

Examples of the Equitable Resilience Builder (ERB) Tool in Practice

Case Studies of Pilots using the ERB Beta Tool:

- [*Grand Rapids \(Region 5\) Workshops, June 2022*](#)
- [*Barnwell and Waynesboro \(Region 4\) Workshops, June-July 2022*](#)
- [*Buffalo \(Region 2\) Workshops, November 2022-April 2023*](#)

In Summer 2022 and Spring 2023, the EPA Office of Research and Development (ORD) piloted the Equitable Resilience Builder (ERB) tool in 7 workshops in six communities in U.S. EPA Regions 2, 4, and 5. ORD hired consultants¹ with experience in community engagement and urban planning to work with local community partners to design and facilitate the workshops to meet the specific goals of the community partners. Participants were recruited by community-based organizations, and participants who were not government employees were offered a stipend for their time participating. These case studies provide examples of different ways that the ERB tool can be used in different contexts and for different purposes, and revealed insights about equitable resilience planning that helped ORD refine and improve this tool.

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¹ Climate Resilience Consulting, Adaptation International, Kim Lundgren Associates, Institute for Diversity and Equity in Emergency Management (I-DIEM)

EPA Region 5: Grand Rapids, Michigan

Community Background

The [Grand Valley Metropolitan Council](#) (GVMC) is an alliance of governments in the West Michigan area that plan for growth and development and coordinate government services. In 2009, GVMC formed the [Lower Grand River Organization of Watersheds](#) (LGROW) based out of Grand Rapids, Michigan, to coordinate basin-wide oversight for the Lower Grand River, implement watershed-wide initiatives, and prioritize water quality concerns.

The Lower Grand River Watershed is already experiencing the effects of a changing climate, including shorter winters, warmer average annual temperatures, increased frequency of extreme precipitation, and temperature fluctuations. Changing land use also affects the watershed.

Since 2020, LGROW has been working on a [Lower Grand River Watershed Resilience Action Plan](#). This plan will offer resilience strategies and action geared towards existing and potential climate change impacts in each of the region's 31 sub-watersheds in the Lower Grand River region.

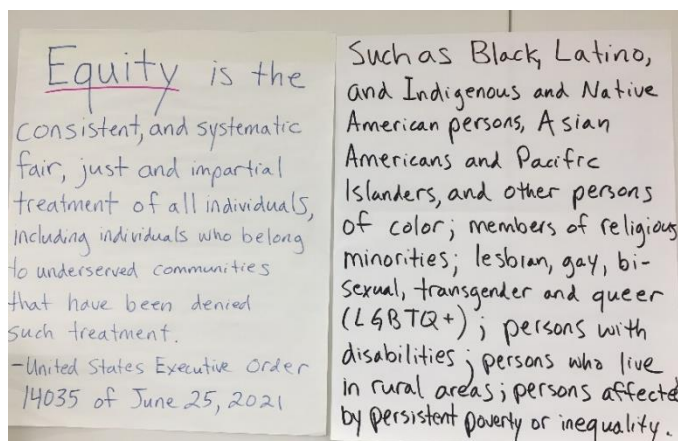
To create a more robust plan, LGROW wants to increase their community engagement in subwatershed communities and the consideration of equity and community needs.

Equitable Resilience Builder (ERB) Workshops Goals

Leveraging its status as an [EPA Urban Waters](#) partner and partnering with EPA ORD as well as contractors from Climate Resilience Consulting (CRC), LGROW set out to use the ERB tool in workshops with three key subwatershed communities in the Lower Grand River region: [Buck Creek](#), [Indian Mill Creek/Mill Creek](#), and [Plaster Creek](#).

The overarching goal for these workshops was to consider equity and the needs of subwatershed communities in the development of the Lower Grand River Watershed Resilience Action Plan. Specifically, the aim for the use of ERB with these subwatershed communities is that each community:

1. builds a deeper collective understanding of pressing vulnerabilities and root causes that impact resilience, and
2. identifies specific actions that can be taken to improve resilience and equity.



Equity definition used at workshops from [Executive Order 13985](#) (Climate Resilience Consulting).

