



Fall 2019

# The City of Providence's **CLIMATE JUSTICE PLAN**

Creating an equitable, low-carbon, and climate resilient future.



**SUSTAINPVD**

CITY OF PROVIDENCE | MAYOR JORGE O. ELORZA



## Acknowledgements

### City of Providence

**Alex Ellis**, Planner  
**Angel Subervi**, Small Business Coordinator  
**Ania Szemiot**, Creative Manager  
**Ben Smith**, Deputy Director of Communications  
**Bonnie Nickerson**, Director of Planning and Development  
**Christopher Sarli**, Sustainability Intern  
**Diana Perdomo**, Chief of Policy  
**Dino Larson**, Energy Manager, Office of Sustainability  
**Ellen Cynar**, Director of Healthy Communities Office  
**Elyena de Goguel**, Health and Sustainability Program Associate  
**Emily Crowell**, Chief of Communications  
**Emily Freedman**, Associate Director of Community Development  
**Emily Snow**, Graphic Design  
**Gina Rodríguez-Drix**, Cultural Affairs Manager, Department of Art, Culture + Tourism  
**Jenn Steinfeld**, Director of Strategic Partnerships and Economic Advancement  
**Jillian Scott**, Policy Associate  
**Leah Bamberger**, Director of Sustainability  
**Leonela Felix**, Deputy Director of Policy  
**Martina Haggerty**, Director of Special Projects, Department of Planning and Development  
**Michael Borg**, Director of Public Property  
**Nicole Pollock**, Chief of Staff  
**Rachel Newman-Greene**, Deputy Director, Healthy Communities Office  
**Sabrina Solares-Hand**, Director of Operations  
**Wendy Nilsson**, Superintendent of Parks Department

#### Consultant Team Led by:

**Andrea Atkinson**, Executive Director, One Square World

#### With Support From:

**Adeola Oredola**, Principal, Adeola Oredola Consulting  
**Dania Flores**, Principal, Access Cooperative  
**Emily Lewis**, Director, Climate and Energy Analysis Center, Acadia Center

**Erika Niedowski**, Rhode Island Director, Acadia Center  
**Julian Rodríguez-Drix**, Asthma Program Manager, RI Department of Health  
**Shalini Gupta**, Principal, SGupta Consulting  
**Varun Kumar**, Policy Data Analyst, Climate and Energy Analysis Center, Acadia Center  
**Xiomara Paulino**, Principal, Access Cooperative

### Members of the Racial and Environmental Justice Committee and Community Leaders

#### Project Team Members:

Pol Tavares  
Vatic Kuumba  
Monica Huertas

#### REJC Committee Members:

Terri Wright  
Lucy Rios  
Mike Araujo  
Jesus Holguin  
Anjel Newmann

#### Community Leaders:

David Jennings  
Yania Peralta  
Ahmed Sesay  
Joel Rosario Tapia (Tuneygua Taino Cay)  
Priscilla De La Cruz

### Future Story Readers

Kalyne Coleman  
Magnolia Perez  
Octavia Chavez-Richmond  
Orlando Hernández  
María Gabriela Rosado González  
Marcel Mascaro  
Jihan Haddad

**This project is supported by a grant from the Barr Foundation.**



## Letter from the Mayor

Friends,

On Earth Day 2016, I signed an Executive Order that set a goal for Providence to become a **carbon neutral** city by 2050. With leadership from the Racial and Environmental Justice Committee (REJC), this plan will not only set us on a path to meet this goal, but it will do so in a way that ensures no one is excluded from the benefits of a healthier, thriving community. It is with great pleasure that I introduce you to Providence's Climate Justice Plan.

Despite being one of the three pillars of sustainability, equity is often an afterthought when it comes to climate action planning. In creating this plan, we chose to lead with equity and partnered with those who are most impacted by the climate crisis and other environmental injustices. Frontline community members were the primary decision-makers in the process, which helped shift power to those who have been historically marginalized. The REJC co-designed and led the engagement process, prioritizing key concerns that are often not considered when thinking about climate solutions. They raised important issues, like making sure climate action doesn't lead to **displacement**, and that we prioritize reducing carbon **emissions** that harm Providence's most vulnerable populations.

The resulting vision set forth by this plan, and the steps it lays out to get there, are transformative. Providence has long been a leader in Rhode Island on climate action. We are the only municipality in the state that has an Office of Sustainability. We were the first municipality to switch all of its street lights to LEDs. We are part of the largest solar farm in the state, generating 23 MW of clean energy to power roughly 70% of our municipal buildings. We know that there is much more we must do to reach our climate goals and create a healthier, more equitable city. This plan puts us at the leading edge of municipalities across the country who are tackling climate justice and sustainability.

I'd like to thank everyone, especially the REJC, for crafting such a bold and important plan. I'd also like to thank in advance all those who read this plan and use it to guide their decision-making. Whether you're a renter, student, small business-owner, commuter, artist, activist, CEO or anything in between, there's a role for you and we need your help. Implementing this plan will not be simple or easy. It will require sacrifices for the greater good of our planet and our society and we need everyone to be a part of the solution.

**Mayor Jorge O. Elorza**  
City of Providence






## Letter from the Racial and Environmental Justice Committee

To You,

We have known for generations that the way our dominant culture lives is out of alignment with nature. Our air is polluted, and our land is poisoned. The causes for our concerns are many and varied but are all rooted in an extractive relationship to the earth and its vital resources. We, the Racial & Environmental Justice Committee (REJC) put forward these Climate Justice Policies in an effort to remedy our relationship to the land, air, and water.

We've developed these policies by engaging our communities that live on the frontlines of this extractive relationship. We are the communities that have historically dealt with the pollution, the waste, and toxicity of our white male supremacist & capitalist society. We put forward this vision for a different future. A future that acknowledges the harm of the past, including the fact that we are on stolen indigenous land, and that country we built, was on the backs of enslaved people. We put forward a vision of a future in which we all can come together to collaborate and co-create solutions that benefit all of us.

The REJC commends the City of Providence for taking the first steps to shift decision-making to communities who are most affected by our climate and environmental crisis. We ask the City and other allies to continue to stay accountable to and courageous for those most affected. Continue to create fuller understanding and commitment to **deep democracy** and collaborative governance.

We've created these policies and future stories by asking our community about their relationship to the city. How do we stay warm? How do we stay cool? How do we get around? What in our neighborhood is making us sick? In asking these questions and understanding the environment affecting these basic elements of life, we created visions for a better Providence. What does it mean for residents to feel secure in their homes? For us to feel connected to and supported by our environment? We dared to dream and from our dreaming we've created worlds for you to explore and help us create.

We look forward to working with you,  
The Racial Environmental Justice Committee



REJC Process. Photo Credit: Racial and Environmental Justice Committee.



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# INTRODUCTION



## Introduction

### The Challenge

In 1790 Moses Brown and Samuel Slater opened the first water-powered cotton-spinning factory in the United States in Pawtucket, Rhode Island, thus beginning a new age of industrialization. Immigrants flocked to Providence and other booming industrial towns. New technologies like the steam engine and the internal combustion engine fueled a rapid increase in the demand for coal, oil, and other fossil fuels, and global capitalism as we know it today was born. Industrialization dramatically altered landscapes and cultures as the profits of the mills and the local economy boomed.

Providence's economic success came at a human and environmental cost. It depended on cheap cotton from the south, which was grown and harvested by slave-labor; indigenous communities lost their access and rights to the land; and rivers were polluted with toxic chemicals as mills and other industries dumped untreated waste into them. More than 200 years later, our post-industrial landscape remains contaminated with lead that poisons 10 to 30% of our kindergarten-age children, depending on the neighborhood.<sup>1</sup>

We've learned a great deal since the early days of industrialization. We now know that dumping pollutants into our environment has serious health consequences. We also know that burning fossil fuels is causing our planet to warm to dangerous levels (see Figure 1) and emits **co-pollutants** that are disproportionately impacting the health of low-income communities of color in Providence. We have known this for decades, but thus far, the solutions being proposed and implemented do not match up with the change that is needed. Changing light bulbs is not going to solve the climate or environmental crisis. If we are to avoid catastrophic climate change, we must stop burning fossil fuels by 2050. This means we need to fundamentally transform the energy system that fuels our economy and we must reconnect with the natural systems that sustain us.

Figure 1

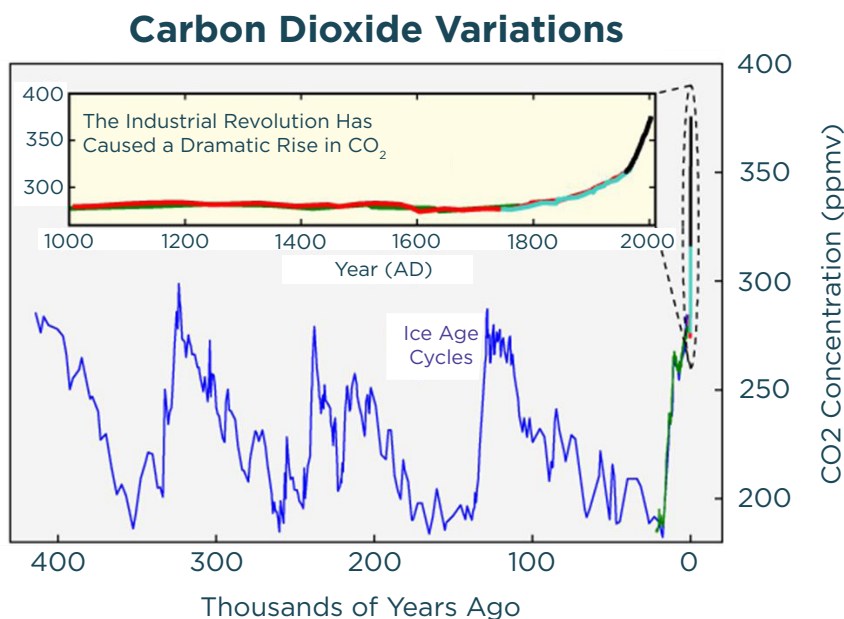


Figure 1. This figure shows the variations in concentration of carbon dioxide (CO<sub>2</sub>) in the atmosphere during the last 400 thousand years. Throughout most of the record, the largest changes can be related to glacial/interglacial cycles.

Since the Industrial Revolution began around 1900, the burning of fossil fuels has caused a dramatic increase of CO<sub>2</sub> in the atmosphere, reaching levels unprecedented in the last 400 thousand years.

Source: Wikimedia Commons

<sup>1</sup> Rhode Island Department of Health, Lead Elimination Surveillance System



## The Opportunity

Mayor Jorge O. Elorza has set a goal for Providence to become **carbon neutral** by 2050 and has dedicated resources to support **frontline communities** to lead the charge. **Frontline communities** are closest to and most impacted by the issues. These communities are experiencing the impacts today. This is not an existential, long-term challenge; it is their daily survival.

When the most impacted are centered in a decision-making process, the resulting interventions and solutions are transformative. This plan, which was co-created by the Office of Sustainability and the Racial and Environmental Justice Committee (REJC), tackles climate change by addressing the root causes: structural racism, economic inequality, and our extractive economy.

This plan takes a systems-thinking and place-based approach to addressing climate change. Albeit daunting, this adds a layer of complexity that is critical to acknowledge and understand if we are to begin to solve the problem. The urgency of our social and environmental challenges require that we no longer work in silos.

Providence's vision for a low-carbon future is one where your race or zip code no longer determines your health or economic outcomes. Where decisions are made collectively to allow those who are most impacted to have the greatest say. Where land stewardship is valued over ownership. Where access to clean water and land is not just a luxury for the wealthy, but a fundamental human right. This plan will set a path for Providence, but it is up to the residents and businesses in the City to make sure that we take it.





**A note about language:** Many of the terms used in this document have historical and evolving meanings based on time, context, location, community and evolution of environmental policy. Such terms have been marked **in bold** and defined in the **Glossary** at the end of the report.





# Climate Action Milestones

**2004**

State adopts **Renewable Energy** Standard requiring 16% of electricity to be **renewable** by 2019.

**2007**

**Environmental Justice** League of Rhode Island forms.

**2009**

Regional **Greenhouse Gas** Initiative (RGGI) established to reduce **greenhouse gas emissions** from power plants across the Northeast via a cap and trade system.

**2008**

Greenprint Providence released.

**2006**

State establishes **energy efficiency utility** programs via the Comprehensive Energy Conservation, Efficiency and Affordability Act which requires electricity and natural gas **utility** companies to invest in all cost-effective **energy efficiency** before purchasing traditional energy supply.

**2011**

Office of Sustainability established.



2014

Sustainable Providence released.

State sets **GHG** reduction targets of 45% from 1990 levels by 2035 and 80% from 1990 levels by 2050 via the Resilient Rhode Island Act of 2014.

2012

Bicycle and Pedestrian Advisory Commission created.

2016

City releases first annual energy report, disclosing energy consumption of all municipal buildings.

Mayor Elorza commits Providence to become **carbon neutral** by 2050.

Providence launches first Solarize campaign.

Racial and **Environmental Justice** Committee forms.

**Renewable Energy** Standard updated to statewide target of 38.5% **renewable energy** by 2035.

2018

RePowerPVD program launched.

Bike share program launched.

Rhode Island becomes first state to sue big oil companies for climate damages.

2013

Fossil Free Rhode Island forms.

2015

City divests from "Filthy 15" fossil fuel companies.

Mayor Elorza joins Compact of Mayors, now the Global Covenant of Mayors.

2017

City releases first **greenhouse gas** inventory showing ~70% of **emissions** are coming from our buildings.

Office of Sustainability adopts REJC's "Just Providence Framework".

Providence selected to join City Energy Project.

All streetlights in Providence converted to LEDs.

Climate Action Rhode Island forms.

2019

Rhode Island youth assemble at State House to strike for climate action.

City connects to 23 MW solar farm to power municipal buildings.





# CLIMATE JUSTICE



## Climate Justice

Providence's climate justice plan seeks a just and equitable approach to transitioning the city away from fossil fuels. In Providence and around the world, people of color have contributed the least to the climate crisis yet they are disproportionately burdened by the polluting industries that are causing climate change and other environmental degradation.<sup>2</sup> They are also most exposed to the impacts of climate change, like extreme heat and flooding.

In Providence, there are many examples of these environmental injustices, or what is also known as **environmental racism**. Health outcomes for people of color in Providence are lower when compared to white people, due to structural racism and oppression. Neighborhoods near polluting industries and highways in Providence have the highest rates of poverty and non-white populations. These same low-income communities of color have the highest asthma rates and lead poisoning rates in the state (See Figure 6 and 7). They also have fewer trees compared to wealthier and whiter neighborhoods.

By focusing carbon reduction at the source in communities most affected by **co-pollutants** and in areas with more sensitive populations (ex. children, people with asthma), climate action not only addresses the global problem, but it also addresses health, racial and economic disparities.

## What is Carbon Pollution?

When we burn fossil fuels like coal, oil, and natural gas that are used to warm our homes and generate electricity, as well as gasoline and diesel, which are used in our cars, trains, trucks and other modes of transportation, **greenhouse gas emissions (GHGs)** or climate pollution is released into the air. **GHGs** get their name because they alter our atmosphere, resulting in more of the sun's warmth getting trapped in it. This is just like your car sitting in the sun on a hot day.

While climate pollution is a global problem, it is also locally harmful to human health because it releases "**co-pollutants**," such as **nitrogen oxide (NOx)**, Sulphur dioxide (SO<sub>2</sub>), **particulate matter (PM)**, carbon monoxide (CO), a variety of **Volatile Organic Compounds (VOCs)** and other hazardous air pollutants. Direct **emissions** from power plants, buildings, and transportation release these harmful air pollutants that are linked to a variety of health impacts including asthma, chronic obstructive pulmonary disease (COPD), lung cancer, cardiovascular (heart) disease, preterm birth and low-birthweight babies, and childhood development including ADHD and reduced IQ.

<sup>2</sup> Tessum, Christopher W., Joshua S. Apte, Andrew L. Goodkind, Nicholas Z. Muller, Kimberley A. Mullins, David A. Paoletta, Stephen Polasky, Nathaniel P. Springer, Sumil K. Thakrar, Julian D. Marshall, Jason D. Hill. Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure. Proceedings of the National Academy of Sciences Mar 2019.



## Climate Pollution in Providence

In 2015, the Office of Sustainability conducted a **greenhouse gas** inventory and found Providence’s **carbon footprint**<sup>3</sup> to be 2.5 million metric tons of **carbon dioxide equivalents (CO<sub>2</sub>e)**, a term that captures all **greenhouse gases** in a common unit. Providence’s per capita **emissions** is 13.9. This is lower than some U.S. cities, such as Houston, but higher than others, like New York City. It is also much higher than cities in the developing world.

Energy used in our buildings accounts for 70% of this pollution, while transportation accounts for roughly one-third. Less than 1% come from processing waste, however this does not include commercial waste (data is not available), nor does it include the pollution that is produced when the goods that we buy are made (unless they are made in Providence).

Providence is also home to the Manchester Street Power Station, one of several hundred power plants that produces electricity for the regional electric grid. The Manchester Street Power Station is a 468-megawatt, fossil fuel-burning power plant that generates enough power for approximately 360,000 homes. It also produces steam for industrial use.

The Manchester Street Power Station accounts for roughly 900,000 metric tons of **CO<sub>2</sub>e**. These **emissions** are not counted towards Providence’s **carbon footprint** because those **emissions** are reflected and counted as part of electricity consumption in the city. Because of the regional nature of the energy system, to count plant **emissions** from locally-sited generation in Providence would be double counting. Still, it is important to acknowledge the localized impact of fossil fuel generation on the local community. Because the plant burns natural gas and oil, it is also responsible for emitting other pollutants. According to the

Figure 2

### City Comparison Carbon Pollution per Capita



Figure 2: City Comparison Carbon Pollution per Capita, Source: [www.c40.org/research](http://www.c40.org/research)

<sup>3</sup> “The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide (CO<sub>2</sub>)”. (Time for Change, What is a carbon footprint - definition, accessed June 2019.) A person or entity’s carbon footprint is the sum of all emissions of CO<sub>2</sub> (carbon dioxide), which were induced by their activities in a given time frame. Usually a carbon footprint is calculated for the time period of a year.



U.S. Environmental Protection Agency, in 2017 the facility reported releasing 486,248 pounds of **NOx** and 13,042 pounds of SO<sub>2</sub>. The data for **particulate matter** was only available for 2014. In that year, the facility released 10,513 pounds of PM 2.5 **particulate matter**.

Providence is also a major transport hub for fossil fuels, which has significant local health impacts. The Port of Providence has fossil fuel import, storage, and distribution terminals that provide gasoline, diesel, jet fuel, heating oil, propane, liquefied natural gas, cement and asphalt to the region. The **emissions** from ocean going vessels burn some of the dirtiest fuel (low-grade bunker fuel). Heavy duty diesel engines in trucks and trains, and off-gassing from valves and storage tanks also contribute to local air pollution in Providence. Communities living near the port-area are mostly low-income communities of color, and are therefore bearing most of the burden of regional fossil fuel distribution.

According to modeling done by Acadia Center, if Providence were to take no action, citywide **greenhouse gas emissions** in 2050 would only decline slightly compared to 2015, resulting in no significant improvement to community health or mitigation of climate change (see Figure 4). This “business-as-usual” scenario assumes no policy changes and accounts for existing trends of clean energy adoption.



Manchester Street Power Station. Photo Credit: City of Providence.

### 2015 Citywide Greenhouse Gas Emissions

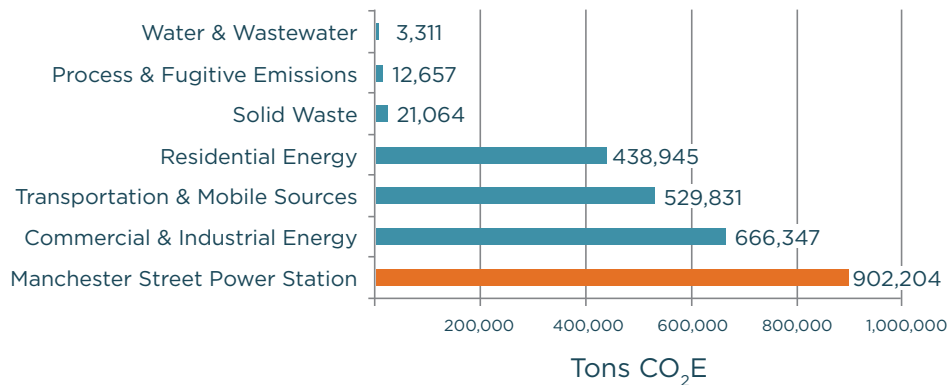


Figure 3

Figure 3: 2015 Citywide Greenhouse Gas Emissions Source: City of Providence, 2019.

