



EXPLORING CLIMATE CHANGE RESILIENCE STRATEGIES IN RHODE ISLAND URBAN UNDER-SERVED COMMUNITIES

ENVIRONMENT COUNCIL OF RHODE ISLAND

OUR OPPORTUNITY

The Environment Council of Rhode Island (ECRI), concerned about the frequent neglect of low-income communities and communities of color in many key stakeholder processes, especially as those processes relate to climate change mitigation and adaptation planning, sought to fill that potential void in the work of the Rhode Island Climate Change Commission by preparing this report.

Climate change poses a real threat to all of us here in Rhode Island, as we face major risks that include rising temperatures, more extreme weather-related events, complications from increased precipitation, sea-level rise, and ocean acidification. Undoubtedly, our coastal communities are under particular threat. Nonetheless, our urban centers are under a threat that is equal to the threat facing our coasts, as they include some of our most vulnerable populations.

Our urban communities have far scarcer resources to adapt and protect themselves from heat emergencies and extreme weather.

Additionally, the challenges in urban centers present unique complexities. Outdated infrastructure, vacant lots, significant areas of impervious cover (Providence is 37 % impervious), and fewer green spaces further complicate flooding, and contribute to hotter temperatures in the city than surrounding rural areas (the “heat island effect”). Furthermore, a substantial portion of urban populations are immigrants who are still learning what it means to live and work here. This means diversity in lifestyles and languages. Most importantly, many who live in the city have limited incomes and are appropriately more focused on the short-term problems facing them and their families, such as work, childcare, meals, and bills.

Recognizing the complexities of adapting in urban settings is critical to providing us with the foresight to fully engage our urban communities. This level of engagement requires the cross-sector attention and collaboration of community organizations, municipal and state governments, faith, businesses, and academia. We need to work hands-on with residents to



Volunteers from the community work together to plant trees at Bucklin Park. Photo: Michael Roles.

understand their needs and issues if we are to create workable urban adaptation strategies that will be embraced by diverse urban populations.

This project worked to begin those conversations, sensitive to the communities’ priorities, which generally do not include climate change. Working in concert with many of the groups that are already addressing community issues in Providence, ECRI brought together a project team that includes the Environmental Justice League of RI (EJ League), Direct Action for Rights and Equality, English for Action, Friends of Bucklin Park, the African Alliance of Rhode Island, and the Rhode Island Student Climate Coalition. While sharing adaptation strategies with neighbors through community work projects, the project team simultaneously worked on outreach relative to climate change impacts and adaptation efforts. By doing so, we were able to see and hear what neighbors experience, and develop recommendations, on their behalf, that would support their efforts to adapt to climate change impacts.

OUR PROCESS

The project team used an approach that comprised of the following elements.

We compiled information on climate change and developed a method to relay the information in a way that would resonate with residents. Using a principle to “say it so that they can see it,” we related climate change impacts to real events happening in neighborhoods. Words like “climate change” and “adaptation” were rarely used. Instead, we emphasized the importance of empowering each other to build self-reliant communities that can adapt to climate change and its impacts. The team recognized and talked to the community about the connections between socio-economic inequities and climate change.

As a focal point of our outreach, we organized a forum—for students from English for Action—with the goal of absorbing feedback from the students on how they see impacts affecting their livelihoods, how they see themselves adapting, and what kind of support they need. We gave presentations on climate change one day ahead of time so forum participants came to the session with a basic understanding of the many current and future manifestations of climate change in their community. At the forum, they were divided into seven carefully considered focus groups. These focus groups were decided upon based on what residents see every day, and the issues that they become passionate about:

Food; Green Space; Waste; Toxics; Transportation; Energy; Disaster Preparedness. All of these focus groups were facilitated by a person from an organization that has knowledge in their respective subjects: Environmental Justice League of RI; Toxic Soil Busters; Childhood Lead Action Project; English for Action; RI Student Climate Coalition; Sierra Club RI; Farm Fresh RI. About 55 attendees participated, representing a breadth of neighborhoods from Providence, Central Falls, Pawtucket, and Lincoln. All of the programming—including the pre-forum presentations—was translated in both English and Spanish. The feedback that came out of the forum was synthesized and translated into the form of many of the recommendations in the following section.

