



East Providence Rhode Island

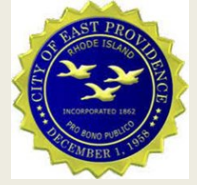


Photo Credits: Wikipedia, eco RI News, LoopNet, flickr

Municipal Resilience Program Community Resilience Building Workshop Summary of Findings June 2021



City of East Providence, Rhode Island Community Resilience Building Workshop *Summary of Findings*

Overview

The need for municipalities, regional planning organizations, corporations, states, and federal agencies to increase resilience to extreme weather events and a changing climate is strikingly evident amongst the communities across the state of Rhode Island. Recent events such as Tropical Storm Irene and Super Storm Sandy have reinforced this urgency and compelled leading communities like the City of East Providence to proactively collaborate on planning and mitigating risks. Ultimately, this type of leadership is to be commended because it will reduce the vulnerability and reinforce the strengths of people, infrastructure, and ecosystems and serve as a model for other communities in Rhode Island, New England, and the Nation.

In the spring of 2021, the City of East Providence embarked on certification within the state of Rhode Island's Municipal Resilience Program (MRP). As part of that certification, the Rhode Island Infrastructure Bank (RIIB) and the Nature Conservancy (TNC) provided the City with a community-driven process to assess current hazard and climate change impacts and to surface projects, plans, and policies for improved resilience. In June 2021, East Providence's Core Team organized a Community Resilience Building Workshop facilitated by TNC in partnership with RIIB. The core directive of this effort was the engagement with and between community members to define strengths and vulnerabilities and the development of priority resilience actions for the City of East Providence.

The East Providence Community Resilience Building Workshop's central objectives were to:

- Define top local, natural, and climate-related hazards of concern;
- Identify existing and future strengths and vulnerabilities;
- Identify and prioritize actions for the City;
- Identify opportunities to collaboratively advance actions to increase resilience alongside residents and organizations from across the City, and beyond.

The City of East Providence employed a unique “anywhere at any scale”, community-driven process called Community Resilience Building (CRB) (www.CommunityResilienceBuilding.org). The CRB’s tools, reports, other relevant planning documents, and local maps were integrated into the workshop process to provide both decision-support and visualization around shared issues and existing priorities across East Providence. The East Providence Local Hazard Mitigation Plan (2017) and Comprehensive Plan (2010, Update Snapshot—2020) were particularly instructive. Using the CRB process, rich with information, experience, and dialogue, the participants produced the findings presented in this summary report including an overview of the top hazards, current concerns and challenges, existing strengths, and proposed actions to improve East Providence’s resilience to hazards and climate change today, and in the future.

The summary of findings transcribed in this report, like any that concern the evolving nature of risk assessment and associated action, are proffered for comments, corrections and updates from workshop attendees and other stakeholders alike. The leadership displayed by the City of East Providence on community resilience building will benefit from the continuous participation all those concerned.

Summary of Findings

Top Hazards and Vulnerable Areas for the Community

Prior to the CRB Workshop, the East Providence Core Project Team identified the top hazards for the City. The hazards of greatest concern included hurricanes and related storm surge, locally severe storms (ice, wind, snow), and excessive rainfall leading to localized flooding (urban runoff, riverine). Additional hazards mentioned and discussed during the workshop included more intense and longer duration heat waves and droughts as well as the longer term implications of sea level rise. These hazards have direct and increasing impacts on the infrastructure, residents, and environment including neighborhoods, natural areas (rivers, wetlands, parks), waterfront, roads, bridges, businesses and commerce, public transportation, municipal facilities, school system, civic events, churches, social support services and other critical infrastructure and community assets within East Providence.

Top Hazards and Areas of Concern for the Community

Top Hazards

- Hurricanes and Storm Surge
- Locally Severe Storms (including ice, wind, and/or snow)
- Excessive Rainfall - Flooding (urban runoff & riverine)
- Heat Waves & Droughts

Areas of Concern in East Providence* - Several categories and locations were identified as being particularly vulnerable by workshop participants including:

Infrastructure: Public Works Complex, Long-term Care Facilities, School, Transformers, Generators, Power Lines, Communication Towers, Gas Pipelines, Residential Mid- & High-Rise Structures (City View Manor, Harbor View, Rumford Towers, Willet Avenue, Parkway Towers, Kent Farm Village, Goldsmith Manor, Winslow Gardens, Riverside House), Taunton Plaza, Seawalls, Aging Buildings and Homes, City Water Supply Pipelines, Sewage Treatment Facilities, Sanitary Sewer Lines, Pump Stations (Narragansett Bay Commission Bucklin Point WWTF; City of East Providence WWTF), Dams (Turner Reservoir, Hunts Mills, Omega Pond, Willett Pond), Forbes Street Landfill/Southeast Area Drainage District, Port, Oil Company Infrastructure (Riverside, near Bold Point).

Ecosystems/Waterways: Rivers (Providence, Seekonk, Runnins, Ten Mile), Floodplains, Conservation Areas, Urban Tree Canopy, 100 Acre Cove, Saltwater Marshes, Freshwater Wetlands, Estuaries, Watersheds; Parks in the Special Flood Hazard Area, Agawam Park, Bold Point Park, Sabin Point Park, Freedom Green Park, Boyden Heights Conservation Area, Rose M. Larisa Memorial Park, Coastal Barriers and Buffers, Narragansett Bay, Exxon/Mobil Property, Ten Mile Greenway, East Bay Bikepath.

Roads, Bridges, and Road Network: Local Bridges and Culverts City-Wide, Warren Avenue Culvert, Willet Avenue, State Street, Center Street, Roger Williams Avenue (near Ten Mile River and Omega Pond), Veterans Parkway, Office Parkway, Henderson Bridge, Washington Bridge, RIPTA, Wampanoag Trail, Forbes Street, Six Corners, Route 44, Cove Street.

Top Hazards and Areas of Concern for the Community

Areas of Concern in East Providence* (cont'd)

Neighborhood Areas: Special Flood Hazard Areas and Repetitive Loss Properties (Ten Mile River, State Street Neighborhood, Bullocks Cove through Willett Avenue in Riverside), Narragansett Terrace (adjacent (north and south) to Sabin Point Park in Riverside), Historic Properties, Looff Carousel, Pomham Rock Lighthouse, Waterfront Special Development District.

Vulnerable Populations: Elderly/Senior Citizens, Non-English Speakers, Residents with Special Needs, Disabled Residents, Local Business Owners, Veterans, Low-Income Residents, Working Poor, Long-term Renters.

*Information from workshop participants augmented via review of the City of East Providence's Local Hazard Mitigation Plan (2017) and Comprehensive Plan (2010); Update Snapshot 2020). ***See Appendix A for full list of mitigation/adaptation actions from the City of East Providence's LHMP.***

Current Concerns and Challenges Presented by Hazards

The City of East Providence has several concerns and faces multiple challenges related to the impacts of natural hazards and climate change. In recent years, East Providence has experienced a series of highly disruptive and damaging weather events including March floods (2010), Tropical Storm Irene (August 2011), Super Storm Sandy (October 2012), Nor'easter Nemo (February 2013), winter storms (2015), and other less impactful but more frequent events. The City received FEMA disaster declaration for the March floods, Irene, Nemo, and the series of winter storms throughout 2015. Impacts from the March floods included severe riverine and basement flooding, while both Irene and Sandy resulted in significant tree and power line damage and minor coastal flooding. Nemo caused over an 80% power outage across the City. Additional winter storms in 2018 caused further tree and powerline damage due to high winds, and coastal erosion, while those in 2020 undermined and destroyed the Larisa Park Seawall. The magnitude and intensity of these events and others across Rhode Island have increased awareness of natural hazards and climate change, while motivating communities such as East Providence to proactively improve their resilience.

This series of extreme weather events highlights that the impacts from hazards are diverse, ranging from: riverine flooding of critical infrastructure, bridges, roads, and low-lying areas; localized flooding from stormwater runoff during intense storms and heavy precipitation events, and; property damage, severe coastal erosion, and extreme utility outages from wind, snow, and ice. Longer periods of elevated heat, particularly in July and August, have raised concerns about vulnerable segments of the population including elderly, disabled, underserved, and disproportionately disadvantaged residents. The combination of these issues presents a challenge to preparedness and mitigation priorities and requires comprehensive, yet locally-specific actions across the City.

The workshop participants were in agreement that East Providence is experiencing more intense and frequent storm events and heat waves. Additionally, there was a general concern about the increasing challenges of being prepared for the worst case scenarios (e.g. major storms, hurricanes (Cat-3 or above)) particularly in the fall/winter months when more intense storms coincide with colder weather. The impact of the current Covid-19 pandemic was raised by workshop participants as well.



(Credit: wikipedia)



(Credit: eastprovidenceri.qscend.com)



(Credit: facebook.com)

Specific Categories of Concerns and Challenges

As in any community, East Providence is not uniformly vulnerable to hazards and climate change, and certain locations, assets, and populations have been and will be affected to a greater degree than others. Workshop participants identified the following items as their community's key areas of concern and challenges across three broad categories - Infrastructure, Societal, and Environmental.

Infrastructure Concerns and Challenges

Roads, Bridges, and Road Networks:

- Bridges infrastructure vulnerable to storm surge (19 bridges of concern) and future sea level rise (7 bridges of concern).
- Roadway inundation during major storms as well as anticipated increases with sea level rise.
- Debris accumulation and damage to road surface from high tides and wave action with 3.8 miles of road currently in floodplain.
- Concerns about condition of state roadways within City.
- Pedestrian and biker safety issues due to certain road network configuration.
- Accessibility to certain RI Public Transit Authority bus stops (e.g. Wampanoag Trail).

Emergency Management and Preparedness:

- Electrical utility and infrastructure susceptible to regular and extended outages puts residents at risk and limits timely dissemination of critical updates and information.
- Need for improvements on emergency preparations and planning for a more diverse array of major events, current and future coupled with table top exercises to ensure readiness.
- Residents in need of emergency preparedness and shelter in place training.
- Gaps in public transportation reliance and emergency preparedness/evacuation.
- Lack of adequate city-wide heat wave response plan coupled with cooling stations in proximity to at-risk populations (i.e. seniors, low-income, and homeless residents).
- Port facilities with regional home heating oil terminals, pipelines, tank farms, and of-loaded, stored cargo.

Stormwater Management:

- Increasing concerns regarding localized flooding from runoff during peak events due to antiquated stormwater management system installed in the mid to latter part of the last century coupled with significant increases in impervious cover.
- High level of impervious surfaces stress stormwater system (i.e. Runnins River south of Route 44).
- Funding to maintain and update stormwater management system.
- Excessive nutrient loading from stormwater runoff results in environmental impacts at Turner Reservoir, Willet Pond, Ten Mile River, and eventually, the Bay.

Specific Categories of Concerns and Challenges (cont'd)

Housing/Buildings/Facilities:

- Affordable/accessible housing options for workers (retail, hospital, lower-wage), young families, and community volunteers.
- Housing stock vulnerable both because of the risk of flooding due to location and also because of inadequate and aged heating and cooling systems that are cost-prohibitive to upgrade by building owners.
- Repetitive loss properties (15 total) located across the Runnins River - State Street neighborhood and the Ten Mile River, and Cove Street areas.
- 258 structures in Special Flood Hazard Area including 150 residential homes, large apartment building, long term care facility, businesses and industrial buildings, and historic structures.

Societal Concerns and Challenges

Vulnerable Populations:

- Power outages are concern for individuals dependent on electric medical devices such as oxygen.
- Large elderly population that often lack resources to meet aging-in-place needs including homecare agencies and providers.
- Isolated population segments coupled with limited mobility and access to food, prescriptions, and supplies during crisis situations.
- Rise in asthma rates among school age children.
- Lower income neighborhoods along rivers vulnerable to flooding coupled with lack of locally-tailored evacuation plans.
- Need for more Section 8 approved and accepted apartments.
- Under-developed relationships between leadership, law enforcement, and certain neighborhoods.

Development:

- Large amount of impervious cover increases ambient air temperature and stress on existing stormwater management system (e.g. commercial areas south of Route 44 and across Runnins River Watershed).
- Increased development/redevelopment along waterfront despite previous damage and warning (i.e. 1938 Hurricane).
- Aging housing stock in certain areas that require maintenance or improvements to accommodate amenities such as air conditioning.
- Need for more affordable housing to attract young professionals and families.

