](#) include circulating local dollars through the economy, supporting local businesses, and reducing the miles food has to travel from farm to plate. A good option is to work with a [Community Supported Agriculture (CSA)](#) where households can buy shares of food from local farms delivered to a central drop-off location. For example, the Cleveland Heights Libraries partners with [CityFresh](#) to establish a CSA pick up at its Coventry Village location.

3. Support the funding of more mobile pantries and an expansion of neighborhood drop off sites for food donation. The [Cleveland Food Bank mobile pantry](#) served thousands of families in need during the pandemic.

4. Support more transportation options for people using food assistance programs to reach drop off sites, and more flexibility for those who don't own a car (drop off sites during the pandemic featured larger boxes and little option for those walking, biking or taking transit).

Policy and Ordinances

1. Support the creation of land trusts — The [Near West Land Trust](#) is a local example of how land trusts provide affordable housing and repurposing vacant land for green infrastructure and and urban farms. The [Dudley Community Garden in Madison, Wisconsin](#) and the [Southside Community Land Trust](#) in Rhode Island have established urban farms on vacant land with land trusts.

2. Change contracting/procurement rules in city operations to allow more vendors to participate in local and regional food purchasing. Along with increasing the amount of reimbursement available to schools that purchase local food, these are policy areas identified by the [Ohio Food Policy Network](#) to help communities build up resilience and food security.

3. FARE recommends that cities fund [gleaning programs](#) that connect community gardens to food pantries, making food donation cost and error free, thus improving food security in the community. The [Greater Cleveland Hunger Network](#) has a gleaning team that may be able to help.

Regional Collaboration

1. Support the same, higher nutritional standards from the school year during the summer and remote learning for students receiving free school lunches and breakfasts. Ohio updated its policy to allow for grab-and-go free lunches during the pandemic, but [a report](#) co-written by Case's Swetland Center found that summer and pandemic food menus did not follow the same strict nutrition guidelines of the The National School Lunch Program.

2. Promote the use of community kitchens & business incubators among residents living in historically redlined neighborhoods and create a market for their food

The Rock community garden in Cleveland donated 500 pounds of food during the pandemic.

products. For example, low car-ownership rates and scarce grocery stores led Cleveland community development organization Burten, Bell, Carr to turn a strip mall into a food education and production center called The Market Café and Community Kitchen. It offers a cooking classroom, a café, and cold storage facility where urban farmers and gardeners can prepare and package fresh produce.

3. Support the growth of urban farming. Cleveland was chosen by the USDA Farm Service Agency in 2021 as one of five cities in the U.S. contributing to a national, urban farming initiative. Cleveland's Glenville Neighborhood will be the site of a program led by Famicos Foundation.

4. Support the funding of state programs to address food deserts like Ohio Healthy Food Financing Initiative, operated through the Ohio Department of Jobs and Family Services, and administered by Finance Fund Capital Corporation, a statewide Community Development Financial Institution (CDFI).

Key Contacts

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Resources

[Edible Cleveland](#) (publication covering local food)

[Cleveland Central Kitchen](#) (local food hub)

[Ohio Food Policy Network](#)

Green Building & Historic Preservation

Communities are paying close attention to their resource consumption from buildings. In the last five years, cities assumed a leadership position, benchmarking energy, water, waste and transportation generated from buildings and setting goals for annual reductions. How cities meet their goals can sometimes be found in building codes, such as those governing indoor air quality. Health and wellness have also taken on a sharper focus. So have comprehensive green building standards like LEED for Cities that are expected to expand the scale of green building initiatives to the whole community.

How communities reach their climate

A green-built home in Cleveland's EcoVillage

commitments will require no small amount of creativity and resources. Cities are being tasked with encompassing the "three Es" of Environment, Equity and Economy in all of their decisions. This section offers municipal leaders ideas on how to achieve "three Es" outcomes. It also reminds us that the greenest building in the world is an existing building. It's a carbon sink — the footprint of a project is much higher if you rebuild it.

Worthington Square, a major conversion of an old warehouse in Cleveland into apartments and an art space

Leadership and Education

1. Consider a comprehensive approach to citywide sustainability activities to better understand patterns in use and the pace of residential and commercial adoption. For example, Shaker Heights sponsors an EcoChallenge where businesses log activities and raise awareness of energy and water use. The city is using the opportunity to encourage businesses to participate in a food composting program.

2. Promote the use of a transparent scorecard where building owners volunteer to share their resource

consumption. Building owners representing more than 66 million sq. ft. of real estate in the [Cleveland 2030 District](#) voluntarily report their energy, water, and transportation emissions reductions each year. Their [2020 Progress Report](#) charted reductions in transportation emissions (49%), energy consumption (32%) and water use (39%).

3. Offer building owners a cost-neutral path to reduce energy use with COSE's free energy audits for any building above 10,000 square feet. Cities can use the [COSE program to get a free energy](#)assessment of a recreation center, library, or senior center to reveal opportunities for energy savings.

4. Encourage your school district to improve its performance in areas like indoor air quality with [Ohio's Green Ribbon Schools Program](#). Magnificat High School in Rocky River [was recognized](#) for its environmental leadership, including classes on sustainability and a hoop house to grow food.

5. Encourage historic preservation groups to work in your community to save and preserve examples of buildings that exemplify historic qualities that are valued by a growing number of renters and homeowners. Cleveland's [Shaker Square Alliance](#), for example, is working to protect historic redbrick apartment buildings in the South Moreland Avenue/Buckeye area.

Municipal Operations

1. For communities paying attention to their energy spend, establish a community-wide effort to aggregate data on resource consumption from buildings by signing up to use [Arc](#), a free resource that is also part of LEED.

2. Take advantage of the [energy efficiency rebate from the utility PJM](#) (see the Energy Section) to replace lighting, roofs and HVAC systems. The City of Brookpark received a PJM rebate in 2019 after replacing the interior lighting at its community center with LEDs for a savings of 34.7 Kilowatts.

A green-built affordable housing development next to Cleveland's W. 65th Rapid Station

3. Cities can ask their project leads and architects to specify "higher efficiency" to take advantage of the 179D tax deduction for lighting and energy efficiency upgrades. Cities can assign the tax deduction to the architect or design firm in exchange for a reduction in fees. Accounting firm [Duffy+Duffy Cost Segregation](#) has filed 2.25 million sq. ft. of publicly owned buildings under the 179D deduction for a total of $2.47 million.

4. In addition, residents and commercial building owners can be encouraged to install solar by applying for a federal [Solar Tax Credit](#) for 26 percent of the cost of the system.

Policy and Ordinances

1. Consider tying economic development incentives such as tax abatements to green building standards. [Cincinnati has a policy](#) that requires all commercial and residential tax abatements to meet green building standards.

2. As companies bring workers back to the office, help them meet [ASHRAE](#) air quality standards by encouraging the use of carpets, paints, furniture and finishes that have no or low [volatile organic compounds (VOCs)](#). Cleveland has [a policy](#) that requires residential tax abatement to meet LEED or [Enterprise Green Communities](#), both of which include stringent indoor air quality standards.

3. Introduce policy that reduces resource consumption in buildings. In June, 2021 the City of Shaker Heights announced it won Gold certification in [LEED for Cities](#), one of only eight cities in the country to reach the voluntary standard that sets goals for energy, water, waste, and transportation use and invites full community participation.

4. Write a [Transit-Oriented Development](#) policy that will prioritize locations for development near existing transit lines and bike lanes to encourage the use of alternatives to driving. (See the Transportation Section's Safe Routes to Parks, a Cleveland program.)

5. Tap state and local redevelopment funds such as commercial PACE and state historic tax credits to fill in gaps. The Centaur project, a $46 million redevelopment of a former NASA office building into a luxury apartment building in Fairview Park, includes energy efficiency features covered by PACE with a loan facilitated by the [Northeast Ohio Advanced Energy District.](#)

Regional Collaboration

1. With stormwater and climate resilience as a focus for Lake Erie, a comprehensive plan is needed for buildings to reduce their impact on freshwater resources. Goals could include updating the plumbing code to specify greywater capture and treatment for new construction.