### Business-As-Usual Emissions Scenario

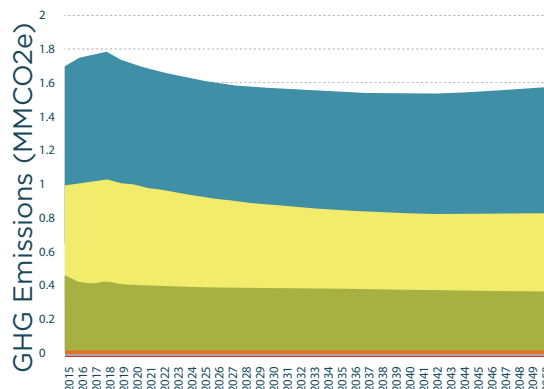


Figure 4

Figure 4: Providence's GHG emissions were an estimated 1.7 million metric tons of CO<sub>2</sub>e in 2015 and are projected to decline slightly, to 1.58 million metric tons, in 2050. Source: Acadia Center, 2018



## Carbon Pollution Disproportionately Harms Low-income Communities of Color

People are impacted by carbon pollution and its **co-pollutants** differently. Living close to highways, ports, freight transportation corridors, and industrial areas with more emission sources increase the exposure to air pollution and the risk of health effects. Histories of residential segregation due to policies such as redlining and poor housing quality determine where people have access to live and the level of pollution they could be exposed to. As a result, low-income communities of color in Providence suffer the greatest environmental health consequences of air pollution. These communities are referred to as “**Frontline Communities.**”

**Frontline communities** are communities of color most impacted by the crises of ecology, economy and democracy. In Providence, they generally include the Indigenous, African-American, Black, Latinx, and Southeast Asian communities. There is particular emphasis on people of color who are refugees and immigrants, people with criminal records, those who speak languages other than English, and LGBTQIA+ individuals. The EPA’s **Environmental Justice** Screening and Mapping Tool is a useful tool for identifying **frontline communities**. For Providence, EJSCREEN identifies parts of South Providence, Washington Park, Olneyville, Manton, Silver Lake, Wanskuck, and the West End as **frontline communities**.

Figure 5

### Environmental Justice Screening Map: Frontline Communities

**Demographic Data (National Percentiles)**

- Data not available
- Less than 50 percentile
- 50-60 percentile
- 60-70 percentile
- 70-80 percentile
- 80-90 percentile
- 90-95 percentile
- 95-100 percentile

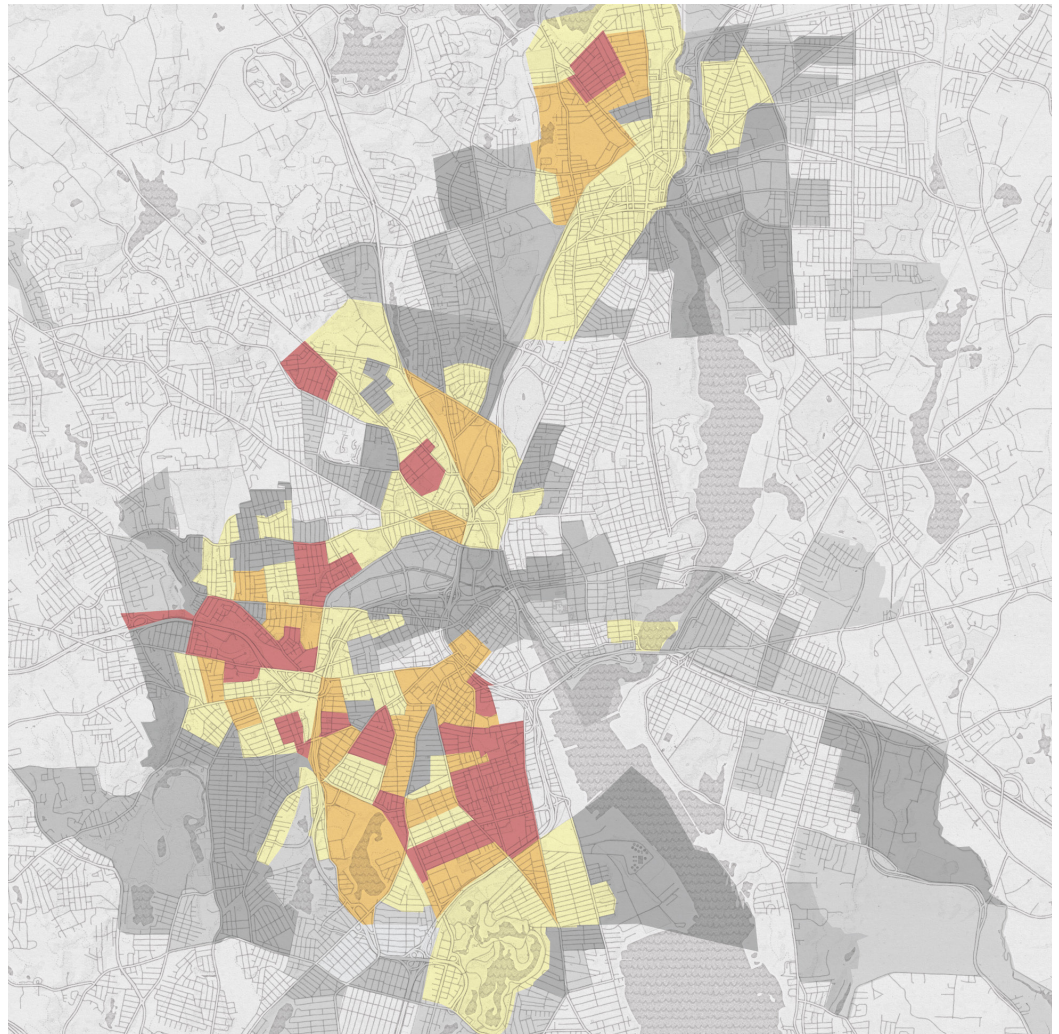


Figure 5: Source: EPA’s Environmental Justice Screening and Mapping Tool (EJSCREEN). Version 2018.

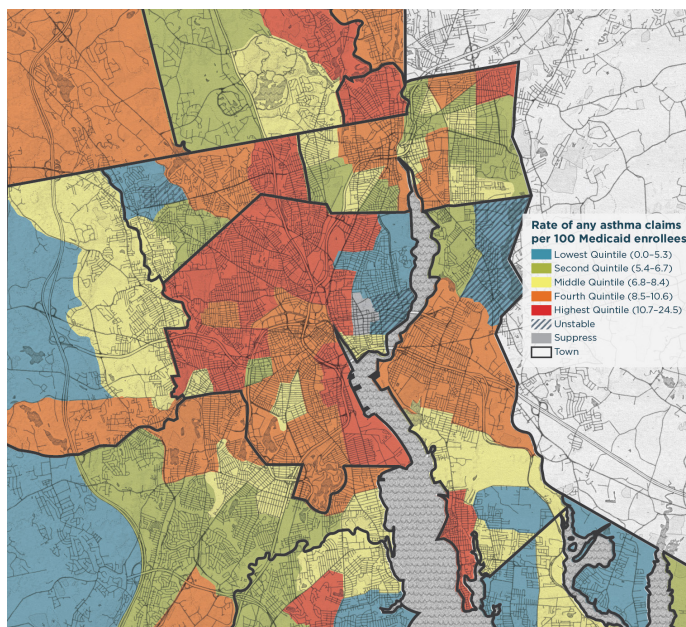


Children are also more sensitive to environmental conditions. For example, they are more sensitive to air pollution because their lungs are still developing and they breathe more air per unit body weight than adults do. This can lead to long-term health impacts. People who already have respiratory health conditions such as asthma and chronic obstructive pulmonary disease are more susceptible to the impacts of pollution.

Children in low-income families are more likely to have severe asthma. In fact, 71% of all asthma-related emergency room visits in Rhode Island are for children in Medicaid.<sup>4</sup> Figure 6 shows that the east side has a much lower rate of children living with asthma compared to the rest of the city. Individuals who reside in South Providence, Washington Park, Wanskuck, and the West End -- all predominately low-income communities of color -- represent the majority of asthma related emergency room visits.

**Figure 6**

**Rate of Children with Asthma in Medicaid**



**Rate of Asthma Emergency Department Visits for Children with Asthma in Medicaid**

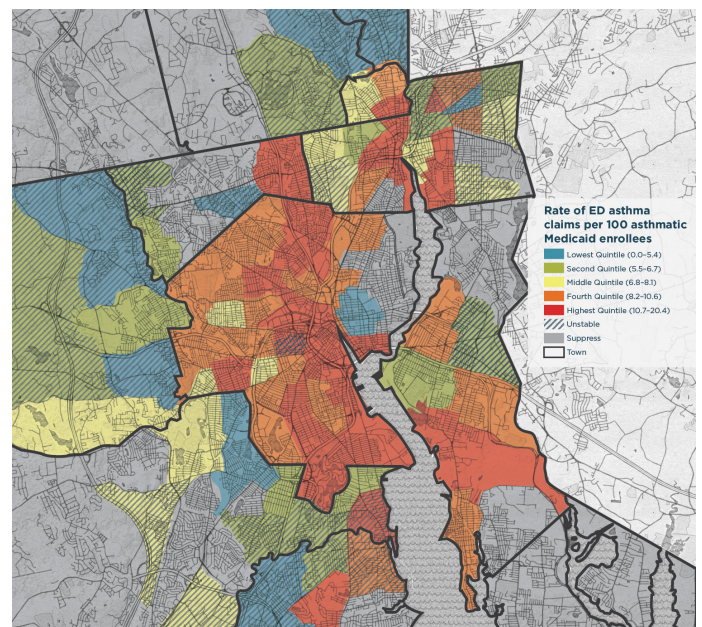


Figure 6: The map on the left is the general prevalence of where children with asthma live - on the east side of Providence 0 - 5.3% of children in Medicaid have asthma while in most of the rest of Providence it's over 8.5% and as high as 10.7% - 24.5%. The map on the right shows the rate of asthma emergency department visits within those children in Medicaid who have asthma, which is as high as 10.7% - 20.4% in many parts of South Providence, Washington Park, West End, and the North End.

Source: Rhode Island Department of Health, with data analysis and maps produced by the Hassenfeld Child Health Innovation Institute at Brown University. Data source: Medicaid claims data for Rhode Island children, 2013-2017: insurance claims with primary diagnosis of asthma (ICD-9 493, ICD-10 J45)

<sup>4</sup> Providence asthma emergency department rates: 2019 Rhode Island KIDS COUNT Factbook asthma indicator is online at: <http://www.rikidscount.org/Portals/0/Uploads/Documents/Factbook%202019/Indicators/Children%20with%20Asthma.pdf>



## Equitable Process for Equitable Outcomes

In order to create a climate plan that supports **frontline communities**, the Office of Sustainability partnered with the Racial and **Environmental Justice** Committee to apply the Just Providence Framework – a set of principles developed by frontline community members of Providence – to the planning process which provides guiding principles and values. The process included the following steps:

1

### Agreement between the REJC, City of Providence and consultants on a community-centered process:

including defined roles and responsibilities and the formation of a project team comprised of members of the REJC, City, a third-party facilitator, and consultants. The project team's skills included the lived experiences of local frontline community members, arts education and management, community organizing, climate and environmental policy, **energy democracy**, consensus building and facilitation, **racial equity**, **environmental justice**, language justice expertise and placed-based regenerative development.

2

### Community-led education and training in energy democracy:

To begin the decision-making process, the project team needed to ensure that the community had the resources and information needed to make decisions about energy in Providence. The REJC worked with a cohort of frontline community members for a program to understand how our energy system currently works, and what a more equitable, just, and carbon-free system might look like. Through the **Energy Democracy** Community Leaders Program, 10 frontline community members of Providence were trained by the REJC, Shalini Gupta (a climate, energy and **environmental justice** policy consultant), Adeola Oredola, a local facilitator and equity expert, and One Square World (an equity and sustainability process consultancy). This program took place in the summer of 2018 via a series of Saturday workshops. At these workshops, participants learned about **environmental justice** and **energy democracy**; how energy is produced, distributed and consumed; the impact of fossil fuels on communities of color; strategies for **energy democracy** possible for Providence including those addressing major polluters, transportation and buildings; and basic organizing and base building skills. The educational program concluded with a combined retreat of the Community Leaders and the full REJC, where we took a deep dive into the Providence energy system and concepts of **energy democracy**.



3

### **Peer-led interviews of frontline community members:**

In the fall of 2018, REJC members and Community Leaders conducted 40 interviews with community members of color to understand how they experience our current fossil fuel-based system in Providence. Interview responses were recorded via phone audio recorder and written on forms. The results of these interviews are in the Appendix. Participants were asked four simple questions:

How do you keep warm in the winter? What do you like about that and what would you change?

How do you keep cool in the summer? What do you like about that and what would you change?

How do you get around the city? What is good about that and what would you change?

What in your community keeps you and/or your family healthy? What do you think makes you or your family sick?

The City also conducted a citywide survey that included similar questions, along with demographic information. Over 150 people responded to the survey. A summary of the results is in the Appendix.

4

### **Design solutions based on the priorities and concerns of frontline communities:**

From these interviews, the project team identified key priorities and concerns and began to formulate potential policies that would be responsive to community priorities.

5

### **Reflect policies and actions back to community members via “Future Stories”:**

In order to return to community members with solutions for feedback and direction, the initial policies and actions were presented alongside stories from the perspective of future residents of Providence. This helped community members visualize how their communities could change depending on the policies and actions being presented. Community members noted what they liked and did not like about the future stories.

6

### **Refinement and finalization of policies based on community feedback with the project team:**

Consultants, the City, and the REJC discussed and refined the goals, targets, and strategies to meet community priorities and be effective in a Providence-specific context. Policies were then pulled into the final report form and reviewed to ensure mutual agreement before the report was released.



## Excerpts from The Just Providence Framework

### A Racially Equitable & Just Providence:

The full version is available at [www.providenceRI.gov/sustainability/equity](http://www.providenceRI.gov/sustainability/equity).

#### 1 Moves us toward el Buen Vivir.<sup>5</sup>

- Ensuring that **frontline communities** enjoy their fundamental right to **quality of life** and liberty and to live free from discrimination and oppression;
- Prioritizing the well-being of our children, youth and elders;
- Centers conversations about the future of Providence on the communities most affected by inequities.

#### 2 Supports Safe Spaces for Frontline Communities of Color

including politically and financially supporting physical and psychological safe spaces built by and for **frontline communities** where we can heal and lead. Acknowledging **gentrification**<sup>6</sup> and committing to stopping the **displacement** of indigenous and people of color, especially by developers and universities; An end to surveillance, police brutality in **frontline communities** that creates a culture of fear and repression.

#### 3 Knows people are sacred and respects their cultures.

#### 4 Upholds Self Determination.

**Frontline communities** are autonomous and have the right to craft decisions that impact their lives and their communities. **Frontline communities** have the resilience and expertise to be our own leaders. It is only in the dignity of our **self determination** that we can thrive as a community.

#### 5 Co-creates and co-leads governance

with **frontline communities** of color and the City of Providence to protect the space for communities' **self-determination**<sup>7</sup>, and ensure equitable access to resources, information, and power.

#### 6 Values education for our children and youth.

#### 7 Practices Local, Regional, National and International Solidarity.<sup>8</sup>

#### 8 Supports meaningful work.



## 9 Requires building a sustainable local economy

in which we produce and consume to live well without living better at the expense of others.

This includes:

- Zero Waste
- Clean and Efficient Public Transportation
- Clean Community Energy
- Regional Food & Water Systems
- Efficient, Affordable, Durable Housing
- Ecosystem Restoration & Stewardship

## 10 Respects Community rights to Land, Water, and Food Sovereignty by:

- Supporting land ownership by people of color.
- Supporting education for people of color about their rights to land, water and food.

## 11 Works to end the extractive economy.

- Eliminate fossil fuel dependence and wasteful use of scarce metals and minerals;
- Eliminate production of plastics, toxic chemicals, synthetic substances and our dependency on them;
- Reduce waste and eliminate wasteful practices that hurt our environment and ecosystems;
- Eliminate destruction of nature and invasion of natural spaces (e.g., land, water, wildlife, forests, soil, ecosystems).

<sup>5</sup> “Living well without living better at the expense of others. The fundamental human right to clean, healthy and adequate air, water, land, food, healthcare, education, transportation, safety, and housing. Just relationships with each other and with the natural world, of which we are a part.” The Just Providence Framework, [www.providenceRI.gov/sustainability/equity](http://www.providenceRI.gov/sustainability/equity), accessed June 2019.

<sup>6</sup> Gentrification: a process of neighborhood change that includes economic change in a historically disinvested neighborhood —by means of real estate investment and new higher-income residents moving in - as well as demographic change - not only in terms of income level, but also in terms of changes in the education level or racial make-up of residents.” -- UC Berkeley - <https://www.urbandisplacement.org/gentrification-explained>

<sup>7</sup> “Freedom of a person to determine the way in which they shall be governed and whether or not they shall be self-governed.” The Just Providence Framework, accessed June 2019.

<sup>8</sup> “Mutual respect for and responsibility to support one another’s human rights.” The Just Providence Framework, accessed June 2019.



## What We Heard

### Priorities

- Adequate heat and insulation
- Energy efficient heating
- Improving public transit, specifically buses
- Efficient central air
- Public indoor play facilities, access to clean public water/cooling centers in summers open until late
- Better windows in homes
- Be able to control heat
- Ability to open windows
- **Renewable energy**
- Move away from natural gas
- Improve street cleaning
- Waste Management
- Bike paths

### Concerns

- Rodents/roaches
- Trash/Dirt
- Gas Leaks
- Smog
- Contaminated Air - especially in Port area
- Lack of maintenance in subsidized housing
- Water quality concerns, especially lead in schools
- Support for obtaining electric energy/solar panels
- High pollen
- Food access
- More/better park areas
- Highways, transportation causing pollution
- Cars not up to standards
- Poorly paved streets
- Smoke from industrial facilities and other **emissions**
- Highway **emissions**

**“There are not enough places for kids to play and be near nature.** Even Roger Williams Park is surrounded by highways!”

“Those huge tanks at **the Port** are just scary. They look like they could blow up anytime. Wait, I think something did a few months ago! And then nasty stuff spilled on Allens. **What are they bringing in and out of there anyway? Definitely not benefiting me, just adds to traffic pollution and make me wish I could move.**”

“Every time our community gets cleaned up, white folks want it and start moving us out. ... **We need to make sure we won’t get kicked out before we push to make good things happen.**”



## About the Plan

The Plan is organized in seven sections: Lead by Example, Collaborative Governance and Accountability, Housing and Buildings, Community Health, Local and Regenerative Economy, Clean Energy, and Transportation. Each of these sections contains objectives, targets, and actions that have been developed to achieve climate justice in Providence.

### Objectives

Intended achievement to accomplish climate justice in Providence.

### Targets

Specific outcomes to measure and track progress towards meeting the objectives of the plan.

### Targets to Develop

Data that the City does not currently have, but intends to collect, measure and analyze in order to develop achievable targets.

### Background

Provides information about what steps have been taken to date in Providence towards these objectives.

### Strategies

The action and policy steps designed to achieve the climate justice objectives.

### Key Stakeholders and Decision-Makers

Each action identifies key partners, which are organizations, institutions or groups the Office of Sustainability seeks to work with for successful implementation of each strategy.

### Implementation Timeframe

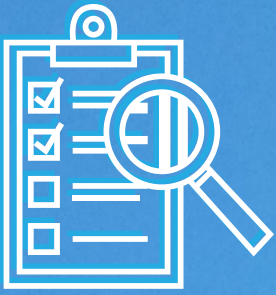
The strategies detailed below are near-term solutions that should be implemented by 2025 in order to ensure that the City is on track to meet its targets. There are 15 priority strategies, identified by the REJC, highlighted throughout the report. The Office of Sustainability is committed to working with the REJC and other stakeholders to advance these strategies by the end of 2021.

**“Why are buses in RI so hard to use?** Not enough routes and stops. Not on time. **You just need a car around here,** and if you can’t afford one it is really difficult to get around.”

“Not every room in my house has heat! **Radiators are missing or broken.** Windows are a mess and the outside air come right through the walls. Gotta use space heaters, but can’t really afford it. ...

[Summer is] so hot I have to go outside. Can’t even open windows in my apartment. More **access to AC would make a big difference for my family.**”



A photograph of a city street scene. In the foreground, a tall, dark green lamppost with a white globe stands on the left. A string of small, white, globe-shaped lights hangs across the frame from the top right. Bare trees with intricate branch structures are scattered throughout the scene. In the background, several tall, modern buildings with glass and brick facades rise against a clear, bright blue sky. The bottom portion of the image is overlaid with a semi-transparent blue gradient.

# LEAD BY EXAMPLE



## Lead by Example

### Objective

The City of Providence expects to lead by example, eliminating all climate pollution from municipal operations by 2040. The City will prioritize city-owned schools and facilities most used by low income, communities of color and in cumulative pollution areas.

### Targets

100% of municipal buildings' electricity will be **renewable** by 2030.

100% of municipal buildings' heating will be **renewable** by 2040.