Specific Categories of Concerns and Challenges (cont'd)

Development (cont'd):

- Recent housing development resulting in market rate and luxury options that is outpacing demand.
- Housing and waterfront development to continue incorporating sustainability and resilience approaches and upgrades such as green infrastructure, which reduces existing risks.
- Concerns about location of Wastewater Treatment Plant and flood-related contamination of adjoining neighborhoods and development.

Community Services:

- Food insecurity amongst residents, which is magnified during emergency situations.
- Need to improve coordinated responses with vulnerable communities to help reduce obstacles to communications, amenities, and services (e.g. cooling stations, health care, mental health support, emergency shelters, etc.).

Environmental Concerns and Challenges

Trees and Forests:

- Increasing impacts on tree health from pests and pathogens resulting in a number of dead and damaged trees posing risks to power lines and blocking roads during emergencies.
- No formal tree and debris management plan for both routine maintenance and disaster response.
- Need to integrate tree equity score information as guide for comprehensive tree management plan.

Open Space, Watersheds, Waterfronts, and Waterways:

- Maintaining connected vegetated stream course and waterways.
- Ongoing bluff erosion due to storm surge and wave energy at Rose M. Larisa Park.
- Open space conversion for development elevating heat-related impacts to residents.
- Future flooding projections due to precipitation events of longer duration and higher intensity will present a challenge in rivers, streams, brooks, and wetland systems.
- Impacts to coastal marsh due to sea level rise and storm surge.
- Coastal erosion impacting natural areas and associated infrastructure (i.e. sea walls, shorelines adjoining private property, and community assets).
- Lack of coherent strategy to secure conservation easements in current and future flood zones to help reduce risks to ecosystems and structures.

Current Strengths and Assets

Just as certain locations, assets, and populations in East Providence stand out as particularly vulnerable to the effects of hazards and climate change, other features are notably assets for East Providence's resilience building. Workshop participants identified the following items as their community's key strengths and expressed interest in using them as the core of future resilience building actions.

- Clearly, the responsive and committed engagement exhibited by leadership, staff, and residents is a very appreciated strength within and across East Providence. Ongoing collaboration between municipal staff, committee/commission, volunteers, business community, faith-based organizations, NGOs, adjoining municipalities, and various state-level organizations, among others, on priorities identified herein will help advance comprehensive, cost-effective, community resilience building actions.
- The City has highly experienced staff with access to adequate resources for most emergency situations coupled with coordination amongst various departments including leadership, Public Works, Police, and Fire as well as adjoining municipalities was cited as a highly valued community strength.
- East Providence exudes small town charm with all the benefits of living in a safe, well maintained, and all the benefits of living in a metropolitan suburban community.
- Health Equity Zone and the City were leaders during the pandemic by connecting residents to services and basic needs through direct communication across multiple platforms.
- Public Works have a deep understanding of what is needed to improve the resilience of existing infrastructure (i.e. stormwater, sewer, etc.) in partnership with other Departments like Planning and Economic Development.
- Effective policy documents, supported by up-to-date surveys and data (including a climate mitigation section in the Comprehensive Plan) to contribute to the procurement of grant funding.
- Strong sense of pride amongst residents that get involved with their community coupled with a tight-knit immigrant community with links to Cape Verde, Portugal, the Azores, and Madeira.
- City has become an employment hub for medical facilities and financial services.
- Strong tradition of volunteerism with deep partnerships in place between municipality, residents, and non-profits.

Current Strengths and Assets (cont'd)

- The City is increasingly preparing for climate change given the concern about current impacts from hazards and the threat of escalation—particularly from storms, flooding, and wind.
- Public process including ward meetings and survey as part of development of the 2021 East Providence Comprehensive Plan.
- Active and resourceful staff that are quick to mobilize in response to issues in a collaborative cross-department fashion.
- Proximity to the City of Providence, Narragansett Bay, and Interstate I-95.
- East Providence is part of a statewide mutual aid plan as a component of the Southern New England Mutual Aid Plan.
- Generators at City Hall, Senior Center, DPW Complex and Pump Stations.
- Maintenance of a diverse communication network that utilizes multiple platforms (text messages, emails, phone calls, etc.) to share information on routine basis as well as before, during, and after major events.
- New culvert under Warren Avenue to address flooding in the State Street neighborhood.
- Designation of the City by FEMA via their Community Rating System as a Class 8 Community, currently.
- City emergency management uses the RI Special Needs Emergency Registry, a self-register portal that informs first responders as to the location of people who have special needs, mobility issues, are vision or hearing-impaired, on dialysis or oxygen, etc., during extreme weather events and major power outages.
- East Bay Community Action Program has a weatherization program among a myriad of other community services.
- Recently increased emergency management capacity and updated Advanced Emergency Action Plan.
- Abundant natural resources including coastline, beaches, open green space (approximately 825 acres of open), woods, especially for the size of the community.
- Living shoreline pilot demonstrates City's openness to innovation and commitment to using natural infrastructure to address vulnerabilities.

Current Strengths and Assets (cont'd)

- Pandemic responses by emergency management and social services staff have elevated the respect and support for these services amongst residents.
- Once in a generation opportunities to regain public access to waterfront through the sale of coastal parcels by petroleum companies that had previously use the land as a safety buffer for their operations.
- City-level tree inventory recently initiated.
- New multi-family residential development and affordable housing opportunities, especially in the City's emerging waterfront, provide exciting living opportunities for young professionals and 55+ residents that include access to dining, entertainment, waterfront, and recreational amenities (East Bay Bikepath).
- Strong recreational boating use in the City is an important part of maritime economy (e.g. hundreds of vessels use Bullock's Cove for docking or mooring).
- City's waterfront has adequate staffing with capacity, expertise, and good coordination and has pre-existing emphasis on climate resilient planning.
- Much of the development along the Seekonk and Providence Rivers are likely to be sufficiently elevated to accommodate predicted future sea level rise (exception is flooding in Bullock's Cove area).
- Ordinance (Chapter 19, Article IX, Section 19-470) that requires developers to "...conform to the policies, standards and regulations of the RI CRMC Red Book and the Metro Bay Region Special Area Management Plan" (SAMP) to identify hazard mitigation, shoreline protection, etc.
- Section 19-483 (Site Development Criteria) requires stormwater management facilities, permeable paving, vegetated buffers and infiltration systems to reduce the volume and improve the quality of stormwater.
- Waterfront District Plan Goals (particularly Goal #5) focuses on encouraging access to multi-modal transportation opportunities, opening of the waterfront to public access as recreational area, and the protection and enhancement of the natural waterfront environment.
- \$400K investment by City for park upgrades in most vulnerable neighborhoods.
- Tree planting program established (2020) with \$25K annual budget plus recent grant (\$20K - TD Bank) to increase shade trees in parks and playgrounds.

Recommendations to Improve Resilience

A common theme among workshop participants was the need to continue community-based planning efforts focused on developing adaptive measures to reduce East Providence's vulnerability to extreme weather, climate change and other common concerns raised. To that end, the workshop participants reached agreement on several priority topics requiring more immediate and/or ongoing attention including:

- **Long-term Vision and Growth** (i.e. development/redevelopment, conservation, transportation, commerce/economic growth, diverse demographics, volunteerism, voluntary buyouts, open space protection in Special Flood Hazard Areas);
- **Infrastructure Improvements** (i.e. stormwater management systems, impervious cover, prioritization and incentivization of low impact resilience development, utility infrastructure reliability, wastewater treatment systems and facilities, coastal shoreline stabilization with nature-based solutions (living shorelines), dam removal, sea-wall replacement);
- **Resilient Community Support** (i.e. affordable/accessible housing, sustainability, green infrastructure, tree management, business and residential recovery, senior care support);
- **Emergency Management** (i.e. communications, outreach, education, continuation of services, coordinating and exercise plans, heating/cooling centers/stations)

In direct response, the workshop participants developed the following priority and other action list. Mitigation actions from the East Providence Local Hazard Mitigation Plan (2017) are provided in Appendix A for cross reference. In addition, actions previously identified in the East Providence's Comprehensive Plan (2010) were reviewed for consistency with input from workshop participants.

Priority Actions

- Improve the reliability of the utility infrastructure by addressing root causes of short and long term power outages, in addition to developing comprehensive response measures and programs to reduce the burden on families, larger communities and small businesses during and after prolonged outages (e.g. food assistance, wage compensation, etc.).

Priority Actions (cont'd)

- Incorporate resulting resilience actions from CRB workshop into Comprehensive Plan and prioritize development of robust resiliency section in 2020-2040 Comprehensive Plan.
- Test the Advanced Emergency Action Plan to ensure that it is functional and tested with an emphasis on coordination across departments and elected leadership regarding timeline and protocol for plan initiation.
- Expand current Advanced Emergency Action Plan to comprehensively identify and address the needs of vulnerable populations through data acquisition, mapping tools, and community collaborations which can inform improvements and enhancements to the plan.
- Enhance community outreach, education, and alternative communication plans (e.g. in case of cell phone service and internet outages) that incorporate the needs of vulnerable populations and promote accessibility (i.e. translation, digital access alternatives, isolated residents, etc.).
- Acquire or secure conservation easements on undeveloped parcels in the flood-zone and other environmentally sensitive properties to help minimize risk and improve public amenities (i.e. Exxon/Mobil surplus property, properties along upper Seekonk, etc.).
- Develop a community engagement strategy to foster support for open space regarding climate adaptation efforts, forest canopy management and expansion, storm-water management and floodplain management.
- Improve coastal resilience for the next 100 years by planning for projected sea level rise up to 9ft through erosion control and coastline stabilization.



(Credit: pinterest.com)



(Credit: eastprovidencebusiness.com)



(Credit: Facebook)

Priority Actions (cont'd)

- Expand initial living shoreline projects into a large, incremental, phased program that provides continued monitoring, with expansion at Rose Larisa Park and also replication along other high priority areas (e.g. Sabin Point, Seekonk/Riverside shorelines).
- Explore further opportunities to use nature-based solution for erosion control at collapsed sea wall location including the installation of a stepped staircase of natural materials planted for gentle slope, rock toe, and vegetated coir log revetment.
- Incentivize further low-impact, resilient, and sustainable development for the Waterfront and city-wide using natural solutions and techniques like green islands, drainage flails, green roofs, rain gardens, and fertilizer alternatives.
- Look to establish regulatory mechanisms to accelerate remediation (e.g. impervious pavement, hazardous waste parcels, etc.), promote infilling in core downtown areas (e.g. density bonus, expedited permitting, fee waivers, etc.), and raise minimum standards for development and redevelopment (e.g. stormwater BMPs, etc.).
- Incorporate further low impact development guidelines and practices into zoning and subdivision regulations.
- Remove dam on the Lower Runnins River to facilitate salt marsh advancement, improve water quality, and increase flood storage capacity.

Other Actions

- Address aging population through resources and programming for seniors to complement ongoing initiatives at the Senior Center and to address lack of homecare agencies and providers.
- Hazardous waste education, training, and events to help remove household hazard waste (e.g. Clean Harbors and Resource Recovery successful paint recycling effort).
- Incentivize and educate landlords about Section 8 housing options.
- Follow-up on and refocus Edmund Place project.
- Set-up and fund/facilitate loan or grant program to provide upfront funds to proactively address housing vulnerabilities in addition to expanded storm damage repairs associated with residential housing.