2. Post-Covid, improving standards for air filtration / indoor air quality will remain a priority. To find solutions inclusive of public buildings like schools, programs that support better filtration and meet equity and climate goals will benefit from a regional solution.

3. Encourage building owners to meet the Paris climate commitment by purchasing green power. Melink Corp, a Cincinnati energy efficiency and renewables consultant, purchases green energy and offers his employees a $700 incentive for buying an electric vehicle at his "net zero energy" facility. Investor-owned utility, AEP, is offering communities a clean energy program with power generated at facilities in Ohio (see Energy section).

Key Contacts

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Michael Peters, Sustainability Coordinator, Shaker Heights
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Resources

The Ohio Department of Development [Energy Loan Fund](#).

[Ohio Facilities Construction Commission](#) requires that buildings using public funds in new construction of schools meet a [LEED-Silver](#) rating.

LEED for Cities requires GIS mapping to earn credits. Shaker Heights hired [Cuyahoga County Planning](#) (Manager of Information & Research Dan Meaney) using a [green building grant from Bank of America](#) to complete this task.

Land use & development

Cuyahoga County [continues to diversify](#) as an influx of new immigrants and city residents bring their skills, trades, and cultural wealth into areas, some that have been shrinking for decades. The housing market, after supply tightened during the pandemic, is poised for growth. Although the market

for Millennials, the largest home buying group since the Baby Boomers, is being stifled by a lack of affordable housing. New tools like land trusts offer an option for permanent, affordable housing. As family size shrinks, growth is being redefined. Communities are tasked with pivoting from large-lot single family-style living to options such as tiny homes, granny flats/accessory dwelling units, and zoning reforms that invite more density and walkability.

Leadership and Education

1. Demonstrate a commitment to balanced growth, meaning, balancing continued urbanization and development with the need for land conservation and protection of natural resources. The Baldwin Creek Preserve project (pictured on page above), led by the City of Middleburg Heights, establishes a permanently protected 15.63-acre natural area. Benefits include increased access to natural areas for passive recreation within walking distance of a dense, residential neighborhood, habitat protection, and a riparian buffer for Baldwin Creek and two headwater tributary streams.

2. Establish a program to ensure housing affordability. Ohio City Inc. and Tremont West Development Corporation formed the Near West Land Trust with a mission to increase permanent, affordable housing in the midst of a hot housing market. The two nonprofit community development groups have plans to build 40 new, single-family homes on vacant lots. When the homeowner sells, they earn 35% of the increased property value. The remainder is kept by the trust, preserving the affordability for future low- to moderate-income families.

3. Pursue development that is inclusive of high-frequency transit. Cleveland and GCRTA are leading the 25 Connects: A Transit Oriented Development plan with a focus on affordable housing and upgrading the current #51 bus line with a Bus Rapid Transit line (BRT) connecting downtown and the MetroHealth campus.

West 25th Lofts are within walking distance of the RTA Red Line Station and the MetroHealth bus line.

Municipal Operations

- Establish a program to re-invest in vacant and abandoned properties. South Euclid established a land bank and a partnership with non-profit community development corporation, One South Euclid, to acquire and redevelop vacant properties. Also, Lakewood operates a housing rehabilitation program offering low-interest loans for renovations, including rental properties. And Cleveland Heights is strategically assembling and building (in partnership with its CDCs) infill housing on vacant lots with its Neighborhood Redevelopment Program.

- Mitigate flooding that occurs from development near wetlands, rivers and creeks. When Pepper Creek in Pepper Pike was backing up onto properties, the city worked

with Western Reserve Land Conservancy and The Northeast Ohio Regional Sewer District to acquire easements and receive a grant to daylight a culvert, resulting in a beautiful, [meandering stream and natural flood plain](#).

• Encourage environmental targets in master planning. For example, Cleveland is including the national EcoDistrict planning process in the Clark-Fulton and in its Slavic Village neighborhoods. The [EcoDistrict](#) protocols invite the community to develop a pathway to resource reduction and to build local resources in multiple areas including energy, water, and transportation use.

Policy and Ordinances

• Consider public area design guidelines and updating zoning to reduce impervious surfaces. Two examples can be found in Lakewood and in Shaker Heights. In Lakewood, when the fast food chain, Raising Canes, opened a small location, a review of the city's [parking maximum](#) in its zoning code led to an agreement for the company to install an EV charging station in a publicly available space (that the city operates) and to expand landscaping. In Shaker, planning for the Van Aken development included multiple rounds of public input that led to more sidewalks, taller trees and green infrastructure (bioswales).

• Be aware of investors buying property for rental purposes whose business models are re-introducing discriminatory and predatory practices. The City of Cleveland has ordinances to hold a property manager accountable (and hold out-of-state owners responsible) and to pursue legal action with banks holding title to properties in tax foreclosure.

• Assist restaurants, bars and coffee shops that struggled through the pandemic. Lakewood and Cleveland Heights adopted emergency resolutions to allow the expansion of outdoor dining, including the use of sidewalk and on-street parking space (for [parklets](#)).

Regional Collaboration

Cleveland Heights repurposed a parking lane on Cedar Road for outdoor dining in its Cedar-Fairmount district

1. Address tax delinquency before it leads to foreclosure. [Cuyahoga County Treasurer Christopher Murray](#) has established a program to assist homeowners who are behind on property taxes with payment plans. Also, Shaker, Garfield, and Maple Heights are active on [Vacant and Abandoned Properties](#) (VAPAC), communicating with residents in need of tax assistance.

2. Support the development of affordable housing. Developers are looking for consistent regulations that are applicable across every community in order to avoid the zero sum game that has led to less affordable housing units than is needed in the region. A single, regional set of guidelines and standards for affordable housing is necessary to ensure buy-in from developers. Montgomery County, Maryland has a [clear definition of affordable housing](#) with four categories for Missing Middle housing in its policy.

3. Eliminate parking minimums from the zoning code. Parking minimums are an impediment to private development, taking revenue-producing space, raising costs, and reducing affordability. For these reasons, [City of Buffalo eliminated](#)

[parking minimums](#) from its zoning code in 2017.

Key Contacts

- [Greater Cleveland Reinvestment Coalition](#) (GCRC), Barbara Anderson
- Cuyahoga County's [Vacant and Abandoned Properties Action Council](#) (VAPAC), Frank Ford
- [Western Reserve Land Conservancy](#), Isaac Robb
- [Near West Land Trust](#), Ben Trimble
- [EcoDistricts](#), Irwin Lowenstein

Resources

- [Cleveland's Mobility Imperative: Designing for flow and meaningful interaction](#) by Justin Glanville and Richey Piiparinen (The Cleveland Foundation)

- [A Long Ride to Work: Job Access and Public Transportation in Northeast Ohio. A Look Behind the Numbers](#), Vol. 6, issue 1. The Federal Reserve Bank of Cleveland.