100% of the City's fleet and school buses will be **renewable** by 2040.

### Targets to Develop

Diversity hiring target to shift municipal workforce to be more reflective of the community.

Number or percentage of City employees using alternative transportation to get to work.

### Background

The 2014 Sustainable Providence plan set out goals and strategies to reduce energy use in municipal buildings. In FY 2017, the amount of energy used by City facilities decreased by 15.5% from the previous three-year average and expenditures on energy have decreased by 28% between FY10 and FY17. These savings are the result of strategic investments in City facilities including building upgrades, converting City street lights to LEDs, and employee education around energy conservation. These efforts have resulted in a 26% reduction in carbon **emissions** from municipal facilities over the past seven fiscal years (FY10-FY17).

While **energy efficiency** is critical to meeting the city's climate goals, City government must also develop a plan to transition its buildings off of fossil fuels. Over the past ten years, most of the buildings that had been heated with oil have been switched to natural gas. The City has also begun shifting its electricity supply to **renewables**. The City entered a public-private partnership to help construct a solar farm in Rhode Island that is generating 30,000 megawatt hours (MWh) per year. This covers roughly 70% of municipal electricity usage. As a result of this project, energy conservation goals, and the state's **Renewable Energy Standard**,<sup>9</sup> approximately 85% of the City's electricity for municipal facilities will be **renewable** by 2030.

<sup>9</sup> The Rhode Island Renewable Energy Standard requires the state's retail electricity providers -- including non-regulated power producers and distribution companies -- to supply 38.5% of their retail electricity sales from renewable resources by 2035.



## Strategies

### Buildings and Clean Energy

### Key Stakeholders

#### Upgrade municipal buildings to shift towards zero energy buildings:

Public Property; Parks Department; PPSD; RIDE; Student/Parent/Teacher advocacy groups

- Conduct a municipal building electrification study to determine a plan for transitioning all City buildings off natural gas and oil and towards zero energy. This study should include community collaboration and prioritize buildings most used by and/or located in **frontline communities**, such as recreation centers, schools, and community libraries.
- Continue efforts to improve building **energy efficiency** through lighting, HVAC, and building envelope/weatherization upgrades.
- Install on-site solar and high efficiency heat pumps or other clean alternatives to natural gas and fossil fuels where feasible.

**Design new buildings to be zero energy:** New buildings and major renovations should be built to be zero energy ready, meaning they are highly efficient buildings that do not burn fossil fuels on site.

Public Property; Parks Department; National Grid

**Explore back-up battery storage and microgrids for critical facilities:** Replace diesel-burning generators with on-site solar plus battery storage. Conduct a **microgrid** feasibility study for emergency shelters and other critical facilities.<sup>10</sup> Prioritize those that primarily serve low income, communities of color.

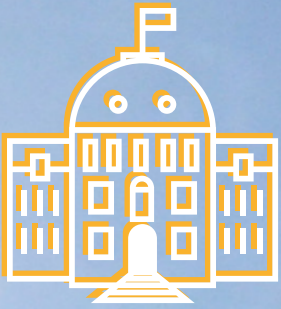
Public Property, Providence Emergency Management Agency; National Grid

<sup>10</sup> Critical Facilities “provide services and functions essential to a community, especially during and after a disaster. Examples of critical facilities requiring special consideration include: emergency operations centers, medical facilities, schools and day care centers, power generating stations, drinking water and wastewater treatment plants, structures or facilities that produce, use or store volatile or toxic materials.” FEMA Fact Sheet, Critical Facilities and Higher Standards, accessed August 2019.



Transportation	Key Stakeholders
<p><b>Maximize efficiency of the City's current vehicle fleet and invest in electric vehicles and charging stations:</b></p> <ul style="list-style-type: none"> <li>Invest in fleet management and tracking technology to right-size fleet and maximize efficiency.</li> <li>In the next year, begin procuring electric vehicles and install charging stations. After two years, evaluate the success of this investment and create a plan to expand the procurement strategy. The older and less efficient vehicles should be prioritized for replacement.</li> </ul>	Public Property
<p><b>Reduce emissions from school buses:</b> Include a requirement in future school bus contracts to minimize <b>emissions</b> from school buses via vehicle age thresholds, cleaner burning fuel, anti-idling technology and eventual electrification. Transportation Request for Proposals related to school busing will include goals around long-term electrification. Improvements should be prioritized in schools with young student populations with the highest <b>environmental justice</b> populations.</p>	Public Property; PPSD; RIDE; Student/Parent/Teacher advocacy groups
Healthy Green Spaces	Key Stakeholders
<p><b>Expand and improve green spaces:</b> Partner with community organizations to expand green spaces and parks in <b>frontline communities</b> including the following priorities:</p> <ol style="list-style-type: none"> <li>Incorporate community priorities and maximize opportunities for new open space and <b>climate resiliency</b> investments.</li> <li>Employ community members in the stewardship of green spaces.</li> <li>Prioritize tree plantings in low-canopy areas where heat island index is high, and residents can experience the cooling (electricity savings), air pollution, and water filtration benefits.</li> <li>Prioritize deep root, native plantings in parks and other public green spaces (including the grounds of municipal buildings, schools, and Providence Public Housing Authority properties) to maximize carbon sequestration, eliminate the need for fossil fuel-based fertilizer and pesticides, and educate the community on the climate and biologically benefits of such planting and land use practices.</li> <li>Work with the state to do the same, with an eye towards managed soils to increase carbon sequestration.</li> </ol>	Parks Department; Neighborhood frontline community groups



A low-angle photograph of the Pennsylvania State Capitol building on the left and the Soldiers and Sailors Monument on the right. The monument features a large statue of a soldier on top and a smaller statue of a sailor below. The sky is clear blue. A yellow horizontal bar is overlaid at the bottom of the image, containing the title text.

# COLLABORATIVE GOVERNANCE AND ACCOUNTABILITY



## Collaborative Governance and Accountability

### Objective

To ensure that those who are most impacted by the climate crisis in Providence are centered in the decision-making process for crafting and implementing solutions.

### Targets

By 2020, two members from the Racial and Environmental Justice Committee are on the Environmental Sustainability Task Force.

By 2025, the Office of Sustainability is actively partnering with frontline community organizations on every major initiative using a collaborative governance model.

By 2030, the Office of Sustainability and the REJC have advanced from the “Involve” stage to “Collaborate” stage on the Spectrum of Community Engagement to Ownership.<sup>11</sup>

By 2025, all City staff are trained upon hire and have continuing education on **racial equity**, anti-racism, **environmental racism**, **environmental justice** and implicit bias.

### Background

The City's 2014 sustainability plan set forth an ambitious agenda to guide the City towards its environmental sustainability goals. The planning process was led by the Office of Sustainability and the Environmental Sustainability Task Force (ESTF).

While the Sustainable Providence planning process successfully engaged many members of the environmental community, it did not have the resources to support a robust community engagement process so access was limited to those who could take time out of their workday to participate. Equity, one of the three pillars of sustainability, was only mentioned in the Land Use and Development section of the plan. Equitable outcomes must

start with an equitable process, meaning that those who are most impacted by an issue must have the resources and access to fully participate in the process.

After hearing from the community, the Office of Sustainability set out to address this in 2016. The City partnered with the Environmental Justice League of Rhode Island (EJLRI), which helped establish the Racial and Environmental Justice Committee (REJC). The REJC has since been advising the Office of Sustainability, along with other departments within City government, on how to embed **racial equity** and **environmental justice** into local decision-making, community engagement, and programming. The Equity in Sustainability report captures the process and results of the first year of this partnership.

The policies and actions in this plan are the result of this three-year partnership between the City and the REJC. The Office of Sustainability is committed to continuing to support and partner with the REJC in order to strengthen relationships between the City and **frontline communities** of color, institutionalize the Just Providence Framework, and move towards collaborative decision-making processes.

The intention behind promoting deep democratic participation and equity by placing decision-making in the hands of **frontline communities** is to ensure that those most burdened by climate change benefit from solutions and to prevent unintended consequences of policies that are meant to solve community challenges. In addition, collaborative governance in climate justice asks that government, institutions and corporations be accountable for their role in contributing to and addressing the climate challenge. In order to create long-term sustainability and equity in Providence, structural and systems change is required.

<sup>11</sup> This tool was developed by Rosa González of Facilitating Power, in collaboration with Movement Strategy Center, in part drawing on content from a number of public participation tools, including Arnstein's Ladder of Citizen Participation and the Public Participation Spectrum created by the International Association for Public Participation.



## From Community Engagement to Ownership: Creating the collaborative governance model

In 2018, the Office of Sustainability and the REJC received an Innovation Fund grant from the Urban Sustainability Directors Network (USDN) to explore their collaborative approach and identify ways to strengthen it. The process was done alongside three other cities: Portland, OR, Seattle, WA, and Washington, D.C., which were engaging in similar efforts. This work resulted in the creation of the Spectrum of Community Engagement to Ownership.<sup>12</sup> The Spectrum serves as a guide to community-based organizations and local governments working to progress developmentally towards community-driven governance models. Community-based organizations play a critical role in cultivating community capacity to participate in and lead decision-making processes that meet community needs and maximize community strengths. Staff and elected officials within local government have essential roles to play in helping to facilitate systems changes to increase community voice and decrease disproportionate harms caused to low-income communities and communities of color.

### About the Providence Environmental Sustainability Task Force

The ESTF has nine members including four appointed by the Mayor, four by City Council, and one by the Environment Council of Rhode Island. The Task Force responsibilities are defined by city ordinance as follows:

- Work with the Office of Sustainability, the Mayor, the City Council and other city departments to coordinate the City's environmental agenda and provide a level of accountability for the environmental initiatives the City is currently implementing or planning to implement.
- Communicate with the public important developments in the City's environmental agenda. This will bring an extra level of transparency and accessibility to the City's progress on important environmental goals.
- Include experts from the City and from the community to discuss and propose innovative, yet achievable, environmental initiatives which the City could adopt to further green the City of Providence.

<sup>12</sup> This tool was developed by Rosa González of Facilitating Power, in collaboration with Movement Strategy Center, in part drawing on content from a number of public participation tools, including Arnstein's Ladder of Citizen Participation and the Public Participation Spectrum created by the International Association for Public Participation.



## Essential Conditions for Collaborative Governance<sup>12</sup>

- 1 **Commitment to Collaborative Governance Model:** Build the capacity for collaboration and break down existing barriers to equitable participation. Use clear and transparent decision-making processes in which frontline community members participate to ensure decisions do not cause additional harm and instead advance equitable solutions.
- 2 **Purpose Clarity:** Take time to align around a shared purpose that advances goals only attainable through collaboration. Partner with frontline community organizations and community members to define problems and design solutions.
- 3 **Community Organizing & Power Building:** Through organizing activities, community leaders are able to understand resident priorities and needs and can effectively represent and be accountable to the interests of their communities.
- 4 **Community Resourcing:** A community resourcing strategy allows for equitable participation by impacted communities. Hire community-based organizations/businesses whenever possible. Resourcing should include stipends to participating community leaders and meeting other basic needs such as food, translation, child care, and timing of meetings.
- 5 **City Racial Equity Training & Capacity:** In order to effectively partner with community organizations, local government staff should be resourced with anti-racism, anti-bias and cultural competency trainings and institutionalized practices.
- 6 **City Resourcing:** Allocating resources appropriately to ensure the commitment to equity is supported and implemented with concrete solutions. Hire staff who have a system-change and **racial equity** analysis, as well as lived experience conducive to collaborating effectively with impacted communities.
- 7 **Power & Influence of Community Groups within City:** Political voice and power of groups rooted in impacted communities are essential to advancing solutions that actually serve the communities they target and to avoiding the unintended consequences of policies that are meant to solve community challenges.
- 8 **Trust & Relationship Building:** Direct relationships between government officials and impacted communities help to ensure policies and plans adopted by government reflect the needs and assets of those most impacted by them. Staff must be supported and encouraged to build authentic relationships with impacted communities.
- 9 **Principles and Practices to Ensure Equity at Every Step:** Community groups to assert practices needed to support equitable participation.

Each City was evaluated based on where they are on the spectrum. Providence was determined to be the furthest along on the spectrum at the “Involve” stage. The full case study and final report is available in the Appendix.



## Spectrum of Community Engagement to Ownership

Stance Towards Community	0 Ignore	1 Inform	2 Consult	3 Involve	4 Collaborate	5 Defer To
<b>Impact</b>	Marginalization	Placation	Tokenization	Voice	Delegated Power	Community Ownership
<b>Community Engagement Goals</b>	Deny access to decision-making processes	Provide the community with relevant information	Gather input from the community	Ensure community needs and assets are integrated into process & inform planning	Ensure community capacity to play a leadership role in implementation of decisions	Foster democratic participation and equity by placing full decision-making in the hands of the community; Bridge divide between community & governance
<b>Message to Community</b>	<i>"Your voice, needs &amp; interests do not matter"</i>	<i>"We will keep you informed"</i>	<i>"We care what you think"</i>	<i>"You are making us think, (and therefore act) differently about the issue"</i>	<i>"Your leadership and expertise are critical to how we address the issue"</i>	<i>"It's time to unlock collective power and capacity for transformative solutions"</i>
<b>Activities</b>	Closed door meetings Misinformation Systematic disenfranchisement Voter suppression	Fact sheets Open Houses Presentations Billboards Videos	Public comment Focus Groups Community Forums Surveys	Community organizing & advocacy House Meetings Interactive Workshops Polling Community forums	MOU's with Community-Based Organizations Community Organizing Citizen Advisory Committees Open Planning Forums with Citizen Polling	Community-Driven Planning Consensus building Participatory Action Research Participatory Budgeting <b>Cooperatives</b>
<b>Resource Allocation Ratios</b>	100% systems admin	70-90% to systems admin 10-30% to promotions and publicity	60-80% to systems admin 20-40% to consultation activities	50-60% to systems admin 40-50% to community involvement	20-50% to systems admin 50-70% to community partners	80-100% to community partners and community-driven processes that ideally generate new value and resources that can be invested in solutions





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## Strategies

### Key Stakeholders

#### Establish Green Justice Zones in Frontline Communities:

Green Justice Zones use a collaborative governance model with **frontline communities** to make investments in sustainability and equity in neighborhoods that have been disinvested in and are overburdened with pollution. The City would provide resources to support community members in developing action plans alongside City officials to address the priorities and concerns of the neighborhood. Green Justice Zones seek to achieve health equity, improve **quality of life**, and **climate resilience** in **frontline communities**. They should consider the following:

Office of Sustainability;  
REJC; Healthy Communities  
Office; National Grid

- **Microgrids** in critical community spaces (i.e. schools, elder care facilities, community centers, etc.) to enable local energy generation, storage and consumption, add capacity and stability to the larger grid, and operate independently at times.
- **Resiliency Hubs** (see page 57).
- Participatory budgeting processes.
- Weatherization, **energy efficiency**, electrification, and on site **renewables**, especially for low income community members.
- Training and job opportunities in the above for local community members.
- Policy tools such as **zoning** to prevent the burden of additional pollution in **frontline communities**.

#### Implement this plan via a collaborative governance structure:

The City should build upon the ESTF’s community-led advisory structure to move towards collaborative governance. The first step should be to update the Code of Ordinances to include two members from the Racial and Environmental Justice Committee on the Environmental Sustainability Task Force and continue to build the ESTF’s membership to be more representative of Providence’s socioeconomic diversity. The updated ESTF and the Office of Sustainability are tasked with ensuring a collaborative governance model is used to implement the Climate Justice Plan, as well as complete subsequent updates, every five years. This collaborative governance model should include:

Mayor’s Office; City Council;  
Office of Sustainability;  
ESTF; REJC

- Partner with frontline community organizations and community members to define problems and design solutions.



**Key Stakeholders**

- Stipends to participating community leaders and meet other basic needs such as food, translation, interpretation, child care, and timing of meetings.
- Ensure that all parties impacted by decisions are informed of the decision and the impacts.
- Hire City staff who have a systems-change and **racial equity** analysis, as well as lived experience conducive to collaborating effectively with impacted communities.
- Hiring of community-based organizations/businesses whenever possible to support the work.
- Support for staff in building authentic relationships with impacted communities.

**Develop a long-term climate resilience and adaptation<sup>13</sup> plan:**

Partner with the REJC and other **frontline communities** to ensure those most impacted by the impacts of climate change are centered in the process of designing and implementing a plan to prepare the city for the impacts of climate change. This plan should examine the impacts of heat, riverine flooding, coastal storms, sea-level rise and other related effects of climate change. It should focus on areas along the Woonasquatucket River, port-areas and the Hurricane Barrier.

Office of Sustainability; Mayor's Office; Planning and Development; Dept. of Public Works; Frontline community organizations

**Measure and monitor the level of environmental burden and investments being made in each neighborhood:**

Use neighborhood-level data to help prioritize investments in areas with the greatest environmental burden. Benchmarking and evaluation at the neighborhood level helps residents and decision-makers develop better metrics and assess targeted areas for program deployment. This should include:

RI DEM; RI OER; RI PUC; Planning and Development; National Grid; Frontline community organizations

- Examining the amount of public money being invested by neighborhood, and ensure that future decisions focus funding in **frontline communities**, especially for pollution reduction, green spaces and parks.
- Determine Providence-specific energy savings and participation rates in the **utility-run energy efficiency** programs to determine gaps in meeting the needs of frontline community members.
- Obtain community-level/spatially disaggregated **GHG** and **co-pollutant** emission source data via stationary air monitors in **frontline communities**.

<sup>13</sup> "Climate adaptation is the adjustments societies or ecosystems make to limit the negative effects of climate change or to take advantage of opportunities provided by a changing climate." University of California, Davis, Science & Climate Definitions, accessed June 2019



**Key Stakeholders**

**Adopt the Just Providence Framework citywide:** Incorporate **racial equity** goals as designated by the Just Providence Framework into City goals. Consider the following strategies:

Mayor’s Office; City Council, REJC

- Expanding **racial equity** practice across departments and management levels.
- Train additional departments to help them use the Just Providence Framework and **Racial Equity** Screening Tool (see page 22) and develop department-specific **racial equity** impact assessments to incorporate racial justice into decision-making citywide.
- Ensure that community members have access to the resources utilized in trainings provided to City staff.
- Work on workforce development, hiring practices, and recruitment so City staff better reflects the community it governs.

**Create a dedicated funding stream to support implementation:**

Identify opportunities to raise dedicated revenue to support a **Just Transition** for Providence. This fund would support implementation of the plan, as well as future updates to the plan. It will help ensure **frontline communities** have access to **renewable energy** and other mechanisms that reduce carbon pollution and their **co-pollutants**. This could be created via a statewide equitable tax or price on carbon pollution, or local revenue sources, like savings from municipal **energy efficiency** and **renewable energy** projects. Distribution of the funds must be done using a collaborative governance model with those most impacted having decision-making power.

Office of Sustainability, REJC and frontline community organizations

**Advocate and support a state-level Climate Justice Working Group:** The RI Executive Climate Change Coordinating Council (EC4) should work with the REJC and other statewide frontline community organizations to launch a Climate Justice/**Environmental Justice/Just Transition** working group. This group should include community leaders and health and labor advocates from across Rhode Island to make recommendations for developing statewide **environmental justice** policies, agency-specific **environmental justice** plans, and incorporating collaborative governance into decision-making processes.