Other Actions (cont'd)

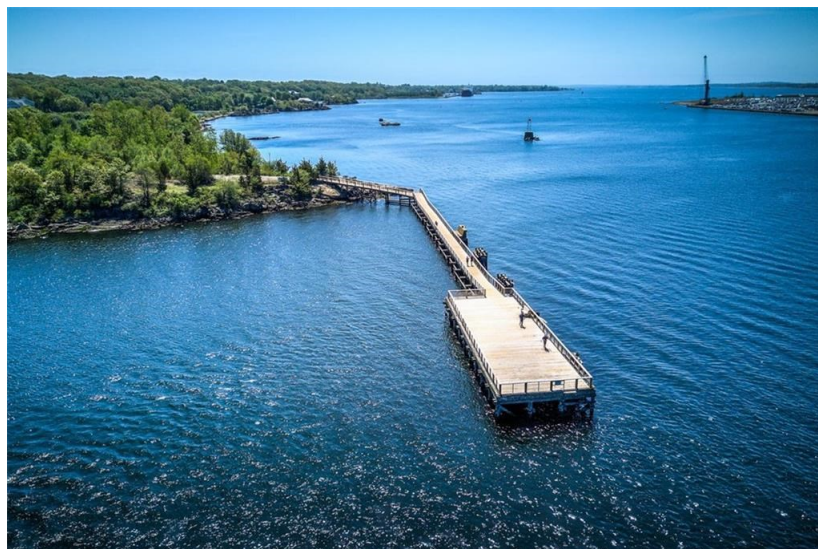
- Advance program to provide more locally produced, plant-based food options across the school system.
- Partner with farms and organizations outside of East Providence to increase food access and equity initiatives for residents.
- Explore and expand on existing food distribution models including an agreement with owners of the Philip Walker House to host community gardens to generate products that could be sold locally at Sacred Cow.
- Conduct outreach to local businesses to educate on safeguards to prevent chemical spills during natural disasters.
- Increase outreach to landlords to help weatherize and winterize rental properties and promote energy efficient appliances.
- Increase shade tree canopy at all schools – particularly on playgrounds and outside areas used by student and teachers - across the system.
- Continue to coordinate emergency response with neighboring municipalities and state departments across both Rhode Island and Massachusetts to help minimize potential isolation of East Providence in an emergency situation.
- Look to build a culture of preparedness amongst residents through routine and broadly available educational outreach via a trained volunteer network and look to promote shelter-in-place strategies for residents with limited access to transportation in the event the public bus system is compromised.
- Enhance direct City-to-resident communications during emergencies beyond social media and online press releases and look to integrate City service providers into novel neighborhood network-building initiatives.
- Establish the new High School as an additional emergency shelter given that it is situated in an elevated areas with modern facilities by identifying and securing resources needed for conversion.
- Expand cooling practices to include transportation of vulnerable populations to designated cooling centers such as the Senior Center and Libraries with air conditioning and open to all when air temperature gets above 95°F.

Other Actions (cont'd)

- Strengthen relationships with faith-based organizations to ensure minority and vulnerable populations (such as elderly living independently) are reaching and educating those in need on resources and services available through the City departments.
- Develop and retain staff capacity to manage the application and administration of grant funding (federal, state, and otherwise) for immediate and long-term projects which support climate resilience.
- Continue to find ways to support the activities of the Community Emergency Response Team and maintain a strong flow of volunteers.
- Strengthen staff capacity and awareness of available datasets and mapping tools that highlight vulnerable demographics, infrastructure, environment, and facilities to help inform emergency managers and leadership about needs and risk related to extreme weather events and changes in climate in East Providence.
- Reassess RIPTA public bus stops and identify those that are not safely accessible and propose relocation/additions (e.g. stops on Wampanoag Trail).
- Look to further integrate bike path network across the City which can help support recreation and to serve as an alternate means of transportation for residents and visitors.
- Continue to update and build out the City's stormwater infrastructure including a specific focus on reducing impervious cover and the use of green stormwater infrastructure, where feasible.
- Explore developing a disaster relief program development for small local businesses particularly in vulnerable waterfront developments.
- Update tree removal section of hazard mitigation plan and update existing urban and other tree planting strategies to include consideration of new environmental conditions (temperature, pests, pathogens, diseases, etc).
- Renew funding for tree planting program as part of tree management plan which accounts both for both the expansion of the urban tree canopy balanced with management along power lines to prevent outages.
- Improve resiliency at Turner Reservoir by assessing and remediating cyanobacteria blooms, determine if dam can be notched to promote less stagnant conditions and wetland restoration and explore potential to increase flood and stormwater storage.

Other Actions (cont'd)

- Commit to more proactive open space acquisition with a focus on purchasing and restoring flood-prone properties to help increase flood storage as well as public amenities, where appropriate.
- Inventory shoreline parcels on the Seekonk River to assess which might be used to enhance public access on west side of rail line (ensure lateral public access as properties are redeveloped), while maintaining buffer zones and conserving unique habitats.
- Ecological restoration of Willet Pond through low cost, multi-pronged effort including stormwater management (green stormwater basin or capture, regrade parking lot), limiting nearby fertilizer use, and increased public awareness and stakeholder investment in the resource (e.g. local freshwater fishing negatively affected by algal blooms; potential economic development opportunity for adjacent businesses, by enhancing traffic around proximate waterways).
- Look to better manage invasive species such as phragmites that displace volume of water storage and restrict water flow in water ways and channels.
- Continue to explore opportunities to enhance policing including community policing programs that integrate social worker/mental health professionals into policing to provide more comprehensive response to crisis situations.



(Credit: City of East Providence)

CRB Workshop Participants: Department/Organization

City of East Providence - Office of the Mayor*

State Senator's Office - RI District 18*

State Representative's Office - District 63*

City of East Providence Department of Planning and Economic Development

City of East Providence Emergency Management Agency

City of East Providence Department of Public Works

City of East Providence Controllers Division

City of East Providence Waterfront Commission

City of East Providence Urban Forest

City of East Providence Health Equity Zone

City of East Providence Chamber of Commerce

East Bay Community Action Program

Riverside Action Group

Save the Bay

Coastal Resources Management Council*

* invited but unable to attend.

East Providence Core Project Team

William Fazioli - Director of Planning & Economic Development, City of East Providence

Claire Morehouse - Planner, City of East Providence

Johanna Walzack - Planner, City of East Providence

Online CRB Workshop Facilitation Team

Rhode Island Infrastructure Bank - Shaun O'Rourke (MRP Lead)

The Nature Conservancy - Adam Whelchel (Lead Facilitator)

The Nature Conservancy - Sue Anderbois (Lead Coordinator/Scribe)

Narragansett Bay Research Reserve - Jennifer West (Small Group Facilitator)

The Nature Conservancy - Drew Goldsman (Small Group Facilitator)

URI Coastal Resource Center - Teresa Crean (Small Group Facilitator)

The Nature Conservancy - Samantha Lash (IT Management/Scribe)

Rhode Island Infrastructure Bank - Kim Koriath (Scribe)

The Nature Conservancy - Jasmine Li (Scribe)

The Nature Conservancy - Tim Mooney (Scribe)

The Nature Conservancy - Samantha Horn (Scribe)

Recommended Citation

City of East Providence (2021). Online Community Resilience Building Workshop - Summary of Findings Report. State of Rhode Island's Municipal Resilience Program. The Nature Conservancy and Rhode Island Infrastructure Bank. East Providence, Rhode Island.

Acknowledgements

Special thanks to the City leadership, staff, and community members for their willingness to embrace the process in hopes of a more resilient future for East Providence. This online Community Resilience Building Workshop was made possible in large part through the generous contribution of the facilitation team members who skillfully conducted the East Providence Community Resilience Building Workshop (including facilitators from University of Rhode Island Coastal Resource Center and Narragansett Bay Research Reserve) in close partnership with the City's Core Project Team.

Appendix A

City of East Providence Local Hazard Mitigation Plan (2017)

Mitigation Strategies and Actions from Previous HMP & Updated Mitigation Strategies and Actions

Mitigation Strategies and Actions from Previous HMP

2010 East Providence Hazard Mitigation Plan Action Item Status Report

Action Item	Progress	2016 Status	Rationale
1. Expand Public Education and Outreach Programs	Greatly increased use of City website and initiated successful social media activity. CRS participation has resulted in additional outreach to residents of flood prone areas.	Modified New Strategy # 5, 16-19.	Continue effort and keep up w/ notification and social media changes.
2. Increase Emergency Sheltering Capability	East Providence High School re-certified as Red Cross Shelter. RIEMA developing statewide plan. EMA and City Command Staff developing local plan and acquiring commodities. Senior Center available for smaller activations	Modified New Strategy #7	Continue to acquire shelter commodities; increase alt. power capability
3. Provide for Continuity of Operations	Electrical generator capability being improved at several sites, FEMA grant obtained to upgrade City Hall generator. Discussions in progress re: essential staffing. Continuity of Operations Plan is priority item of this planning cycle.	Modified New Strategy #6.	Staff COOP plan for emergencies still needs to be memorialized.
4. Assess Vulnerability of Public Buildings	Capital funding has returned and is supporting building improvements City-wide. This effort will continue as will effects to improve safety and security for City staff, school students, and residents.	Modified New Strategy #1	Reduce potential for incidents
5. Assess Vulnerability of Public Records	Long-term effort in progress. Many land evidence records are now available electronically. Public records digitization ongoing.	Completed	Ensure availability and increase access to public records.
6. Protect Library Resources	Library building maintenance improved in recent years. Library developing new community facility at former Fuller Library.	Completed	Maintenance of highly used and regarded City facilities.
7. Assess Vulnerability to Cultural and Historic Resources	Local historic districts have been established to increase awareness of local sites and resources. Funding increased to support historic Looff Carousel. Efforts beginning to rehab historic Oddfellows Hall.	Modified New Strategy #13	Reduce potential for damage or loss due to natural hazards
8. Ten Mile River Stream Gage as Nat'l Weather Service Forecast Point	Pursued with NE River Forecast Center; drainage basin does not meet size criteria. Successful local study ongoing to use River Gage levels to predict flooding along both Ten Mile and Runnins Rivers	Cancelled	Local flood study is achieving the objectives of this action item.

Mitigation Strategies and Actions from Previous HMP

Action Item	Progress	2016 Status	Rationale
9. Encourage Underground Utilities	Recent larger developments including Bridgham Farm and Seaview Estates subdivisions have underground electrical; similar plans for new Kettle Point and Village on the Waterfront developments.	Completed	Protect utility infrastructure, lessen vulnerability to outages.
10. Update the City's Debris Management Plan	Plan available and debris storage measures have been implemented during recent storms.	Cancelled	No current interest in update. Will re-evaluate late in cycle.
11. Maintain NFIP Participation and Compliance	Maintaining Hazard Mitigation Plan. City EMA and Engineering have worked to provide flood zone and flood insurance information to dozens of City residents and maintain log of inquiries.	Modified New Strategy # 9, 10	Ensure FEMA compliance, maintain NFIP eligibility
12. Enroll in FEMA Community Rating System	Successfully completed. CRS Class 9 enrollment achieved effective May 1, 2014.	Modified New Strategy #2	Improve to Class 8 to increase discounts for flood insurance policy holders.
13. Maintenance of Drainage Infrastructure	Ongoing DPW activity to clean catch basins and maintain drainageways. Significant capital funding necessary to improve drainage in certain locations. Potential for capital improvement bond funding.	Modified New Strategy #9, 14	Keep drainage-ways unclogged to reduce flood potential.
14. Tree Trimming Program	National Grid performs tree trimming. Through capital budget planning, the City has acquired a new tree truck to aid in citywide tree trimming effort.	Modified New Strategy #15	Reduce tree/wire conflicts to lessen incidents of downed wires.
15. Encourage Acquisition of Open Space	Parcel acquired in repetitive flood area north of Waterman Ave. Parcel with brook frontage in Riverside in acquisition process.	Modified New Strategy#11	Maintain open space areas for stormwater and floodplain functions.
16. Explore Financial Incentives for Conservation Easements	Option pursued in recent developments; tax reduction often not significant enough for commercial developers. May be more beneficial for residential interests.	Modified New Strategy #11	Maintain sensitive areas in natural state.
18. Inventory of Long-Term Care and Child Care Facilities	Long-term care facilities identified with contacts. EMA, EMS will continue involvement with state Long-Term Care Mutual Aid Plan along with collaboration with Dept. of Health and the Hospital Association of Rhode Island.	Completed	Assist facilities where possible in emergencies.
19. Examination of Land Uses	Open space has been preserved in new development where possible and drainage from these developments has been carefully engineered. Market forces create challenge to preserving developable land.	Completed	Maintain open space designations where possible.
20. Training Opportunities and Natural Hazard Seminars	Local EMA attends sessions in all possible Emergency Management sectors, additional public safety staff have become knowledgeable in disaster operations through recent major storms and relating trainings.	Modified	Continue education, keep up with policies and best practices.