- [The Emerging Market for Transportation Choices](#)

- [Vibrant NEO 2050 Guidebook](#)

- [LEED for Cities](#)

- [Form-Based Codes](#)

- ["Instead of Free Parking"](#) by Donald Shoup

- [Walkable City Rules](#) by Jeff Speck

- [Two Cleveland corporate relocations illustrate employment access inequities](#)

Solid Waste

In 2018, China's National Sword policy barred many types of recyclables coming from the U.S. causing a ripple effect in the markets that are still being felt. Recycling has been streamlined as a result into these five, core items.
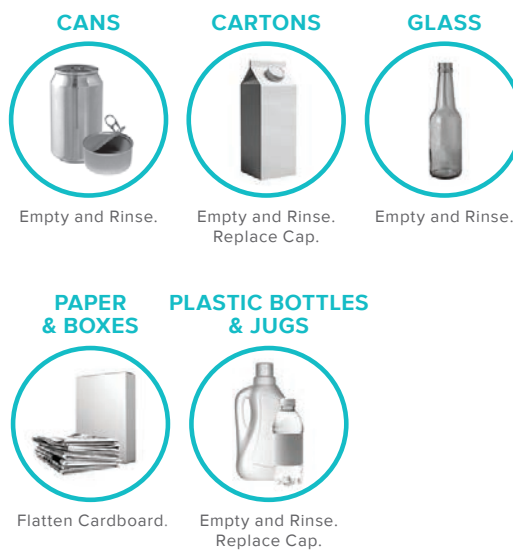
Recycling in Cuyahoga County is **easier than ever.**

Good news: Most product packaging and paper can be recycled in your home. Cut your trash in half when you combine paper, cans, cartons and glass along with plastic bottles and jugs in your curbside recycling. Recycle more, recycle better.

Learn more at **CuyahogaRecycles.org**

Cuyahoga County
SOLID WASTE DISTRICT

CANS

Empty and Rinse.

CARTONS

Empty and Rinse.
Replace Cap.

GLASS

Empty and Rinse.

PAPER & BOXES

Flatten Cardboard.

PLASTIC BOTTLES & JUGS

Empty and Rinse.
Replace Cap.

Place these items loose — not bagged — in your recycling container.

Communities like Cleveland and Richmond Heights paused their curbside recycling and are coming up with interim strategies until they can figure out what to do about escalating costs. Paper and cardboard markets are fluctuating, but still in demand thanks to online retailers.

A bright spot that municipalities may want to encourage more of through their marketing and sustainability efforts are grassroots efforts to reuse items. Site traffic has ramped up on Facebook Buy Nothing pages, Craigslist and Freecycle.

Waste-reducing entrepreneurs like Upcycle Parts Shop in Cleveland and Little Spark Refill Shop in Rocky River and Chagrin Falls are offering an emerging market to reuse common items. Also, individuals are forming networks to keep items from entering the landfill by donating or "upcycling" items, including the West Side Trash Connectors, and by offering neighborhood drop-offs for aluminum cans with Cleveland's Clean Garbage Recycling.

Another bright spot has been food waste reduction. Food donation services like Stone Soup and the Greater Cleveland Hunger Network have produced smartphone apps and services for companies to make food donations. Also, commercial composting has had a boost from Cleveland urban farms like Rid All Green Partnership and private companies like Rust Belt Riders offering residential food waste pick up and/or drop off sites, diverting hundreds of tons of methane-producing food waste from entering landfills. Check out all of the composting options at the Cuyahoga County Solid Waste District "Where to Recycle?" web resource.

Leadership and Education

1. "Empty, clean and dry" is the mantra for proper recycling. To prevent contamination and bad recycling habits, work with the Cuyahoga County Solid Waste District to host a Recycling 101 webinar or in-person session for residents to learn how to reduce contamination. Contact the District's education specialist, Carin MIller, to schedule a basics of municipal recycling or an at-home composting webinar. Or check their website for upcoming events.

2. Get creative with marketing on the topic of recycling. After the city saw a major cost increase to its recycling in 2021, (retired) Pepper Pike Service

Director Robert Girardi and Councilman Scott Newell collaborated to make [an informational video](#) to help residents recycle the right way. In the video, Girardi addresses "wish cycling" or throwing obvious trash items into the recycling 'hoping' for the best. Also, Moreland Hills Village City Council and the city's Green Commission produced [a video series](#) to encourage their residents to follow proper recycling methods. Consider sharing the Cuyahoga County Solid Waste District's ["wishcycler" video series](#) with local school officials.

3. Encourage residents to start backyard composting. The Cuyahoga County Solid Waste District hosts seasonal educational programs to teach how-to compost and the benefits of backyard composting. Cities including Lakewood, Parma Heights and Pepper Pike schedule seminars annually due to residential interest, with attendee surveys on how much waste they divert from the landfill.

4. Economic development directors can help businesses and organizations in their community reduce waste and recycle more by connecting them with the Solid Waste District's business recycling specialist. Chambers of commerce can host a speaker that will discuss the economic and environmental benefits of waste reduction and recycling at work.

Help volunteer clean-up efforts in your community in the following ways:

• The Solid Waste District's Clean Up Cuyahoga program provides litter clean up supplies to groups like, We Are Parma Proud (26 adults and four kids collected 19 bags of litter) and Ohio City Trash Pick Up (25 adults, 15 kids collected 40 bags of litter).

• The Clean & Green Cleveland trailer, stocked with landscaping tools and cleanup supplies to assist with beautification and clean-up efforts, is available through Cleveland Neighborhood Progress for loan to City of Cleveland residents and community volunteer groups.

• Connect clean up volunteers with data-tracking mobile technology. The Cuyahoga County Soil & Water Conservation District has a litter grabber with a sensor that can record the type of trash and geocode it using a mobile app called Litterati (to study patterns).

Municipal Operations

1. Update waste hauling operations with bins (carts) and trucks with robotic arms. Carts make waste and recycling pick up safer for drivers and more efficient. Eliminating blue bags reduces labor, contamination and recycling costs for communities. Cleveland Heights secured a $4.3 million loan through the Ohio Water Development Authority to eliminate blue bags in favor of recycling and refuse carts in 2021, a time and fuel saving upgrade.

2. Add recycling drop off locations for residents. When Richmond Heights paused its curbside recycling because of escalating costs, it added an aluminum can drop off at its fire station in support of [Aluminum Cans for Burnt Children](). [Royal Oak Recycling]() and River Valley Paper Company offer drop off bins for paper and cardboard at schools and places of worship.

3. Support independent or municipal recycling services at multi-family housing and in private communities. The Cuyahoga County Solid Waste District created [a guide]() to multi-family unit recycling.

Policy and Ordinances

1. Cuyahoga County Solid Waste District has a model ordinance for cities to use if they choose to implement mandatory recycling for multifamily housing. Contact the [Solid Waste District]() for details.

2. During administrative design review, encourage retailers, offices and restaurant chains to design for and support infrastructure for recycling in their buildings or facilities. The Cuyahoga County Solid Waste District can assist with the review process.

3. Develop a plan to reduce waste generation and increase landfill diversion rates. Cleveland is partnering with Cleveland Neighborhood Progress on a [Circular Cleveland]() initiative that hires residents to generate ideas to close the loop on solid waste while producing green jobs (modeled after its [climate ambassadors]()).

Regional Collaboration

1. Consider group purchasing for waste services contracts. Westlake, Bay Village, Rocky River, Fairview Park and Lakewood collaborate to divert residential yard waste to a municipally owned and operated [Class 4 composting facility](#).

2. Support the expansion of specialized recycling infrastructure in Northeast Ohio. Companies like [Purecycle Technologies](#) recently expanded their footprint with a Plastic Recovery Facility (PERF) in southern Ohio where waste haulers like Rumpke are returning to recycling plastic tubs (i.e. yogurt and #5 dairy tubs).

3. Support clean drinking water and the reduction of plastic water bottles, which have a [3,500% higher environmental impact than tap water](#) because billions of bottles end up in the ocean and lakes each year. Cleveland's [Drink Local, Drink](#)

Tap is developing clean drinking water in Africa and connecting Clevelanders to their source of drinking water, Lake Erie.

Key Contacts

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Resources

To encourage others to become waste reduction ambassadors or to pursue a possible career path, the Cuyahoga County Solid Waste District Master Recycling Ambassador Program is a good resource for training. The Solid Waste District also sells low-cost composting equipment to Cuyahoga County residents.

Transportation

Millennials are moving to the suburbs and cities and choosing to put down roots where communities are investing in bike lanes, walkable commercial districts, transit, trails and parks in close proximity to residents. In planning for a more sustainable and equitable region, efforts to decarbonize transportation rank alongside retrofitting buildings as a high-impact opportunity. Communities that are redesigning transportation systems guided by

principles of sustainability and policies like Complete Streets and Vision Zero are placing themselves at an advantage.