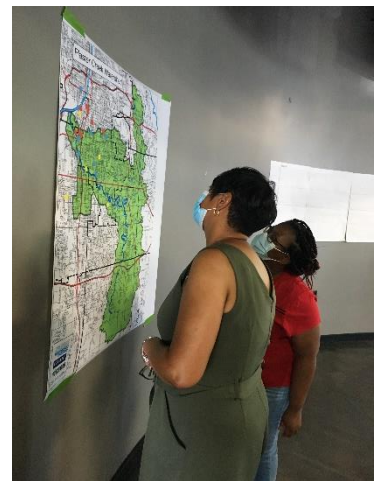
ERB Activities

LGROW identified community-based organizations in each subwatershed through their existing networks and these organizations helped to co-develop and recruit participants for the workshops. Through monthly meetings, LGROW and CRC selected core activities from the ERB tool to use in the workshops, then worked with the subwatershed organizations to tailor specific activities and workshop materials to the local context and timeframe of each workshop. These subwatershed organizations provided relevant background information for the activities and reviewed in-workshop participant guides and worksheets.

Then, the subwatershed organizations led recruitment of workshop participants. These organizations used the posters and workshop descriptions created in the materials design process to recruit workshop participants through messages sent to their own listservs, posts in community Facebook groups, posters hung in community centers, and individual outreach where necessary.

In the end, three workshops – one six-hour workshop in each subwatershed community – employed three activities from the “Assess” section as well as one activity from the “Strategizing Action” section of the ERB, including:

- Engaged subwatershed community members in storytelling to understand their experiences with hazards, disasters, and threats (HDT)
- Conducted a hazard mapping activity to identify where HDT and community assets are located and how various HDT as well as community assets might impact each other
- Discussed who in each community might be most vulnerable to hazards and disasters, how they are impacted, and what are the root causes of these impacts
- Identified the most powerful possible actions to build equitable resilience in each subwatershed community



*Mapping activity in Plaster Creek
(Climate Resilience Consulting).*

LGROW prepared a compilation of information about the watershed’s ecology and presented it at the start of each workshop. They also provided [Michigan EJ Screen](#) maps for each subwatershed for use throughout the workshop including as a point of reference during discussions about vulnerability within communities and mapping hazard risks and community assets. Other resources shared on flipchart paper included definitions for equity and watershed terms, as well as workshop communication agreements (i.e., ground rules).

During lunchtime at the end of the workshop, time was offered for an “open-mic” for workshop participants to share community updates, resources, poetry, songs, and networking. This

provided an opportunity for participants to share knowledge, connect with others in a less formal way, and engage creatively with the topics important to them.



Buck Creek workshop (Climate Resilience Consulting).

Outcomes

The ERB workshops helped build a deeper collective understanding of pressing vulnerabilities, community strengths, and equitable resilience amongst the workshop participants in each of the three subwatershed communities. This allowed LGROW to gather community input for watershed plan strategies and action items as well as unearth opportunities to create greater equity through both the development of the Watershed Resilience Action Plan and its eventual implementation, especially for the key subwatersheds

of Indian Mill Creek, Mill Creek, Plaster Creek, and Buck Creek.

Workshop participants identified potential equity-driven actions for individuals, institutions, businesses, and governments. Across the three workshops, participants suggested

- Improving physical accessibility to ensure that more people in the watershed benefit from its natural areas
- Involving youth in active ways to increase their engagement, knowledge, and skills
- Communicating information that relates to community needs through trusted community information providers
- Decreasing extreme heat impacts on people, communities, and ecosystems that are disproportionately impacted
- Prioritizing resources to populations particularly impacted by hazards, disasters, and threats

With greater understanding of local needs and community input of resilience strategies and actions that more closely meet these needs, GVMC and LGROW are well on their way to building more equitable resilience in West Michigan after engaging in this ERB process. As of the writing of this case study in March 2023, LGROW is working to finalize their Action Plan for release in the near future.