The other half of this project included community projects revolving around building community by preparing neighbors. The Environmental Justice League of RI partnered with Green Pathways to

organize monthly community projects focused on weatherization. During these projects, participants were taught basic techniques to make homes more energy efficient while helping a neighbor with hands-on work. Friends of Bucklin Park and the RI Student Climate Coalition worked with neighbors in South Elmwood and Trees 2020 to plant 14 trees in Bucklin Park. While learning about the proper way to plant trees, project leaders also discussed the importance of trees as a climate adaptation strategy, providing tree shade in the city. In the coming months, near this project's close, we hope to help expand a community garden that will support efforts for greater food security.

Limited time and money were ongoing project challenges. With a \$5,000 budget, dozens of hours were volunteered, work projects were limited, and there was only enough work time to organize logistics for one large-scale forum. In-depth work was only done in the South Elmwood and Olneyville areas of Providence. While this report is meant to capture the needs of urban communities around Rhode Island, other neighborhoods were only represented through our large forum, and community weatherizations. Another challenge was introducing a topic (climate change and adaptation) that most community participants had never before considered. After demonstrating its importance, the path forward became clearer.



Tree planting in Bucklin Park engages community volunteers of all ages. Photo: Michael Roles.

Recommendations To The R.I. Climate Change Commission Regarding Support For Urban Resilience To Climate Change

EDUCATION AND OUTREACH

Educate urban communities about climate change and tools for adaptation: Greatly enhance and further fund multilingual education and outreach for children and families using multilingual resources and materials about cooling centers, emergency preparedness and response, planting trees, weatherization, healthy local food, waste clean-up, composting, and recycling.

There is a disconnect between knowledge about climate change, and how the issue relates to our daily lives and choices throughout low-income communities and communities of color. Most are not familiar with the term. But many see the effects in their neighborhoods and home countries, as many residents have experienced or witnessed displacement. Additionally, English is a second language, and sometimes difficult to understand, for many.

Local governments, in concert with community leaders, must get out into the communities and provide multilingual support and programs regarding all of the above mentioned, and demonstrate how community resilience greatly enhances daily living. It's imperative that outreach on existing programs is more present. More readily available information on existing programs and resilience strategies needs to be provided. All further initiatives will help communities become safer, healthier, and better prepared.

Preparing for a community forum, the partners in this project had to brief the participants in presentations about climate change one day ahead of time, so that participants could grasp the issue before talking about it. All presentations, including the forum, were provided in English and Spanish.

Most participants did not know what a cooling center is or where one is located; most did not know what to do in an emergency or disaster, and all felt unprepared; most were unaware of the benefits of trees and the planting programs that are available, such as the Providence Neighborhood Planting Programs; most were unaware that weatherizing is available, although not adequately; most do not know where the closest community garden is – in fact, almost all who came from a different country had a garden in their backyard in their country of origin, but do not have one here.

Most community members are more concerned about how they'll put dinner on the table, how they'll get their kids to and from school, and how they'll stay in their homes.

INFRASTRUCTURE

Make certain that urban communities have infrastructure that keeps them safe: Ensure that comprehensive plans and hazard mitigation plans adequately address infrastructure needs in dense communities that protect urban, low-income families and residents of color from future climate change risks including increased flooding, sea level rise and other storm hazards. Provide proper upgrades and maintenance to access roads, evacuation routes, bridges, storm drains, and public buildings within and near dense and low income communities to aid emergency preparedness and response. Promote the installation of stormwater infiltration systems.

It's essential that localities pay close attention to specific neighborhood streets where water frequently rises above two inches for several hours during something as frequent as a severe thunderstorm. Identifying the root causes of these effects is crucial in order to make appropriate infrastructure improvements as a vital necessity to protecting residents and their properties. Additionally, redundancy is key when planning evacuation routes. We need flexibility and a comprehensive strategy for backup routes when primary routes become suddenly unavailable. Dense communities run the risk of becoming backed up or blocked and chaotic.

During informal conversations about this project, at least five neighbors from the Olneyville and Elmwood neighborhoods of Providence recalled moments when their streets and surrounding areas were flooding to a point where using them would be hazardous to safety. All remembered the 2010 March floods as moments when they felt "confused" as to what to do and where to go; three felt "cornered" in their homes by the time it was too late to evacuate. Two remembered the microburst that happened in June of 2011 when their streets were "like river rapids" for several hours; specific streets where flowing water was witnessed during the microburst include Vineyard and Hawthorne Streets in Providence. As a result of the microburst, fallen trees had blocked a multitude of important routes for daily living – another example of a time when residents said they felt "cornered" or "trapped".

