



# **Sustainability Initiatives in The Ohio River Basin**

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## **Executive Summary**

The Ohio River Basin is a commercially and recreationally important watershed spanning fourteen states and over 25 million people, providing critical services including drinking water, hunting and fishing, shipping and transit, and sanitation (1). However, water quality throughout the region has declined as industrialization and unregulated use have led to pollution. Restoration of this region made significant strides as a result of federal funding and investment, but the Ohio River Basin still faces health problems. This presents an urgent health and safety issue to communities, industries, and ecosystems dependent on the Ohio River Basin and necessitates rehabilitation and protection.

Many non-profits and governmental organizations are focused on Ohio River Basin restoration. The National Wildlife Federation (NWF) is a grass-roots, American, non-profit organization dedicated to environmental conservation nationwide and is a key proponent of Ohio River Basin restoration. The NWF is currently developing a funding proposal to submit to the federal government, requesting funds to restore and conserve the deteriorating Ohio River Basin. However, in order to effectively accomplish this goal, the NWF needs extensive background information about the cities and sustainability plans in the Ohio River Basin. This information will provide examples of ongoing initiatives, feasibility and success, expenses, and public perceptions to be referenced in the NWF proposal, facilitating a more compelling and comprehensive proposal to garner political support.

In partnership with the NWF, our Graham Sustainability Scholars team has conducted this vital background research on Ohio River Basin communities. Most major cities in the Ohio River Basin have sustainability and climate action plans dedicated to reducing their environmental impacts by reducing waste and transitioning to more efficient energy-use practices. Our main objectives were to:

1. Review and analyze the sustainability and climate action plans of five major cities in the Ohio River Basin,
2. Develop case studies of initiatives of interest to the NWF's restoration efforts,
3. Engage in public listening sessions to receive feedback from the represented communities.

## **Introduction and Background**

Our team worked with the NWF to analyze sustainability and climate action plans and community-focused initiatives from major cities in the Ohio River Basin. The cities we focused on were chosen jointly by our team and the NWF based on social and environmental factors like population density and proximity to the Ohio River. The cities chosen were: Pittsburgh, PA; Louisville, KY; Huntington, WV; Evansville, IN; and Cincinnati, OH. For each of the five cities, we analyzed the sustainability and climate action plans, and reviewed transcripts of listening sessions held by the NWF. These activities revealed common goals shared by stakeholders

throughout the basin, including environmental preservation, economic development and job creation, and recreational opportunities. The Ohio River Basin restoration plan created by NWF and the Ohio River Basin Alliance (ORBA) will unify and amplify these common shared goals.

Additionally, one of our team members, Josephine McCarthy, interned for the NWF in the summer of 2023. During the internship, Josephine joined listening sessions with Ohio River Basin Tribes to hear about their environmental conservation priorities. She then compiled a listening session report summarizing community stakeholders' priorities.

## **Methods**

In collaboration with the NWF, we chose to analyze sustainability and climate action plans from the following cities: Pittsburgh, PA; Louisville, KY; Huntington, WV; Evansville, IN; and Cincinnati, OH. These cities were chosen based on the criteria of being mainstem, or on the main downstream portion of the Ohio River, as well as having a large population. We chose these criteria in hopes of making sure our research encompassed the population impacted by the issues in the Ohio River Basin as much as possible. We reviewed each of the five cities' sustainability and climate action plans and noted key themes.

## **Deliverables and Recommendations**

### Case Studies

After reviewing the sustainability and climate action plans of five Ohio River Basin cities (Evansville, IN; Huntington, WV; Cincinnati, OH; Pittsburgh, PA; and Louisville, KY) we noted key themes. We then related those key themes with the Ohio River Basin Alliance Report objectives which include: clean water, healthy and productive ecosystems, knowledge and education, transportation and commerce, flood control, and recreation. From there we developed five case studies on sustainability initiatives in our target cities in the Ohio River Basin (see Appendix A for the full case studies):

- Evansville's Promise Zones: areas where the federal government partners with local leaders to increase economic activity, improve educational opportunities, leverage private investment, reduce violent crimes, increase public health and address other priorities identified by the community.
- Louisville's Woodlawn Avenue Legacy Project: focuses on improving public spaces in Beechmont, Louisville, with a particular emphasis on infill and reuse opportunities along Woodlawn Avenue.
- Pittsburgh's Carbon Sequestration Project: advocates for increased carbon sequestration in existing and future city infrastructure.
- Cincinnati's Sustainability District: focuses on reducing their building energy usage, water consumption, and transportation emissions by 50% by 2030.

- Huntington’s Housing Project: focuses on creating quality housing opportunities.