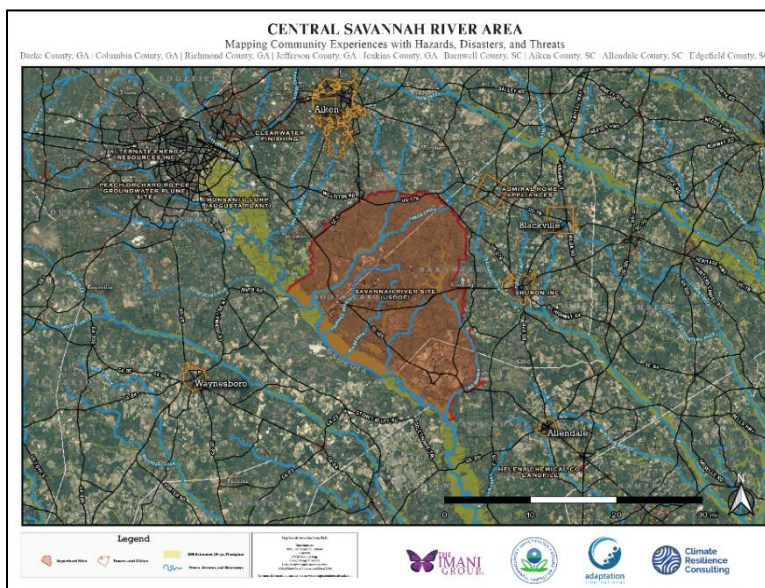


Buck Creek workshop (Climate Resilience Consulting).

EPA Region 4: Barnwell, South Carolina, and Waynesboro, Georgia

Community Background

The Imani Group is a faith-based, grassroots organization that collaborates with community, state, and federal partners across Georgia and South Carolina to address long-standing Environmental Justice issues in the predominately Black, rural, and historically underserved communities of Central Savannah River Area (CSRA). The CSRA is named after the 300 square mile [Savannah River Site](#) (SRS), a multi-reactor nuclear research and weapon fabrication plant and [superfund site](#) spanning South Carolina's Aiken and Barnwell counties that is contaminated by 13 tons of plutonium and other radiochemical substance dating back to the Cold War.



Map of the Central Savannah River Area & Savannah River Site (Adaptation International).

The CSRA watershed and communities therein have not only been exposed to toxic substances during the tenure of the plant's operation but are also exposed to harmful pollutants that continue to be emitted from hundreds of [environmental pollution sources](#) along the heavily industrialized Savannah River corridor. Impacts to communities in this region are further exacerbated by historical underinvestment in water, electric, and broadband infrastructure as well as multiple weather and climate hazards.

The Imani Group and EPA Region 4 have longstanding relationships with faith-based communities, community leaders, and emergency management professionals. Both groups have engaged with environmental justice work in the CSRA for years. This includes efforts to build a cadre of more than 60 local faith-based and community leaders trained on methods to build equitable climate resilience and emergency management in their communities. To do this, Imani and EPA convened members of two communities adjacent to each other across the Savannah River: Barnwell, South Carolina and Waynesboro, Georgia.

Equitable Resilience Builder (ERB) Workshops Goals

As historically underserved communities, Barnwell, Waynesboro, and the surrounding towns and counties recognize that critical resources are often first directed towards larger urban centers, affluent groups, and business interests during and after a natural disaster. Subsequently, local communities also recognize that they must take deliberate steps to ensure their own safety until help finally reaches them. The Imani Group and EPA chose to pilot the ERB process in Barnwell and Waynesboro as a prototype for building a CSRA-wide, faith-based emergency preparedness and climate resilience movement that addresses these disparities.



Waynesboro workshop (Adaptation International).

Specifically, the workshops aimed to use the ERB tool to support the following goals:

1. Create space and structure for community members to learn from each other, identify a shared understanding of key hazards and vulnerabilities of concern, and examine their present and potential future impacts on congregations and communities;
2. Provide training on a suite of tools and methods related to building equitable climate resilience as well as FEMA emergency preparedness and management techniques;
3. Identify local climate hazards and issues of concern, resilience-building strategies, and outline implementation details; and
4. Help build a cadre faith-based leaders, congregations, and residents who can serve as climate resilience and emergency preparedness leaders in their communities.

After completing both workshops, participants were awarded stipends and certificates in recognition for the contribution of time and expertise.

ERB Activities

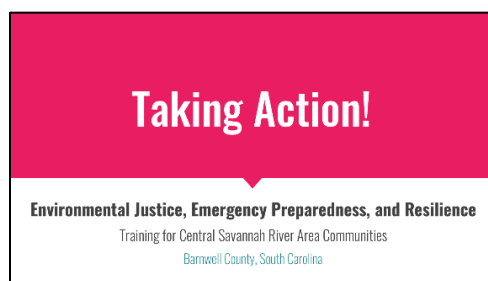
The two-part training workshop series focused on two sections of the ERB tool and took place in June and July of 2022. The Imani Group invited 60 participants to the workshop series using a mix of print and electronic communications, local radio announcements, community events, and direct outreach to individual contacts. Through monthly meetings, the larger project planning team (including EPA Region 4 staff, members of the EPA Office of Research and Development, Adaptation International, and Climate Resilience Consulting) reviewed the ERB tool and selected activities that were most relevant to community needs. They also determined how to weave additional disaster planning and preparedness materials into the ERB process as a prominent component of the work.