Mitigation Strategies and Actions from Previous HMP

Action Item	Progress	2016 Status	Rationale
21. Maintain NIMS compliance	EMA up-to-date with required FEMA/EMI training. Extensive School Dept. training achieved in recent years. Public Safety personnel have been trained as required.	Complete	Ensure FEMA compliance.
22. Emergency Management Volunteer Coordination	Smattering of volunteer interest. An individual or group is needed to coordinate a viable volunteer program.	Cancelled	Item will be re-evaluated if staffing assistance is provided.
23. Need for alternate power for sewer system pump stations	Most locations now fully generated. Working to improve service to stations that still rely on portable generators for alternate power.	Modified New Strategy #1	Ensure system functions during emergencies, preserve quality of environment.
24. Installation of Second Cross-Bay Water Pipeline	Highly expensive and complicated project. City will support any effort that may evolve in the future. In related effort, the City has approved \$19M bond to improve water infrastructure and quality of City water.	Cancelled	City will monitor, requires major commitment from many entities.
25. Inspection, Maintenance and Repair of Culverts	Funding secured for improvement of Warren Avenue Culvert. Options being investigated for improvements to or replacement of culvert on South Broadway.	Modified New Strategy #9	Mitigate flooding, scour, and potential for street damage.
26. Dam Monitoring and Maintenance	City owns three dams on Ten Mile River. Turner Res. Dam is considered "high-hazard". RIEMA working w/ Narr. Bay. Comm. re: high-hazard structure on that property.	Modified New Strategy #4	Mitigate against dam failure, have plan available in case of failure.
27. Inventory of Bridges with Utilities	Inventory complete and information available in the City's GIS Database.	Completed	Update as necessary.
28. Private industry and Commercial Outreach	Outreach conducted and relationship built with EP Area Chamber of Commerce. Additional private and commercial outreach will be investigated.	Modified New Strategy #17	Provide prepared-ness and mitigation info on large scale.
29. Inventory of Commercial and Industrial Buildings in Floodplain	Improved orthophotos and new mapping tools have aided in identifying structures.	Completed	To be updated as facilities are built, replaced, or torn down.
30. Carefully Planned Future Waterfront Development	Development slowed during the recession but increased beginning in 2014. Waterfront review process includes thorough review of natural hazard impacts. Collaboration with EMA done regarding natural hazards as warranted.	Completed	Development review accounts for SFHA and other sensitive areas.

Updated Mitigation Strategies and Actions (2017)

Hazard Mitigation Mission, Goals, and Specific Strategies

Mission: East Providence is prepared for natural hazards and has the resources to mitigate, prepare for, respond to, and recover from a disaster.

Goal 1: Reduce the vulnerability of our residences, businesses and government to natural disasters.

Strategies:

1. Upgrade alternate power capability at municipal facilities including City Hall, other City Buildings, and at water and wastewater pumping stations.

Ensure that municipal buildings and other infrastructure continue to provide service and function as designed in the event of an interruption of electrical power. Generator support exists but is currently inadequate due to technology demands at City Hall and the City Public Works Complex, and due to technology and a building addition at the Senior Center.

Priority: High

Action Type: Emergency Services

Project Lead: DPW Public Buildings Division

Supporting Resources: East Providence EMA, DPW Engineering Division, City Manager and City Council, Police Dept., Fire Dept., and Information Technology (IT) Dept.

Benefit: Ensure full service to residents and safe conditions for public employees; protect communications and IT resources.

Time Frame: Long-term. Complete by late 2018.

Cost Estimate: Significant

Funding Options: City Capital Budget, hazard mitigation grant opportunities.

2016 Status: Project underway to install new generator at the City Public Works complex.

Funding pending expected for a Senior Center generator. FEMA grant available for City Hall project; logistics still being determined. Working with the Public Buildings and Engineering Divisions to determine other infrastructure still in need of alternative power sources.

2. Upgrade the City's participation in FEMA's Community Rating System.

The City achieved enrollment in the Community Rating System in 2014 as a Class 9 community, enabling floodplain residents to realize a 5% reduction in flood insurance policy rates. Goal of upcoming Hazard Mitigation Plan cycle is to upgrade to Class 8.

Priority: High

Action Type: Planning and Prevention

Updated Mitigation Strategies and Actions (2017)

Project Lead: East Providence EMA

Supporting Resources: DPW Engineering Division, IT Dept. (public outreach assistance), RIEMA CRS User Group, FEMA CRS resources, and Insurance Services Office (ISO)

Benefit: Constituent flood insurance discounts, increased flood hazard awareness, increased public outreach.

Time Frame: Long-term. Complete by mid-2019.

Cost Estimate: Staff Time

Funding Options: n/a

2016 Status: Class 9 community status recertified in October of 2015. Data gathering, notification and other activities underway to maintain enrollment and upgrade classification.

3. Upgrade and strengthen infrastructure at school facilities.

School buildings have a well-built “shell” but in many instance doors and windows are not of the highest quality and strength. Improvements to doorways and especially windows are needed at a number of the City’s public schools.

Priority: Medium

Action Type: Structural projects, Planning and Prevention.

Project Leads: School Administration and School Facilities.

Supporting Resources: Fire Dept. (inspection), DPW Building Division, School Committee.

Benefit: Increased school building resilience to wind-related hazards.

Time Frame: Medium-term.

Cost Estimate: Significant

Funding Options: Grant potential, staff time availability

2016 Status: Entryway, window, and other physical plant improvements are getting underway made as funding is available. RI Dept. of Education assistance has been used. Additional capital funding would help to increase execution of this very large task.

4. Update Emergency Action Plans for local high hazard dams and coordinate with upstream communities.

Ensure that local emergency action plans are up to date with regard to areas of impact, emergency notification protocol, and local contact information.

Priority: High

Action Type: Planning and Prevention

Project Lead: East Providence EMA

Supporting Resources: Police Dept., Fire Dept., DPW Water Division, RIEMA, and Narragansett Bay Commission.

Benefit: Higher level of preparedness and increased ability to move people from harm’s way in the unlikely event of a dam emergency.

Time Frame: Medium-term. Complete early 2018

Cost/Funding Options: Staff time

2016 Status: Turner Reservoir Dam EAP is at RIDEM for review. More detailed hazard mapping is desirable. Need to integrate into emergency notification system. Coordination needed with Narragansett Bay Commission re: EAP for a structure at their WWTF facility in Rumford.

Updated Mitigation Strategies and Actions (2017)

5. Implement education program for residents regarding the purpose and use of mapped evacuation routes and coordinate with neighboring towns.

Evacuation route signs are posted along some roadways in East Providence but many are not aware of how best to use that information, where the signs are intended to lead them, and what happens at town and state borders. Survey residents and provide education based on knowledge gaps that are discovered.

Priority: Medium

Action Type: Public Education and Awareness

Project Lead: East Providence EMA

Supporting Resources: RIEMA, DPW, Police Dept., and IT Dept.

Time Frame: Medium-term

Benefit: Public understanding of use of this signage in the event of storm surge evacuation as part of a broader personal evacuation plan.

Cost/Funding Options: Staff time.

2016 Status: New action item for this Plan update.

6. Prepare post-disaster Continuity of Operations Plan for City government.

Public Safety operations have clear guidelines and chains of command; City government as a whole would benefit from similar written guidance that could be implemented immediately if necessary. An outdated consultant-based Continuity of Operations/Government Plan needs substantial updating or replacement.

Priority: Medium

Action Type: Planning and Prevention

Project Lead: East Providence EMA

Supporting Resources: City Management, all City Department heads, and RIEMA

Benefit: Continued operation and service to the Public in the event of a major incident or emergency.

Time Frame: Medium-term

Cost/Funding Options: Moderate if contracted out, substantial staff time if executed in-house.

2016 Status: No recent activity. Plan templates are available; extensive project that requires prioritization from command staff level. RIEMA initiative to assist local continuity plans is anticipated during this plan cycle.

7. Increase shelter capacity and capability with infrastructure upgrades.

Improved provision of sheltering aids in mitigating the impact from natural disasters. The City has an approved regional shelter at the High School and can utilize the Senior Center and Riverside Middle School if necessary. The High School has a large generator, but electrical upgrades to support it are needed. The Senior Center and Riverside Middle School need larger generators to work well as shelters. Work with groups including long-term care facilities and East Providence Housing Authority to develop protocol for sheltering in place.

Priority: High

Action Type: Emergency Services.

Project Lead: East Providence EMA

Supporting Resources: American Red Cross, East Providence Fire and Police Departments, East Providence Housing Authority, Rhode Island Department of Health

Benefit: Improved service to all residents including those with additional needs in the event of an emergency that requires sheltering.

Updated Mitigation Strategies and Actions (2017)

Time Frame: Long term

Cost/Funding Options: Staff time

2016 Status: Fire Department/EMS accesses the Dept. of Health Functional Needs registry.

Coordinate with Dept. of Health to ensure list is up-to-date. The Red Cross has exercised the former St. Brendan's School in Riverside and is considering that facility for use as an approved shelter. That facility would need a generator if the Red Cross pursues this option. The City is working to improve alternative power provision at the Senior Center and is seeking funding to do the same at the High School.

8. Upgrade water lines.

Water service is provided to nearly 100% of City residents. Underground infrastructure is many decades old in most cases. Action is needed to mitigate long term degradation of the system.

Priority: High

Action Type: Structural Projects

Project Lead: DPW Engineering Division

Supporting Resources: Other Department of Public Works Divisions and local contractors.

Benefit: Pro-active avoidance of water main breaks. Strengthen existing brittle infrastructure to offer resilience to minor earthquakes and tremors. Maintain high water quality.

Time Frame: Long-term. Complete 2021.

Cost/Funding Options: Significant. \$2-5 Million/year through 2021 for water main cleaning/lining thru RI Infrastructure Bank. Additional funding options include City Water Enterprise Fund, City Capital Budget.

2016 Status: Major water improvement bond is being used to execute several water quality improvement projects. Some water main work completed within several City utilizing Federal ARRA funding in early 2010's and Rhode Island Infrastructure Bank program. More funds may be needed to complete program in the entire city.

Goal 2: Reduce property damage caused by natural disasters.

Strategies:

9. Reduce poor drainage flooding at locations, as identified in Section 3.2c of this Plan update, and in the Southeast Drainage Area.

Nuisance street flooding occurs multiple times in most years at the same locations, and basement flooding is common in certain areas of the City, especially parts of Riverside east of Willet Avenue. Engineering projects have been identified to reduce these incidents, these include culvert upgrades and upsizing and construction of drainage swales.

Priority: Medium

Action Type: Structural Projects, Property Protection

Project Lead: DPW Engineering Division

Supporting Resources: Other Department of Public Works Divisions, City Management, City Capital Budget and Five-year Capital Improvement Program, and City Planning Dept.

Benefit: Reduction in frequency and severity of minor flooding.

Time Frame: Long-term

Cost/Funding Options: \$1-5 Million. Limited Capital Budget funding available.

2016 Status: Drainageways and catch basins are maintained on scheduled basis. Capital project bond funding is a possibility to execute larger flood mitigation engineering projects.

Updated Mitigation Strategies and Actions (2017)

10. Implement physical mitigation activities in repetitive loss areas.

Mitigation opportunities exist for residents of repetitive loss neighborhoods. These may include acquisition and elevation, or smaller-scale activities to allow residents to remain in their neighborhoods.

Priority: High

Action Type: Property Protection

Project Lead: East Providence EMA

Supporting Resources: RIEMA and FEMA's Unified Hazard Mitigation Grant Program.

Benefit: Increased awareness of flood hazard in these areas and of options to mitigate flooding.

Time Frame: Medium-term. Complete 2018.

Cost Estimate: Significant

Funding Options: Hazard Mitigation Assistance grants.

2016 Status: Two mitigation projects are in progress in the flood-prone State Street neighborhood as described in Section 3.3d of this Plan update. CRS participation has resulted in increased outreach regarding hazards; mitigation outreach will be increased during this planning cycle. A Flood Audit Task Force was developed to investigate the feasibility of providing residential flood mitigation audits for flood-prone properties; this initiative was getting underway as of late 2016.

11. Acquire or secure conservation easements on flood-zone and other environmentally sensitive properties.

Certain undeveloped properties, or portions of properties, in the SFHA or containing wetlands, may be best suited to remain or return to a natural state. These will be inventoried, with consideration given to these conditions as development proposals are presented.