Other areas to consider: Switching fleets powered by EVs, planning for an orderly introduction of in-demand shared mobility devices like scooters and eBikes and accessibility issues for seniors. All are covered in this section. Sustainable mobility has become a way for communities to distinguish themselves and remain inviting for all.

Leadership and Education

1. **Encourage more multi-modal options for commuting**

   [Gohio Commute](#) is an online community that organizes and tracks biking, walking, transit use and carpools, including ["school pools"](#) that connect families who want to carpool. Lorain City Schools are considering school pools as part of its [Safe Routes to School](#) journey. MetroHealth Hospital is encouraging employees to take transit by offering free bus passes and discounts on health insurance.

2. **Install traffic calming devices on streets where speeding is a concern**

   Lakewood has a [traffic calming program](#) and policy to install speed tables on residential streets; it is very effective in deterring speeding. Cleveland installed roundabouts on Franklin Avenue after a resident-led safety study. [Akron installed](#) 14 speed tables on residential streets. Pepper Pike deployed a beautiful curb extension project at Brainard Circle.

3. **Consider a [Safe Routes to Parks](#) plan to improve parks access by bike**

   City of Cleveland is working on a Safe Routes to Parks plan to improve bike

Lakewood has a program to install speed tables like this one on Marlowe Avenue

and pedestrian conditions on E. 55th and E. 72nd streets including a big community outreach effort.

4. **Host an adult bike safety class**

Bike Cleveland offers its Silver Spokes program in Cleveland and its suburbs with a focus on older adults biking and driving around bikes safely. Senior-accessible bikes are available for practice.

5. **Support flexible solutions for "first/last mile" connections to transit**

Lake County public transit agency, Laketran, won a [Fund for Our Economic](#)

[Future Paradox Prize](#) grant for a project where 50 businesses along Tyler Boulevard will introduce a pilot, fixed-route transit service. For employers who sign on, the grant subsidizes their bus passes.

6. **Produce a trails and greenways plan with actionable steps**

   Orange Village worked with the real estate developers of Pinecrest to fund 8.75 miles of trail as part of their development, incorporating years of resident feedback into trail design and programming and connecting community assets.

Municipal Operations

1. **Establish a parks access initiative to measure and improve who has access to parks and green space**

   Cleveland established a 10-minute walk team with members from City Planning, Capital Projects and its Office of Sustainability to coordinate efforts, gather community input and act according to the goal of a park within a 10-minute walk of every resident.

2. **Invite an orderly introduction of shared mobility devices**

   With the help of Cuyahoga County Department of Sustainability's scooter typology project to identify which docking stations are suitable for parking garages. The project will tap existing NOACA funds to build out scooter stations in public parking garages, starting in Euclid, S. Euclid, Cleveland Heights, Shaker Heights and East Cleveland. Participation of more communities is encouraged.

3. **Make a group purchase of shared mobility (eBikes and scooters) memberships for city employees to use**
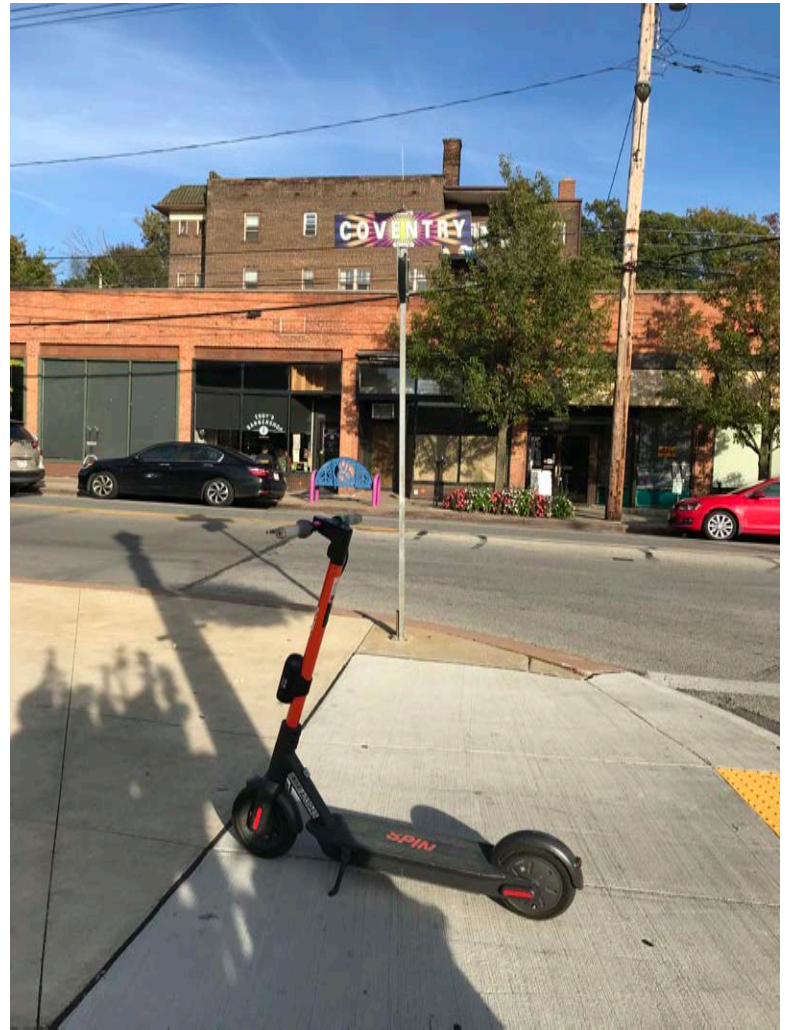
   University Hospital Systems was an early supporter of bike share, with employee discounts and sponsorship. eScooters have supported 630,000 rides since launching in Cleveland in August, 2019.

4. **Collaborate with local bike groups to repurpose impounded bikes**

   Bay Village partners with volunteers at Village Bicycle Coop to fix up bikes and deliver them to those in need. The Brecksville United Methodist Church runs a Bicycle Ministry where they fix up bikes and donate them to those in need.

Scooters connect Cleveland Heights and University Circle

5. **Transition light duty fleet to EVs / adopt a requisition standard for EVs**

   Cleveland purchased 3 Chevy Bolts, will purchase 10 EVs in FY2021 and is exploring a policy to make EVs standard (combustion engines request only).

Policy and Ordinances

Pepper Pike calmed traffic around Brainard Circle with bump outs and sidewalks

1. **Focus on safety and speeding to reduce crashes**

The City of Lakewood introduced a [Neighborhood Traffic Calming Policy](#) that is built around residents applying for, participating in and building support for interventions like speed tables and [chicanes](#) to reduce crashes and improve biking and walking on their street. A pilot resulted in a major reduction of speeding.

2. **Promote equity and shared mobility with an ordinance that requires operators to locate eBikes and scooters in locations with low-to-moderate income households**

   [Lime](#), the operator of an eBike rental program in Cleveland and the suburbs, has an Access Program geared toward low-income individuals with discounted rates. Euclid and South Euclid have passed ordinances allowing shared mobility devices and, with East Cleveland and Cleveland Heights, are [launching shared mobility](#) within their borders.

3. **Support road diets that convert four-lane roads into three lanes (with center turn lanes and bike lanes)**

The City of South Euclid is pursuing a [4-to-3 road diet](#) on South Green Road that will include [buffered bike lanes](#) and [bike boxes](#) at traffic signals.

4. Parma Heights introduced a planted median and bike lanes on Pearl Road (south of Snow Road) to calm traffic and invite more cycling to local destinations.

5. **Design for a multi-modal system with a [Complete Streets](#) Policy**

   Cleveland Heights adopted a complete and green streets ordinance in 2018 which won Best in the U.S — the city redesigned the Edgehill/Overlook intersection with bike, pedestrian and green amenities. Also, NOACA adopted a complete streets policy and will be looking to fund projects that promote bike and pedestrian access.