The first training workshop employed three activities from the ERB section on “Assess” that focused on storytelling, information sharing, and identifying key hazards, disasters, and threats that are affecting the community. Through storytelling, participants discussed the climate and extreme weather challenges that are and will continue to affect the region as well as the community members who are most at risk before, during, and after a disaster. In the following exercise, participants worked together to map the impacts of the hazards, disasters, and threats (or issues of concern) they identified during their stories. Interactive mapping played a critical role in supporting storytelling and collecting local knowledge of vulnerabilities and assets in the communities. Detailed maps of focal communities added value to this peer-to-peer knowledge exchange – participants explicitly expressed that they had not seen their community represented in that level of detail. In the final activity of this first workshop, participants discussed the groups of community members that have been (and are likely to be) impacted by both climate and man-made issues of concern.



Mapping activity at the Waynesboro workshop (Adaptation International).

In addition to the ERB materials, the first workshop included the presentation of relevant findings from the [NOAA Climate Explorer](#), [FEMA Hazard Risk Index](#), [Neighborhoods at Risk](#), and [CDC Atlas of Heart Disease and Stroke](#) for each community. Participants were asked to reflect on this information, including whether the information aligned with their lived experiences with hazards, disasters, and threats. In this and all ERB activities, facilitators took great care to emphasize that workshop participants are the local experts on climate and man-made hazards, vulnerabilities, and resilience strategies. Participants left with a group of federal and locally relevant resources made available through both a QR code-accessible webpage and print.



Barnwell workshop post-workshop summary (Adaptation International).

The second workshop focused on two activities from the ERB section “Strategizing Action.” These activities focused on equity and collaboratively identifying resilience building strategies that address participants' top concerns. Participants identified topic areas including cyber threats and broadband access, gun violence and mental health, drug use and overdoses, pollution, water quality, transportation, and homelessness. Participants used breakout group discussions to brainstorm and refine actions to address

these issues and build resilience. For each action, the group identified stakeholders that would need to be involved, the ideal audience for the action, and the tactics and resources needed to be successful.

The second workshop additionally included the activity “Environmental Justice Considerations During Emergency Responses,” in which participants completed the tabletop exercise “Survival” by J. Kyle Bryant (EPA Region 4). In this exercise, participants were immersed in a survival scenario and then reflected on their experience, exploring group power dynamics in emergency response situations. Participants discussed how to navigate future emergency response scenarios in their community and advocate for equitable outcomes. The themes of this exercise (power, collective decision making, equity, and environmental justice) were reiterated throughout ERB exercises.

Outcomes

Piloting the ERB process in these workshops created space for participants to come together and discuss how environmental and social-economic issues enhance the risk for portions of their communities and what they can do together to reduce that risk. Participants left with stronger peer-to-peer relationships; new data and information; a shared set of actions to address concerns; and individual commitments to advance emergency preparedness, resilience, and environmental justice in their communities. The process also yielded immediate results, including a new partnership launched by two participants shortly after the workshop series to address recurring violence and environmental justice issues in Barnwell County.

The ERB process helped to build practical skills and knowledge, with the following results:

1. Community-led identification of over 30 local climate and man-made issues of concern, and over 40 potential resilience strategies and initiatives that can be implemented locally and in the wider CSRA;
2. Outlines of comprehensive action plans for eight community-identified hazards, disasters, and threats;
3. QR code-accessible repository of complementary climate resilience tools, emergency preparedness techniques, and state and local resources; and
4. A network of over 60 CSRA faith community members trained on methods to build equitable climate resilience in their congregations, counties, and the broader region.

At the conclusion of the pilot, the Imani Group, EPA Region 4 staff, and the rest of the project team were pleased with these outcomes. The local members of the team intend to seek other funding opportunities to replicate this process in other Savannah River corridor communities.



Barnwell workshop (Adaptation International).

EPA Region 2: Buffalo, New York

Community Background

Buffalo, New York has a complex history of environmental degradation and social inequality that has had a profound impact on the city and its residents. Having developed as a major industrial center, factories producing steel, chemicals, and other products polluted the air and water, leading to high rates of respiratory disease and other health problems. At the same time, Buffalo was highly segregated, with African American and immigrant communities often living in crowded and unhealthy living conditions. As industry left the city, Buffalo faced a period of both economic decline and further environmental degradation, as abandoned factories and brownfields became contaminated with hazardous waste. Many of these sites were located in low-income communities, exacerbating existing social inequalities.