Priority: Medium

Action Type: Natural Resource Protection, Property Protection

Project Lead: City's Planning Department

Supporting Resources: Waterfront Special Development District Commission, Conservation Commission, Law Enforcement, and DEM

Benefit: Protection of natural resources, reduction in impervious surface, mitigation of additional flooding due to intensified land use, avoid development in areas of high flood risk, natural treatment of stormwater runoff.

Time Frame: Long-term

Cost/Funding Options: Potential very occasional DEM funding, City Capital Budget, fee-simple acquisition.

2016 Status: City does not actively seek land acquisition or conservation easements but considers inquiries on a case-by-case basis. Subdivision and development plan review includes consideration of flood potential and of sensitive environments on-site and nearby.

12. Develop a recovery and reconstruction ordinance for post-disaster rebuilding.

In the wake of a major hazard incident, such as a hurricane, an emergency reconstruction ordinance that is specific to East Providence could expedite responsible rebuilding in affected areas. The State Department of Administration was crafting legislation for potential statewide implementation, if this is successful the City would take measures to ensure that is appropriately addresses conditions specific to our community.

Priority: Medium

Action Type: Planning and Prevention

Updated Mitigation Strategies and Actions (2017)

Project Lead: City's Planning Department and DPW

Supporting Resources: East Providence EMA, Planning Board, City Council, and City Management, RI Dept. of Administration.

Benefit: Aid in streamlining the permitting process and expediting the return of the community to pre-incident conditions.

Time Frame: Long-term

Cost/Funding Options: Staff time availability

2016 Status: Research will be performed regarding similar communities' experiences with this type of initiative.

13. Perform emergency/disaster planning for the City's historic properties.

Provide disaster planning resources including templates for disaster planning for parties responsible for City-owned or affiliated historic properties and structures including the historic Crescent Park Looff Carousel.

Priority: Medium

Action Type: Planning and Prevention

Project Lead: East Providence EMA

Supporting Resources: Historic District Commission and the Rhode Island Office of Library and Information Services.

Benefit: Prepare for and potential mitigate damage to historic structures from natural hazards.

Time Frame: Medium-term.

Cost/Funding Options: Staff and volunteer time

2016 Status: State "Coordinated Statewide Emergency Preparedness" (COSTEP) program developed in early 2010s. COSTEP disaster plan template available.

14. Research and implement a backflow valve retrofit program.

Many homes in East Providence are prone to basement flooding and/or backflow into basements. Some communities have instituted successful cost-efficient programs to provide residents with backflow valves.

Priority: Low to medium

Action Type: Property Protection, Planning and Prevention.

Project Lead: East Providence EMA

Supporting Resources: DPW Engineering and Building Divisions, and programs in other communities.

Benefit: Reduction or prevention of backflow for participating residents.

Time Frame: Medium-term

Cost/Funding Options: Varies, \$100-plus residential, \$1,000's for most commercial applications. Funding sources for a City program will be investigated.

2016 Status: No activity at the current time. This initiative will be need to be researched and leadership polled to determine interest on the part of the City in implementation of such a program.

15. Conduct outreach regarding tree trimming.

Overhead utilities lines, streets and traffic, and property are all at risk from damage by falling, overgrown, or poorly-located trees. National Grid has existing tree trimming program. Provide City residents with information regarding maintenance of trees on private property that are

Updated Mitigation Strategies and Actions (2017)

adjacent to power lines, may affect overhead utility connection to their property, or may otherwise cause property damage.

Priority: Medium

Action Type: Natural Resources Protection, Public Education and Awareness.

Project Lead: East Providence EMA

Supporting Resources: National Grid and DPW Parks Division

Benefit: Protection of overhead utilities, limit property damage especially during storm events.

Time Frame: Medium-term

Cost/Funding Options: Staff time.

2016 Status: Working with National Grid to determine rotating schedule of tree trimming activities and other line maintenance. Outreach to residents regarding trees on private property will be developed.

16. Research coastal erosion mitigation options.

Shoreline erosion resulting from high-than-normal tide events and from storm wave action is causing gradual incremental property loss in portions of Riverside and there is concern for structural damage in the long term based on expected climate events, and in the shorter-term in the event of a hurricane storm surge. Some individual property owners have undertaken their own shoreline protection measures and there is resident interest in a comprehensive strategy for erosion mitigation.

Priority: Medium

Action Type: Property Protection, Structural Projects.

Project Lead: East Providence EMA, Planning Department, DPW Engineering Division.

Supporting Resources: Coastal Resources Management Council

Benefit: Protection of property during major storm and high tide events.

Time Frame: Long-term

Cost/Funding Options: Significant. Funding options to be determined.

2016 Status: Preliminary discussions have taken place regarding this issue, but information is needed regarding mitigation options that may be available, along with the feasibility and regulatory ability to perform physical shoreline erosion mitigation measures on any large scale.

Goal 3: Increase public outreach on disaster preparedness, response and recovery.

Strategies:

17. Increase resident participation in City-wide hazard mitigation priority identification.

Inform population of natural hazard impacts through hazard mitigation plan meetings and/or workshops. Supplement public meetings with materials from State or Federal partners.

Priority: High

Action Type: Public Education and Awareness

Project Lead: East Providence EMA

Supporting Resources: IT Department (public outreach assistance) and RIEMA.

Benefit: Increased constituent awareness of natural hazards and government resources.

Time Frame: Long-term

Cost/Funding Options: Staff time

2016 Status: Greatest amount of input often comes in immediate wake of natural disasters. Research needed on best practices for pre-incident public engagement.

Updated Mitigation Strategies and Actions (2017)

18. Increase outreach to commercial interests.

Provide hazard information to commercial interests via established information networks including the local Chamber of Commerce, realtor groups and other business organizations.

Priority: High

Action Type: Public Education and Awareness, Planning and Prevention

Project Lead: East Providence EMA

Supporting Resources: East Providence Area Chamber of Commerce and other local business organizations.

Benefit: Increase awareness of hazards and of resource availability.

Time Frame: Short-term. Complete in 2017.

Cost/Funding Options: Staff time availability

2016 Status: Increased outreach to Chamber of Commerce via social media accomplished, can provide additional outreach in person as practicable.

19. Increase hazard and hazard-mitigation communication in hard copy form and via the use of technology.

Use available resources including social media, City web platforms, and mass notification systems to conduct emergency management and hazard mitigation outreach. Develop hard copy mitigation content and designate locations for their distribution including at City Hall and other public facilities.

Priority: Medium

Action Type: Public Education and Awareness

Project Lead: East Providence EMA

Supporting Resources: IT Department, RIEMA, FEMA and NOAA resources.

Benefit: Increased constituent awareness and high level of constituent information service.

Time Frame: Short-term

Cost/Funding Options: Staff time

2016 Status: Recent strong success in expanded use of social media. Training underway on Code RED system. Outreach underway to increase resident mobile device enrollment. Hard copy hazard and hazard mitigation material under development.

20. Develop and distribute City specific earthquake damage mitigation information.

Little activity has occurred as region is generally not considered to be earthquake prone. Make information available to residents and business regarding basic earthquake preparation and property damage mitigation options.

Priority: Medium

Action Type: Public Education and Awareness

Project Lead: East Providence EMA

Supporting Resources: USGS and RIEMA

Benefit: Increased constituent awareness of earthquake risk, and of basic damage mitigation activities that may be easy to accomplish.

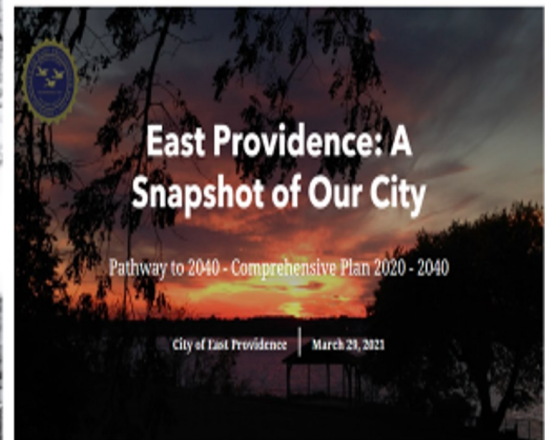
Time Frame: Long-term

Cost/Funding Options: Staff time availability

2016 Status: Awareness increased briefly with series of Eastern CT quakes in early 2015. Research is needed to develop basic information for constituents.

Appendix B

East Providence Map Resource Packet* Used During Workshop

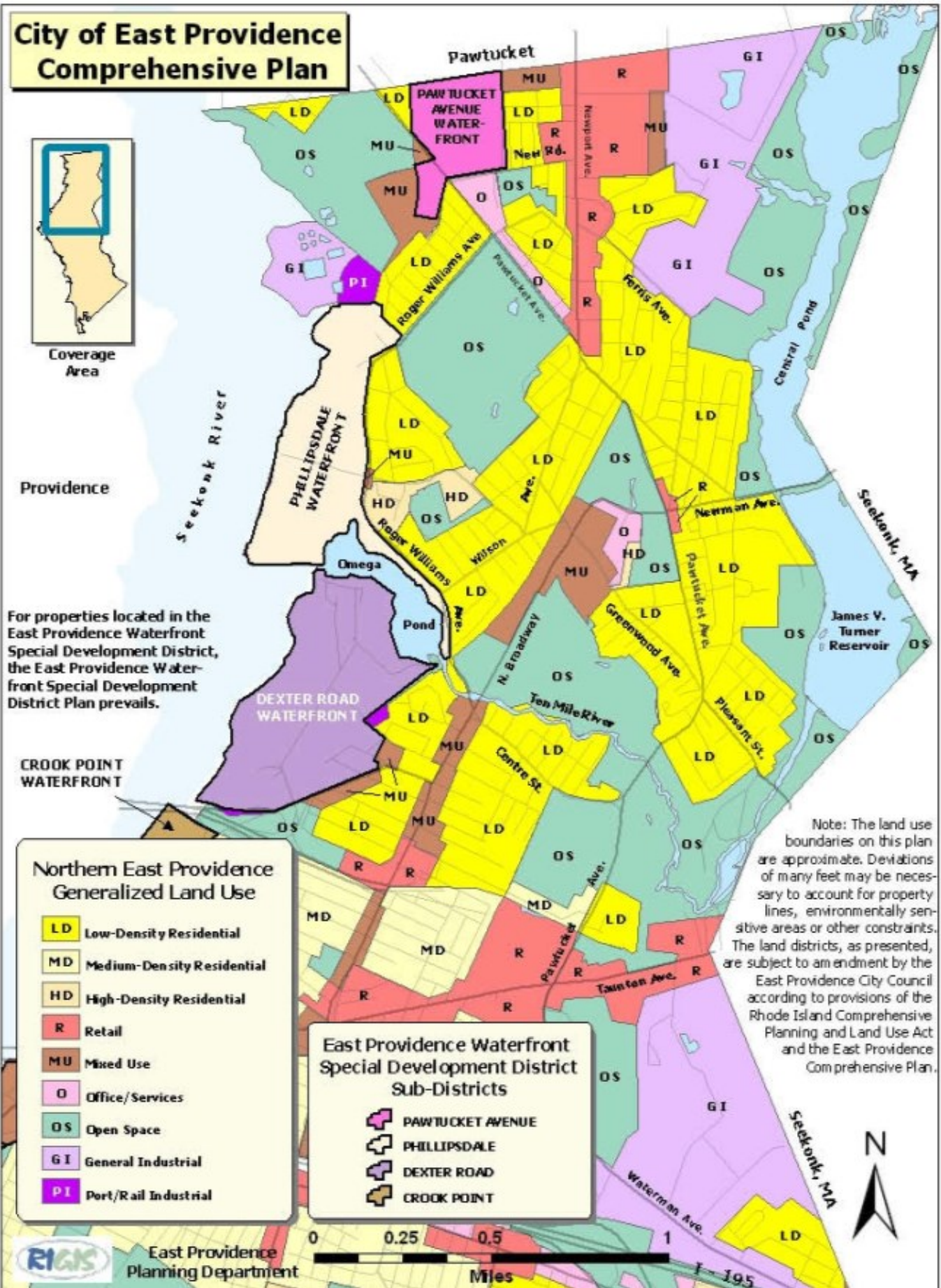


***Gathered from East Providence's Local HMP (2017) & Comprehensive Plan (2010; Update Snapshot 2020)**

City of East Providence Comprehensive Plan



Coverage Area

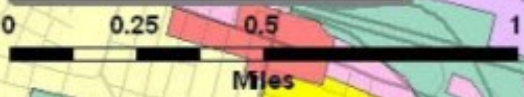


For properties located in the East Providence Waterfront Special Development District, the East Providence Waterfront Special Development District Plan prevails.