GREEN SPACE AND PERMEABLE SURFACES

Remove pavement and increase greenery where possible: Promote green space, permeable surfaces, and trees in all planning for future land use and roads in urban centers. Depave vacant lots whenever possible.

Fewer pavements mean less flooding and fewer overflows in storm drains. More green space and trees result in cooler temperatures and less extreme effect from a heat island.

Many residents have acknowledged that flooding has been occurring more frequently on their streets over the last few years. Neighbors that we worked with said that they do not own vehicles and walk several blocks to do errands when the bus cannot accommodate them, exposing them to elements like extreme heat. Upon learning about the public health and quality of life benefits of urban greenery, community members became excited and passionate about this issue. Nobody was familiar with available tree-planting programs.



Merino Park from the end of the Footbridge. The river continued to rise after this photograph was taken on March 30, 2010 and later that day the eastbound side of Route 6 east was closed due to the water that was already starting to block the highway. Photograph by: Bruce G. Hooke.

FOOD SECURITY AND ACCESS

Support access to local food: Promote urban and regional agriculture by making unused public land (including school grounds, city land, and park land) accessible for long-term use for personal, non-profit, and micro-enterprise organic and sustainable food production for consumption, prioritizing projects that are culturally appropriate, create green collar jobs for low-income residents, become hubs for youth development programs, and direct food produced to low-income communities through retail, food banks, and schools. Require and supply assistance in soil testing and remediation.

While Rhode Island communities have made significant gains in local healthy food production by means of community and urban agriculture, there are still many neighborhoods that do not have sufficient access. The growing emphasis on “culturally appropriate” gardening will help attract more urban residents to community gardens. We need to diversify our crops and use greenhouses and raised beds whenever possible. Community gardens are also brilliant prospective hubs for youth and community building programs, as well as potential incubators for green jobs and micro-enterprise for residents and young people struggling for income. Nevertheless, urban soil is very toxic and usually needs remediation.

Most of the neighbors that we worked with have roots in nations where the climate is very different, and, therefore, are used to using fruits and vegetables that do not grow in a typical Rhode Island community garden for their cooking. During our large forum, attendees were asked if they had a garden in their yard in their native country. 90% raised their hands. They were then asked if they grow fruits or vegetables at home here. Zero raised their hands.



Fresh fruit is an important part of a balanced diet. Photo: Jennifer Quigley-Harris

TOXICS

Proactively addresses toxic sites in the community to minimize the spread of toxic substances and waste during extreme weather events: Consider and implement a plan for clean-up of contaminated sites and polluted waterways where flooding could transfer toxic substances and other waste to nearby properties.

Community members were concerned about extreme rain and flooding washing contaminated sediments and toxics from industrial sites and brownfields through neighborhoods. While we recognize that efforts are on-going to address and remediate contaminated sites, climate change gives this work renewed urgency. We need a comprehensive, detailed plan for the systematic clean-up of waste, brownfields, urban ponds, rivers, and other contaminated sites.

Many neighbors were extremely passionate about the subject of waste, contaminants, and trash in and around their communities. Some were able to walk down the street and see items as large as televisions and computers strewn carelessly every few hundred feet or so. While we developed ideas on neighborhood-driven clean-up programs and solutions, they spoke in frustration about the need for the enforcement of anti-dumping laws. Further, many who live near brownfields and contaminated sites spoke of fear of the toxic substances from those sites leeching onto their properties and into their homes during floods, like the one in March of 2010.

Many toxic sites that residents speak of are located on, near, or in rivers and ponds. During flood phase, rivers that overflow into contaminated areas carry those contaminants and waste downstream into nearby communities. There are also a number of junkyards located along urban rivers.



Sewage bubbled out of manholes during the flood because the wastewater treatment facilities were filled beyond capacity. Photograph by: R.I. Department of Environmental Management.

COOLING CENTERS AND ADAPTATION FOR EXTREME HEAT EVENTS

Protect urban residents from extreme heat: Establish and improve access to cooling centers that have the ability to provide sanctuary and shelter during extreme heat. Improve the capacity of cooling centers in order to better accommodate large numbers; include adequate cooling systems. Implement a program that allows non-government entities who wish to partake in such a program—including churches, non-profits, and the private sector—to formally establish their facilities as cooling centers, in order to better accommodate large populations in extreme heat emergencies. Establish a plan that includes measures for developing a more stable electricity grid, or initiating more energy independent public buildings, in order to prevent blackouts during extreme heat. Support an increase in public transit routes leaving cities and transit accessibility during extreme heat for residents who wish to escape urban heat islands.

