Sustainability, Resilience, and the Environment

GOAL: Protect, preserve, and restore the natural environment; improve resilience to climate and environmental hazards; ensure equity in environmental policy; and mitigate the impacts of greenhouse gas emissions, air and water pollution, and contamination on residents' health, safety, and quality of life.

Providence is a colonial era coastal and riverine city with established road and land patterns and a relatively small amount of vacant land. The city's built infrastructure, topography, and natural habitats are interconnected and vulnerable to a changing climate, a growing population, and other external challenges. Antiquated infrastructure and deferred maintenance present challenges, particularly within the city's stormwater infrastructure, which has been overwhelmed in recent storm events. Rising sea level and varying temperatures add to these challenges, with "frontline" neighborhoods bearing the brunt of the impact. Climate change impacts everyone, but the term frontline communities has emerged in recent years to refer to the primarily low-income, communities of color that endure a disproportionate risk of the adverse impacts of climate change, while already confronting interconnected environmental justice challenges.

Sea level rise and storm surge threaten property and infrastructure in low-lying areas and along waterways. Increasingly frequent and intense rain events now cause flooding in areas that were previously able to withstand the deluge. Rising temperatures result in more high-heat days and impact air quality, particularly in areas with high percentages of impervious surface and sparse tree canopy. These issues continue to present new challenges to residents, businesses, infrastructure, and the environment, and have social, economic, and environmental impacts.

In alignment with decarbonization mandates set by the **Rhode Island Act on Climate (2021)**, the City must reach certain emissions benchmarks over the next 30 years. Specifically, these benchmarks include reaching 45% below 1990 emission levels by 2030, 80% below 1990 emission levels by 2040, and reaching net-zero emissions by 2050. Recognizing the urgency of the aforementioned climate and environmental justice issues in combination with state mandated climate action, the City of Providence will embark on incremental progress towards a net-zero future.

In order to face these challenges, attention must be focused on restorative environmental practices, energy conservation, a transition away from fossil fuels for heating and transportation, and promotion of renewable energy sources, cleaner industrial operations, and emissions reduction. We must be prepared for and facilitate a transition to an equitable, post-fossil fuel existence. Particular attention to

and investment in areas of the city that bear outsized burdens must continue to occur. Frontline communities must be engaged in the identification and implementation of solutions to these challenges.

Existing documents and ongoing efforts such as the City of Providence Climate Justice Plan, the Providence Tree Plan, Providence Hazard Mitigation Plan, and ProvPort Master Plan have significant bearing on specific aspects of this section as well as strategies to reach climate mandates and should be referenced for details and implementation where applicable.

In 2019, the City of Providence, in partnership with the Racial Environmental Justice Committee and residents of Providence's frontline communities, created the **Climate Justice Plan**. The plan provides a comprehensive and community-input driven analysis of seven primary strategies which aim to achieve climate and environmental justice for all Providence residents and for the natural environment. The Plan prioritizes solutions for low-income, communities of color who often bear the brunt of environmental hazards yet contribute the least to climate and environmental crises.

OBJECTIVE SRE1: CLIMATE PROTECTION, STORMWATER and FLOODING

Ensure the protection and resilience of the people, natural environment, built environment, and infrastructure of Providence to the effects of climate change and extreme weather.

Strategies:

A. Assess stormwater and flood protection infrastructure, focusing on resiliency capacity, deferred maintenance and repair, particularly in flood-prone areas, with the intention of protecting water quality, preventing erosion and riverbank destabilization, and protecting human lives and property.
B. Reduce impervious surface and investigate mechanisms to incentivize pavement reduction, use of permeable surface materials, and green infrastructure/nature-based stormwater solutions.
C. Study and prioritize rivers, watersheds, and flood-prone areas for further analysis and funding (and explore funding sources and mechanisms).
D. Coordinate inter-departmental efforts amongst Planning and Development, Parks, Sustainability, Public Works, and Emergency Management to maximize stormwater management and flood mitigation planning, funding, design, and implementation.
E. Incorporate stormwater mitigation and management into streetscape projects and prioritize projects with ancillary benefits including heat island mitigation, stormwater retention, traffic calming, complete streets configurations and open space.
F. Coordinate and incorporate plans and studies into multi-departmental decision-making (including the Hazard Mitigation Plan, Natural Resource Conservation Service (NRCS) Woonasquatucket Flood project and subsequent recommendations, and Seekonk River-area projects and plans.
G. Coordinate with and assist community groups in their efforts to implement stormwater and flood reduction measures.
H. Review and revise the City's stormwater ordinance to ensure a balance between the desire for increased development and density in certain zones and the impacts of increased impervious area

and stormwater to avoid exacerbating flooding. Consider including requirements to address pollutants of concern for specific watersheds. Also consider more stringent on-site stormwater management requirements for new development or substantial redevelopment projects.