- Northern East Providence Generalized Land Use**
- LD Low-Density Residential
 - MD Medium-Density Residential
 - HD High-Density Residential
 - R Retail
 - MU Mixed Use
 - O Office/Services
 - OS Open Space
 - GI General Industrial
 - PI Port/Rail Industrial

- East Providence Waterfront Special Development District Sub-Districts**
- PAWTUCKET AVENUE
 - PHILLIPSDALE
 - DEXTER ROAD
 - CROOK POINT

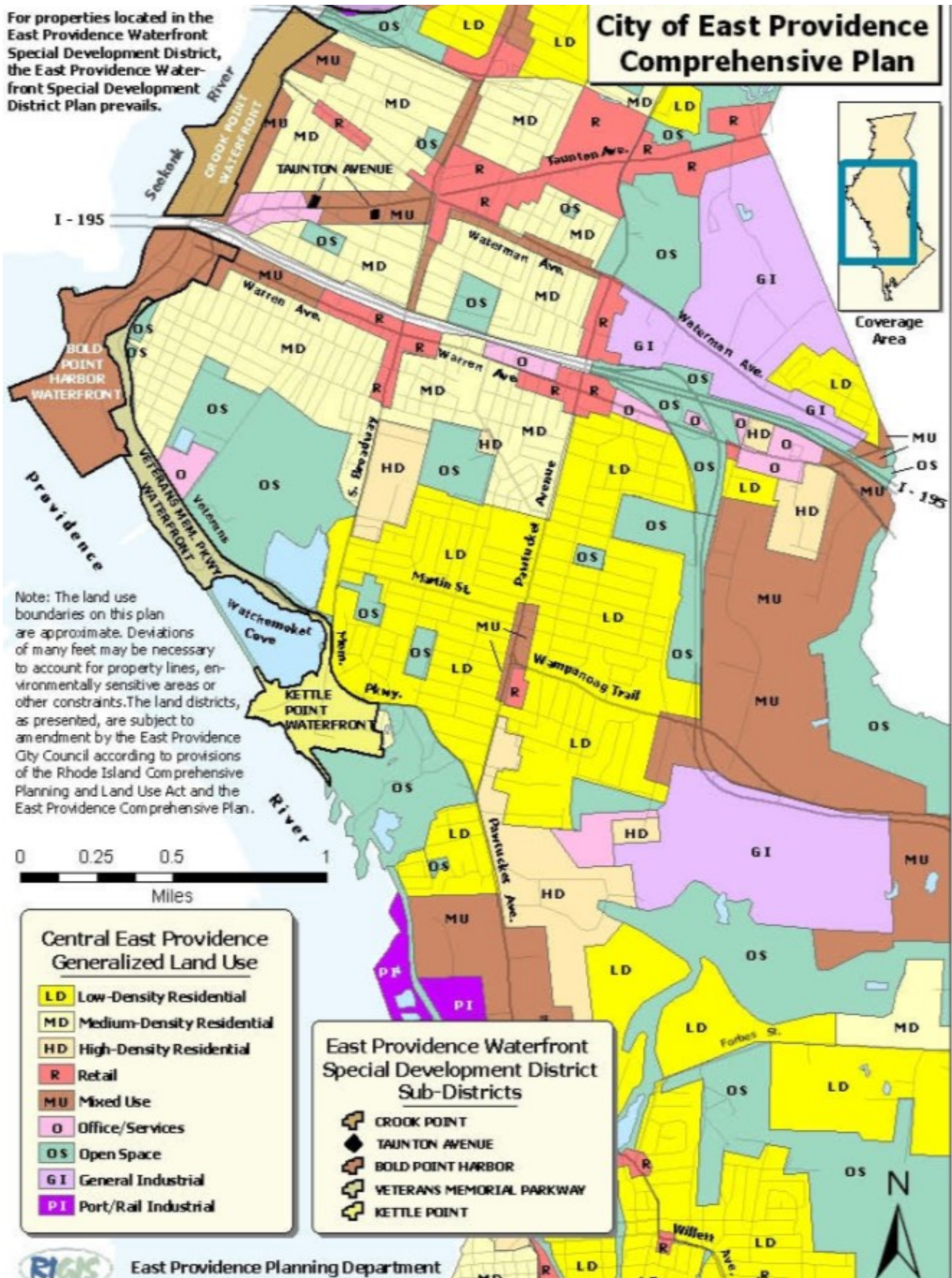
Note: The land use boundaries on this plan are approximate. Deviations of many feet may be necessary to account for property lines, environmentally sensitive areas or other constraints. The land districts, as presented, are subject to amendment by the East Providence City Council according to provisions of the Rhode Island Comprehensive Planning and Land Use Act and the East Providence Comprehensive Plan.



East Providence Planning Department

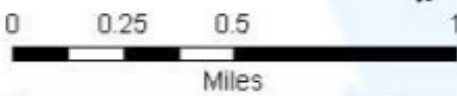
For properties located in the East Providence Waterfront Special Development District, the East Providence Waterfront Special Development District Plan prevails.

City of East Providence Comprehensive Plan



Coverage Area

Note: The land use boundaries on this plan are approximate. Deviations of many feet may be necessary to account for property lines, environmentally sensitive areas or other constraints. The land districts, as presented, are subject to an amendment by the East Providence City Council according to provisions of the Rhode Island Comprehensive Planning and Land Use Act and the East Providence Comprehensive Plan.

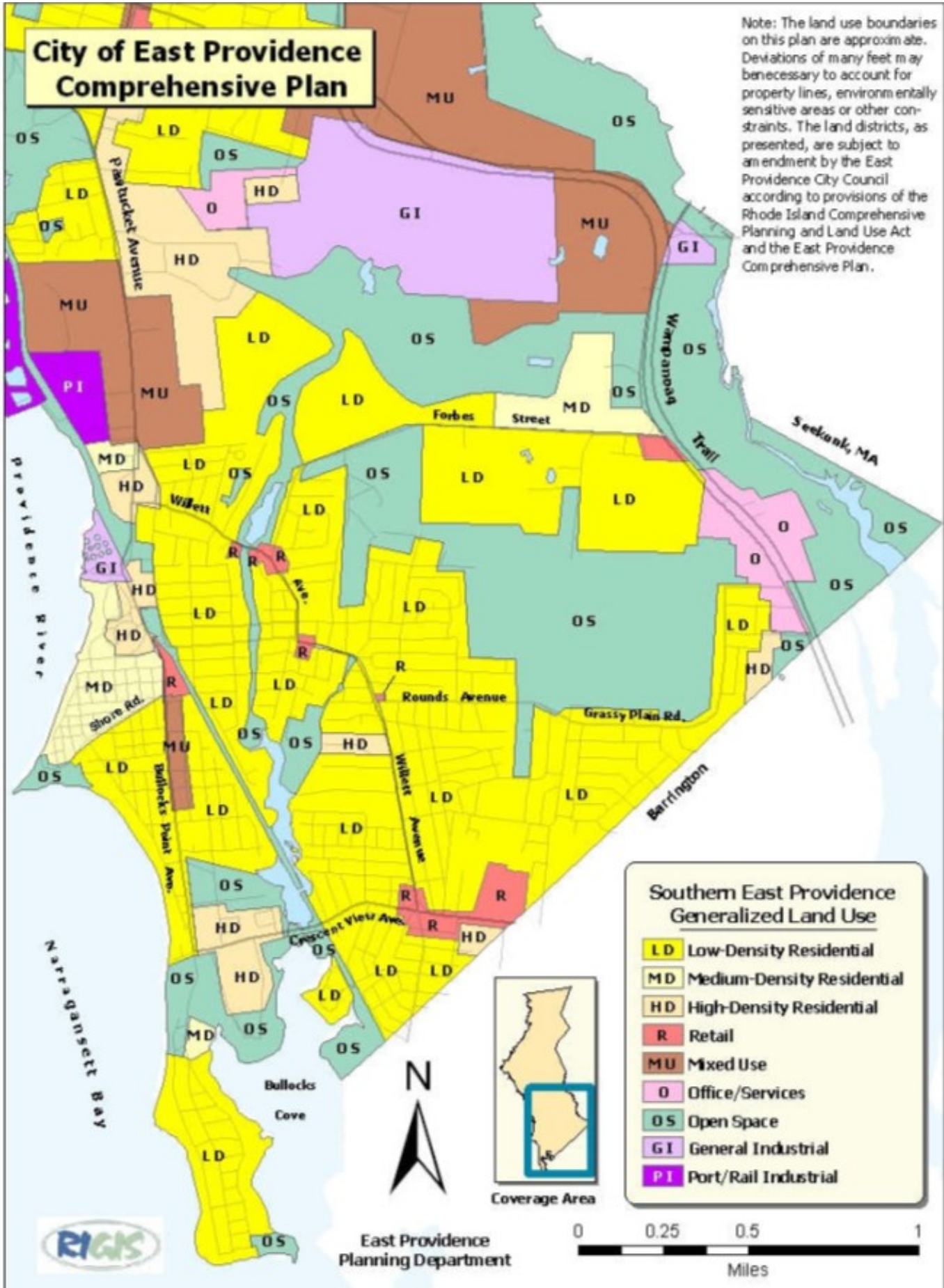


Central East Providence Generalized Land Use	
LD	Low-Density Residential
MD	Medium-Density Residential
HD	High-Density Residential
R	Retail
MU	Mixed Use
O	Office/Services
OS	Open Space
GI	General Industrial
PI	Port/Rail Industrial

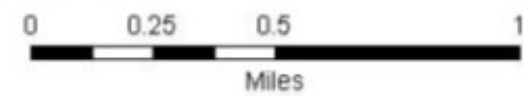
East Providence Waterfront Special Development District Sub-Districts	
	CROOK POINT
	TAUNTON AVENUE
	BOLD POINT HARBOR
	VETERANS MEMORIAL PARKWAY
	KETTLE POINT

City of East Providence Comprehensive Plan

Note: The land use boundaries on this plan are approximate. Deviations of many feet may be necessary to account for property lines, environmentally sensitive areas or other constraints. The land districts, as presented, are subject to amendment by the East Providence City Council according to provisions of the Rhode Island Comprehensive Planning and Land Use Act and the East Providence Comprehensive Plan.