REJC and other RI frontline community organizations; EC4



Key Stakeholders

Advocate and support a statewide shift to energy

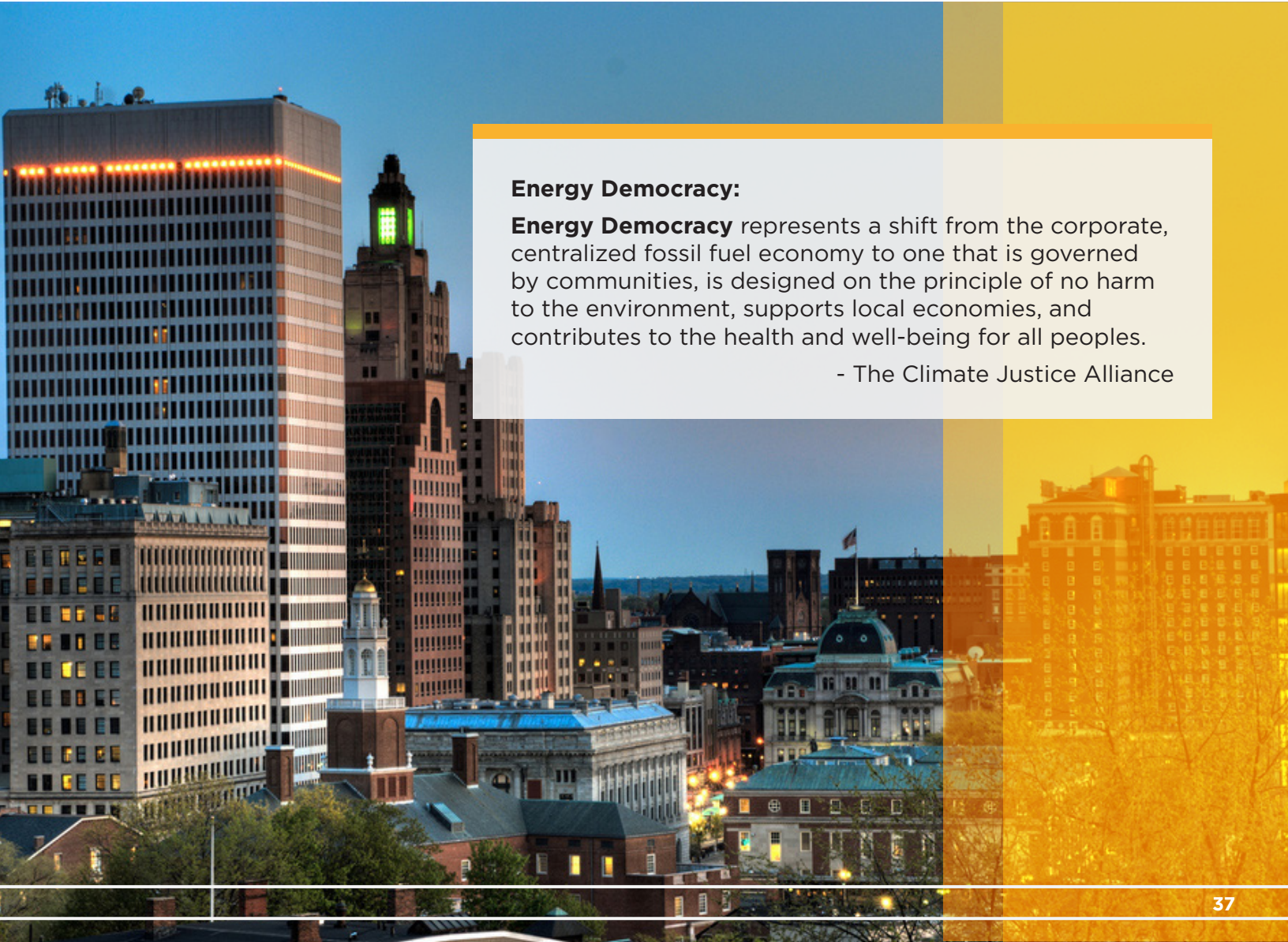
**democracy:** The state and utilities should partner with frontline community organizations to create mechanisms for collaborative governance with **frontline communities** around energy decisions. Specifically, ensure that residents know how rates are decided and structured to ensure that they do not disproportionately burden low income households.

RI OER; RI EERMC; RI PUC; National Grid; RI frontline community organizations

Ensure RGGI funding supports environmental justice priorities:

Advocate that Regional **Greenhouse Gas** Initiative (RGGI) funding supports **energy efficiency** and other priorities for **frontline communities** and low-income communities of color. There should be a community-centered process to designate and distribute these funds.

RI OER, REJC and RI frontline community organizations

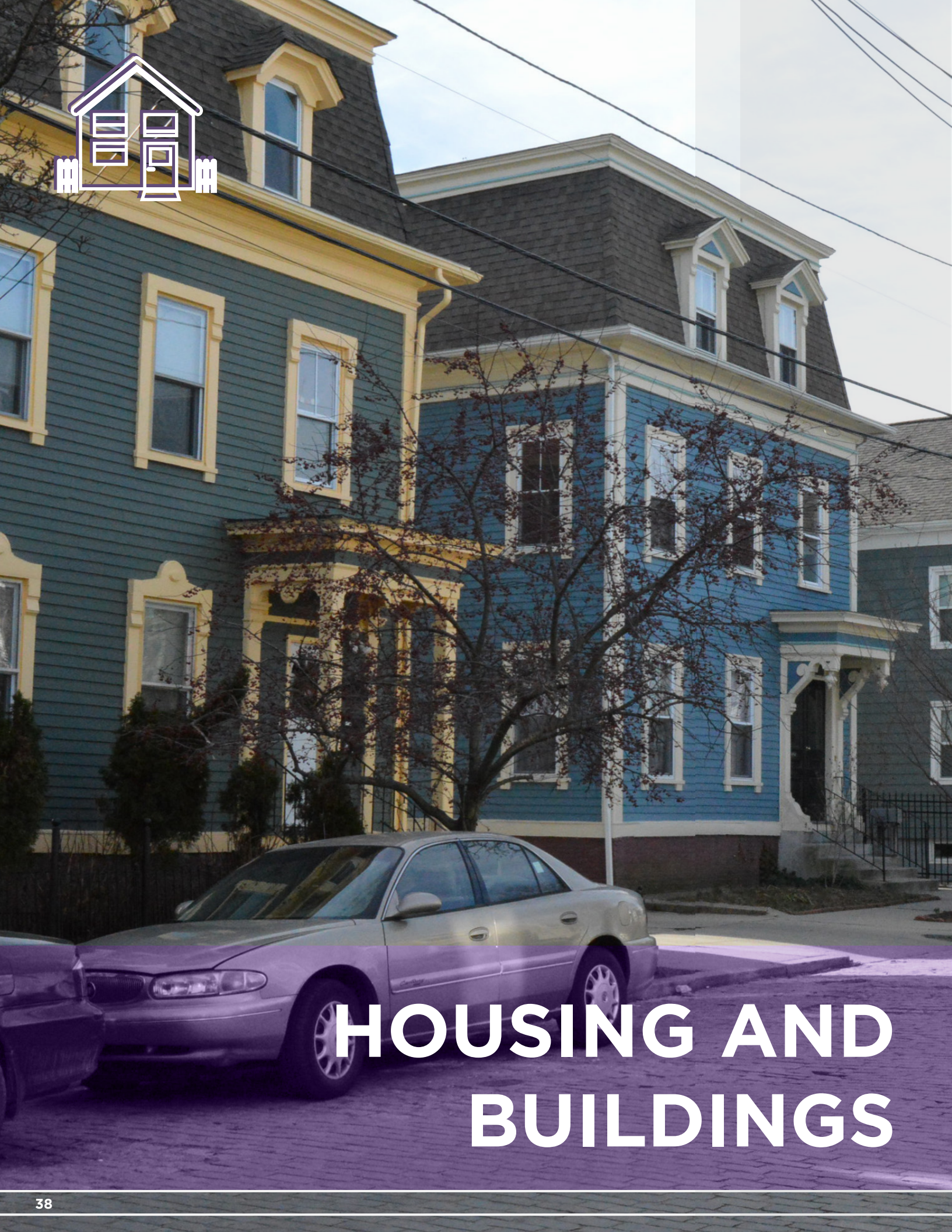


Energy Democracy:

**Energy Democracy** represents a shift from the corporate, centralized fossil fuel economy to one that is governed by communities, is designed on the principle of no harm to the environment, supports local economies, and contributes to the health and well-being for all peoples.

- The Climate Justice Alliance





# HOUSING AND BUILDINGS



## Housing and Buildings

### Objective

To end **displacement** and ensure dignified housing and access to affordable, efficient and clean energy for Providence residents, while eliminating fossil fuel use in all buildings.

### Targets

By 2035: 48% of residential heating and 45% of commercial converted to heat pumps.

By 2050: 90% of residential heating and 85 percent of commercial converted to heat pumps.

By 2040, reduce low-income energy burden to <5%. (Low income energy burden is the percent of income that low-income households are spending on energy)<sup>14</sup>

By 2040, eliminate **utility** shut offs.

### Targets to Develop

Increase the energy savings (MMBTUs) for low income households in Providence.

Increase low-income **energy efficiency** program participation.

Increase **energy efficiency** and electrification investment dollars for low income households.

Housing and anti-**displacement** metrics and targets.

### Background

Buildings account for 70% of the city's **carbon footprint**. Ensuring they are made to be more **energy efficiency** and transitioned off fossil fuels (including natural gas, which is the primary source of heating the Providence) is critical to meeting our climate goals. The City has implemented a number of policies and programs to help building owners do just this. This progress was highlighted by the American Council for an Energy Efficient

Economy's (ACEEE) City Clean Energy Scorecard. Providence was ranked number 25 (up from number 31 two years ago) and was highlighted as a "City to Watch." Some recent accomplishments include:

- In 2016, the City adopted Property Assessed Clean Energy (PACE) to unlock financing opportunities for property owners.
- In 2018, the City launched its RePowerPVD Energy Challenge Program, which includes two tracks--a 20% by 2025 energy reduction challenge, and the Race to Zero: a competition for aspiring zero energy buildings in Providence. Thus far, 1.7 million square feet of real estate have enrolled in the energy reduction challenge. This includes a handful of City buildings, Providence Housing Authority, the Marriott Downtown, Cornish Associates, and the Regency Plaza.
- The City recently completed a code assessment to help ensure new buildings are meeting the energy code requirements.
- The City provided scholarships for building operators in Providence to attend trainings designed to help them run their buildings more efficiently.

The City is also developing a benchmarking policy that would require large buildings to document and report their energy use to the City.

All of this progress is built on the foundation of strong **energy efficiency** programs and policies at the state level. The state has set policies that require utilities to invest in **energy efficiency** as a fuel source, rather than buy more traditional energy like fossil fuels. This is because a one-time investment in a building's **energy efficiency** is much more cost effective than buying more energy year over year. These investments also provide local jobs and keep our building stock in good shape.

<sup>14</sup> See: American Council for an Energy-Efficient Economy, Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities. April 2016.



However, the benefits of such programs and policies are not being shared equally. A 2016 report from the American Council for an Energy-Efficient Economy (ACEEE) found that low-income households in Providence spend 9.5% of their income on energy, compared to just 4.7% for all other households.<sup>15</sup> This puts Providence fifth highest in the country for low-income energy burden.

Furthermore, Providence is experiencing a boom in development but the effects of these projects and improvements are not felt evenly across the city. These investments put upward pressure on the cost of living. Long-time residents of neighborhoods may enjoy a better **quality of life**, but may be pushed out if they are unable to keep up with higher costs of living, especially if these effects are not considered and mitigated early on. Striking a balance between progress and equity is required for a truly inclusive community where all residents have access to jobs, housing, and a good **quality of life**.

## Affordable Housing and Displacement Statistics

From the City's Anti-Displacement and Inclusive Prosperity report

42%

of home owners

57%

of renters

30%

of home owners

48%

of renters

outside of the East Side are housing cost burdened, meaning they spend more than 30% of their annual income on housing costs.

are housing cost burdened on the East Side.

For Providence households making 80% of the regional median income,

10

of the City's

25

neighborhoods are considered to be unaffordable based on average housing costs.

For all neighborhoods with a poverty rate of 28% or more,

average rents increased by 6.75% between 2011 and 2016 while incomes increased only 4.15%.

<sup>15</sup> ACEEE, Lifting the High Energy Burden in America's Largest Cities: How Energy Efficiency Can Improve Low Income and Underserved Communities, April 2016



## Strategies

### Anti-Displacement and Dignified Housing

#### Ensure all residents can benefit from energy efficiency improvements without concern for being displaced:

Ensure that renters cannot have their rent raised, be evicted, harassed, or otherwise pushed out when basic health, safety or **energy efficiency** improvements are made. **Utility** efficiency programs should implement safeguards for ensuring benefits of lower energy costs flow to renters, and are not all held by landlord. Landlords should adhere to the Rhode Island Landlord/Tenant handbook and mitigate disruptions to renters of **energy efficiency** and electrification upgrades through actions such as informing tenants when improvements are to begin, and providing adequate accommodations during major energy improvements.

### Key Stakeholders

Division of Housing and Community Development; National Grid; Law Department; Mayor's Office; City Council; Frontline community organizations

#### Stop the displacement of communities of color in Providence:

The City should work with local **frontline communities** and frontline housing organization partners to prevent **displacement** and increase access to housing and homeownership for frontline community members through the following actions:

Mayor's Office; City Council; Division of Housing and Community Investment; Law Department; Frontline community organizations

- Build off of past engagement efforts and community-led proposals to develop a comprehensive housing strategy that identifies anti-**displacement** policies and increases housing affordability, access, and homeownership for **frontline communities** in Providence. Using a collaborative governance model, policies to consider should include: housing and community land trusts with special **zoning** designations, rental registration, "Just Cause" eviction ordinances, anti-harassment policies to prevent landlords from coercing tenants into moving, and other rental security policies.
- Ensure community members have access to information about how to navigate services related to housing affordability and anti-**displacement** including:
  - Greater dissemination of Landlord Tenant Handbook to ensure tenants know their rights on and off-line. Consider requirements for landlords to provide handbook upon lease of property.
  - Support for low-barrier community legal aid programs.
  - Assisting people to navigate services and apply for affordable housing.
  - Improve access to information about land trust housing opportunities in Providence.
- Create housing and anti-**displacement** metrics for Providence, and ensure that future versions of this report add housing and anti-**displacement** targets.



Anti-Displacement and Dignified Housing	Key Stakeholders
<p><b>Initiate Community Benefit Agreements for large projects:</b> Develop a local model and assessment plan with <b>frontline communities</b> for “Community Benefit Agreements” (CBA) and require them for large new developments and redevelopments, particularly those that receive public dollars/subsidies. Under a CBA, the developer would assess the impact to the surrounding neighborhood including impacts related to housing affordability/<b>displacement</b>, transportation/traffic, local jobs, carbon and air pollution <b>emissions</b>, and health. The developer would then work with community members to minimize negative impacts through the agreement.</p>	<p>Mayor’s Office; City Council; Department of Planning and Development; Law Department; Frontline community organizations</p>
<p><b>Explore mechanisms to prioritize affordable housing for displaced populations.</b> Work with the Providence Housing Authority to develop a process that prioritizes housing for those that have historically been displaced from their communities in Providence. This could be modeled off the Community Preference ordinance in Seattle, which enabled affordable housing providers to prioritize those with historic connections to the communities that have been most harmed by the legacy of discrimination and segregation.</p>	<p>Providence Housing Authority; Division of Housing and Community Development; RI Housing; Frontline community organizations</p>
Affordable, efficient, and clean energy	Key Stakeholders
<p><b>Pass a Building Energy Reporting Ordinance (BERO):</b> This policy, which has been drafted by the City and stakeholders, requires building owners to report their energy use and carbon <b>emissions</b> to the City and mandates action to improve energy performance for buildings over 10,000 square feet. The City would then ensure that building energy and <b>emissions</b> information is made readily available to the public, especially to renters, tenants, and prospective renters and buyers.</p>	<p>Office of Sustainability; Mayor’s Office; City Council; ESTF</p>
<p><b>Explore mandatory emissions reductions for large buildings:</b> Launch a stakeholder process to explore targets for emission reduction. Such a policy was recently adopted by New York City. The local law sets <b>emissions</b> caps for various building types over 25,000 square feet. Building owners are subject to fines if they miss the targets. Starting in 2024, the law requires landlords to retrofit buildings to cut <b>emissions</b> by 40 percent in 2030, and double the cuts by 2050.</p>	<p>Office of Sustainability; Mayor’s Office; City Council; ESTF</p>



### **What is a Community Benefit Agreement?**

One of the policies recommended in this section is to implement community benefit agreements in Providence. According to the Community Benefits Law Center, a project of the Partnership for Working Families:

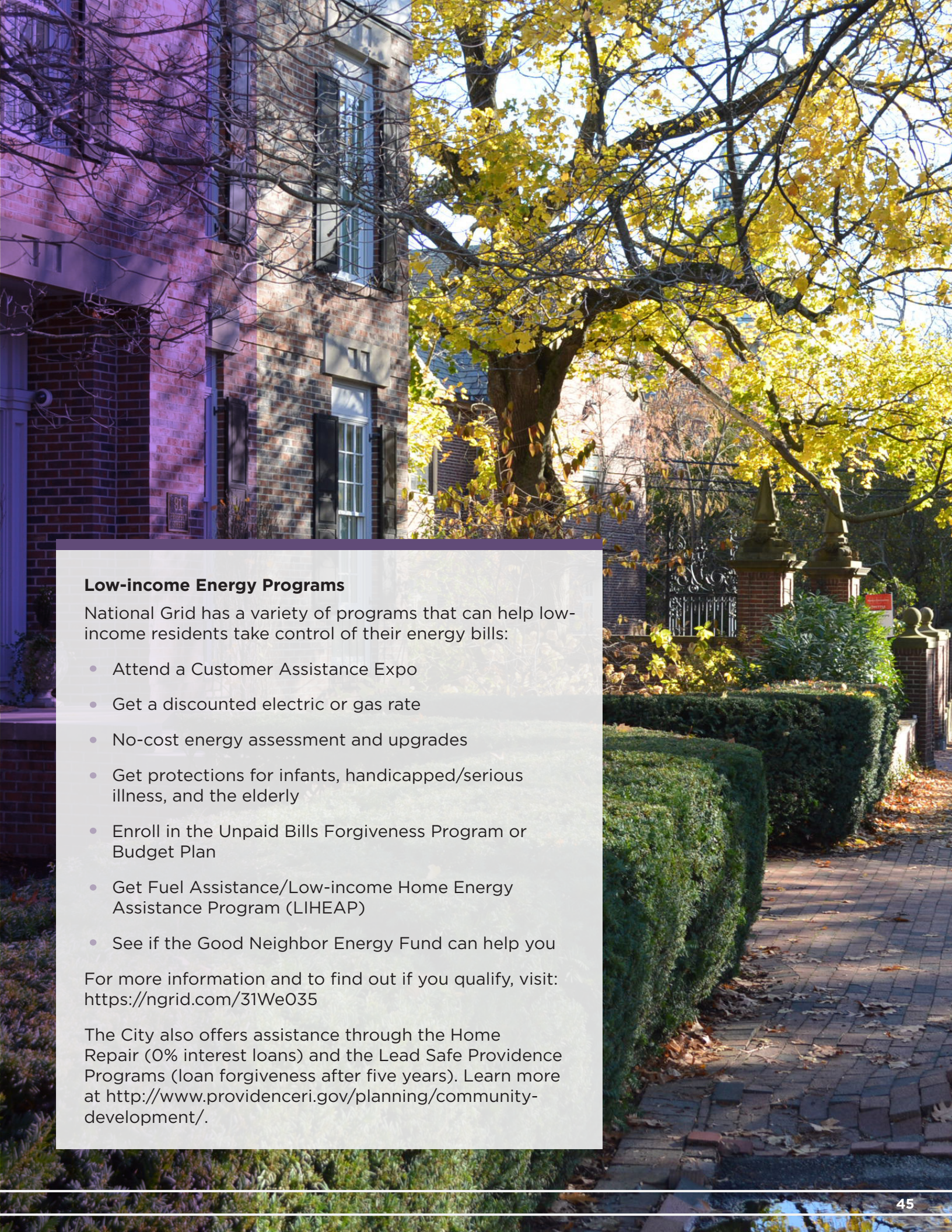
“Community Benefits Agreements (CBAs) are complex, multi-party contracts executed by several community-based organizations and one or more developers, including developers’ commitments to provide a range of community benefits related to a proposed development project, and usually containing the community-based organizations’ commitment to support approval of the project.

CBAs promote the core values of inclusiveness and accountability. CBAs promote inclusiveness by providing a mechanism to ensure that a broad range of community concerns are heard and addressed. They promote accountability by ensuring that promises made by developers, local government or other project proponents are made specific, legally binding and enforceable by the community.”