### Listening Session Report

Graham Sustainability Scholar team member, Josephine McCarthy, developed the Ohio River Basin Listening Session Report in the summer of 2023. She listened to recordings of 31 NWF listening sessions. She summarized key community concerns of Ohio River Basin residents and possible solutions.

### Recommendations

1. Ensure social equity and public health for disadvantaged communities in the Ohio River Basin is prioritized. Communities of color, working class communities, indigenous communities, and disabled communities are disproportionately affected by climate change, environmental inequities, and economic stressors within the Ohio River Basin. Therefore, these frontline communities should be prioritized when drafting a restoration plan for the Ohio River Basin. These communities are also disproportionately affected by negative health outcomes associated with climate change and environmental contaminants. Therefore, public health initiatives within the basin should prioritize these communities. We also recommend that their voices and ideas are included in the development of any Ohio River Basin plans before being sent to Congress.
2. Increase community outreach to garner support. A social media campaign on Instagram, Facebook, X, and public events could expand the reach and result in an increased number of people and communities involved in the Ohio River Basin Restoration Plan development. Ultimately, more support from Ohio River Basin residents could result in Congressional support for an NWF Ohio River Basin Restoration Plan.

### **Impact**

Our Case Studies and Listening Session Report will contribute to the NWF’s development of the Ohio River Basin Restoration Plan which will outline pressing ecological issues in the region and offer potential solutions. The Ohio River Basin Restoration Plan will be presented to Congress as justification for accompanying legislation, which will seek to fund restoration initiatives that address the concerns outlined in the Plan. Our work provides guidance on the basin-wide sustainability initiatives, the concerns and priorities of basin residents, and examples of existing projects in the basin that would benefit from the restoration funding. By funding projects outlined in the Plan, Ohio River Basin residents and environmental systems will be protected and restored.

The United Nations Sustainable Development Goals provide an important framework for sustainability initiatives around the world, allowing us to evaluate the impact of our work in a broader context. By focusing on these goals, we were able to support NWF's progress on key environmental issues, including public health, equity, and safety, for people throughout the Ohio River Basin. Our project addressed the following United Nations Sustainable Development Goals:

- 6 - Clean Water and Sanitation
- 7 - Renewable Energy
- 8 - Good Jobs and Economic Growth
- 9 - Innovation and Infrastructure
- 11 - Sustainable Cities and Communities
- 13 - Climate Action
- 14 - Life Below Water
- 15 - Life on land

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## Appendix A

### City Case Studies

#### *Case Study: Cincinnati Sustainability District*

Cincinnati's 2018 sustainability plan has an equitable housing goal to create a "Sustainability District". The three goals of the Cincinnati sustainability district are: reduce their building energy usage, water consumption, and transportation emissions by 50% by 2030 (a baseline for Cincinnati is yet to be established). Since the sustainability district uses the 2030 District model and is led by the private sector, there will be nominal administrative costs for the City and low involvement from local, state, or federal governments. A rough estimate of seven employees contributing at average wage and benefit packages allotting 10 hours each runs around \$2000 worth of labor. The City workers will assist in creating a campaign, along with other entities, to educate key stakeholders on how reduction of energy and water usage can help reduce environmental burdens as well as save money.

The target audience for this goal is building owners and managers, Cincinnati Metropolitan Housing Authority and landlord organizations to reach low income tenants, and Members of the public that can influence the way buildings operate. The critical component that the city outlines for realizing a sustainability district is getting buy-in from building owner organizations who will get management involved. Building owners will have to be the ones to drive decision making. Large corporate and institutional partners who own and maintain large buildings will be key.

In order to make the sustainability district equitable, the City will work to recruit specific buildings that house low income tenants, provide subsidies, tax breaks, or other forms of incentives to encourage building owners to participate, select a diverse cross-section of the city to include in the district, and create diverse jobs with efficiency retrofits.

#### Resources

- <https://www.cincinnati-oh.gov/oes/citywide-efforts/climate-protection-green-cincinnati-plan/>
- <https://2030districts.org/cincinnati/>

### *Case Study: Promise Zones in Evansville*

Promise Zones were originally created under the Obama administration in July of 2015. These zones are placed in high poverty communities and, in general, the federal government partners with local leaders to increase economic activity, improve educational opportunities, leverage private investment, reduce violent crimes, increase public health and address other priorities identified by the community (HUD, 2016). To determine where the Promise Zones were going to be located, the Obama administration held a national competition consisting of three rounds. In each round the cities applying demonstrated a consensus vision for their community and its residents, the capacity to carry out the project, and a shared commitment to specific, measurable results (USDA). In the end, 22 Promise Zones were designated across the country. Although Promise Zones do not receive direct funding from the federal government, the city does gain a large array of resources that they can utilize to support the development of the Promise Zone. These benefits include 5 Americorp VISTA members, who over the course of a year perform capacity building, a federal liaison to help development navigate federal programs, preferences for certain competitive federal grant programs and technical assistance from participating federal agencies (HUD).