East Providence Planning Department



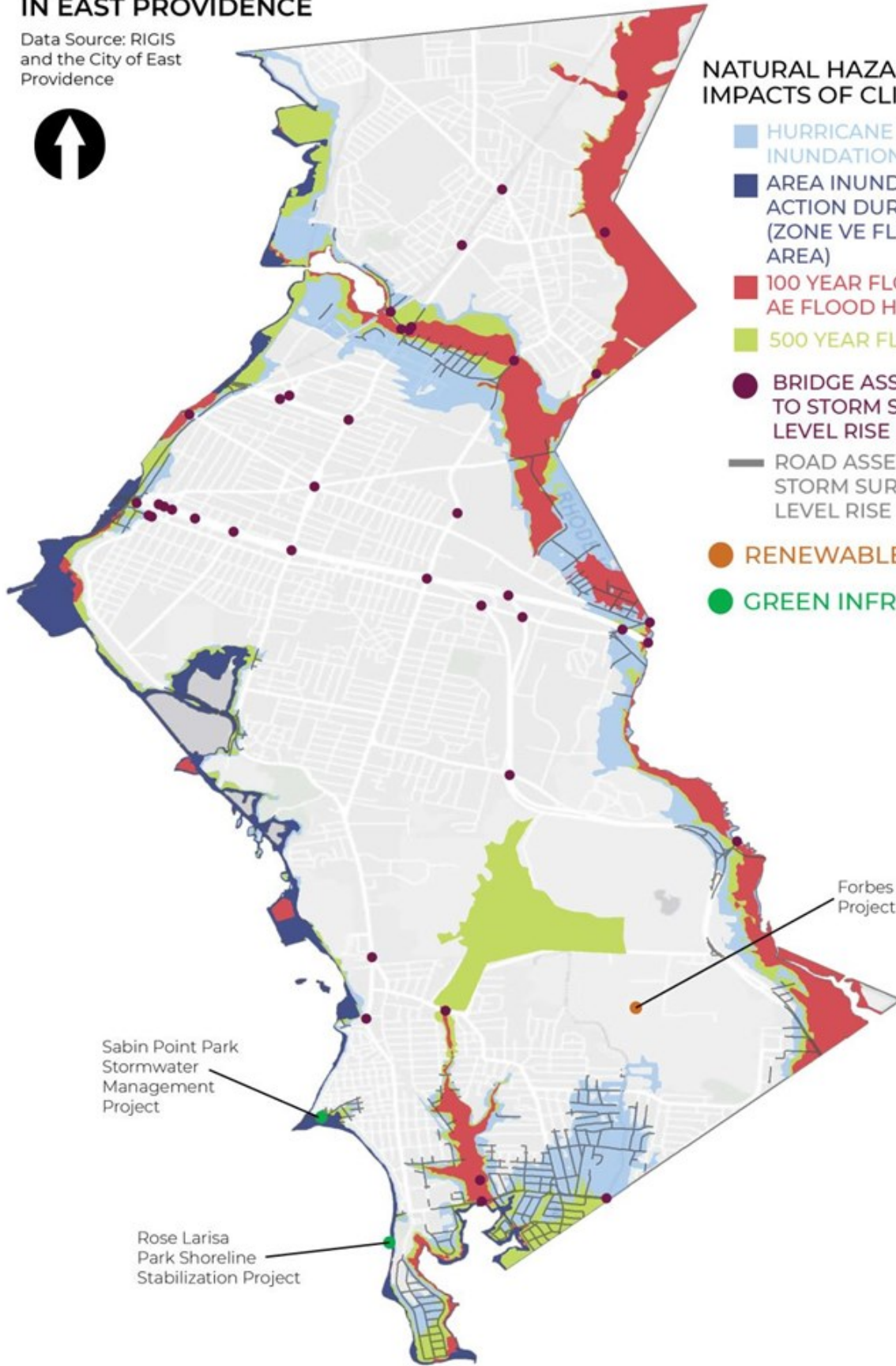
SUSTAINABILITY IN EAST PROVIDENCE

Data Source: RIGIS
and the City of East
Providence



NATURAL HAZARDS AND IMPACTS OF CLIMATE CHANGE

- HURRICANE SURGE
INUNDATION AREAS - WORST
- AREA INUNDATED BY WAVE
ACTION DURING A STORM
(ZONE VE FLOOD HAZARD
AREA)
- 100 YEAR FLOODPLAIN (ZONE
AE FLOOD HAZARD AREA)
- 500 YEAR FLOODPLAIN
- BRIDGE ASSETS EXPOSED
TO STORM SURGE AND SEA
LEVEL RISE BY 2100
- ROAD ASSETS EXPOSED TO
STORM SURGE AND SEA
LEVEL RISE BY 2100
- RENEWABLE ENERGY
- GREEN INFRASTRUCTURE



Sabin Point Park
Stormwater
Management
Project

Rose Larisa
Park Shoreline
Stabilization Project

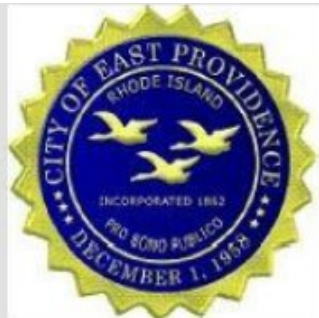
Forbes Street Solar
Project

CURRENT AND FUTURE PROJECTS AS OF FEBRUARY 2021 IN THE WATERFRONT DISTRICT IN EAST PROVIDENCE

Data Source: City of East Providence



- 1.** Henderson Bridge New Exit to Waterfront Drive
- 2.** Future Mixed-Use Development (RI WE)
- 3.** New 195W Off Ramp to Waterfront Drive
- 4.** Watchemoket Square Gateway
- 5.** Waterfront Restaurant
- 6.** Bold Point Residences
- 7.** Odd Fellows Hall
- 8.** Proposed Live Music Venue
- 9.** Proposed Industrial Port
- 10.** Future Mixed-Use Development
- 11.** Kettle Point: 228 Apartments, 64 Townhomes, 80K S.F. Medical Office



East Providence Hazard Mitigation Plan Critical Facilities FEMA Flood Zones

Facilities and Public Schools	
1	East Providence Fire Stn. 1
2	East Providence Fire Stn. 2
3	East Providence Fire Stn. 3
4	East Providence Fire Stn. 4
5	East Providence Police Dept.
6	East Providence City Hall
7	East Providence DPW Complex
8	East Providence WWTF
9	Narr. Bay Comm. WWTF
*10	East Providence High School
11	Martin Middle School
12	Riverside Middle School
13	Myron Francis Elem. School
14	Orlo Avenue Elem. School
15	Whiteknact Elem. School
16	Hennessey Elem. School
17	Kent Heights Elem. School
18	Oldham Elem. School
19	Waddington Elem. School
*20	East Providence Senior Center

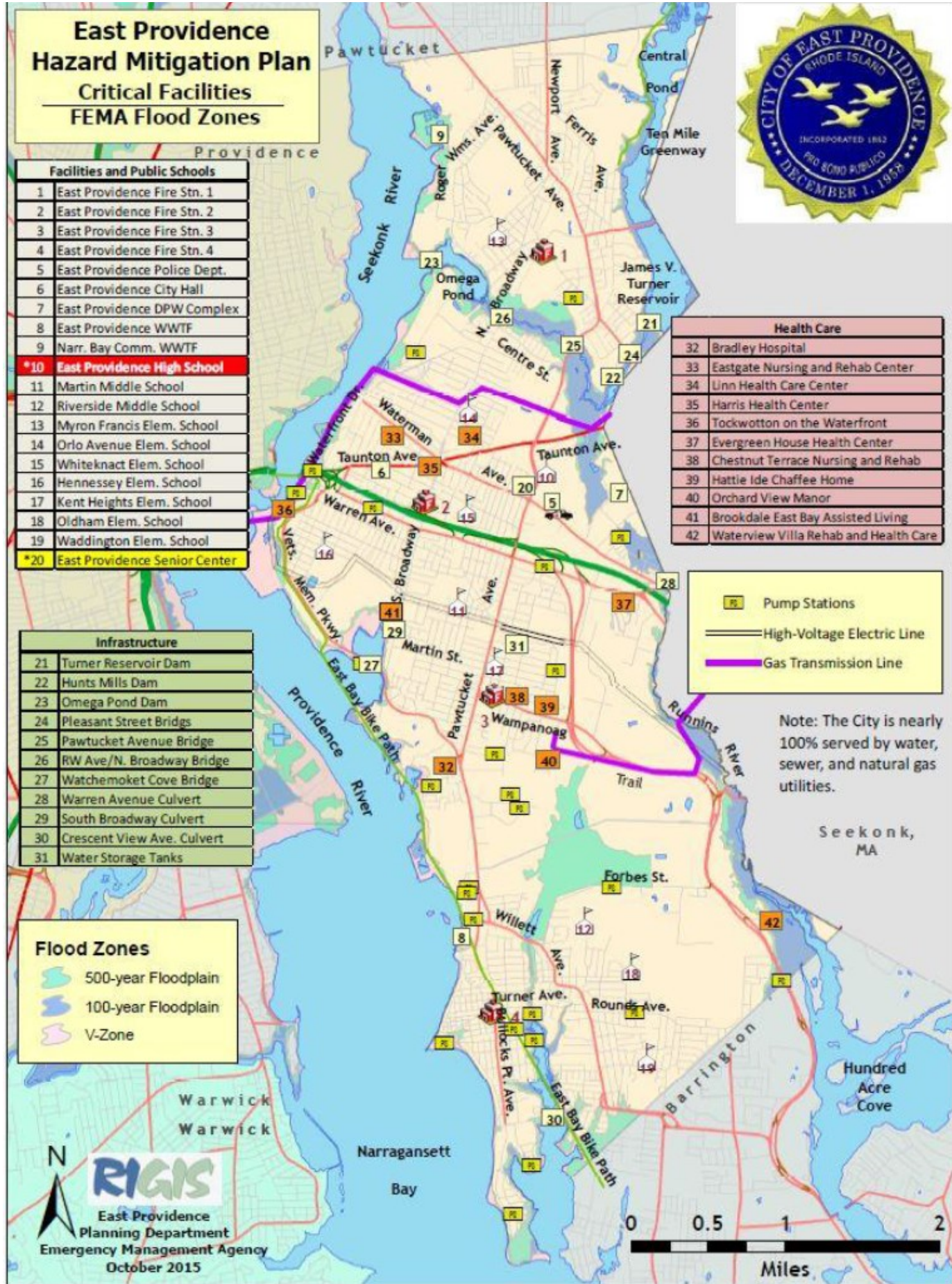
Health Care	
32	Bradley Hospital
33	Eastgate Nursing and Rehab Center
34	Linn Health Care Center
35	Harris Health Center
36	Tockwotton on the Waterfront
37	Evergreen House Health Center
38	Chestnut Terrace Nursing and Rehab
39	Hattie Ide Chaffee Home
40	Orchard View Manor
41	Brookdale East Bay Assisted Living
42	Waterview Villa Rehab and Health Care

Infrastructure	
21	Turner Reservoir Dam
22	Hunts Mills Dam
23	Omega Pond Dam
24	Pleasant Street Bridges
25	Pawtucket Avenue Bridge
26	RW Ave/N. Broadway Bridge
27	Watchemoket Cove Bridge
28	Warren Avenue Culvert
29	South Broadway Culvert
30	Crescent View Ave. Culvert
31	Water Storage Tanks

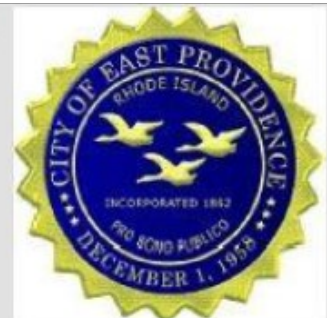
- PS Pump Stations
- High-Voltage Electric Line
- Gas Transmission Line

Flood Zones	
	500-year Floodplain
	100-year Floodplain
	V-Zone

Note: The City is nearly 100% served by water, sewer, and natural gas utilities.



RIGIS
East Providence
Planning Department
Emergency Management Agency
October 2015



East Providence Hazard Mitigation Plan

Critical Facilities

Hurricane Storm Surge

Note: Degree of Hurricane Storm Surge is highly storm-track dependent.

Facilities and Public Schools	
1	East Providence Fire Stn. 1
2	East Providence Fire Stn. 2
3	East Providence Fire Stn. 3
4	East Providence Fire Stn. 4
5	East Providence Police Dept.
6	East Providence City Hall
7	East Providence DPW Complex
8	East Providence WWTF
9	Narr. Bay Comm. WWTF
*10	East Providence High School
11	Martin Middle School
12	Riverside Middle School
13	Myron Francis Elem. School
14	Orlo Avenue Elem. School
15	Whiteknact Elem. School
16	Hennessey Elem. School
17	Kent Heights Elem. School
18	Oldham Elem. School
19	Waddington Elem. School
*20	East Providence Senior Center

Health Care	
32	Bradley Hospital
33	Eastgate Nursing and Rehab Center
34	Linn Health Care Center
35	Harris Health Center
36	Tockwotton on the Waterfront
37	Evergreen House Health Center
38	Chestnut Terrace Nursing and Rehab
39	Hattie Ide Chaffee Home
40	Orchard View Manor
41	Brookdale East Bay Assisted Living
42	Waterview Villa Rehab and Health Care

Infrastructure	
21	Turner Reservoir Dam
22	Hunts Mills Dam
23	Omega Pond Dam
24	Pleasant Street Bridges
25	Pawtucket Avenue Bridge
26	RW Ave./N. Broadway Bridge
27	Watchemoket Cove Bridge
28	Warren Avenue Culvert
29	South Broadway Culvert
30	Crescent View Ave. Culvert
31	Water Storage Tanks