Affordable, efficient, and clean energy	Key Stakeholders
<p><b>Require homes and small buildings to disclose their energy performance at the time of rental or sale.</b> For buildings under 10,000 square feet, require the building’s energy performance to be provided at the time of sale or rental to help prospective owners and renters understand how expensive their energy bills will be. Create a clearinghouse of information where energy performance of homes for rent or sale is made available and accessible.</p>	<p>Office of Sustainability; Mayor’s Office; City Council; ESTF</p>
<p><b>Advocate for the state of Rhode Island to adopt more advanced energy code standards.</b> The state should continue to adopt the most recent energy code from the International Energy Conservation Code (IECC). Municipalities in Rhode Island must follow the state code. The State currently uses a weaker version of the 2012 code, yet it is in the process of adopting a version of the 2015 code. However the 2018 is already available and being used elsewhere in the country. Furthermore, the IECC is now developing a new code standard for 2021 that will should align with <b>net zero building</b><sup>16</sup> energy goals. The state should adopt this code when it is available.</p> <p>In the meantime, the state should allow municipalities to adopt the “stretch code” as the base code. The RI Stretch Code is a voluntary code that goes above the state’s building code. It aligns with <b>utility</b> incentives and includes an option for Zero Energy buildings. The City should require large projects, especially those that receive public subsidies to adhere to the stretch code.</p>	<p>OER; RI Building Code Commission; National Grid</p>
<p><b>Expand knowledge of and access to existing energy efficiency programs:</b> Work with frontline community organizations and the Community Action Partnership of Providence (administrator of the Low Income Home Energy Assistance Program (LIHEAP)) to expand knowledge of, access to, and better evaluations of existing <b>energy efficiency</b> programs, especially to frontline community members in culturally-appropriate ways. This effort should explore the following:</p> <ul style="list-style-type: none"> <li>• Identify specific barriers to participation among LMI populations, including through existing and/or future participation studies</li> <li>• Make programs more accessible and consumer-friendly. National Grid should find ways to simplify this process and make it more approachable to those who need assistance. It is especially challenging for low-income residents to spend time away from work and other responsibilities to prove their need for assistance.</li> </ul>	<p>Office of Sustainability; National Grid; EERMC; OER; CAPP; Division of Housing &amp; Community Investment; Frontline community organizations</p> <p><sup>16</sup> A net zero building is “one that has zero net energy consumption, producing as much energy as it uses in a year. In some months it may generate excess electricity through distributed renewables; at other times it may require electricity from the grid. On balance, it is self-supporting. Net zero buildings are more resilient during disasters and blackouts, are more carefully designed by necessity, and generally have reduced operating costs.” Project Drawdown, Buildings and Cities, Net Zero Buildings, accessed August 2019.</p>





### **Low-income Energy Programs**

National Grid has a variety of programs that can help low-income residents take control of their energy bills:

- Attend a Customer Assistance Expo
- Get a discounted electric or gas rate
- No-cost energy assessment and upgrades
- Get protections for infants, handicapped/serious illness, and the elderly
- Enroll in the Unpaid Bills Forgiveness Program or Budget Plan
- Get Fuel Assistance/Low-income Home Energy Assistance Program (LIHEAP)
- See if the Good Neighbor Energy Fund can help you

For more information and to find out if you qualify, visit:  
<https://ngrid.com/31We035>

The City also offers assistance through the Home Repair (0% interest loans) and the Lead Safe Providence Programs (loan forgiveness after five years). Learn more at <http://www.providenceri.gov/planning/community-development/>.



Affordable, efficient, and clean energy	Key Stakeholders
<ul style="list-style-type: none"> <li>• Ensure that on-bill financing includes inclusive financing that can help <b>frontline communities</b> access <b>energy efficiency</b> upgrades.</li> <li>• Employ community members to engage with their communities about existing programs like discount and disability programs, etc.</li> <li>• Expand cross-referrals between existing programs (e.g. CAPP and Home Repair) and encourage greater use of OneTouch referral system by all home-visiting housing service providers.</li> </ul>	
<p><b>Expand energy efficiency, energy access, clean energy and electrification programs to better serve low-income communities, renters, and other underserved populations:</b> This work should seek to:</p> <ul style="list-style-type: none"> <li>• Create protections for Providence low income residents through programs like Percentage Income Payment Plan (PIPP) which allows low-income households to pay a fixed percentage of their income for <b>utility</b> bills.</li> <li>• Prioritize efficiency programs for small businesses and nonprofits, with a focus on locally owned businesses and grassroots organizations for energy improvements, to support retrofits, and green economy transition.</li> <li>• Expand the cold-climate heat pump program for income-eligible customers introduced in 2019.</li> </ul>	<p>Office of Sustainability; National Grid; EERMC; OER; CAP; PUC; Frontline community organizations</p>
<p><b>Identify additional funding for energy efficiency investments in frontline communities:</b> Ensure that <b>energy efficiency</b> programs are adequately resourced to meet the need in low and moderate income households regardless of a household’s credit score, or <b>utility</b> bill payment history or ability to pay. Consider the following sources of funding:</p> <ul style="list-style-type: none"> <li>• Increase funding for the Community Development Block Grant-funded City Home Repair Program to serve a greater number of households, and expand marketing of program and emphasize focus on <b>energy efficiency</b>.</li> <li>• Support the Providence Housing Authority to leverage funding to conduct energy audits of properties and make energy improvements and eliminate the use of natural gas in their buildings.</li> <li>• Leverage funding by coupling efficiency upgrades with healthy homes improvements, such as Integrated Pest</li> </ul>	<p>Office of Sustainability; OER; Division of Housing and Community Investment, Providence Housing Authority; Frontline community organizations</p>



## Affordable, efficient, and clean energy

Management (IPM)<sup>17</sup> and environmental hazard mitigation/remediation (including mold, lead, asbestos and radon). In addition, **energy efficiency** investments should be coupled with routine maintenance and capital investments in buildings.

## Key Stakeholders

**Create more equitable energy rate structures:** Work with the state to prevent **utility** shut-offs and integrate fair rate structures that do not penalize lower consumption users disproportionately. Ensure the PUC is able to consider the impact of health, climate pollution and other social effects of energy infrastructure in their decisions.

PUC; OER; Frontline Community Members

<sup>17</sup> Integrated Pest Management (IPM) is “an effective and environmentally sensitive approach to pest management that relies on a combination of common-sense practices. IPM programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment”. U.S. Environmental Protection Agency, Integrated Pest Management (IPM) Principles, accessed August 2019.



### Providence Public Library

“Providence Public Library has embarked on Rhode Island’s largest-ever library renovation project. New energy-efficient windows and other building envelope improvements are being implemented that also meet historic preservation guidelines. New rooftop air handling units and energy recovery units will improve the efficiency of both heating and cooling. Energy-efficient lighting fixtures installed as part of the project will save more than 162,000 kilowatt hours. Special computer room air conditioning (CRAC) units are being used to create precisely controlled environments for some of the Library’s most precious materials. Greenworks Lending is providing \$1.6 million in C-PACE financing to PPL through the Rhode Island Infrastructure Bank’s RI-CPACE program. One of the important goals through this transformative renovation was to achieve greatly needed energy efficiencies throughout our aged

structures. We are confident these improvements will serve the Library well into the future but, more importantly, the savings will enable us to allocate more of our resources to the Library’s ultimate mission of providing high-impact educational programs and services to our community. We are extremely pleased to have been able to work with our architect (designLAB Architects) and construction manager (BOND), to ensure that our project was eligible for financing programs like C-PACE and the Efficient Buildings Fund.”

- Jack Martin, Executive Director of Providence Public Library





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# COMMUNITY HEALTH



## Community Health

### Objective

Create the conditions for healthy air and community spaces free from pollution for all Providence residents, with a focus on Port-area neighborhoods and other communities facing the highest rates of pollution.

### Targets

By 2035, reduce childhood asthma-related Emergency Department visit rate to 10 per 1,000 children and by 2050, reduce the rate to less than four per 1,000 children.

By 2035, **direct emissions** in **frontline communities** are reduced by 20% and all are eliminated by 2050.

By 2035, there are three **Resilience** Hubs in **frontline communities** and by 2050, there is one in every neighborhood.

### Background

Low-income communities of color are disproportionately burdened by the fossil fuel industry in Providence. Whether it is pollution from the highways that bisect these communities, or the storage and movement of fossil fuel-based goods in the port, the health of these communities suffer the most from this industry. For example, children living in the urban core of Rhode Island (Providence, Pawtucket, Central Falls and Woonsocket) experience higher asthma Emergency Department visit rates than the rest of the state. According to the 2019 Rhode Island Kids Count Factbook, the urban core rate was 12.0 per 1,000 children, while Providence alone was 13.3 per 1,000. The statewide average is 6.8 per 1,000; however, when you take out the urban core it drops to 4.3. Children in low-income families are more likely to have severe asthma. In fact, 71% of all

asthma-related emergency department visits in Rhode Island are for children in Medicaid. Geography in the city also matters. The east side has much lower rates of children living with asthma compared to the rest of the city and that most emergency room visits related to asthma are in South Providence, Washington Park, Wanskuk, and the West End—all predominantly low-income communities of color (see Figure 6). Asthma is not the only environmental-related health hazard plaguing low-income communities. While lead poisoning rates have sharply declined in recent years, Providence still has some of the highest lead poisoning rates in the state. The same neighborhoods that suffer from asthma, also suffer disproportionately from lead poisoning (see Figure 7).

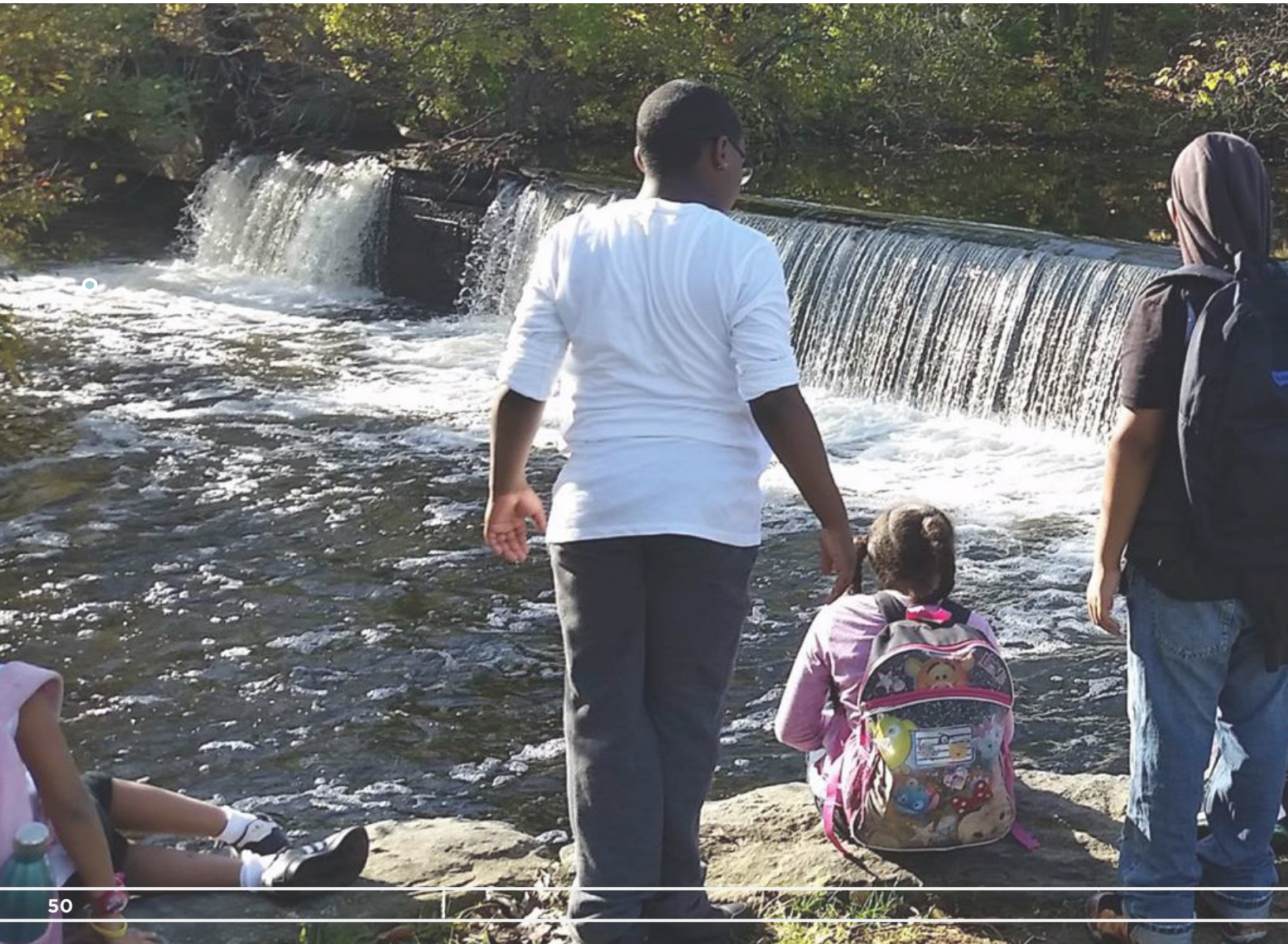
The Office of Sustainability and Healthy Communities Office have been increasing their collaboration to better address the social and environmental determinants of health. The City leads quarterly meetings with partners working on lead poisoning prevention including the Department of Health, RI Housing and Childhood Lead Action Project, and the Division of Housing and Community Investment. These meetings help partners coordinate efforts like shared messaging and outreach, as well as track collective progress towards eliminating lead poisoning in Providence. In addition, In 2017-2018, the two offices represented Providence in the development of Climate Smart Cities- Metro Providence tools for green infrastructure and climate action decision-making. This process resulted in maps, data and other information vital to developing the City's and region's priorities for strategic green infrastructure improvement. Online maps and data sources identify priorities for connecting and expanding walk/bike corridors, reducing urban heat islands, addressing stormwater challenges, and reducing inequity in climate change impact.



Led by the Healthy Communities Office, the City and its partners have taken on a number of other initiatives to address health equity and improve outcomes including:

- **Place Based Health Equity Initiatives:** From 2015 to 2019 the City's Healthy Communities Office led the City of Providence Health Equity Zone (HEZ), funded by the Rhode Island Department of Health. The Citywide HEZ brought multiple community partners together to address core health equity issues in the City's neighborhoods, with a special focus on improving access to physical activity, good nutrition and a healthy environment. This work will continue through the

Healthy Communities Office's ongoing support of urban agricultural initiatives, summer and after-school meals for City youth, improvement of the City's walking and bicycling environment, community engagement in City Parks, and more. Going forward, the Healthy Communities Office will work to bring City resources and capacities to support neighborhood-based HEZes centered in Olneyville and the West End, as well as to other place-based efforts to reduce health inequities throughout Providence.





- City Health Dashboard:** In 2016, Providence was one of four pilot cities in the Robert Wood Johnson Foundation's Municipal-level Health Data for American Cities project. This project is creating a common framework for understanding and benchmarking cities' standings in widely accepted indicators of health and creating guideposts to improve urban health nationwide. An online data visualization tool presents 26 measures related to health across the five areas: health outcomes, health behaviors, clinical care, social and economic factors, and physical environment. <https://www.cityhealthdashboard.com/ri/providence/city-overview>

The City was also recently selected by Healthy Babies Bright Futures to join its Bright Cities Program, which partners with local nonprofits and city governments to reduce their community's exposures to neurotoxic chemicals that interfere with children's ability to learn and thrive. The program is designed to lower the levels of these chemicals in air, water, food, soil and everyday consumer products.

The Department of Art, Culture + Tourism (ACT) is another key partner in creating healthy communities for all residents. The ACT Public Art Program is invested in commissioning public art works that serve as shade structures and/or water providers in the City's hottest heat islands, and to serve



## Place-Based Health Equity Initiatives

“We support Providence communities in developing place-based approaches to improving health for our most vulnerable neighbors and the city as a whole. Providence neighborhoods experience real inequities in access to good food and physical activity, social and economic opportunities, and healthy water, soil, air and living environments. Working with communities to address these issues can transform all our neighborhoods into healthy places to live, work and grow up.”

- Rachel Newman Greene, Deputy Director, City of Providence's Healthy Communities Office



as gathering points or wayfinding for disaster preparedness. ACT public art residency program embeds Providence creative workers into City agencies and community based organizations. Through these residencies, artists would develop projects that infuse artistic practices and artists' creative problem solving into residents' lives and the everyday operations of the City. This coming year, ACT will embed an artist in the Office of Sustainability to work closely with the Office, the REJC, and community members to draw attention to and build towards the goals outlined in the Climate Justice Plan and this report.

Furthermore, the City is working closely with Providence Public School District to rethink our indoor and outdoor spaces. The Healthy Communities Office and Parks Department are developing the Providence Green Schoolyard Initiative, piloted through improvement and expansion of the Bailey Elementary School grounds. The City is also

preparing to invest \$278 million in health and safety improvements for our schools, following the voter's approval of a state and local bond. To effectively leverage these funds, the Healthy Communities Office is leading the development of the Providence Green Schoolyards Guide to support schools to improve their grounds by adding school gardens, nature education space, stormwater reclamation sites, tree canopy and/or other green improvements. The City will work with RIDE and other stakeholders to move this initiative forward to create engaging learning environments both inside and outside of school buildings.

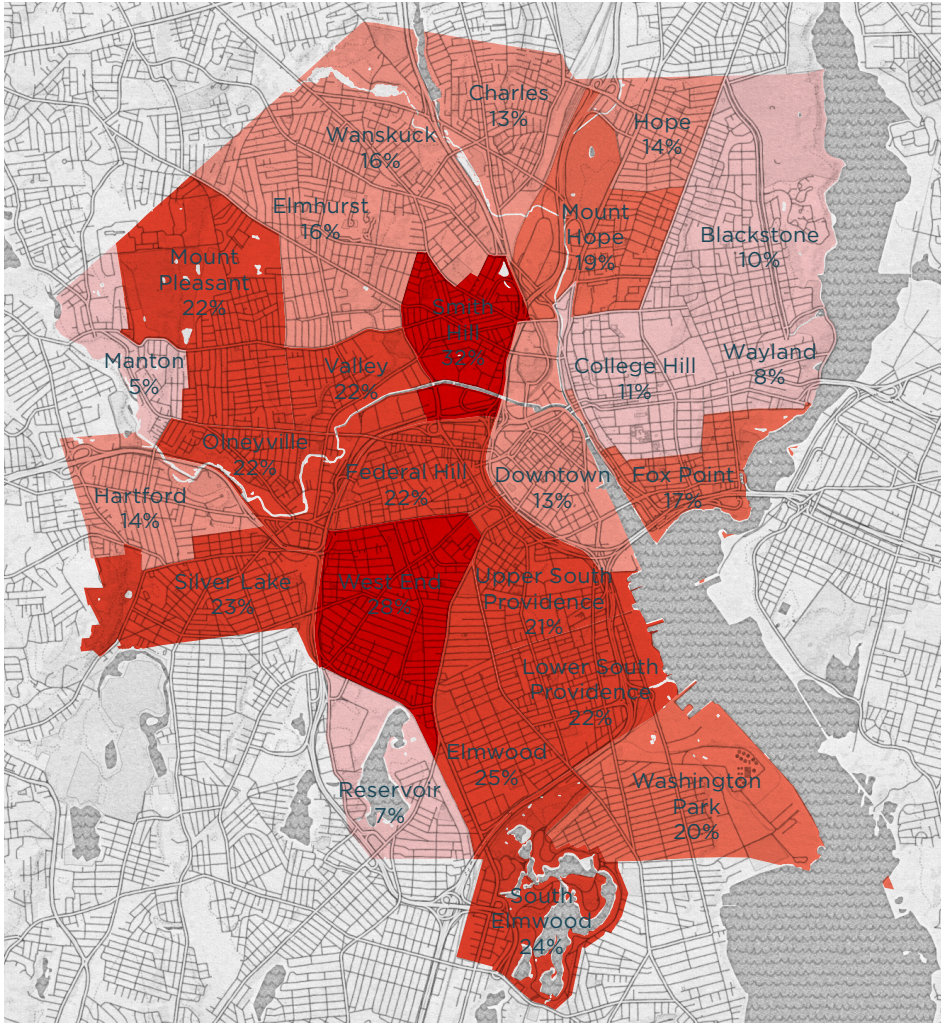
These efforts have laid a tremendous foundation, yet there is much more work to do at all levels, from grassroots to national health initiatives in order to address health inequities in Providence. The impacts of climate change such as extreme heat and flooding will only exacerbate health inequities.





# Kindergarten-Aged Children Who Have Had Elevated Blood Levels in Providence, 2014

Figure 7



**% BLL 5+**

- 5%-11%
- 12%-16%
- 17%-20%
- 21%-25%
- 26%-32%

Statewide average = 12.4%

Source: Rhode Island Department of Health Lead Elimination Surveillance System, Rhode Island GIS

Note: The population includes the total number of children eligible to enter school in fall 2014 (born between 9/1/08 and 8/30/09) with at least one confirmed lead test. Elevated blood lead levels are defined as at least one confirmed test of 5 micrograms/deciliter or higher in the child's lifetime.





## Strategies

### Air Quality

### Key Stakeholders

**Advocate for legally binding climate pollution reduction and clean energy targets:** These targets should be established at the state-level across all sectors including energy, buildings, and transportation and set a path to 100% **renewable energy** by 2050. Facilities would be required to monitor and publicly disclose major pollutants in real-time and reduce pollution to meet targets. The law should also incorporate **cumulative impact analysis**<sup>18</sup> into **emissions** standards for air and climate pollution, requiring consideration of cumulative levels and effects of past and current pollution before permits may be issued for facilities.

RI DEM; EC4; RI General Assembly; Frontline community organizations

**Explore zoning and land use policy changes to reduce pollution and improve community health:** Update **zoning** ordinance to prohibit new fossil fuel infrastructure and address cumulative health impacts. Engage in a community-led process to explore local **zoning** changes, such as performance standards, that would address the cumulative health impacts of industrial land uses adjacent to homes, schools, parks and other sensitive users starting in areas most impacted. Through this process, **frontline communities** should be able to set objectives for development. **Zoning** mechanisms would then be updated to meet these community objectives.