A 'road diet' in Parma Heights led to a planted median and bike lanes

6. **Plan for climate resilience by investing in green infrastructure in key corridors**

   RTA partners with cities to install bus shelters which will become necessary infrastructure as extreme weather events and storms become more intense due to climate change. Green Streets policies and the County's [Healthy Tree Canopy Grants](#) (see Trees & Land Management) can be coordinated to plant shade trees near bus shelters and where pedestrian activity is higher.

Cleveland Heights invested $3 million (with a [NOACA TCLI](#) Implementation grant) in a streetscape improvement project on Lee Road that included new trees, planters and curb extensions.

Regional Collaboration

1. Support the Northeast Ohio Areawide Coordinating Agency ([NOACA) Environmental Justice](#) Policy. In 2021, NOACA's Board agreed to promulgate a racial equity in highway interchanges policy. Each interchange proposal will be evaluated for any unintended consequence of sprawl and furthering racial inequity and will include a greenhouse gas emissions analysis.

2. Support Greater Cleveland Regional Transit Authority converting gas-powered buses to electric buses. Lake County's transit operator, Laketran, [secured federal funding](#) for an EV bus and 2 charging stations.

3. Support the use of state funds from the VW diesel settlement to build up electric vehicle (EV) charging stations across the region. NOACA completed a regional study on [priority locations for EV charging](#) stations and will accept applications from cities for charging stations.

4. Support the Cuyahoga County Regional Lakefront Transportation Connection Study with the goal of creating connections to the lakefront and a trail system for all of Cuyahoga County. Cleveland will do so with its Lake Avenue trail project (a multi-purpose trail between West Blvd to W. 117th Street).

5. Support equity in transportation. The City of Maple Heights added bike lanes, is increasing tree canopy and using environmental justice as a pillar of planning on its Dunham Road Greenway Project.

6. Support a countywide bike and greenway network. The [Cuyahoga County Greenway Partners](#) has a vision and resources to help communities build connected bike and hike infrastructure.

Key Contacts

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•Jacob VanSickle, Executive Director, Bike Cleveland, jacob@bikecleveland.org

•Sara McCarthy, Fund for Our Economic Future/Paradox Prize, smccarthy@thefundneo.org

•Sarah O'Keeffe, Director, Sustainability, The MetroHealth System, sokeeffe@metrohealth.org

•Dave Baas, City Planner, City of Lakewood, david.baas@lakewoodoh.net

•Kate Moening, NOACA/Gohio Commute, kmoening@mpo.noaca.org

• Diana Hildebrand, Black Girls do Bike Cleveland Chapter

Resources

[State of Ohio DERG program](#) and VW Mitigation Fund for EV charging stations.

Transit advocates [Clevelanders for Public Transit](#) are a resource to understand how bus riders interact with your community to get where they need to and can help with a strategy to increase bus ridership in an inclusive way.

Trees & Land Management

Trees are an efficient "green technology" that help communities reduce costs and increase their resilience to climate change. In an increasingly hot world, trees reduce air conditioning costs (a 100-foot-tall tree has 200,000 leaves that provide shade). Mature trees absorb a lot of stormwater (11,000 gallons per season) from the soil and release it into the air again as oxygen and water vapor. Trees also improve a community's biodiversity (one oak

supports 250 different species). Trees are an investment in a more climate resilient future. However, tree canopy is being lost at an alarming rate. From 2011 to 2017, Cuyahoga County lost 6.1% of its tree canopy (6,600 acres), according to the County's 2019 tree canopy assessment. That includes 18,000 trees lost to clear-cut development during that time. Also, the simple act of replacing a lawn for a garden improves nearby streams, biodiversity, and can cut down as much as 55% of municipal waste (from clippings). This section provides an update on the resources to start planning for and planting trees.

Leadership and Education

1. **Encourage residents to plant and care for trees. Also, to switch to organic lawn care as a healthy alternative to chemical applications that end up in rivers and the lake.** The Nature Center at Shaker Lakes' 3-H Lawns is a resource for low maintenance/high (ecological) return lawn care. Also, GardenWalk Cleveland is inspiring residents to share ideas in natural landscaping.

2. **Repurpose vacant lots into gathering spaces and provide young people with skill building**. South Euclid participated in the Kent State Urban Design Collaborative's Making Our Own Space in 2021, activating a vacant lot with the participation of six local teens.

3. **Establish a Tree Commission and invite community members to contribute to a shared vision with goals such as increasing tree canopy**. Lakewood's Tree Committee produced 11 guiding principles, including a goal to increase the city's tree canopy from 28% to 33% coverage.

4. **Provide residents with tree stewardship resources**. The Cuyahoga County Soil & Water Conservation District's ReLeaf program helps to mail out educational materials about proper maintenance of trees (i.e. not

mounding up mulch on roots), and has a naturalist scholarship, The Legacy Tree Fund, in cooperation with Bay Village, Independence, Parma, and South Euclid.

5. **Encourage community participation to improve green infrastructure**. Cleveland's Collinwood area has the Green Palette project, with artists leading rain barrel painting, a green roof on Arts Collinwood, and converting amenity strips into native gardens. Similarly, Cleveland Heights volunteers are improving the Bradford pedestrian trail with gardens and a "Pollinator Path." It has inspired another group in the city's Fairfax neighborhood to do the same.

Municipal Operations

1. Apply for a Cuyahoga County [Healthy Tree Canopy Grant](#) — the County's five-year, $5 million program to revitalize the tree canopy in Cuyahoga County. (See highlights below)

2. Trees and functional green space are an important part of the [Northeast Ohio Regional Sewer District's Green Infrastructure (GI) Grant Program](#), which has funded 54 projects on public and private properties as of 2021. The goal is to reduce stress on wet-weather drainage and collection systems like creeks and streams. Natural "bio retention cells" in the public right of way and on private lots with parking and common areas are routinely awarded contracts, such as the $191,160 Arch Park. Completed in 2016, the park in Cleveland's Slavic Village neighborhood also serves as a traffic calming "bump out" at E. 49th Street and Broadway Avenue (pictured above). Communities are encouraged to learn more and apply for the [annual GI grants](#).

3. Preserve street trees — even those that push up sidewalks — by offering urban forestry a resource in their assessment. Euclid started a concrete sidewalk replacement program for income-eligible residents: If a sidewalk is damaged because of a city tree, the city will assess the damage, make sure it was caused by the tree, and replace the concrete on a bulk buy.

4. Invest in parks and green space as an amenity that every resident can access. After Seven Hills adopted a park levy in 2020, the city acquired 20 acres from a developer that it will preserve as a natural area and stream buffer adjacent to a small community park and residential area (with grant funds provided by Ohio Public Works Conservation Fund and support from the Northeast Ohio Regional Sewer District).

5. Form a public-private partnership to build a park or trail project. City of Euclid negotiated with 88 property owners for easements and purchases that produced the region's most exciting lakefront trail and park; it secured FEMA, H2Ohio, EPA, ODNR and Cleveland Foundation funds to pay for the ¾-mi trail, pier, and shoreline stabilization project.

Policy and Ordinances

1. Develop a public-private partnership to increase tree canopy. Lakewood adopted legislation in 2018 to allow for the city to plant trees on private property, including front yards on certain streets, with a legal easement to enable it.