Evansville was given its Promise Zone designation in June of 2016 in the third round of the national competition (City of Evansville). Evansville Promise Zone spans a good portion of the downtown area of Evansville and is home to around 22000 residents (HUD, 2016). At the time they were first designated as a Promise Zone the poverty rate was 39.03% and the unemployment rate was 12.86%. These were well above the national averages for the time which were 12.7% for the poverty rate and 4.9% for the unemployment rate (Semega et al, 2017 & United State Department of Labor, 2016). With this being said the community is resilient and has a nationally recognized community school partnership program, neighborhood associations, and emerging economic and social development. Evansville's Promise Zone has six main goals for the community which are better career opportunities, new business establishments, improved well-being of youth and families, reduced crime rates, promotion of overall health, and expanding the number of affordable housing units (HUD, 2016). Although it was only established in 2016, the Promise Zone has had major success stories such as installing 5 free public wifi beacons during Covid which have over 200 users daily. More recently, the Promise Zone has been a food desert since 2018, but in March of 2023 organizers were able to open a new DG Market by providing grants through the City's Redevelopment Commission. This market gave residents within the Promise Zone access to fresh produce, milk, eggs, and meat (City of Evansville)

In order to gauge progress towards the Promise Zone's goals, a community survey is sent out every odd numbered year. Feedback from the community is mixed, some goals show progress such as the percentage of people agreeing with the statement that the income from employment met their financial needs increasing from 42% in 2019 to 49% in 2021. Some goals, such as crime reduction, are not showing much progress with 44% of respondents reporting crime as a problem in 2021 compared to 36% of respondents in 2019 (City of Evansville, 2022).



All together it appears that Evansville's Promise Zone is showing mixed results, however for being less than a decade old, the project is heading in a positive direction towards its main goal of helping the overall community.

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## *Case Study: Housing in Huntington*

### From the City of Huntington's Plan 2025

Huntington, West Virginia has ten major neighborhoods, each with a different variety of housing opportunities. However, not all of this housing is utilized. At its peak, Huntington had more than 80,000 inhabitants (City of Huntington, 2013). Now, only half that number live in the city (City of Huntington, 2013). As a result, much of the city's housing infrastructure has aged into various stages of disrepair. The city's "Plan2025" outlines several plans for creating quality housing opportunities:

1. Attracting new residential development within city limits in all districts
2. Prioritizing residential development that fits the historic residential character but provides new development opportunities
3. Incentivizing residential maintenance (code enforcement) and reinvestment into older housing
4. Encouraging deconstruction rather than demolition if repair is no longer an option
5. Recognizing that demolition may be best solution for a property and is an important tool to preserving safe and quality residential neighborhoods, while realizing that demolition can be a lengthy process
6. Promote fair housing practices and revise city zoning ordinances, policies and procedures to correct identified impediments (City of Huntington, 2013).

An example of these plans in action is the Land Bank program of the Huntington Urban Renewal Authority (HURA). Advertised as "returning tax-delinquent properties to productive use," the Land Bank works to repair and manage properties in disrepair (City of Huntington, 2023a). HURA purchases delinquent tax liens on a variety of properties, then interest (1%) is earned on properties that are redeemed (City of Huntington, 2023a). Those that are not redeemed are demolished or resold. This process keeps investment within the community, rather than transferring those dollars to out-of-town investors (City of Huntington, 2013).

When Plan2025 was written in 2013, the Land Bank program had purchased back more than 700 tax liens (City of Huntington, 2013). The city had taken ownership of 113 properties, of which 39 were resold. Current Land Bank properties can be found [here](#) or at the link listed below (City of Huntington, 2023b).

Much of this program's success can be attributed to partnerships with local organizations. For example, a partnership with Habitat for Humanity allowed the city to transfer five properties to the group's Veteran Housing Initiative. Partnership with a local housing authority also allowed the city to transfer property of the development of a senior high rise, which housed 40 seniors displaced by a recent demolition (Phillips, 2015).

A blog from West Virginia University also cites the program's partnership with West Virginia State University Extension's SCRATCH program (Phillips, 2015). This partnership involved local kids in the redevelopment process by having them plant community gardens at vacant properties throughout the city (Phillips, 2015).

Such partnerships have not only benefited community members, but have also allowed the Land Bank program to rehabilitate and revitalize the city's housing market.