Planning and Development; City Council; Law Department; Frontline community organizations

Explore requiring documentation about environmental, social and economic impacts from development applicants in Providence in order to promote sound environmental and land use policy, similar to the one used by Newark New Jersey's **Environmental Justice** and Cumulative Impacts Ordinance.<sup>19</sup>

**Work with the state to communicate air quality to impacted to impacted communities:** Monitor major air pollutants and ensure residents in areas of high air pollution are aware of existing air quality conditions and improvement plans and actions. Residents must also be informed of methods to reduce their exposure to pollution and have a clear process to report violations.

RI DEM

<sup>18</sup> Cumulative impact is the “impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. Cumulative impact analysis may be thought of as a comparison of the past, present, and reasonable foreseeable health or condition of a specific resource.” US Department of Education, Federal Highway Administration, NEPA and Transportation Decisionmaking Questions and Answers Regarding the Consideration of Indirect and Cumulative Impacts in the NEPA Process , accessed August 2019.

<sup>19</sup> Newark, New Jersey, Environmental Justice and Cumulative Impacts Ordinance.



## Air Quality

### **Advocate for legislation for the elimination of gas leaks:**

Gas leaks not only result in methane being released into the air, which is one of the most potent forms of climate pollution, but they are also harmful to human health, present a serious public safety threat, and result in the premature death of street trees. In order to protect consumers from paying for gas leaks and to help ensure the leaks are addressed promptly, the state should consider a law that prohibits National Grid from passing the cost of wasted gas onto consumers. This will incentivize National Grid to fix the leaks as quickly and as cost-effectively as possible. When a similar bill was passed in Texas, 55% of the leaks were fixed within 3 years.

The state should also consider a law requiring National Grid to repair gas leaks during road construction projects. Whenever a street is already open for construction, National Grid should check and repair all gas leaks in that area. Repairing leaks before repaving is not only cheaper for National Grid (and therefore, rate-payers), it also decreases the chance the street will need to get opened up soon afterward for pipeline repairs, reducing future street repaving needs (and costs) for the local municipality and disruption for nearby residents.<sup>20</sup>

## Key Stakeholders

OER; PUC; National Grid

## Healthy Community Spaces

### **Maximize the health and climate benefits of green spaces:**

Design policies and incentives for private landowners, business, landlords to use native species and reduce the use of fossil fuel derived fertilizers and pesticides. Advocate at the state Department of Transportation, and other governmental institutions with land holdings in Providence, for similar climate friendly practices and conversion.

## Key Stakeholders

Mayor's Office; City Council; RI DOT

**Expand community facilities for cooling:** Increase cooling center, water park hours and access, ensure consistency in operations and communication to the public.

PEMA; Public Property; Parks and Recreation

<sup>20</sup> Conservation Law Foundation, Markey Gas Leaks Report, accessed June 2019.



Healthy Community Spaces	Key Stakeholders
<p><b>Support the development of a Green Port Initiative:</b> Work with the port-area Green Justice Zone to create a long-term vision and process to address the negative health impacts, eliminate climate and other pollution, ensure the port is resilient to the impacts of climate change, and increases the positive benefit of the port for neighboring communities, workers and businesses. The Collaborative should include businesses in the port, frontline workers, and frontline community neighbors of the port.</p>	<p>Mayor’s Office; RI DEM; RI Attorney General’s Office; Port employers and employees; Port-area <b>frontline communities</b></p>
<p><b>Work towards a zero emissions, pollution-free port:</b> Implement strategies to reduce climate and other pollution from port operations including vessels, trucks, cargo-handling equipment, and other industrial processes. Working with the Green Port Collaborative (see above):</p> <ul style="list-style-type: none"> <li>• Incentivize more efficient shipping practices including infrastructure for more fuel efficient vessels coming in and out of the Port.</li> <li>• Conduct and publish a carbon <b>emissions</b> inventory of the port area that includes <b>co-pollutants</b>. Businesses would be required to provide their data to the City if not already available.</li> <li>• Set short-, medium- and long-term <b>emissions</b> reduction targets and create plans to meet targets.</li> <li>• Create a fee on <b>emissions</b> from the port. Revenue should support a near-port community-controlled fund for investments to help them transition from fossil fuels and be protected from climate change.</li> <li>• Explore a zero-emission standard for port operations.</li> <li>• Explore ways to include the community, and equity and climate targets in the ProvPort lease agreement.</li> </ul>	<p>Mayor’s Office; RI DEM; RI Attorney General’s Office; Planning and Development; Port employers and employees; Port-area <b>frontline communities</b></p>
<p><b>Work towards a clean port economy:</b> Restrict the import and storage of hazardous and polluting materials in the Port with a goal to phase out such materials by 2040</p> <ol style="list-style-type: none"> <li>1 Increase import fees for fossil fuels. Revenue should be designated to support <b>frontline communities</b> transition from fossil fuels and be protected from climate change.</li> </ol>	<p>RI DEM; Mayor’s Office; City Council; RI General Assembly</p>



## Healthy Community Spaces

- 2 Assess and report hazardous materials imported, transported and stored at the Port.
- 3 Limit and restrict fossil fuel and other hazardous materials import and export.

**Create a network of Resilience Hubs:** According to a paper<sup>21</sup> from the Urban Sustainability Directors Network, Resilience Hubs are defined as:

“Community-serving facilities augmented to:

- 1 Support residents and
- 2 Coordinate resources distribution and services before, during or after a natural hazard event.

They leverage established, trusted, and community-managed facilities that are used year-round as neighborhood centers for community-building activities. Designed well, Resilience Hubs can equitably enhance community resilience while reducing **GHG emissions** and improving local **quality of life**. They are a smart local investment with the potential to reduce burden on local emergency response teams, improve access to health improvement initiatives, foster greater community cohesion, and increase the effectiveness of community-centered institutions and programs.

Moreover, Resilience Hubs provide an opportunity to build local community power and leadership. They are focal points for neighborhood revitalization that provide the resources residents need to enhance their own individual capacity while also supporting and strengthening their neighborhood and neighbors. Instead of being led by local government, they are intended to be supported by local government and other partners but led and managed by community members, community-based organizations, and/or faith-based groups.”

They can be located in city-owned, community-owned, and non-profit owned spaces throughout the City, and should prioritize serving **frontline communities**. Resilience hubs will be accessible and safe spaces for community, managed by community organizations trained in trauma-informed response.

## Key Stakeholders

Public Property; PEMA; Office of Sustainability; Recreation; Frontline community organizations

<sup>21</sup> Urban Sustainability Directors Network (USDN), Resilience Hubs: Shifting Power to Communities and Increasing Community Capacity.





# LOCAL AND REGENERATIVE ECONOMY



## Local and Regenerative Economy

### Objective

Build a sustainable, zero-waste economy in Providence, one in which we produce and consume to live well without living better at the expense of others, with a focus on supporting local businesses and creating meaningful work for local frontline community members.

### Targets

By 2040, eliminate food waste in Providence.

Meet annual targets of 10% of City spending in municipal purchases of goods and services from state-certified women-owned enterprises and 10% of City spending in municipal purchases of goods and services from state-certified minority-owned enterprises as outlined in City ordinance.

### Targets to Develop

Increase number of enterprises in Providence that are democratically controlled and operated by their own workers.

Increase partnerships with frontline community organizations for workforce training.

Expand training and educational opportunities offered through the PVD Self Employment Program for unemployed and underemployed Providence residents, specifically for **frontline communities**.

Increase investments from the Providence Business Loan Fund that are supporting enterprises that are engaging in a circular and regenerative economy, specifically to people of color in Providence.

### Background

The transition away from fossil fuels is an opportunity to transform our economy into one that values planetary health and human wellbeing. Conventional economic thinking has led to the Earth's sixth mass extinction, according to recent warnings from scientists.<sup>22</sup> The take-make-waste extractive industrial model has ravaged the planet's natural resources, spread trash to the deepest parts of the ocean and the highest mountain peaks, poisoned our air and water, created vast global inequality, fueled violence and oppression, and is ultimately the driving force behind the current climate crisis. If humans continue on with business as usual, climate change could cost the U.S. economy hundreds of billions a year by 2090.<sup>23</sup>

A **just transition** away from a fossil-fuel based economy must focus on an economy that recognizes how the health and wellbeing of humans entirely depends on protecting and investing in the natural systems we need to survive. A regenerative economy sees the planet and its living systems as top capital assets and, by definition, self-sustains. It also places value in how people live well and thrive in a place. By shifting towards a regenerative economic model (also known as circular economy), we can protect the Earth as our number one capital asset, live well while doing so, and set a sustainable and equitable economic foundation for current and future generations to follow and build upon.

<sup>22</sup> Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines. Gerardo Ceballos, Paul R. Ehrlich, and Rodolfo Dirzo, Proceedings of the National Academy of Sciences of the United States of America. July 2017.

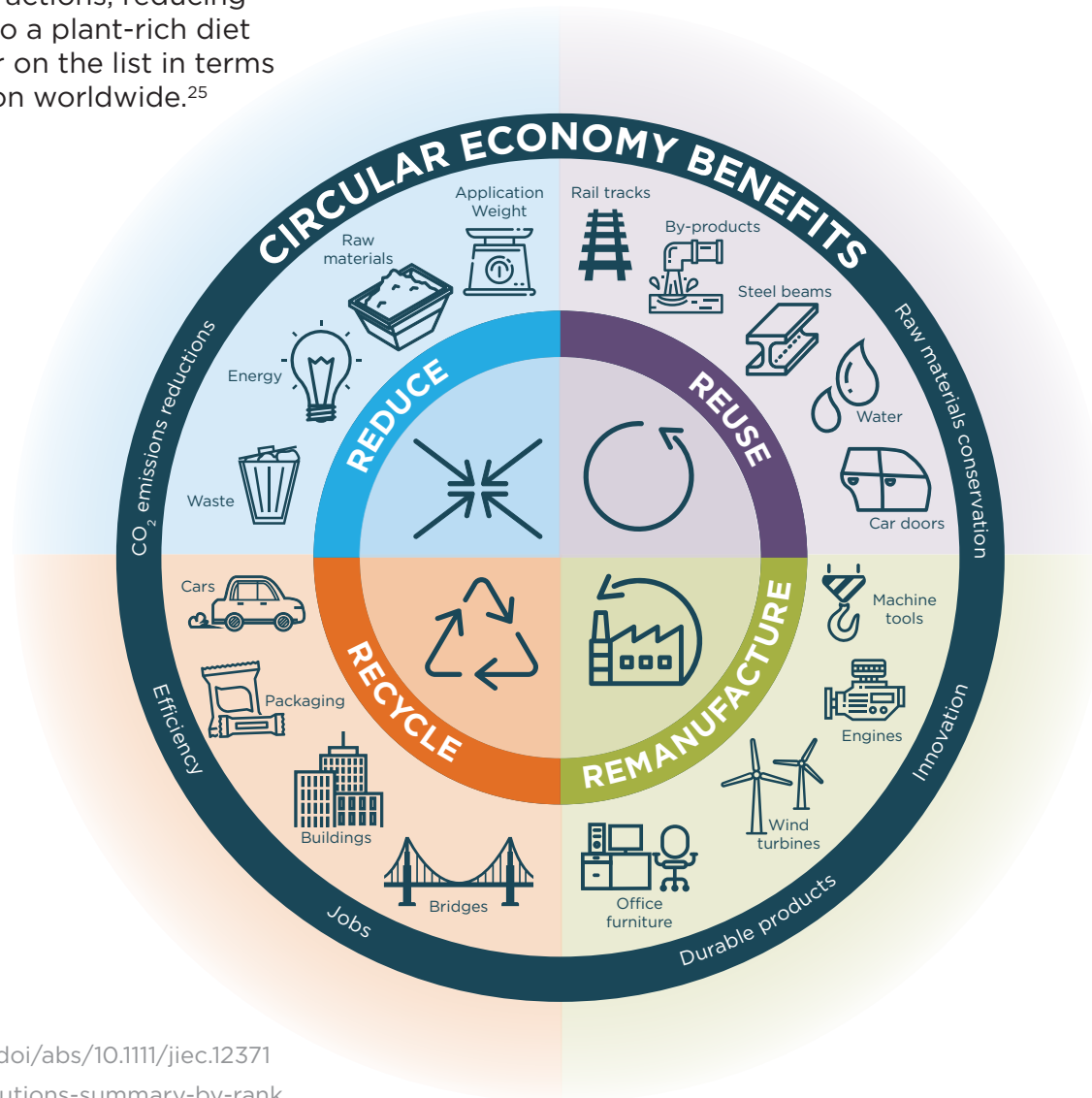
<sup>23</sup> <https://www.nature.com/articles/s41558-019-0444-6>



## Turning Rhode Island’s Waste into Climate Resilient Resources

Understanding how we use - and ultimately dispose of - the items we purchase is one of the first steps in regenerative economic thinking. In particular, wasted food has far-reaching environmental, economic and social impacts. When you waste food, you waste the energy, water and labor that went into growing, farming, processing, transporting, packaging and refrigerating that food. A study published in 2015 by the Journal of Industrial Ecology shows that household consumption of food and material goods is responsible for up to 60 percent of global **greenhouse gas emissions**.<sup>24</sup> Furthermore, according to Drawdown, a comprehensive study examining the most impactful climate actions, reducing food waste and switching to a plant-rich diet are numbers three and four on the list in terms of reducing climate pollution worldwide.<sup>25</sup>

While waste accounts for less than one percent of Providence’s overall climate pollution, Providence’s **greenhouse gas** inventory does not take into account the up and downstream impacts of what we consume and how we dispose of it. The measurement approach used does not capture the climate pollution that is generated from the factories and farms that produce the goods and food consumed in Providence.



<sup>24</sup> <https://onlinelibrary.wiley.com/doi/abs/10.1111/jiec.12371>

<sup>25</sup> <https://www.drawdown.org/solutions-summary-by-rank>

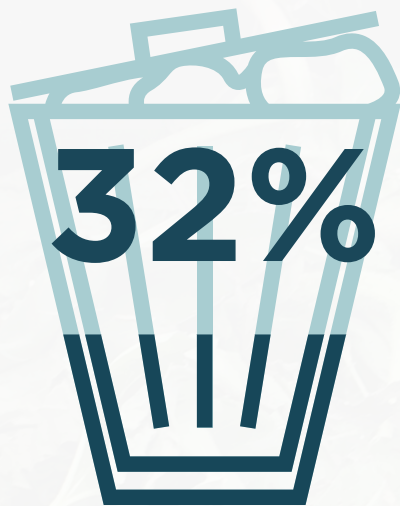


Through food waste prevention, rescue and recovery efforts, Rhode Island can prolong the life of our landfill and cut down on climate pollution, but we can also improve the health and quality of our local soil. Soil is the foundation of food production and food security, supplying plants with nutrients, water, and support for their roots. Without healthy soil, it is harder to grow the food we need and the actual nutritional value of our food goes down. At the same time, our soils are valuable shields in the fight against climate change; they contain more carbon than all above-ground vegetation and help

store and regulate **greenhouse gas emissions**. But our planet's soils are rapidly degrading due to human activities such as large-scale, intensive chemical farming and rapid urban development. According to a 2015 United Nations report, the majority of Earth's soil resources are only in fair, poor, or very poor condition.<sup>26</sup> Turning Providence's wasted food into soil-supporting compost for local farmers can create jobs, turns waste into a valuable resource, supports Rhode Island farms and food businesses and is a key component to creating a circular, regenerative economy.

## Tackling the waste problem is crucial to fighting the climate crisis.

Rhode Island's landfill is expected to run out of room by 2024, and once that happens, waste disposal costs will likely increase substantially as the state seeks alternative places and processes to manage trash. But not all of Rhode Island's trash needs to be wasted.



In 2018, the Rhode Island Resource Recovery Corporation (RIRRC) estimated that **32% of the state's municipal landfill waste, or 103,754.86 tons, was food and other organic materials that could be turned into compost.**

Not only does food take up valuable space in our landfills, food rotting in landfills produces Methane ( $\text{CH}_4$ ), a **greenhouse gas** 30 times more harmful than  $\text{CO}_2$ .

If that 32% were composted instead, it would have saved approximately 44,033 tons of **CO<sub>2</sub>e** from entering the atmosphere and created natural soil-strengthening compost that Rhode Island desperately needs.

<sup>26</sup> <http://www.fao.org/3/i5199e/i5199E.pdf>



## Existing Programs and Policies

The City of Providence has begun integrating elements of regenerative economic thinking throughout its operations, programs and policies. Through the use of interdepartmental working groups, representatives from various City departments work together across silos to come up with innovative, holistic, systems-driven solutions to specific challenges. Offices like Sustainability, Healthy Communities, Innovation and Economic Opportunity and the Art, Culture + Tourism Department all engage in work that seeks to address root causes while creating pathways for a healthier, more **climate resilient** and equitable City. Breaking down silos is critical to creating holistic solutions that embrace a regenerative economic model.

### Sowing Place: Creating an inclusive local cultural and food economy

In spring 2016, the City and community partners were awarded a grant from the Kresge Foundation to design neighborhood-scale projects demonstrating creative, cross-sector visions of food-oriented development. This grant helped establish Sowing Place, a creative placemaking initiative organized by the Department of Art, Culture + Tourism in partnership with the Providence Healthy Communities Office, the African Alliance of Rhode Island, West Elmwood Housing Development Corporation's Sankofa Initiative, and Southside Cultural Center of Rhode Island. Facilitated by Providence-based poets Vatic Kuumba and Laura Brown-Lavoie, this project supports a unique set of food and arts events to promote an expansive perspective of health and well-being. The collaboration centers communities, vendors, and artists of color to build a strong, inclusive local cultural economy and a resilient local food system.







## Community Highlight: Urban Greens Co-op Market

“**Cooperatives** like Urban Greens are economic engines that can create sustainable jobs, contribute to social equality, and are democratically controlled by its members. Urban Greens is the sole commercial tenant in a mixed-use development comprising two buildings that also includes 30 residential units – six of which will be reserved for affordable housing funded through the City of Providence’s Home Investment Partnership Program (HOME). The \$2.2 million Urban Greens project is expected to generate 28 part-time and full-time jobs. Urban Greens is thrilled to be the newest co-op in a small but growing number of **cooperatives** in Rhode Island, and we’re committed to serving and empowering the communities that surround us.”

- Philip Trevvett, Urban Greens council member





## Workforce Development

The City's Office of Economic Opportunity incorporates regenerative economic thinking within their mission, using innovative ways to create employment pathways specifically for low-income and unemployed residents in Providence. Initiatives like the Summer Youth Employment Program, Workforce Solutions, PVD Self-Employment program and the Minority and Women-Owned Businesses Procurement Program all aim to expand opportunities for the City's low-income persons and economically distressed neighborhoods to support economic growth, improve **quality of life**, and strengthen communities and neighborhoods.

The Self-Employment Program was created by the Office of Economic Opportunity, in partnership with the Center for Women and Enterprise and the Division of Community Development, in order to serve currently unemployed and under-employed Providence residents who are interested in starting their own businesses. The PVD Self-Employment Program has a goal of providing unemployed and under-employed Providence residents with the training and support necessary so that they can become reemployed by starting their own businesses. The program consists of a three-module course: Business Planning, Financial Literacy, and a Mentoring Program. The program will provide training and educational opportunities to 100 unemployed and under-employed Providence residents, helping them gain the financial literacy, practical business skills, and access to capital required to start and grow small businesses.



## Zero Waste

The City of Providence's Sustainable Providence plan sets a goal to create a Zero Waste strategy by 2033, and the City continues to make progress towards increasing its residential recycling rate and supporting food rescue and recovery efforts throughout the city. As a whole, Rhode Island's wasted food recovery and composting sector is growing. In 2016, the state passed a law requiring large producers of organic waste, such as universities and hospitals, to separate and divert their food scraps from ending up in the landfill, helping to carve out space for food recovery businesses to thrive.

There is also a growing number of local composting businesses and nonprofits who are providing residential and commercial food scrap collection or drop-off options. Providence's Office of Sustainability, in partnership with the Zero Waste Providence group, are exploring neighborhood-scale composting solutions and working on a campaign to get 100 business in Providence to compost by the end of 2020. As part of 100x2020 initiative, the City and partners hosted an event in early 2019 to help restaurants learn about composting and connect with service providers. The City has also developed a "Compost" webpage so that residents, businesses and institutions can easily get all the information they need in order to compost properly at home, on site, or through a local service.

The Office of Sustainability has also been working with Art, Culture + Tourism to encourage (and later on, ensure) special events in the city are zero waste. The goal is to begin with City-sponsored events such as PVDFest, 4th of July Celebration, Tree Lightings, and neighborhood parks performances, and then establish policies that help community-driven events reach zero waste goals.

## Food & Education

As of 2018, ninety-one percent of Providence Public School District's students are children of color, and eighty five percent qualify for free or reduced lunch. Sodexo, the District's Food Service Management Company, reports an average of 12,350 students eat breakfast and 17,050 eat lunch at school per day, all of which are provided at no cost as of September 2019.