No climactic shift poses a greater threat to residents of urban centers, nor is more urgent to address, than that of extreme heat-related events. Data shows that extreme heat poses a particularly significant threat to low income communities and communities of color. Each year, we witness increases of average annual temperature and an increase in the number of days above ninety-Fahrenheit degrees. Urban centers consistently report the hottest temperatures, due to the effect of urban heat islands. Communities need to be properly prepared so that residents can adequately adapt to hotter days in order to prevent heat-related fatalities and health emergencies. Local governments need to examine all avenues to mitigate effects in order to protect populations, learning from such examples as the 1995 Chicago heat wave that resulted in more than 700 heat-related deaths over five days, or the 2003 European heat wave that resulted in more than 40,000 heat-related deaths.

Most residents are unaware of the definition of a cooling center, many walk several blocks in their daily lives, and many do not have the proper resources to keep their homes cool. On very hot days, many residents try to leave urban centers in favor of beaches and areas that are able to provide recreation under cooler circumstances. However, especially with reduced access to public transportation, many residents are experiencing full buses that are unable to accommodate more riders. Some of those prospective riders further wait outside for the next bus, while others are never able to leave the city. Some community centers and public buildings that would constitute as cooling centers are hotter inside than outside on a 90-degree day.

Community centers, libraries, schools, and other public buildings must have adequate cooling systems in order to be sufficiently prepared for ozone alert days, extreme heat, and heat waves. During extreme heat, communities must keep libraries and other public buildings open longer in order to provide shelter and sanctuary from the heat. Communities must do their part to get public buildings off the electricity grid as much as possible. Utilities and the State of Rhode Island must do their part to strengthen the electricity grid in preparation for high usage during extreme heat.

ENERGY

Promote energy efficiency: Improve the accessibility of energy efficiency programs for low-income residents, and allow tenants who receive LIHEAP assistance, live in affordable housing, and/or pay their own energy bills to make energy efficiency upgrades with greater autonomy from property owners/landlords. Promote policies that allow homes which are currently deemed affordable or low-income housing, following energy efficiency upgrades, to remain deemed low-income or affordable housing. Require that landlords become more responsive to requests from tenants for weatherizations and energy-efficiency upgrades. Support and promote programs that provide training and jobs in energy efficiency and sustainability to low-income residents and residents of color. Promote energy efficiency upgrades with landlords/property owners in urban centers.

Urban residents are very interested in getting their homes weatherized. Low-income residents need to stay warm in the winter and cool in the summer while cutting energy costs wherever possible. However, most urban residents are not property owners and therefore live in apartments as tenants. The conundrum becomes apparent when a willing member of the community seeks permission from the owner of the property for energy efficiency upgrades, and the owner either declines (reasons include liability and unforeseen costs), or is difficult to reach. These cases include times when the tenants are paying the utility bills.

This is an obstacle that was reached multiple times during Environmental Justice League's community weatherization program. Additionally, throughout communities in other states that provide weatherization to low-income households, residents have witnessed those households lose their designation of affordable housing following energy efficiency upgrades.



A day at the beach is a great way to beat the heat in Rhode Island. Photo: Thomas Ardito.

DISPLACEMENT

Severe storms and rising sea level has already forced some Rhode Islanders out of their homes. Future changes will exacerbate this problem. The floods of March 2010 displaced residents—some were forced to leave their homes and were able to return when flood damage was repaired. Others were forced to permanently abandon their homes. In southern Rhode Island, beachfront home owners at Matunuck are grappling with coastal erosion, likely exacerbated by sea level rise, and the possible loss of their homes.

As we look to the future, we also recognize that Rhode Island, particularly the urban centers, will attract refugees from areas of the world hardest hit by climate impacts. The United Nations projects migration of peoples in need of vital resources to become a major effect of climate change. Rhode Island needs to begin examining strategies to prepare our State and make it a safe place for people displaced by climate change.

CONCLUSION

The Environment Council of Rhode Island commends state leaders in the legislature and government for the many ongoing planning and implementation initiatives designed to address adaptation to climate changes. The Ocean State's vulnerabilities are daunting. Rhode Island is fortunate to have a collection of excellent non-governmental organizations focused on the challenges of urban underserved communities. These organizations are both a source of information and capacity and can assist the state with the urban adaptation strategies described in this report.



Community volunteers learn about whetherization. Photo: Environmental Justice League of R.I.

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