I. Identify the areas most impacted by flooding caused by heavy rain events, sea level rise, and storm surge, and consider regulatory measures to ensure development is safely sited and resilient to flooding.
J. Identify locations and consider strategies to restore floodplains to reduce the incidence of flooding and lessen risk to health, safety, and the economy.
K. Review and revise City floodplain management responsibilities and procedures including maintenance of elevation certificates and related recordkeeping.
L. Incorporate phytoremediation and other natural solutions into stormwater and flood mitigation efforts where possible, mindful of the prevalence of contaminated land adjacent to water bodies and rivers.
M. Encourage and assist in the "greening" of flood-prone areas wherever possible.
N. Build on the findings and recommendations of the Infrastructure Resilience Framework project and the ProvPort Master Plan to identify funding sources to develop and implement a plan for the Port of Providence to increase resilience to storm surge and to avoid the spread of hazardous materials and contamination that could result from significant flooding of the port area.
O. Devote resources to the ongoing maintenance of the hurricane barrier.

OBJECTIVE SRE2: CLIMATE PROTECTION, AIR QUALITY, and HEAT MITIGATION

Ensure resilience and the protection of public health to the effects of extreme heat and air pollution.

Strategies:

A. Support and help expand public and private air quality monitoring programs, particularly in areas with high rates of asthma, odor complaints, highway and truck traffic, and industrial activity.
B. Work with the state to strengthen environmental monitoring and enforcement of violations, to ensure regulatory compliance by industrial operators.
C. Support and implement actions to reduce the incidence of air quality odors, issues, and violations, working with state and federal regulators and industrial operators.
D. Investigate ways to address the cumulative impacts of pollution sources in concentrated areas.
E. Support enforcement of anti-idling regulations, particularly in the port area and other high-traffic industrial and commercial areas and investigate off-street options for truck queuing and temporary parking.
F. Encourage, support, and implement best practices that reduce emissions from businesses and vehicle fleets in alignment with state mandates.
G. Promote and encourage additional use of and membership in programs such as DERA (Diesel Emissions Reduction Act) and Green Marine.
H. Plan for the reduction of fossil fuel imports, operations, and storage at ProvPort and in the port area overall, ensuring that there is no increase in fossil fuel infrastructure except as may be necessary for

improvements for safety, resiliency, and the environment, or to facilitate the delivery of more environmentally friendly fuels.

I. Promote expansion of renewable energy businesses and operations and other clean and "green" industrial uses throughout the region.
J. Promote development practices that increase green space, landscaping, native plants and wildflowers, tree-planting, natural vegetation, and reduced impervious surface to mitigate the heat island effect.
K. Support the implementation of the Providence Tree Plan and promote private and non-profit planting efforts that increase canopy coverage, especially in low-canopy neighborhoods.
L. Identify properties with large rooftops suitable for increased thermal emittance, or cool and reflective finishes, to offset heat island impacts, particularly in frontline communities and/or neighborhoods with high percentages of large buildings and roof coverage.
M. Work with state and federal agencies to mitigate the cumulative impact of emissions and pollutants generated by industrial operations.
N. Expand and facilitate use of alternative fuels and improve traffic circulation to reduce emissions and improve air quality.
O. Protect neighborhoods from the impacts of freight movement, particularly by truck, by promoting appropriate travel routes and temporary staging areas.
P. Reduce VMT (Vehicle Miles Traveled), expand and promote transit, bicycle, scooter, and pedestrian transportation and mobility. Support telecommuting and home-based employment.

OBJECTIVE SRE3: NATURE AND THE CITY

Protect and restore environmentally significant and sensitive areas and habitat including wetlands and wetland buffers, rivers and riverbanks, and the urban forest.

Strategies:

A. Promote and advocating for the restoration of all rivers and waterbodies to fishable and swimmable conditions.
B. Enforce regulations relating to stormwater and water quality and ensuring compliance with state total maximum daily loads (TMDLs) and water quality standards.
C. Support and promote the implementation of the Providence Tree Plan and voluntary planting efforts, with particular focus on developing funding strategies and programs to support tree planting and maintenance on public and private property in low canopy neighborhoods.
D. Support, promote, and implement naturalization of riverbanks, valleys and uplands where practicable.
E. Protect habitat in and along rivers and other waterbodies as well as on land, particularly in conservation zones and in parks.