Community Farm. Photo Credit: City of Providence



## Strategies

### Key Stakeholders

**Create workforce development programs to support a just transition away from fossil fuels:** Create programs that will help prepare **frontline communities** to have meaningful work in the carbon-free economy. This should include training and education in industries such as construction, **energy efficiency**, clean energy, electrical trades and engineering, including job training for frontline community members to provide education and implementation of **energy efficiency** and electrification services. It should also:

- Support self-employment and **cooperatives** for frontline community members, especially in industries that foster a regenerative economy.
- Create partnerships with frontline community businesses and community organizations to deliver trainings, efficiency and **renewable energy** services and products.
- Train local employers, especially in the clean energy industry, in **racial equity** and sustainability practices, and provide guidelines that support the training, hiring and retention of local, frontline community members.
- Create a clear definition for **just transition, circular, local and regenerative economy** businesses and operations for Providence.

Office of Economic Opportunity, Frontline community organizations

**Strengthen City policies supporting local frontline community workers and businesses:** Continue efforts to ensure compliance with the First Source Ordinance, which supports local hiring. Implement additional policies to improve local labor conditions, especially for **frontline communities**. This includes supporting unionized labor and providing a dignified wage, paid time off and other benefits. In addition, work with the state to improve accessibility of becoming W/MBE certified for small businesses.

Office of Economic Opportunity

**Create employment pipelines for local residents to work at the port:** Review local hiring needs processes within the port-area and identify ways to make these jobs more accessible to port-area residents.

Office of Economic Opportunity



**Zero Waste**

**Key Stakeholders**

**Create recognition program for local businesses that are composting and engaging in responsible waste management:**

Highlight and celebrate local businesses who are composting, recycling and incorporating other sustainable actions throughout their business operations. Explore different types of recognition models / award programs for maximum incentivization.

Office of Sustainability,  
Office of Economic  
Opportunity

**Increase carbon sequestration in soils through composting:**

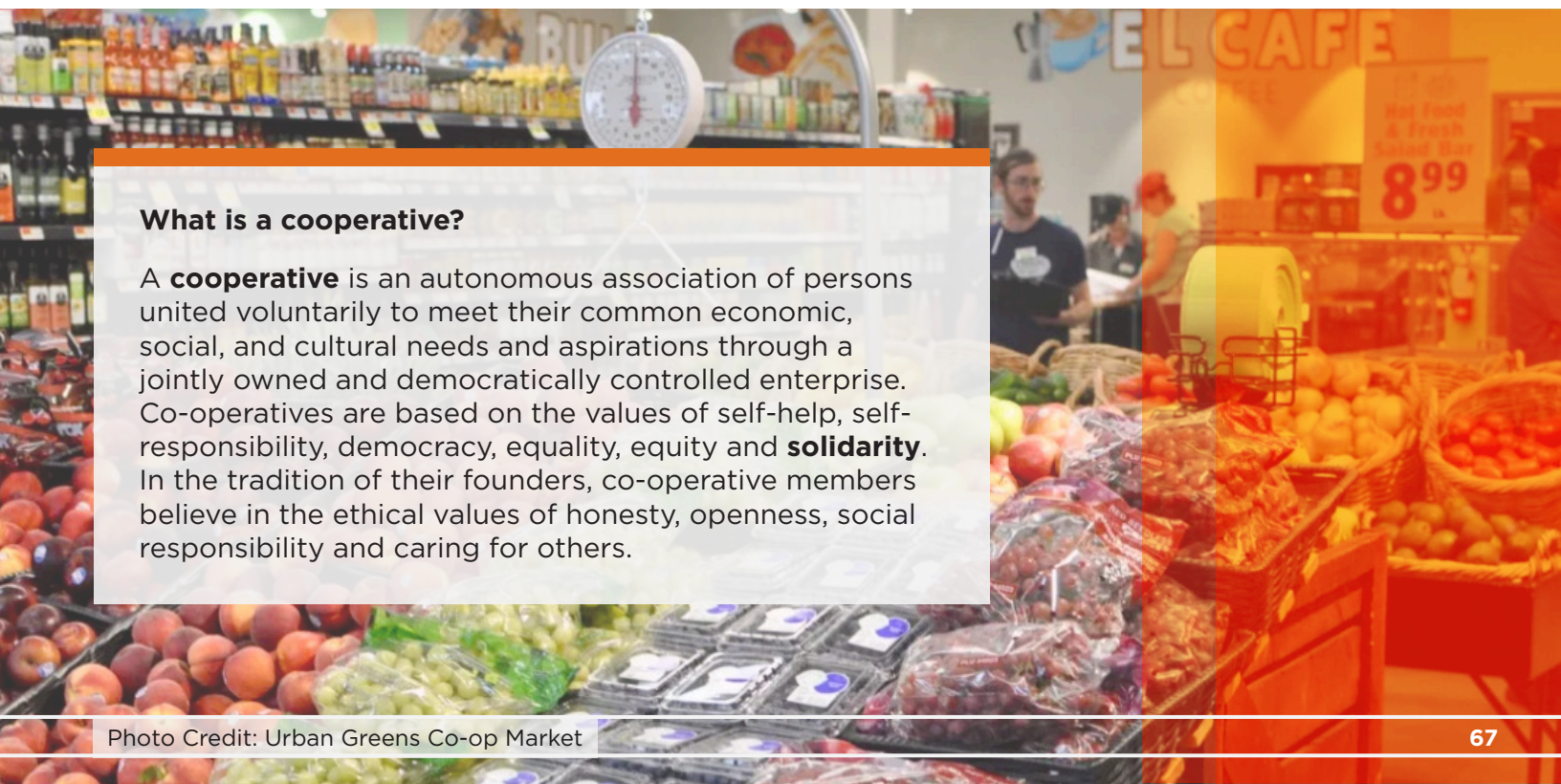
Explore the benefits of adding compost to soils to increase carbon sequestration and stormwater runoff treatment capacity. Continue to promote local use of finished compost.

Office of Sustainability;  
Parks Department

**Explore a city-wide community composting program and other food waste reduction strategies:** Work with local community groups to pilot community composting throughout the City. Use various models of neighborhood composting that incorporate curbside pickup, multiple drop-off locations, incentivize at-home composting, etc. Ensure that the resulting composting program will not economically or otherwise burden communities of color.

Office of Sustainability;  
Healthy Communities Office

Explore opportunities to reduce waste through programs such as “gleaning,” where crops that would otherwise be wasted are harvested and donated to those in need.



**What is a cooperative?**

A **cooperative** is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. Co-operatives are based on the values of self-help, self-responsibility, democracy, equality, equity and **solidarity**. In the tradition of their founders, co-operative members believe in the ethical values of honesty, openness, social responsibility and caring for others.





# CLEAN ENERGY



## Clean Energy

### Objective

Transition to 100% clean energy supply in Providence, with a focus on local generation and equitable access.

### Targets

By 2035, 50% of electricity is carbon-free.

By 2050, 100% of electricity is carbon-free.

Local generation accounts for 30% of supply.

### Targets to Develop

Number of low to moderate income Providence residents enrolled in community solar.

Percentage of clean energy assets in Providence owned by frontline community organizations and individuals.

### Background

Electricity in Providence is getting greener over time due to three main factors. First, the state's **Renewable Energy** Standard mandates that electricity suppliers increase the share of **renewables** in the electricity mix. Originally set to achieve 16 percent **renewable energy** by 2019, the RES was updated in 2016 to set a statewide target of 38.5 percent **renewable energy** by 2035. Secondly, more and more businesses and residents in Providence are choosing to go solar. Installed solar capacity has grown from just .08 MW to 6.2 MW between 2008 and 2018 (See Figure 8). This has been the result of dropping prices for solar, state and federal incentives and policies, and City programs such as Solarize Providence. The City has also made it easier to go solar by streamlining the permitting process and creating a web page that serves as a one-stop-shop for residents and businesses interested in going solar.

For those residents or businesses that can't put solar or other **renewables** on their property, there are other options. Large nonprofit institutions such as universities and hospitals can participate in **Virtual Net Metering**, where they get credit from renewable projects offsite. Smaller businesses and residents can soon participate in a similar process through community solar, where sign up to get credits from a portion of a larger solar farm. It is just like having a plot in a community garden. Lastly, you can always switch your energy supply to **renewables** through a third party supplier. Just make sure you read the fine print. In order to ensure your **renewables** are having a true positive impact, look for organizations that support local renewable projects.

In order to meet our clean energy goals going forward, Providence must rapidly accelerate the adoption of local energy. We must also be cognizant of who has access to these opportunities. Installing solar panels can provide significant savings for the homeowner. However, you need to own your home, have a new roof and upgraded electrical services, and have access to a loan or be able to self-finance. This creates many barriers for low and moderate income families. Furthermore, as more and more people opt to generate their own electricity, the grid still needs to be maintained. Most residents and businesses with solar are generally still connected to grid and rely on it for their energy needs. Fees and rate structures will need to shift to better account for the costs solar incurs and the value it provides to the grid. Without changes to the current model, once solar reaches high deployment levels, those who have not been able to go solar could end up paying a disproportionate amount to keep the energy system up and running. Taking an equitable approach means that every clean energy program is focused on helping low income, communities of color become less burdened by the cost and the environmental impacts of our energy system and working towards **Energy Democracy**.



Figure 8

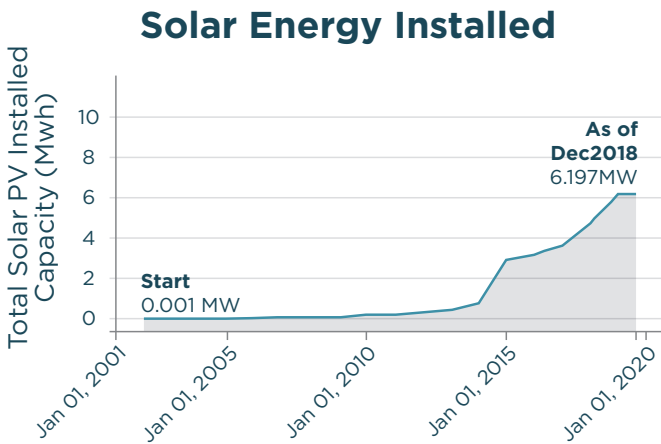


Figure 8: Annual solar PV interconnection data is provided by the RI Office of Energy Resources. Source: SustainPVD, 2018.

## What is community solar?

Also known as shared solar or solar gardens, is a distributed solar energy deployment model that allows customers to buy or lease part of a larger, offsite shared solar photovoltaic (PV) system. Community solar subscribers typically receive a monthly bill credit for electricity generated by their share of the solar PV system, as if the system were located on their homes/premises.<sup>27</sup>

<sup>27</sup> National Renewable Energy Laboratory: State, Local and Tribal Governments, Community Solar site, accessed June 2019: [www.nrel.gov/state-local-tribal/community-solar.html](http://www.nrel.gov/state-local-tribal/community-solar.html)



### Community Solar in Providence

“The Office of Energy Resources is launching a Community Solar Marketplace, a place on our website where low-to-middle income community members can go for all the resources they need. We have this unique opportunity to get ahead of the market and we have money specifically for community input. Trust is an important part of this - talking to people who are trusted members of the community. Complementing this work is a new Community **Renewables** program through the **Renewable Energy** Fund. It is designed for community solar developers to actually get customers and allocates funding to developers that they can then pass along as savings to their customers.”

- Shauna Beland, Chief of Program Development for **Renewables** & Solar, Rhode Island Office of Energy Resources



## Strategies

### Key Stakeholders

**Implement community choice aggregation (CCA):** Community Choice Aggregation (CCA) (also known as Green Municipal Aggregation, Community Energy Choice, and other names) allows the City to purchase greener electricity in bulk on behalf of all residents and businesses in the City. This generally allows the City to get a cheaper rate than what customers could get on their own with a third party supplier, or with the basic supply rate from National Grid. National Grid continues to provide electric transmission and distribution service to all customers. Residents or businesses would have the opportunity to opt-out of the program at no cost. It has been done all over the country, including 147 municipalities in Massachusetts. Providence's CCA should prioritize local, **renewable energy** sources and include principles of **energy democracy**.

Office of Sustainability;  
Mayor's Office;  
City Council; RI PUC;  
ESTF; Frontline community  
energy organizations

**Increase access to renewable energy for frontline communities via community solar other programs:** Work with frontline community organizations and members to implement policies and programs to increase access to **renewables** including:

Office of Sustainability; RI  
PUC; RI OER

- Community solar programs that allow residents to subscribe to local solar energy projects. These projects should have a low-income participation requirement, use rooftops, vacant lots, brownfields, and community rooftops, and use local union labor. The City should explore using its own buildings to support a community solar project for low-income residents, renters, and others who don't have access to solar. **Frontline communities** should be resourced to lead engagement efforts to drive project participation and development,
- Explore funding/capital opportunities, such as 0% interest loans for frontline community organizations and individuals to directly and democratically own clean energy assets.
- Identify additional opportunities for climate resilient, renewable, affordable, and environmentally-just forms of energy generation, transmission, distribution, and consumption, such as community-owned **microgrids**.

**Prioritize development in the port to support offshore wind:** Continue efforts to ensure the growing offshore wind industry can use Providence's industrial waterfront to site their supply chains. The companies using this infrastructure should be held to robust local workforce, environmental, and economic development targets.

ProvPort; Mayor's Office



## Key Stakeholders

**Address local impacts of regional power operations:** Work with RGGI, DEM to ensure that the operation of Manchester Power - as part of the regional grid - measures, reports and reduces impacts on local air quality on a routine basis. Addressing the impact of regional initiatives on local communities, ensures accountability to the local communities in which they operate.

RI OER, RI DEM, RGGI

## Take Action!

Have you noticed more and more of your neighbors going solar? That is because it can reduce your energy bills and save you money! Visit [www.providenceri.gov/sustainability/go-solar-providence/](http://www.providenceri.gov/sustainability/go-solar-providence/) to learn everything you need to know about going solar for your home or business.

Don't own your own spot? You can still go green by joining a community solar farm or purchasing **renewables** through a third party supplier. Make sure to do your homework. Look for locked in rates and local **renewables**.



## Providence Port

“We shipped out the last shipment of coal by barge a few months ago and we don’t see it coming through the port again anytime soon. We are looking to do more work with offshore wind like what we did for Deepwater Wind on Block Island Wind Farm. A big part of this shift is market conditions. There is a massive opportunity for ports right now when it comes to offshore wind energy - it is growing exponentially up and down the East Coast, with a development pipeline of 20 gigawatts or more over the next 10-15 years. ProvPort and Waterson Terminal Services are extremely well positioned to play a major role in this industry.”

- Christopher Waterson, General Manager of Waterson Terminal Services, Port of Providence



Prov Port Wind Turbines. Photo Credit: Waterson Terminal Services, LLC



Photo Credit: Grace Brown

## Resident - Grace Brown

“I am an engineer. I learned about solar 30 years ago, but it was not efficient enough, not affordable enough and I was smart enough to realize that. When [the solar community] began talking about adding direct current, they had to meet their aspirations with what people could actually afford. Once that happened, I said ‘that’s for me!’ I installed solar two years ago. It’s been financially lovely! On a long summer day about a year ago, I got a nice check for \$300.”

- Grace Brown, Providence Resident & Engineer





BIKE  
to your destination! Recycle-A-Bike will park  
ALE



# TRANSPORTATION



## Transportation

### Objective

Ensure that all Providence residents have access to clean and efficient public transportation and infrastructure that supports walking and riding bicycles, while reducing carbon and **co-pollutants** in the city, with a focus on areas with cumulative health impacts.

### Targets

By 2035, 11% reduction in Vehicle Miles Traveled (VMTs) and by 2050, 20% reduction in VMTs.

By 2035, 43% of VMTs in Providence are electric and by 2050, 80% of VMTs are electric.

By 2035, increase the number of employers in Providence offering RIPTA's EcoPass to their employees from 50 to 200.

Increase the number of trips taken using JUMP Boost plan subscriptions to 10%.

### Targets to Develop

Increase in public transit ridership in Providence.

Reduce diesel truck traffic in **frontline communities**.

Increase low-carbon transit options in **frontline communities**.

Increase sidewalk maintenance and investment in **frontline communities**.

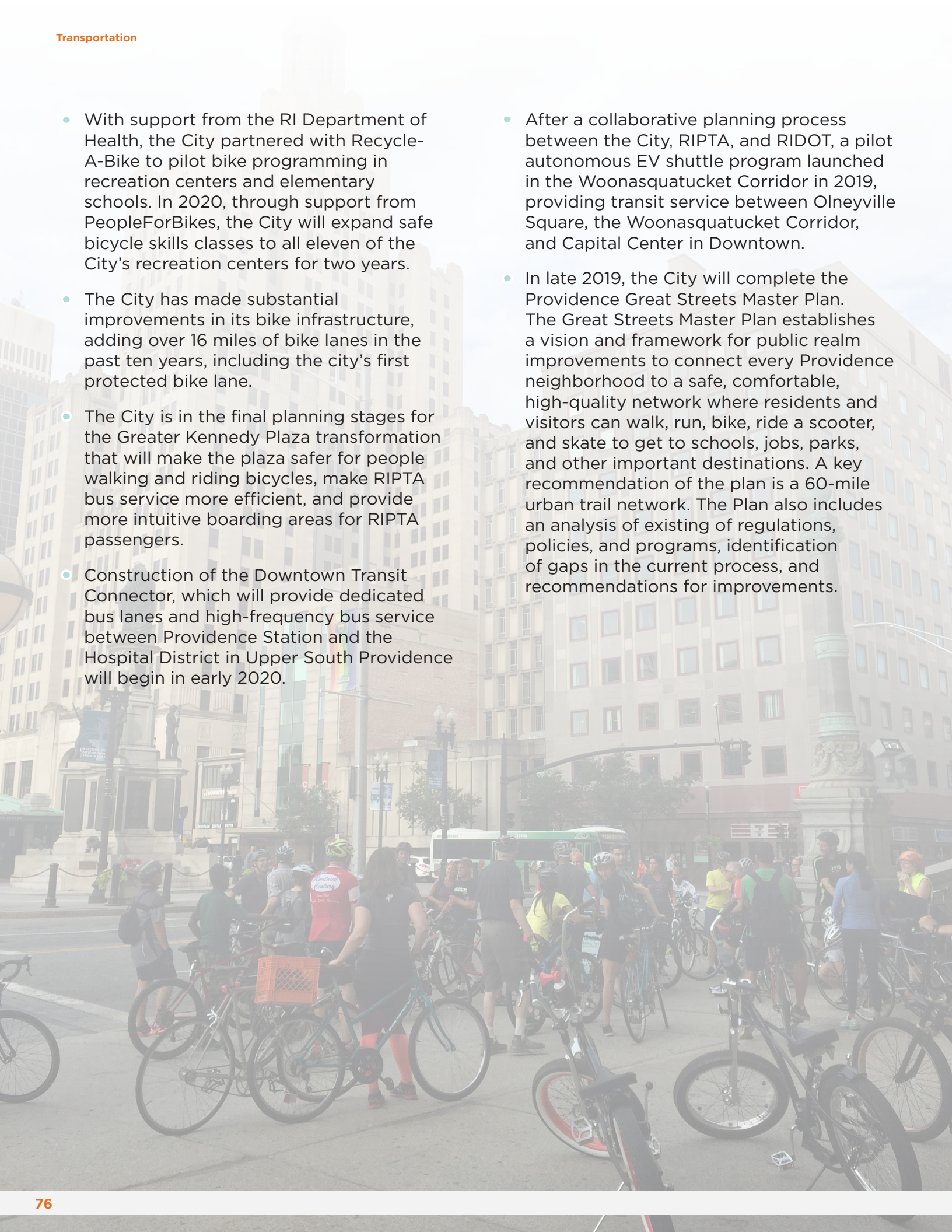
### Background

The *Sustainable Providence* plan sets a goal to “Ensure all road users have access to balanced, safe, and affordable transportation options.” Substantial progress towards this goal has been made in recent years with investments to make Providence a safer and more comfortable place to walk and ride bicycles, make public transportation cleaner and easier to use, and introduce new forms of transportation like electric-assist bicycles and scooters and electric autonomous vehicle shuttles. Key milestones include:

- Providence's new **Zoning** Ordinance, passed in 2014, removed parking minimums in Downtown and transit-oriented zones, reduced parking minimums in other areas of the city, allowed for shared and more flexible parking city-wide, and introduced requirements for bicycle parking.
- In 2016, Mayor Elorza signed an Executive Order requiring most major road restriping and construction projects to go before the Providence Bicycle and Pedestrian Advisory Commission for review and public comment.
- In 2017, 29 City employees participated in Complete Streets training.
- In 2018, RIPTA announced it will be adding three electric buses to its fleet, with the goal of adding 16 to 20 of such buses in 2021. The first three will replace existing buses on routes that serve low-income, **environmental justice** communities.
- In the the Fall of 2018, Providence launched its electric bikeshare program with an additional expansion in Spring 2019. This program includes 1100 JUMP bikes citywide. The City is in its second year of its E-Scooter Program with 600 scooters.