2. Enable more natural front yards by amending zoning requirements for turf grass (there are 40 million acres of lawn in America - the largest "crop" of any planted — most are required by law). Cleveland Heights amended its
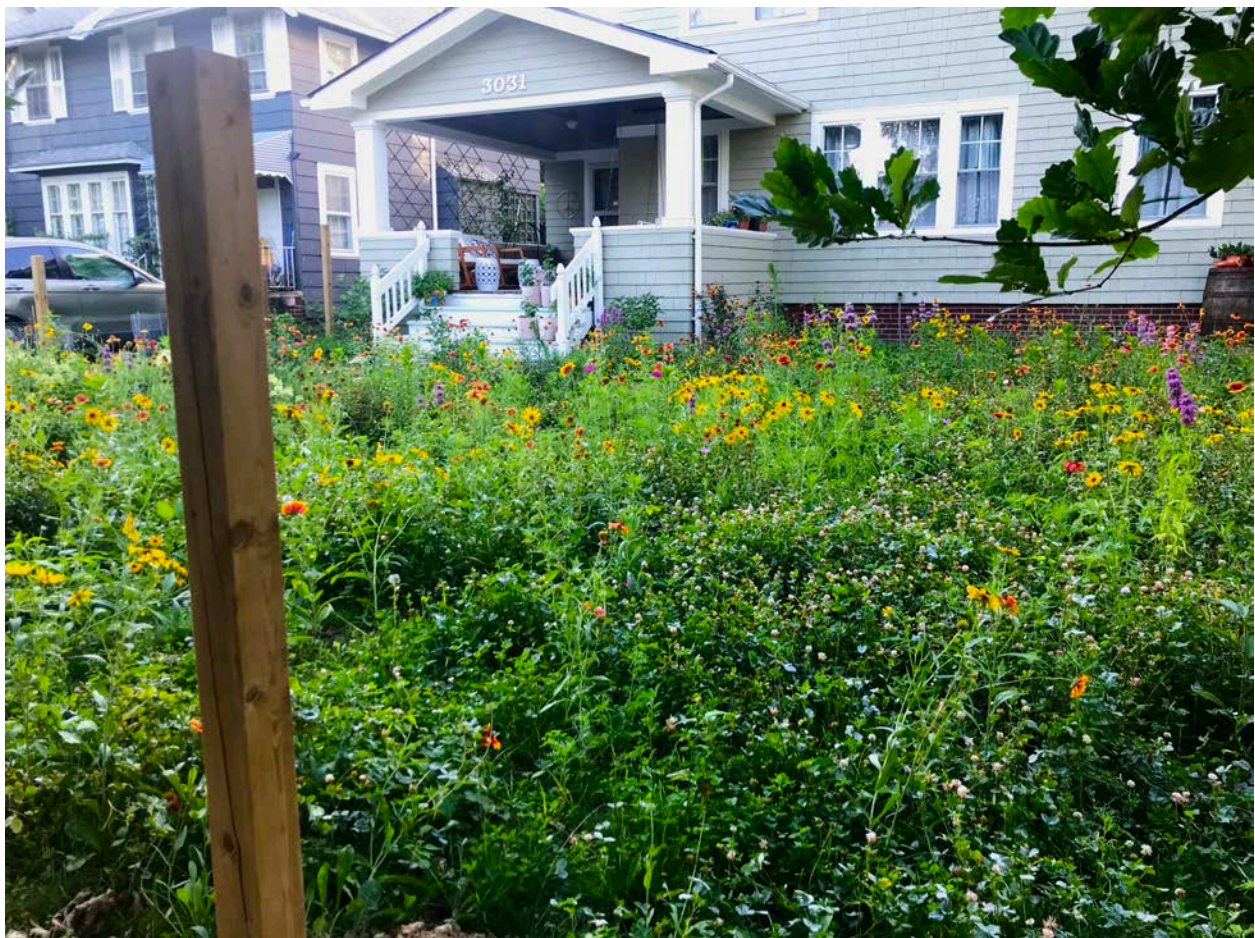
zoning code to allow front yard gardens and the raising of chickens and bees. It has inspired community groups like the [Heights Pollinator Pathway](#) and the [Heights Tree People](#) to plant trees and rain gardens.

3. Update tree plans like Cleveland did with its [Tree Plan (2015) and Tree Canopy Progress Report (2020)](#). The report anticipates climate change by diversifying the trees the city plants.

4. Consider joining your community to the [Tree City USA](#), a national recognition program from the Arbor Day Foundation. University Heights posts street signs declaring they have been a Tree City for more than 40 years.

5. Further tree planting initiatives with program support. The [Rocky River Backyard Buffers Program](#) provides tree and shrub seedlings, and planting guidance free of charge to stream side landowners in the Rocky River Watershed.

6. Encourage organic lawn care by adopting a policy that prevents the use of chemical fertilizers and herbicides on city-owned property. City of Independence adopted policy in 2021 where only organic/sustainable ingredients will be used in fertilizers, herbicides and pesticides in local parks.

Regional Collaboration

1. Support the [Lake Erie Allegheny Partnership (LEAP) Regional Biodiversity Plan](#) which calls for enhanced natural corridors along the lake, river valleys, foothills, and Lake Erie watershed boundary to protect species diversity and migratory patterns.

2. Support the Metroparks' [Cleveland Harbor Eastern Embayment Resilience Study (CHEERS)](#), an ambitious plan to build an island and fishing cove near the E. 55th Street fishing pier at the lakefront.

3. Support Cuyahoga County's Healthy Tree Canopy Grant Program by applying for a planning grant that assesses where trees are needed. Parma applied for two tree grants: In 2019 to complete a citywide assessment and in 2021 for a $97,000 grant to add hundreds of trees.

4. Support a regional initiative to reduce chemical fertilizers. Lawn fertilizer may be contributing to the dead zone in Lake Erie that causes [drinking water health hazards](#).

Key Contacts

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[Cleveland Tree Coalition](#): Take Action to Plant and Preserve Trees

Resources

- [i-Tree provides information and data to help with tree planting, species, management and costs](#)

- [Ohio Department of Natural Resources Urban Forestry Toolbox](#)

- [The US Forestry Services tree atlas](#)

- [Cuyahoga Greenways](#)

  [Vibrant Cities Lab: Urban Forestry Toolkit](#)

- Robbins P., 2007. [Lawn People. How Grasses, Weeds, and Chemicals Make Us Who We Are](#). Temple University Press, 9781592135783, 208pp.

- Tallamy, D., 2019. [A Call for Backyard Biodiversity](#), American Forests

- [Arbor Day Foundation's 22 benefits of trees](#)

- A [U.S. Forest Service climate vulnerability assessment](#) of Northeast Ohio in 2018 found that one-third of the region's trees may be impacted by climate change, with deciduous species like maples and beech in the category of highest impact.

- [Cleveland Metroparks' Landscaping for Biodiversity](#)

- [Doan Brook Watershed Partners' Healthy Homes](#)

- [Cleveland Museum of Natural History's Landscaping with Native Plants](#)

- [The Chagrin River Watershed Partners' Landscaping Solutions](#)

Highlights from rounds one and two of the Cuyahoga County tree grants

Round One of the Cuyahoga County Healthy Tree Canopy Grant Program in 2019 identified over 15,000 sites available for tree planting and funded 26 municipal projects based on a variety of factors, with special consideration given to projects that align with the County's [racial equity](#) and [climate vulnerability](#) goals.

Round Two (announced in May, 2021) will fund 4,000 trees at 25 project sites — 11 west side and 4 east side suburbs and 8 Cleveland neighborhoods — including special projects like the county's first, native tree farm at Parma's Stearns Farm.

The Cuyahoga County Planning Commission encourages communities who did not receive funding to apply next year; they are available to provide guidance.

- Bedford Heights received a $40,000 grant for the replacement of residential Ash trees.
- Slavic Village inventoried all of its street trees and identified those classified as high-risk in round one. The City of Cleveland removed the highest risk trees and, with a $31,000 round two grant, will plant 20 new trees on vacant lots and bring 30 trees back to health.
- Lyndhurst "relies on fresh forestry for air quality, property health & stormwater management." 10% of the city's trees were affected by a microburst storm in 2019 and a viral outbreak of emerald ash borer. Covid-19 put financial strain on the tree budget; a $49,152 grant from the county will fund a 24-month project to plant 65 trees in spring and 175 trees in fall of 2021.
- Brooklyn has the 6th lowest tree coverage in Cuyahoga County. The city won a $17,595 grant to build its program of planting trees, 70 in Marquardt Park, 42 trees in a newly added neighborhood park and 50 street trees.