Today, Buffalo continues to face environmental and social challenges. The city ranks among the worst in the country for air pollution, and rates of childhood asthma are high. Poverty and segregation persist, with many low-income communities living in close proximity to environmental hazards. The COVID-19 pandemic had a significant impact on Buffalo, in particular, exacerbating existing inequalities, as marginalized communities were disproportionately affected due to limited access to healthcare, crowded living conditions, and higher rates of underlying health conditions.

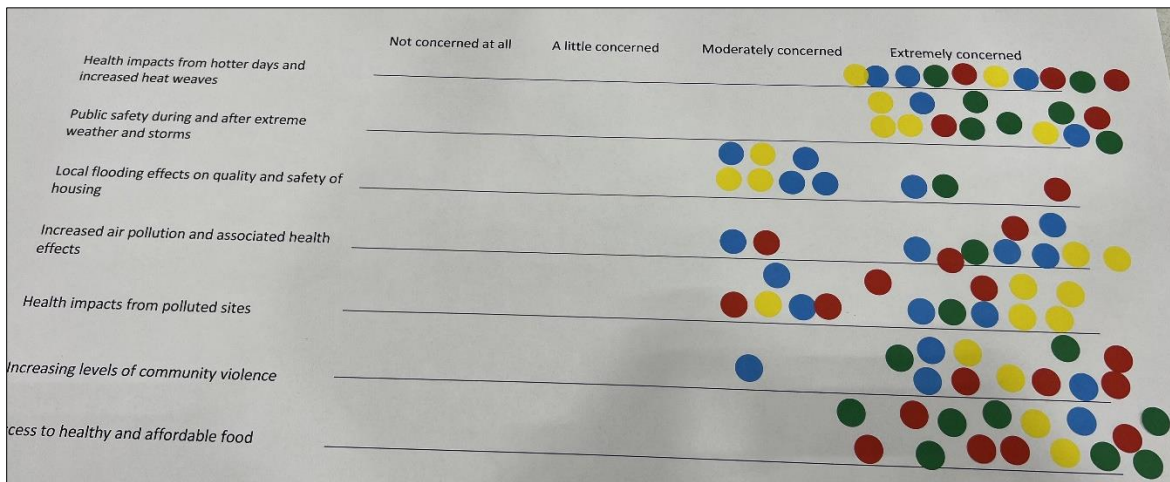
A small group of State and Federal agency representatives—from NYS DOS, EPA, and FEMA, formed the ad hoc COVID/Smart Growth/Brownfields Equitable Resiliency Partnership to address resiliency post-COVID in a multi-dimensional, holistic, place-based manner, focusing on Buffalo as a pilot community. The Equitable Resiliency Partnership decided to focus its efforts on Buffalo, NY for several reasons including governmental efforts during COVID to address health care disparities in communities of color, a strong advocacy and community-based organization (CBO) network, and the state and federal government's successful brownfield redevelopment programs.

Equitable Resilience Builder (ERB) Workshops Goals

The goals for the Buffalo workshops transformed throughout the project as relationships with community-based organizations deepened. Initially, the Equitable Resiliency Partnership/Region 2 set out to inform a broader suite of potential activities focusing on brownfield redevelopment, smart growth, green job development, food security, climate change adaptation and disaster mitigation and pandemic recovery. The intended goals of the workshops aimed to:

- Establish a deeper understanding of the economic, social, and health impacts of COVID-19, as well as climate hazards, for community members that have experienced economic and environmental distress
- Build local capacity for recovery and resilience efforts based on the needs of impacted communities

- Maximize and leverage access to existing public and private resources that can support ongoing community efforts



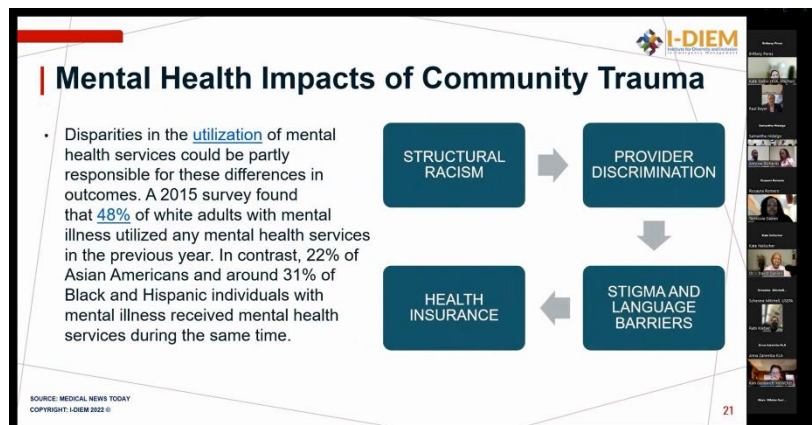
Community concern activity from Buffalo workshop (Kim Lundgren Associates).