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*Case Study: Woodlawn Avenue Legacy Project*

From the Louisville Climate Resiliency Plan

Sponsored by the Congress for New Urbanism (CNU) and the Center for Neighborhoods (CFN), the Woodlawn Avenue Legacy Project focuses on improving public spaces in Beechmont, Louisville, with a particular emphasis on infill and reuse opportunities along Woodlawn Avenue. Woodlawn Avenue is the heart of the Beechmont neighborhood, uniquely known for its diverse community and historic architecture. There is significant potential to enhance and expand the existing local businesses in this area as many people are seeking to support immigrant entrepreneurship, and younger families are attracted to the area by affordable housing.

CNU Legacy projects, with municipality and community participation as well as pro-bono assistance from planning and design firms, are meant to be collaborative efforts to revitalize neighborhoods. Some features of the revitalization plan for Woodlawn Avenue include:

1. “Complete streets” with accessible transportation for cars, cyclists, and pedestrians; improve pedestrian safety
2. Beautification with landscaping and murals
3. Markets and community gathering spaces, support for local businesses and small-scale development
4. Reuse of historic buildings
5. Development of an inclusive identity for Woodlawn Avenue

One concern for the project was revitalizing Woodlawn without displacing citizens, as well as gentrification. So far, community participation has been facilitated through brainstorming sessions and workshops by the Center for Neighborhoods. Displacement risk in Louisville and gentrification is becoming a growing challenge with development pressures and newly created federal Opportunity Zone designations. One way the City of Louisville is combatting this issue is by holding wealth-building activities for existing residents. For example, the project Russell: A Place of Promise provides resources for investment without displacement by connecting families with homeownership and business ownership resources, and advocating for community ownership of neighborhood assets.

Currently, community groups and members included in this project are the Beechmont Avenue Neighborhood Association. Other programs and sponsors included in this project include the City of Louisville, PlaceMakers, LLC, DPZ CoDesign, Gibbs Planning Group, Cassie Nichols, PLA, and WORK Architecture + Design.

Resources:

<https://www.cnu.org/sites/default/files/Woodlawn-Report-20190516.pdf>

<https://centerforneighborhoods.org/#>

<https://www.cnu.org/our-projects/legacy-projects>

<https://louisvilleky.gov/housing/document/2019housingneedsassessmentexecutivesummarypdf>

### *Case Study: Pittsburgh Carbon Sequestration*

Pittsburgh, PA is a large city that is home to more than 310,000 people and important businesses. The state of Pennsylvania is the world's 22nd largest emitter of CO<sub>2</sub>, and Pittsburgh has historically been a major site of production. Residents have been plagued by poor air quality, and the city has begun major efforts to reduce carbon emissions and improve air quality. In the city's sustainability plan, Pittsburgh advocates for the following strategies to increase carbon sequestration:

1. Ensure that new buildings are location efficient (i.e. not replacing green spaces and accessible to transportation).
2. Preserving or creating urban farmland with city programs like Adopt-a-Lot, which converts abandoned lots to community gardens that residents can rent and grow their own produce.
3. Protecting and expanding existing urban green spaces (Greenways for Pittsburgh) and tree cover (Shade Tree Commission).

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minimize erosion of soils, which store carbon.

According to the city's sustainability plan, some of the major challenges in accomplishing their goal of a 100%-increase in carbon sequestration are lack of data about these green spaces' ecology and lack of funding.

#### **What would the city do with additional funding?**

Since the sustainability plan plainly states that funding is one of the major roadblocks to this transition, it is likely that government funding would go toward expanding the departments overseeing these efforts. For instance, the Greenways for Pittsburgh plan, an attempt to preserve hillside green spaces, was limited in staff because of economic hardships. With more funding, programs like Greenways would be better staffed, allowing for more effective maintenance of areas important to carbon sequestration. Additional funding may also help support scientific research into the ecology of these urban environments that can assess the relative importance of certain green spaces, which

would allow for more targeted and informed conservation. Although some researchers may already have funding from external sources, government funding for this city project may further incentivize valuable research. Understanding the underlying ecology of these urban systems is vital for efficient planning; combined with increased staffing and maintenance, there is great potential for increased carbon sequestration if provided additional funding.

**Potential challenges moving forward:**

The city sustainability plan outlines a few caveats that may impede progress despite increased funding. For example, public perception and understanding of increasing carbon sequestration efforts is integral to smooth implementation of the city's strategies. The city aims to address this by increasing education and awareness about climate change and carbon sequestration, but there will certainly be conflict within the community about how funding should most equitably be allocated.

Another consideration moving forward is privatization and new development, which may convert existing green space into a potential carbon source. The city seeks to increase green infrastructure and "biophilic" design but may not have the ultimate say in industry practices. Furthermore, the city may be put under pressure to allow additional business development since this would provide new jobs to the community. Bearing this in mind, there may come difficult policy decisions that may limit carbon sequestration goals despite additional government funding.