Watershed Management

Watersheds are places of wonder. Properly managed, they play host to healthy ecosystems that are [teaming with biodiversity](#).

Watershed management was given a boost in Cuyahoga and four adjacent counties in the last five years when the Northeast Ohio Regional Sewer District completed regional stormwater plans for the Cuyahoga River (north & south), Rocky River, Chagrin River and Lake Erie-direct tributaries.

The Pepper Creek development in Pepper Pike restored a creek to help with flood mitigation.

The result? 500 problem areas and $1.1 billion in watershed projects were identified, which is the reason [stormwater fees in 58 communities](#) (totaling $43 million annually) are being collected by the Sewer District. Communities adjacent to watersheds are tapping Sewer District funds for river and wetland restorations and to address emergency situations.

Development determines much about watershed health. The region's pattern of low-density development and building in slope and flood plains has [an impact on water quality](#). Area flooding continues to be a concern. Thankfully, alternatives exist within the region's sustainable land-use plan, [VibrantNEO 2040](#).

Coastal wetlands restoration and shoreline stabilization received an infusion of support from the State of Ohio with its [H2Ohio program](#) and crucial support from Congress in the form of the [Great Lakes Restoration Initiative](#). New sources such as FEMA infrastructure funds for climate resilience (see Euclid in Land Use and Development) in coastal areas and the 2021 infrastructure program is anticipated to further boost watershed management and green infrastructure.

Leadership and Education

Leadership and education are critical for planning and building resilience. The following are suggestions and local examples from communities taking a proactive approach to watershed management.

1. **Preserve trees surrounding streams and rivers to protect water quality**

West Creek Reservation in Parma has a large, natural stormwater retention area accessible to the public.

For example, Middleburg Heights received a Sewer District stormwater grant for 25% of the cost of the Baldwin Creek project. This was to acquire 11 acres of land adjacent to four city-owned acres. The city is creating a nature preserve with a trail system, and is doing stream bank restoration.

2. **Provide city workers with the skills to build and maintain green infrastructure**

The Sewer District is a training facility for The National Green Infrastructure Certification Program (NGICP) which provides skills needed for entry-level workers to properly construct, inspect and maintain green stormwater infrastructure (GI). For more information on this training, contact Christopher Hartman HartmanC@neorsd.org or Crystal Davis DavisC@neorsd.org.

3. **Promote a citywide appreciation for nature and natural science careers**

Community science projects are happening in schools (STEM) and at watershed groups in your area. For example:

- The Cleveland Metroparks selected a site at the river restoration at Bonnie Park in Strongsville where visitors can place a mobile phone and upload an image using the app Chronolog (pictured right) contributing to a time-lapse image.

- The Cleveland Water Alliance is looking for participants to join its Smart Citizen Science program where children can learn about Lake Erie water quality.

- Public Engagement in watersheds management is part of MS4 (municipal stormwater) requirements. The Cuyahoga Soil & Water Conservation District organizes volunteers who monitor and record water quality tests of streams. They are using the app Water Reporter to upload and map data.

  4. **Encourage residents to be active in watershed protection**
  For example, communities can host Cuyahoga Soil & Water Conservation District's Master Rain Garden Class. Residents are trained in how to properly build a rain garden, which can retain up to 10% of the stormwater that is typically generated on a parcel. The program has led to 100 rain gardens being built by homeowners throughout the region, while encouraging them to share their knowledge.

Municipal Operations

1. **Be proactive when addressing roadway and basement flooding**

   For example, Middleburg Heights received $3.8 million from the Sewer District's Cost-Share Program, adding $1.9 million of its own funding to acquire 12 parcels and 7 homes that were built in a flood-prone area adjacent to Big Creek Parkway and Abram Creek (see map below). The homes were regularly flooded, causing stress and anxiety to those living in them. While it is costly to demolish them, in order to protect the remaining properties in the area, the city needs to build three stormwater detention basins and a wetland in the project area.
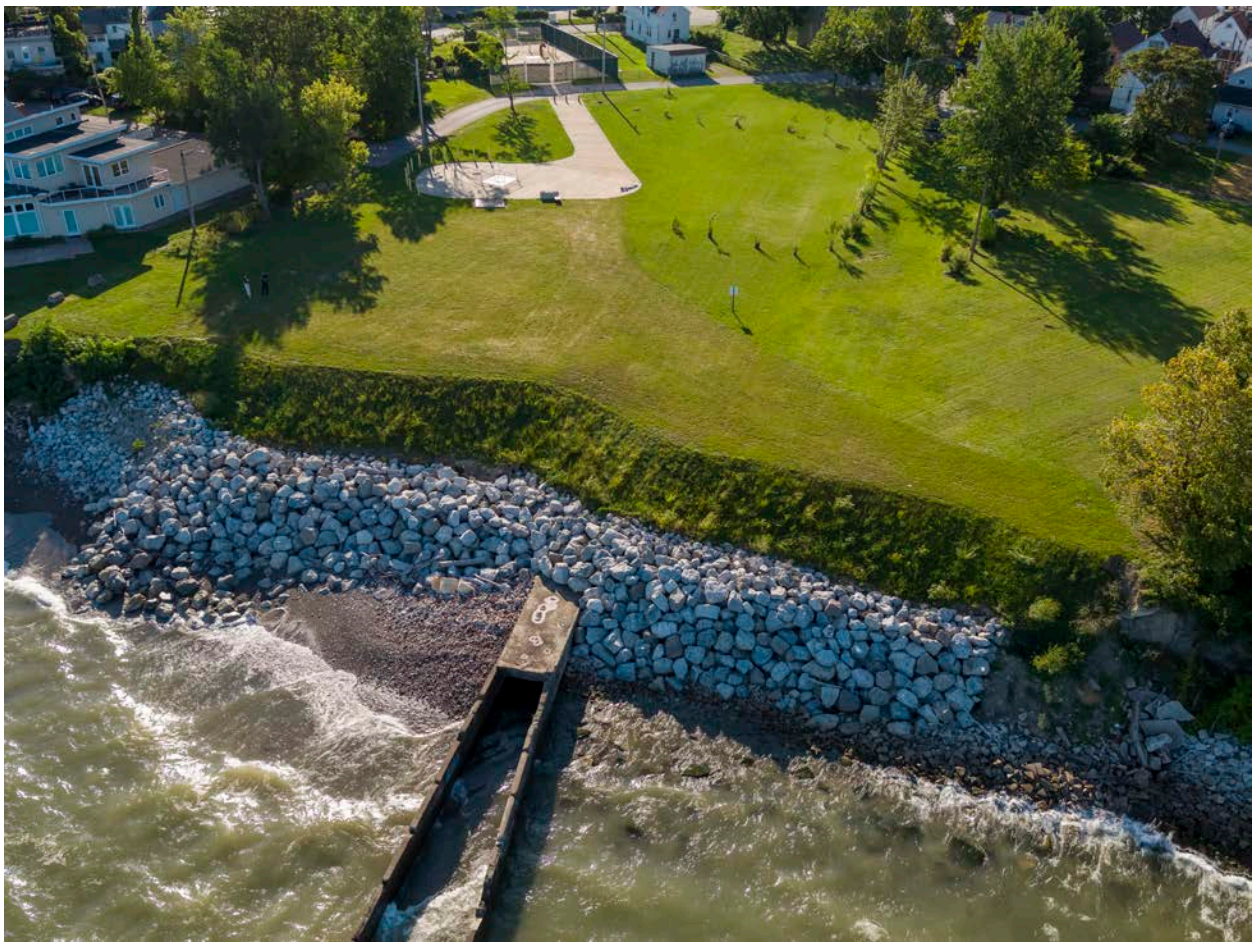
2. **Improve fish health by removing old dams from local rivers and streams**

With the aid of the Ohio EPA's unique [Water Resources Restoration Sponsor Program](), which has no cap or local matching funds needed, dams are removed, opening up fish habitat and improving stream health and biodiversity.