Due to a myriad of factors—from the lack of capacity of CBOs coming out of COVID-19 to the tragic, racially-driven mass shooting at Tops Friendly Market in April 2022 to the series of deadly winter storms in Winter of 2022—the Buffalo workshops were postponed and it became clear that trauma-informed approach was needed.

Region 2 decided to adjust the project goals to reflect what was most representative of community needs. The Project Team aimed to take a step back to listen to what residents are experiencing, without an objective for a specific outcome.

ERB Activities

In response to the longstanding trauma facing the Buffalo community, EPA Region Two held a virtual Trauma-Informed Engagement Training in November 2022 as both a learning opportunity for the project team and invited CBOs and community partners. The personal trauma caused by the effects of disasters and other threats can be life-changing and long-lasting. When these events occur, marginalized and underserved communities often face disproportionate impacts, significant delays in response, and longer times for recovery. The Institute for Diversity and Inclusion in Emergency Management (I-DIEM) facilitated the training to help establish a



Trauma-informed engagement training (Kim Lundgren Associates).

foundational knowledge of diversity, equity, inclusion, and cultural competence, demonstrate how to apply trauma-informed approaches to engaging with communities with histories of trauma, and to reflect on how to operationalize trauma-informed care in Buffalo.



Buffalo workshop (Kim Lundgren Associates).

After the Trauma-Informed Engagement Training, Region 2 held a smaller meeting with CBOs and local government partners to understand existing community needs and priorities. CBOs expressed that the Buffalo community has already had many opportunities to share their stories and was eager to see action. Additionally, with the influx of funding coming into the Buffalo community, they highlighted the need for

coordination and transparency to ensure the community's needs are met. It is not uncommon after a disaster for an influx of funding to be funneled into a region and get caught in bottlenecks. Region 2 identified the need for stronger coordination and proposed to hold a Resource Planning Workshop to identify the financial and technical resources available and committed to Buffalo for recovery and resilience, map the issues and CBOs being resources through these funds, and discuss how to fill gaps and collaborate on future and current efforts.

The Resource Planning Workshop was held in April 2023 at the Delavan Grinder Community Center in East Buffalo. Together, workshop participants aimed to identify financial and technical resources available for priority needs in Buffalo and build connections to enable communication and collaboration around new opportunities.



Buffalo workshop (Kim Lundgren Associates).

Outcomes

The training and workshop in Buffalo helped build a deeper understanding of the root causes of vulnerabilities in Buffalo. The project created an opportunity to bring CBOs together, with local and regional government agencies, to collaborate and uncover existing challenges. Throughout the process, CBOs and government agencies identified existing challenges related to transparency and coordination that make it difficult to provide adequate resources and care to the community, including:

- There is a need for added transparency with government and community organization spending;
- There is a need to equip organizations with the accurate knowledge they need to use these funds;
- Investment and philanthropic efforts are not always connected and there needs to be more coordination with community engagement;
- There is a lack of coordination, and in some cases competition, amongst community-based organizations in Buffalo, which can lead to siloed projects and lost opportunities to leverage shared resources;
- There are significant gaps in communication, strategy, and resources between regional and local government and grassroots and community-based organizations; and
- Financial and technical resources are not necessarily coordinated, can be burdensome to apply for, and are not accessible to all organizations, particularly those that are less connected or with lower capacity.

During the Resource Planning Workshop, participants identify potential opportunities to overcome some of Buffalo's greatest challenges, including:

- Establishing a community-based organization collaborative network to enhance and strengthen the capacity to work together to provide services to the Buffalo community.
- Transforming ~10 acres to develop a community eco-center for the east side of Buffalo
- Establishing a training program to build the capacity of Buffalo-based Black developers
- Utilizing a system like 211 to increase transparency around resources, assets, and non-profit referral process to support community-based organizations in servicing community.
- Leveraging the existing Non-Profit Support Group to provide assistance to community organizations to leverage existing resources