OBJECTIVE SRE4: RESOURCE CONSERVATION

Conserve energy, reduce consumption of fossil fuels in alignment with local targets and state mandates, and develop and implement renewable energy sources.

Strategies:

A. Continue developing and implementing strategies to incrementally reduce greenhouse gas emissions across energy, transportation, waste and other sectors in line with city and state plans and mandates like the Climate Justic Plan, the RI Act on Climate, and the forthcoming RI Climate Action Plan.
B. Continue investments in multi-modal transportation safety, efficiency, and electrification in line with the Great Streets Plan, RI Transit Master Plan, and RI Long Range Transportation Plan, to encourage mode shifts toward public transportation, walking, biking, carpooling, and electric vehicles.
C. Continue to transition the City fleet to low- or no-carbon vehicles by procuring fuel-efficient, hybrid technology and alternative energy vehicles.
D. Support the transition of RIPTA's bus fleet to zero-emissions vehicles, with an emphasis on transitioning routes in areas impacted by poor air quality.
E. Reduce vehicle emissions caused by excessive idling by measures including public education, consideration of anti-idling regulations, and enforcement of existing regulations.
F. Continue to pursue weatherization, energy efficiency, and electrification at City-owned facilities.
G. Reduce the City's use of materials and increasing recycling rates, promoting the use of recycled materials, and encouraging source reduction in packaging.
H. Promote and incentivizing weatherization, energy efficiency, electrification, and renewable energy sources of commercial and residential buildings.
I. Identify opportunities and locations for and constructing local renewable energy sources including wind and solar locations such as schools, rooftops of large buildings, and parking areas.

OBJECTIVE SRE5: SUSTAINABILITY AND THE BUILT ENVIRONMENT

Ensure that buildings and infrastructure are environmentally sustainable and resilient to the effects of climate change.

Strategies:

A. In alignment with the City's Green Building Ordinance, decarbonize City-owned buildings by 2040 through investments in weatherization, energy efficiency, electrification, and renewable energy.
B. Promote the use of "green" technology and practices in industry, business and construction.
C. Develop design criteria that maximize energy conservation and electrification and minimize the use of fossil fuels in buildings.
D. Encourage the use of recycled materials in the construction of buildings.
E. Encourage the reuse of existing buildings.
F. Promote the long-term benefits of energy-efficient rehabilitation and new construction and

consider the use of appropriate incentives.

G. Promote the use of rain barrels to collect rainwater and prevent sewer overflow.
H. Encourage "depaving" of properties through education, enforcement of existing paving limits, and incentives, where applicable.
I. Utilize the institutional master plan review process to encourage institutional stakeholders to reduce excess pavement and develop more sustainable and resilient buildings and infrastructure.

OBJECTIVE SRE6: BROWNFIELDS

Prioritize the remediation of brownfields (land contaminated by hazardous substances and/or petroleum) to revitalize neighborhoods, remove health hazards, address community needs including open space, and improve the environment.

Strategies:

Continue to pursue US EPA Community Wide Assessment and Cleanup Grants.

A. Work with state, private, and non-profit entities to facilitate the assessment, remediation, and environmentally sustainable redevelopment of brownfield sites.
B. Identify environmentally compromised land and establish strategies to mitigate impacts.
C. Identify additional funding sources to encourage redevelopment of vacant, underused, and environmentally compromised lands such as brownfields.
D. Identify and coordinate geographic-specific grant needs for brownfields assessment and cleanup and ensure sufficient staff and consulting resources to develop high-quality grant applications.

OBJECTIVE SRE7: PUBLIC AWARENESS AND INVOLVEMENT

Encourage and foster environmentally sustainable and climate-resilient practices.

Strategies:

A. Lead by example and reduce the City's environmental footprint by adopting environmentally conscious practices for City government and in City facilities.
B. Encourage and, when practicable, provide incentives to recycle, conserve water and energy, use renewable resources and alternative sources of energy, and use public transit and alternative modes of transportation.
C. Support and incorporate community-led efforts and scientific findings to improve environmental conditions and public health in frontline neighborhoods.
D. Synthesize and publicize the findings and recommendations of ongoing efforts such as the NOAA Shoreline project, National Science Foundation project, and ProvPort Master Plan to improve conditions for public health, access, wildlife habitat, and resiliency in the port area.