- With support from the RI Department of Health, the City partnered with Recycle-A-Bike to pilot bike programming in recreation centers and elementary schools. In 2020, through support from PeopleForBikes, the City will expand safe bicycle skills classes to all eleven of the City's recreation centers for two years.
- The City has made substantial improvements in its bike infrastructure, adding over 16 miles of bike lanes in the past ten years, including the city's first protected bike lane.
- The City is in the final planning stages for the Greater Kennedy Plaza transformation that will make the plaza safer for people walking and riding bicycles, make RIPTA bus service more efficient, and provide more intuitive boarding areas for RIPTA passengers.
- Construction of the Downtown Transit Connector, which will provide dedicated bus lanes and high-frequency bus service between Providence Station and the Hospital District in Upper South Providence will begin in early 2020.
- After a collaborative planning process between the City, RIPTA, and RIDOT, a pilot autonomous EV shuttle program launched in the Woonasquatucket Corridor in 2019, providing transit service between Olneyville Square, the Woonasquatucket Corridor, and Capital Center in Downtown.
- In late 2019, the City will complete the Providence Great Streets Master Plan. The Great Streets Master Plan establishes a vision and framework for public realm improvements to connect every Providence neighborhood to a safe, comfortable, high-quality network where residents and visitors can walk, run, bike, ride a scooter, and skate to get to schools, jobs, parks, and other important destinations. A key recommendation of the plan is a 60-mile urban trail network. The Plan also includes an analysis of existing regulations, policies, and programs, identification of gaps in the current process, and recommendations for improvements.





## Strategies

	Key Stakeholders
<p><b>Evaluate and modify traffic patterns to reduce emissions in frontline communities:</b> Work with the state and <b>frontline communities</b> to reduce transportation related air pollution, beginning with areas of high cumulative pollution. Conduct a study of truck traffic and identify corridors and neighborhoods where truck routes and related infrastructure should be eliminated or rerouted to reduce diesel <b>emissions</b> burden in high residential and air pollution areas. Ensure involvement of frontline community members in future corridor planning, especially related to on-ramps and other major highway projects.</p>	<p>Planning and Development; RI Division of Statewide Planning; RIDOT</p>
<p><b>Advocate for reducing emissions from trucks:</b> Identify resources and programs to improve efficiency and EV infrastructure for buses, garbage trucks, construction and other commercial trucks working in Providence's <b>frontline communities</b>.</p>	<p>National Grid; RI OER; RI Division of Statewide Planning; RI DEM</p>
<p><b>Advocate for investing in cleaner and more accessible public transportation:</b> Electrify and improve RIPTA bus fleet and service, prioritizing routes in communities of color. Improve RIPTA access in low income areas. Improve the cleanliness and condition of RIPTA buses and shelters. Advocate for free/ discounted public transportation, especially for low income residents.</p>	<p>RIPTA; RI General Assembly; RIPTA Riders Alliance</p>
<p><b>Invest in infrastructure to make walking and riding bicycles safer and more accessible, especially in low-income areas:</b> Improve and expand walking and biking infrastructure and maintenance, especially sidewalks, protected bicycle lanes, and shared use paths. Explore way to ensure sidewalks are shoveled during the winter. Work with frontline community organizations to support programs that improve community cleanliness and safety of sidewalks, bike lanes and public transportation waiting areas and create living wage jobs for frontline community members.</p>	<p>DPW; Planning and Development; Bicycle and Pedestrian Advisory Commission (BPAC)</p>
<p><b>Create a citywide mobility plan that builds upon the City's Great Streets Master Plan and RIPTA's forthcoming Transit Master Plan:</b> Engage in a collaborative governance process to fill in gaps in existing plans (such as EV infrastructure, EV ride sharing, parking, and curbside management) to help the city improve mobility equity and meet its electrification, vehicle miles traveled reduction and other climate and equity goals.</p>	<p>Planning and Development; RIPTA; Office of Sustainability; DPW; frontline community organizations</p>



**Key Stakeholders**

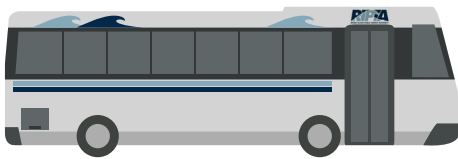
**Expand bike share and scooter share access to low-income communities:** Continue to offer a low-income pricing plan for the e-bike share program and expand access. Improve the enrollment and usability of income-eligible programs. Continue to require scooter-share operators to offer and promote similar low-income access plans at reduced rates.

Planning and Development;  
Bike Share Provider;  
Scooter operators

**Advocate for the expansion of incentives for electric vehicles:** Continue to advocate for state-level policies and programs that advance electrification goals such as the return of the state EV incentive. Ensure that such incentives benefit low-income and moderate-income communities. For example, expand the incentive to the used car market.

RI DEM; RI OER; RI General Assembly

# PVD Specific RIPTA Numbers



**OVER  
500,000**

rides by college students in Providence annually

**8,173**

of Providence residents in the No Fare Bus Pass Program (roughly 50% of total)

**3,200**

Providence High School students take RIPTA to school every day

**ALL PVD**

based College and University students ride with student IDs through UPASS

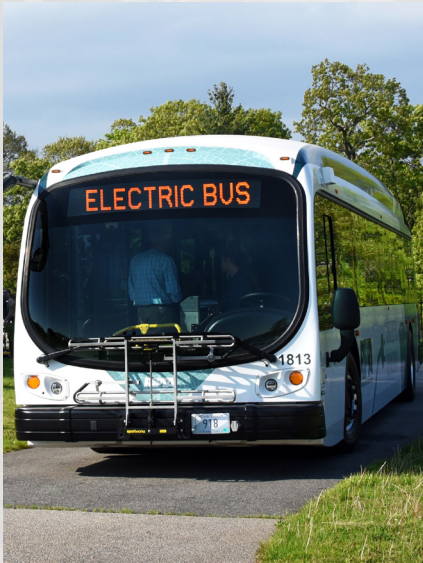
**20**

PVD based employers subsidizing transit City of Providence

**50**

employees use EcoPass to take transit to work





### RIPTA Zero Emissions Vehicle Program

“RIPTA is committed to exploring and employing technology that will allow Rhode Islanders to experience the benefits of clean transportation, both on and off the bus. Electric buses are already on the road in other states, demonstrating both fiscal and environmental benefits. Our buses will contribute to cleaner air and less noise. This effort serves as a concrete example of Rhode Island’s commitment to lead by example in transitioning toward an **emissions**-free public transit system – a critical step in combatting climate change and improving air quality.”

- Scott Avedisian, RIPTA CEO

RIPTA BUS. Photo Credit: Rhode Island Public Transit Authority





# GLOSSARY



## Glossary

The report acknowledges that many of the terms used in this document have historical and evolving meanings based on time, context, location, community and evolution of environmental policy. What follows are meanings and definitions directly pulled and cited from government, academic, nonprofit and community sources – that the City of Providence Sustainability Office and the Racial Environmental Justice Committee found to be appropriate for the context and goals of the Providence Climate Justice Plan.

**Climate Adaptation:** “Climate adaptation is the adjustments societies or ecosystems make to limit the negative effects of climate change or to take advantage of opportunities provided by a changing climate.”<sup>28</sup>

**Buen Vivir:** “Living well without living better at the expense of others. The fundamental human right to clean, healthy and adequate air, water, land, food, healthcare, education, transportation, safety, and housing. Just relationships with each other and with the natural world, of which we are a part.”<sup>29</sup>

**Carbon Footprint:** “The total amount of greenhouse gases produced to directly and indirectly support human activities, usually expressed in equivalent tons of carbon dioxide.(CO<sub>2</sub>)”<sup>30</sup> A person or entity’s carbon footprint is the sum of all emissions of CO<sub>2</sub> (carbon dioxide), which were induced by their activities in a given time frame. Usually a carbon footprint is calculated for the time period of a year.

**Carbon Neutral:** Calculating your total climate-damaging carbon emissions, reducing them where possible, and then balancing your remaining emissions, often by purchasing a carbon offset: paying to plant new trees or investing in ‘green’ technologies such as solar and wind power.<sup>31</sup> It is important to use an approach that addresses social outcomes as well as climate emissions in order to ensure that carbon neutral approaches are effective, rather than shift the burden of climate to others.

**Climate Resiliency:** Climate-resilient pathways...can be seen as iterative, continually evolving processes for managing change within complex systems.<sup>32</sup> Resiliency is the capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.<sup>33</sup>

<sup>28</sup> University of California, Davis, Science & Climate Definitions, accessed June 2019.

<sup>29</sup> The Just Providence Framework, [www.providenceRI.gov/sustainability/equity](http://www.providenceRI.gov/sustainability/equity). Accessed June 2019.

<sup>30</sup> Time for Change, What is a carbon footprint - definition, accessed June 2019.

<sup>31</sup> New Oxford American Dictionary, “Carbon Neutral” 2006 Word of the Year definition.

<sup>32</sup> Denton, F., T.J.Wilbanks, A.C. Abeyasinghe, I. Burton, Q. Gao, M.C. Lemos, T. Masui, K.L. O’Brien, and K.Warner, 2014: Climate-resilient pathways: adaptation, mitigation, and sustainable development. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1101-1131.

<sup>33</sup> IPCC, 2014: Summary for policymakers. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L.White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 1-32.



**Carbon Dioxide Equivalents (CO<sub>2</sub>e):** A way of measuring greenhouse gas emissions, based on their global warming potential (GWP). This measurement puts all GHG emissions in relation to the GWP of carbon dioxide, which is considered to have a GWP of 1.<sup>34</sup>

**Cooperative:** A cooperative is an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly owned and democratically controlled enterprise. Co-operatives are based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity. In the tradition of their founders, cooperative members believe in the ethical values of honesty, openness, social responsibility and caring for others.<sup>35</sup>

**Co-pollutants:** GHG emissions from the combustion of fossil fuels are accompanied by other hazardous substances, called co-pollutants, such as particulate matter (PM), ozone-forming nitrogen oxides (NO<sub>x</sub>), and volatile organic compounds (VOCs) that cause respiratory and cardiovascular disease and increases in mortality.<sup>36</sup>

**Deep Democracy:** A form of governance including direct and ongoing participation of community members in civic institutions and organizations, including equitable problem solving and capacity-building for citizens and City workers.

**Displacement (residential):** the process by which a household is forced to move from its residence - or is prevented from moving into a neighborhood that was previously accessible to them because of conditions beyond their control. Displacement can be physical (as building conditions deteriorate) or economic (as costs rise). It might push households out, or it might prohibit them from moving in, called exclusionary displacement.<sup>37</sup> [Displacement Explainer Video: <https://www.urbandisplacement.org/pushedout>]

**Emissions:** Substances discharged into the air (as by a smokestack or an automobile engine).<sup>38</sup>

**Energy Efficiency:** is using technology [and practices] that requires less energy to perform the same function. Using a light-emitting diode (LED) light bulb or a compact fluorescent light (CFL) bulb that requires less energy than an incandescent light bulb to produce the same amount of light is an example of energy efficiency.<sup>39</sup>

<sup>34</sup> See EPA's Greenhouse Gas Emissions: Understanding Global Warming Potentials <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials> for more information.

<sup>35</sup> Cooperation Jackson definition, which drew on definitions, values and principles of Mondragón and the International Cooperative Alliance.

<sup>36</sup> Carbon trading, co-pollutants, and environmental equity: Evidence from California's cap-and-trade program (2011-2015), Lara Cushing, Dan Blaustein-Rejto, Madeline Wander, Manuel Pastor, James Sadd, Allen Zhu, Rachel Morello-Frosch. Published: July 10, 2018 <https://doi.org/10.1371/journal.pmed.1002604>

<sup>37</sup> UC Berkeley, Urban Displacement Project (UDP), Resources accessed June 2019 and Executive Summary, published December 2015.

<sup>38</sup> Merriam-Webster definition, accessed August 2019.

<sup>39</sup> US Energy Information Administration definition, accessed June 2019.



**Energy Democracy:** Energy Democracy represents a shift from the corporate, centralized fossil fuel economy to one that is governed by communities, is designed on the principle of no harm to the environment, supports local economies, and contributes to the health and well-being for all peoples.<sup>40</sup>

**Environmental Justice:** According to the US EPA, environmental justice is the right to a clean, safe and healthy quality of life for people of all races, incomes and cultures. Environmental justice emphasizes accountability, democratic practices, remedying the historical impact of environmental racism, just and equitable treatment, and self-determination.<sup>41</sup> Environmental justice is achieved through the fair treatment and meaningful involvement of all people, regardless of race, culture, immigration status, income, and educational level in the development, adoption, implementation, and enforcement of protective environmental laws, regulations, and policies of a place. Fair treatment means that no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial, governmental, and commercial operations or the execution of federal, state, local, and tribal programs and policies. The concept of fair treatment includes the equitable distribution of environmental resources and burden.<sup>42</sup>

**Environmental Racism:** Any policy, practice, or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color. It also includes exclusionary and restrictive practices that limit participation by people of color in decision-making boards, commissions, and regulatory bodies.<sup>43</sup>

**Frontline Communities:** Communities of color most impacted by the crises of ecology, economy and democracy, including the Indigenous, African-American, Black, Latinx, and Southeast Asian communities in Providence. There is particular emphasis on people of color who are refugees and immigrants, people with criminal records, those who speak languages other than English, and LGBTQ.<sup>44</sup>

**Gentrification:** “a process of neighborhood change that includes economic change in a historically disinvested neighborhood —by means of real estate investment and new higher-income residents moving in - as well as demographic change - not only in terms of income level, but also in terms of changes in the education level or racial make-up of residents.” -- UC Berkeley - <https://www.urbandisplacement.org/gentrification-explained>

**Greenhouse Gas (GHG):** gases which allow direct sunlight (relative shortwave energy) to reach the Earth's surface unimpeded. As the shortwave energy (that in the visible and ultraviolet portion of the spectra) heats the surface, longer-wave (infrared) energy (heat) is reradiated to the atmosphere. Greenhouse gases absorb this energy, thereby allowing less heat to escape back to space, and 'trapping' it in the lower atmosphere. While gases such as carbon dioxide occur naturally in the atmosphere, through our interference with the carbon cycle, we artificially move carbon from solid storage to its gaseous state, thereby increasing atmospheric concentrations.<sup>45</sup>

<sup>40</sup> Climate Justice Alliance: Energy Democracy, accessed June 2019.

<sup>41</sup> Adapted from various environmental justice definitions, namely a leading California EJ organization, Asian Pacific Environmental Network and the University of Michigan's program on environmental justice.

<sup>42</sup> City of Minneapolis Comprehensive Plan definition of environmental justice in its adopted Environmental Justice and Green Zones Policy, which was based on elements taken directly from EPA EJ 2020 Plan Glossary of terms.

<sup>43</sup> Bullard, Robert, The Threat of Environmental Racism, Natural Resources & Environment, Vol. 7, No. 3, Facility Siting (Winter 1993).

<sup>44</sup> Recommendations for a Racially Just Providence, Racial and Environmental Justice Committee (REJC), adopted by Office of Sustainability September 2017.

<sup>45</sup> National Oceanic and Atmospheric Administration, What are greenhouse gases? Accessed August 2019.



**Just Transition:** A framework that has been developed by the trade union movement to include a range of social interventions needed to secure workers' jobs and livelihoods and shift to sustainable production, including avoiding climate change, protecting biodiversity, among other challenges.<sup>46</sup> Just Transition is a principle, a process and a practice. The principle of just transition is that a healthy economy and a clean environment can and should co-exist. The process for achieving this vision should be a fair one that should not cost workers or community residents their health, environment, jobs, or economic assets. Any losses should be fairly compensated. And the practice of just transition means that the people who are most affected by pollution – the frontline workers and frontline communities – should be in the leadership of crafting policy solutions.<sup>47</sup>

**Microgrid:** Microgrids have two defining features: (1) they are locally controlled energy systems (2) they can function both connected to the traditional grid (megagrid) or as an electrical island. According to the US Department of Energy Microgrid Exchange Group: a microgrid is a group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid. A microgrid can connect and disconnect from the grid to enable it to operate in both grid-connected or island-mode.<sup>48</sup>

**Net Metering:** Net metering in Rhode Island allows an electricity customer to offset their electricity usage with eligible renewable energy technologies. Net-metered renewable energy installations are generally sized to meet a property's electric demand. Net-metered systems cannot generate more than 125% of the electricity consumed on-site. The homeowner, business, or municipality can choose to receive compensation for that excess generation or a credit to their future electric bills.<sup>49</sup> H.B. 8354, which was enacted on June 2016, authorized community net metering in Rhode Island.

**Nitrogen dioxide (NO<sub>2</sub>)** comes from combustion – heating, electricity generation, and vehicle and boat engines. It is a noxious gas that irritates the airways in the lungs, causing coughing and wheezing triggering reactions in people with respiratory diseases such as asthma that can lead to emergency room visits or hospitalizations. Long term exposure can decrease lung function, cause the development of asthma, and increase the risk of respiratory infections like bronchitis. Those most at risk are children, the elderly, and people with asthma or other respiratory disease. NO<sub>2</sub> also combines with chemicals in the air and sunlight to create both particulate matter and ozone.

**Particulate matter (PM)** are small particles, invisible to the eye, that are released by combustion from engines or plants or by volcanoes and wildfires. PM 10 are “coarse” particles with diameters less than 10 microns and PM 2.5 are smaller “fine” particles with diameters less than 2.5 microns. The smaller particles can penetrate deep in the lungs and even cross into the bloodstream. Particulate matter varies by location, temperature, and weather conditions but tends to be higher closer to highways or sources of emissions. Exposure to high concentrations of particulate matter can trigger asthma attacks, and long term exposure to particulate matter increases risk for cardiovascular disease and lung cancer.

<sup>46</sup> Recommendations for a Racially Just Providence, Racial and Environmental Justice Committee (REJC), adopted by Office of Sustainability September 2017. Climate Justice Alliance: Energy Democracy, accessed June 2019.

<sup>47</sup> Just Transition Alliance, What is Just Transition? Accessed June 2019.

<sup>48</sup> Berkeley Lab, Microgrid Team site, accessed June 2019.

<sup>49</sup> State of Rhode Island, Office of Energy Resources: Net Metering , accessed 6/2/19.



**Quality of Life:** General well-being of individuals and societies including access to clean, healthy and adequate air, water, land, food, education, transportation, safety, and housing.

**Racial Equity:** A condition in which the way someone is racialized does not determine their access, opportunities, treatment, or statistical outcomes in society. Achieving these results requires a proactive and ongoing commitment to anti-racist policies, practices, attitudes, and actions. When a person's outcome is not predicted by the color of their skin.

**Renewable Energy (renewables):** energy obtained from sources that are virtually inexhaustible and replenish naturally over small time scales relative to the human life span.<sup>50</sup>

**Self-Determination:** Freedom of a person to determine the way in which they shall be governed and whether or not they shall be self-governed.

**Solidarity:** Mutual respect for and responsibility to support one another's human rights.

**Utility:** A Utility (or public utility) is a business or service, which may be publicly or privately owned, that supplies the public with some commodity or service, such as electricity, gas, water, transportation, or telephone service. Privately owned public utilities operate through an exclusive franchise granted by the legislature, public service commission, or other regulatory agency, and their operation is strictly regulated by the franchisor. In Rhode Island, public utilities are required to file rate schedules with the Public Utilities Commission. The PUC must approve rates or proposed changes in rates.<sup>51</sup>

**Volatile Organic Compounds (VOCs)** are a broad set of gases made up of mainly carbon-based molecules that irritate the lungs, decrease lung function, and can also cause headaches, nausea, and damage to the liver, kidney, or central nervous system. Some VOCs associated with fossil fuels, such as benzene and formaldehyde, are also classified as carcinogenic (suspected or known to cause cancer).

**Zoning** is the way governments manage the physical development of land and the kinds of uses to which each individual property may be put. Zoning laws typically specify the areas in which residential, industrial, recreational or commercial activities may take place.

Zoning Ordinances provide a set of land use and development regulations, organized by zoning district. A Zoning Map identifies the location of the zoning districts, thereby specifying the land use and development requirements affecting each parcel of land within the City.<sup>52</sup>

<sup>50</sup> National Geographic, definition of renewable energy, accessed August 2019.

<sup>51</sup> Adapted from USLegal.com, accessed June 2019.

<sup>52</sup> City of Providence, Zoning Ordinance User's Manual, accessed June 2019.





# APPENDIX



## Appendix

Available online at

<http://www.providenceri.gov/sustainability/climate-justice-action-plan-providence/>

### **I. Technical Appendix**

Business as Usual scenario

Carbon Neutral City Plan scenario

### **II. Survey and Interview Data**

Energy Democracy Retreat summary

Community Leader Program summary

### **III. Climate Justice Plan Development Process Case Study**

### **IV. From Community Engagement to Ownership**

Tools for the Field with Case Studies of Four  
Municipal Community-Driven Environmental &  
Racial Equity Committees





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