Two recent examples of dam removal include the Cleveland Metroparks, which received $1 million from the state program for [a dam removal]() and streambank restoration on the East Branch of the Rocky River, in the [Mill Stream Run Reservation](), at Bonnie Park. Additionally, the [Cuyahoga Valley National Park]() and Cleveland Metroparks removed the 8 foot-high dam on the Cuyahoga River, at Station Bridge in Brecksville, a few hundred meters downstream from the confluence of Chippewa Creek. This will allow for fish migration and safer passage for kayakers.

Percent of Land in Flood Plain
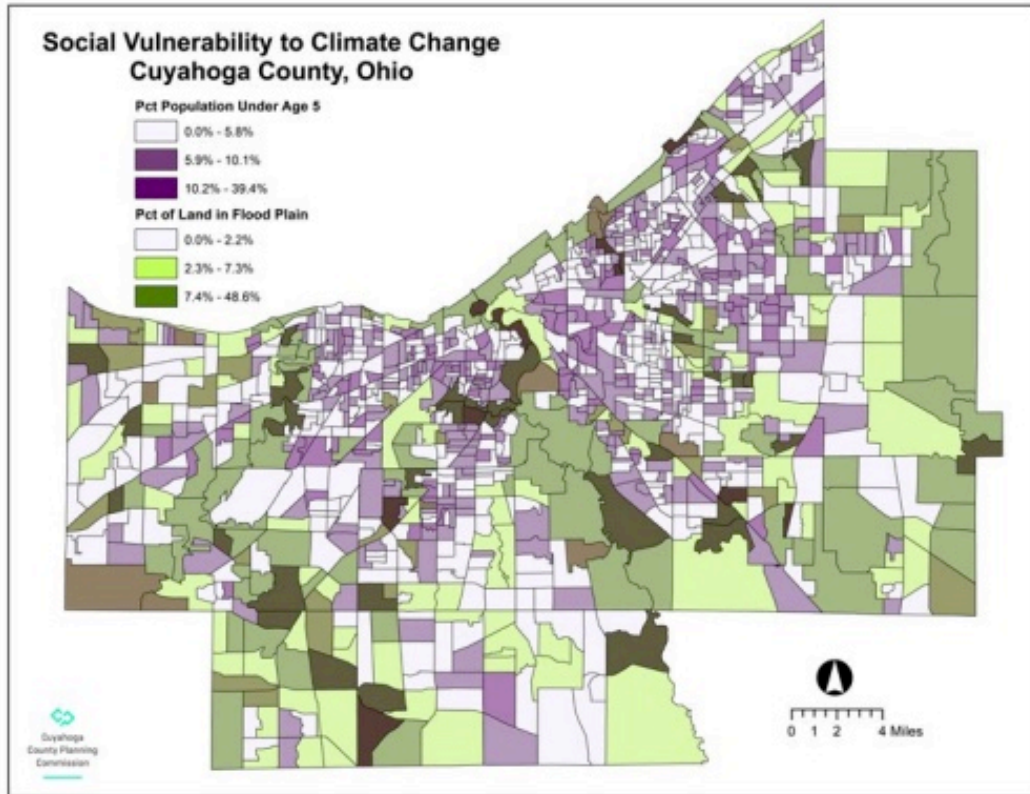
A combination of social and physical factors such as the percent of county land in flood plains show where there are vulnerabilities to climate change. From the Cuyahoga County Climate Action Plan (2019).

3. Encourage Home Owners Associations (HOAs) to review post-construction stormwater features, such as retention ponds, with an eye toward a maintenance plan. Cuyahoga Soil & Water Conservation District has a proactive approach in meeting with HOA Presidents and City Engineers, including a checklist of immediate and long-term troubleshooting.

Policy and Ordinances

1. Adopt a [policy to reduce runoff from impervious surfaces](). Lakewood established an impervious surface program in July, 2021 to reduce stormwater runoff that leads to bacteria (eColi) in local rivers and the lake (Lakewood charges a fee based on the square footage of lots). Also, Olmsted Falls has an impervious surface-based stormwater fee.

2. Keep your community's [MS4 requirements]() current by adopting climate models that accurately reflect increased rainfall intensity. This will ensure properly sized riparian buffer zones, detention ponds and dry wells (see [Cuyahoga Soil & Water Conservation District]() for guidance).

3. Protect properties from erosion and costly flooding. Recommend that developments provide computer models for stormwater control measures. In Olmsted Township, the city engineer requested that a developer provide a hydrologic model that shows how a housing development will not impact an onsite stream.

4. Adopt an ordinance to preserve trees. Conservation Development is a planning tool with a long track record of preserving trees surrounding watersheds in planned unit developments. For example, Aurora (in Portage County) adopted a [Conservation District]() in 1999 that has an open space requirement of 40% of green space protection that is still in use today. Ryan Homes at Forest Ridge Preserve in Aurora worked with The West Creek Conservancy in 2019 to preserve 75-acres of open space as a nature preserve.

Regional Collaboration

1. **Support river restoration activities and scientific studies.**

For example, support the [removal of the Gorge Dam](#) in Cuyahoga Falls that will restore conditions that support fish and other macro-invertebrate populations in the Cuyahoga River. Also, the [Cuyahoga River AOC](#) is researching the link between fish deformities and riverbed sediments with the goal of addressing contaminants.

The Doan Brook had its banks and natural course restored behind the Cleveland Museum of Art in 2019

2. **Support initiatives to prevent plastic waste from [accidentally ending up in Lake Erie](#).**

Cleveland's Office of Sustainability organizes the [Plastics Reduction Working Group](#) (lead by [Cathi Lehn](#)) with participants from across Northeast Ohio. Also, Cuyahoga County adopted a [plastic bag ban](#) that will take effect

on January 16, 2022. And Cuyahoga County residents have options for <u>properly disposing of pills and medications</u>.

3. **Educate city engineers on the updated (as of April 1, 2021) Ohio EPA requirements for municipal stormwater discharge permits (NPDES).**

New requirements for post-construction stormwater management include: Restoration of at least three hundred linear feet of channelized stream, updating ordinances to include green infrastructure, or depaving one acre of developed impervious surface.

Key Contacts

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Local Watershed Coordinators

• Big Creek — [Bob Gardin, Big Creek Connects](#)

• Chagrin River — [Christina Znidarsic, Chagrin River Watershed Partners](#)

• Doan Brook — [Tori Mills, Doan Brook Watershed Partnership](#)

• Euclid Creek — [Claire Posius, Friends of Euclid Creek](#)

• Rocky River — [Jared Bartley, Rocky River Watershed Council](#)

• Tinkers Creek — Babette Gouda, [Tinkers Creek Watershed Partners](#)

• West Creek — Derek Schafer, West Creek Conservancy

Resources

[Cuyahoga County Climate Change Action Plan](#) (CCCCAP) has data on green infrastructure and climate vulnerabilities such flood-prone development.

Northeast Ohio Regional Sewer District:
[Green Infrastructure grants and story map](#)
[Affordability Program](#)
[Stormwater fee credit](#)

Precipitation annual reports and trends, i.e. climate change
[NOAA National Climatic Data Center](#)
[Midwestern Regional Climate Center](#)
[NEORSD Rainfall Dashboard](#)

[NOAA National Climate Report](#) (maps and figures showing monthly average temperatures across the US and individual states)

[Landscaping Solutions - Chagrin River Watershed Partners](#)

Holden Forests & Gardens [Tree Selection Guide](#) (for urban and suburban areas)

[Cuyahoga Soil and Water Conservation District Resources](#)