OBJECTIVE SRE8: FRONTLINE NEIGHBORHOODS AND ENVIRONMENTAL JUSTICE

Mitigate the disproportionate environmental and health impacts of pollution, climate impacts, and the degradation of natural systems on environmental justice neighborhoods.

Strategies:

A. Reduce the impacts of pollution from industrial operations; fuel and materials storage; energy production; and freight movement, focusing in particular on the health, safety, and quality of life impacts of emissions, pollutants, traffic, and nuisances on near-industry neighborhoods.
B. Encourage the development and implementation of sustainable industrial practices. Strategies should include reducing emissions from truck traffic and idling, cargo-handling equipment, ships and vessels, building energy use, energy production, and industrial processes.
C. Promote the use of and transition to clean and renewable energy sources for port and industrial activities.
D. Promote port uses such as offshore wind support and production and other renewable energy-related industry that significantly reduces emissions, fossil fuel use, import, and storage, and hazardous substance and materials storage.
E. Work with industry stakeholders to identify and support development of cleaner alternatives to fuels and materials.
F. Promote and plan for cleaner, "greener," industrial operations and uses that balance economic, social, and environmental outcomes and improve resilience to sea level rise, storm surge, and environmental impacts.
G. Ensure that the port provides meaningful economic benefit to near-port neighborhoods, including Upper and Lower South Providence and Washington Park. For example, develop and publicize job-training and employment opportunities for disadvantaged near-port neighborhood residents.
H. Foster a transparent and collaborative relationship between the City, near-industry neighborhoods, industrial operators and landowners, and other stakeholders.
I. Increase public access to and involvement in the port area and shoreline, especially for residents of port-area neighborhoods while avoiding conflict with commercial uses.
J. Promote the improvement of environmental conditions of port properties, particularly those north of ProvPort, and encourage the establishment and growth of cleaner industry, such as offshore wind-related and other industry in the renewable energy sector. Discourage additional fossil fuel business in Providence, ensure no additional fossil fuel infrastructure other than safety and environmental improvements, and plan and prepare for the phase out of such businesses that will result from state decarbonization mandates.
K. Position industrial areas to be prepared for a "post-carbon" future in alignment with state decarbonization mandates.
L. In anticipation of federal and state legislation targeting investment in "green justice areas," establish local green justice area designations to identify neighborhoods most affected by cumulative impacts and environmental justice issues.
M. Prioritize green justice areas for resource allocation, ensuring that communities with historically disproportionate environmental burdens receive an equitable share of resources, such as the establishment of resilience hubs, energy efficiency, and electrification of homes, and workforce

development. Ensure the implementation of required sustainability projects via the Sustainability Projects Reserve Account in accordance with ProvPort Master Plan requirements.

N. Prioritize and implement recommendations of ongoing efforts such as the NOAA Shoreline project, National Science Foundation project, SNEP Opportunity to Advance Resilience (SOAR), and ProvPort Master Plan to improve conditions for public health, access, wildlife habitat, and resiliency in the port area.

OBJECTIVE SRE9: THE ENVIRONMENT AND THE REGION

Ensure coordination with other municipalities and the state to ensure mutually beneficial environmental outcomes.

Strategies:

A. Coordinate the review of state and federal government plans and projects with adjoining communities to ensure that the proposals will not adversely affect air and water quality and environmentally sensitive areas.
B. Encourage and participate in regional and state-led efforts to meet state decarbonization mandates set forth in the Act on Climate.
C. Coordinate with the neighboring municipalities of East Providence and Pawtucket on plans and projects with mutual benefits on and around the Seekonk and Providence rivers, including environmental protection (habitat, water quality), recreational boating, and shoreline access.
D. Work with the state and neighboring municipalities to address the issue of water-borne debris and marine hazards.
E. Pursue regional and/or watershed-level approaches to stormwater management and flood control.
F. Encourage the state to lead by example by using alternative fuel vehicles for fleet and transit vehicles, decarbonizing state-owned buildings, and building infrastructure that will reduce VMT.
G. Work with state and other municipalities to address regional sustainability through coordinated approaches to transit, air and water quality, brownfield remediation, flood zone protection, and provision of bike paths and recreational areas.
H. Ensure that state projects meet or exceed local landscaping requirements.
I. Encourage the state to consider ease of maintenance in its designs and identify long-term maintenance plans for all of its projects.