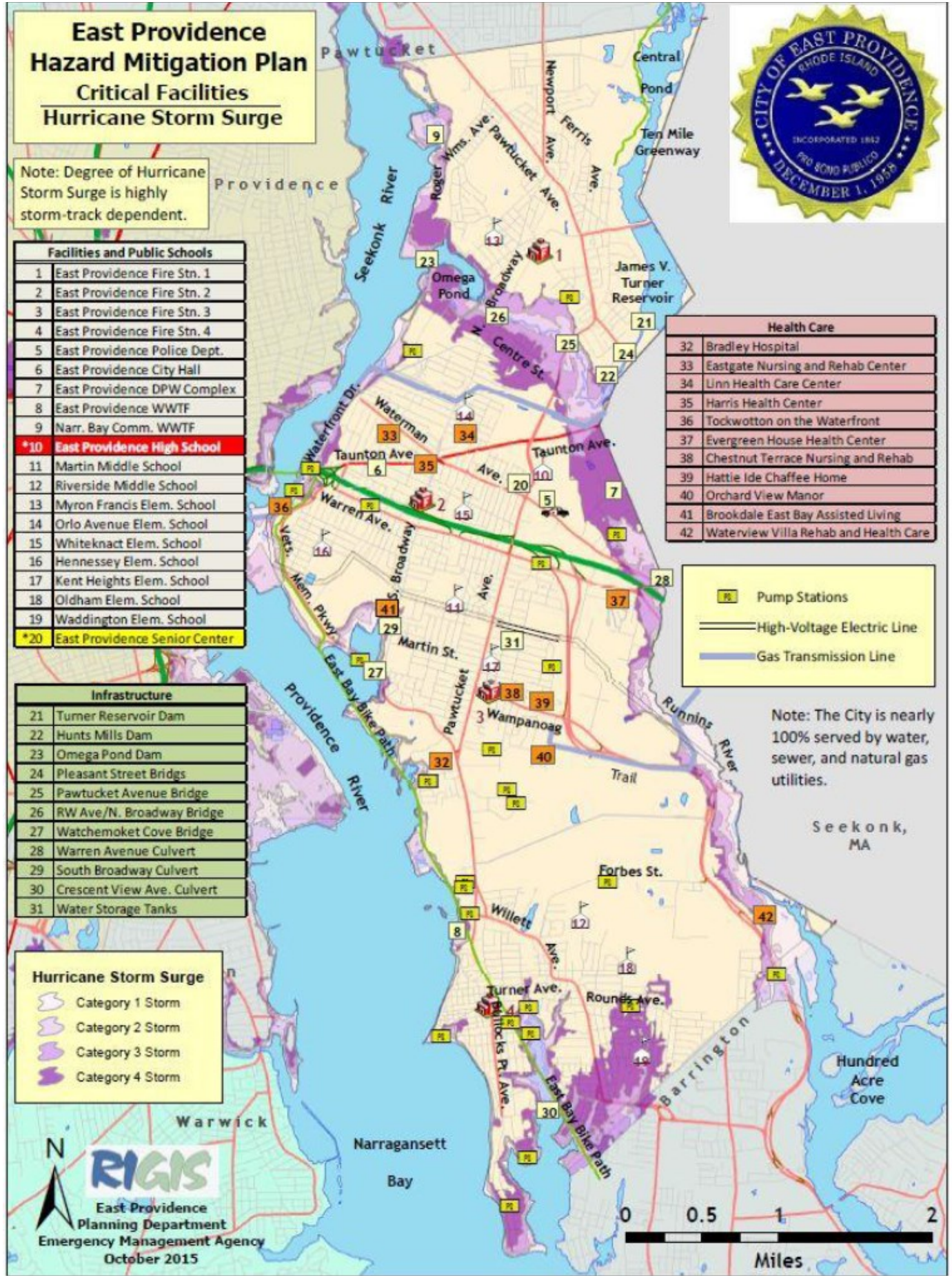
Hurricane Storm Surge	
	Category 1 Storm
	Category 2 Storm
	Category 3 Storm
	Category 4 Storm

Pump Stations

High-Voltage Electric Line

Gas Transmission Line

Note: The City is nearly 100% served by water, sewer, and natural gas utilities.



RIGIS
 East Providence Planning Department
 Emergency Management Agency
 October 2015

TRANSPORTATION AND CIRCULATION IN EAST PROVIDENCE

Data Source: RIGIS



East Providence Bridges Exposed to Sea Level Rise

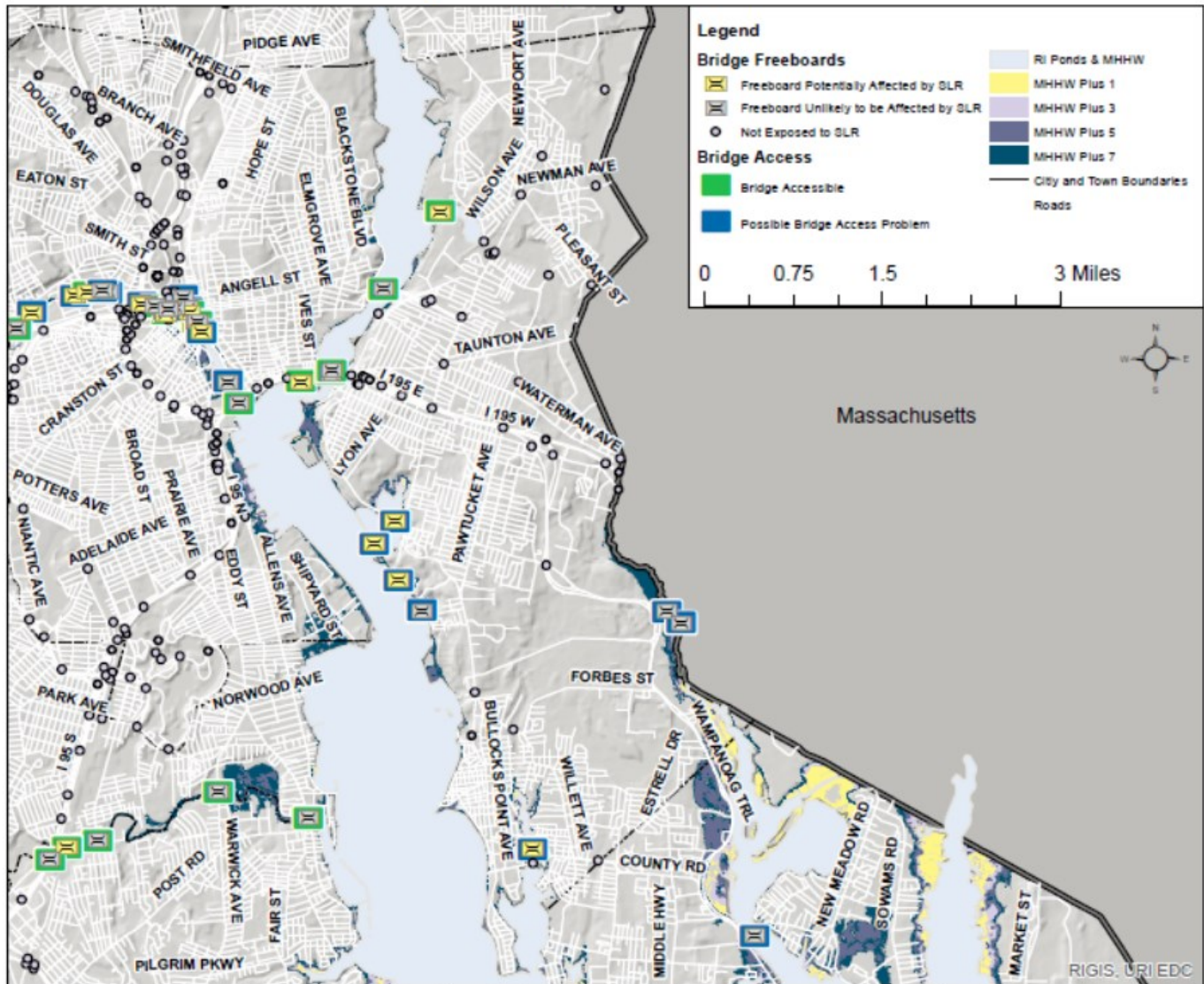


Figure 5

Given seven feet of sea level rise, a total of 90 bridges in Rhode Island cause concern either due to potential freeboard height or accessibility problems. In East Providence there are seven bridges of concern, four of which are non-motorized facilities. East Providence's bridge infrastructure is the third most vulnerable in the state of Rhode Island to sea level rise.

East Providence Roads Exposed to 100-Year Storm Surge Events

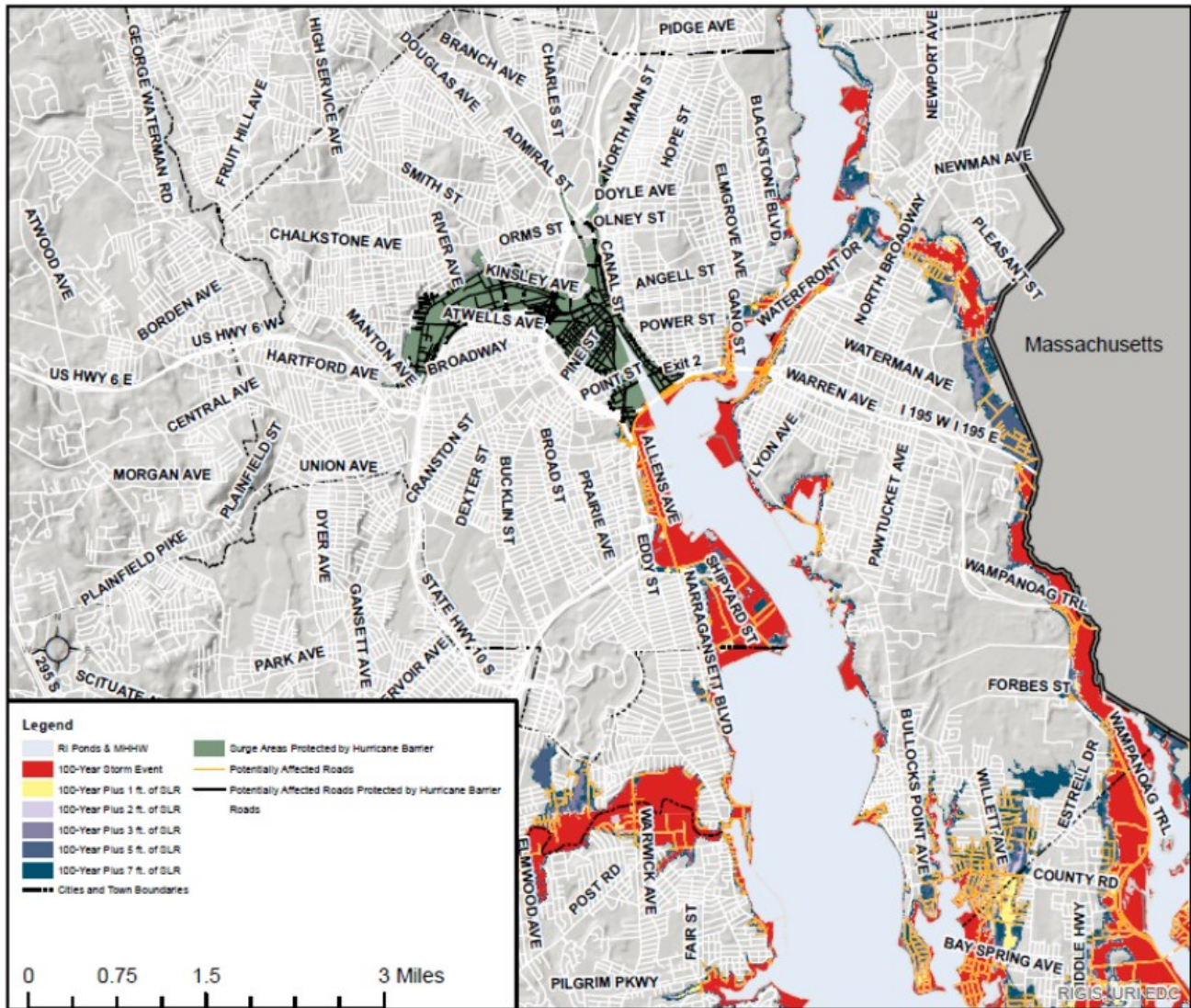


Figure 7

Given seven feet of sea level rise and a 100-year storm surge event, a total of 573 miles of road in Rhode Island will potentially be exposed to inundation, 73% of which will occur on local roads. For East Providence, 33 miles of roadway inundation can be expected, 69% (~23 miles) of which are local. East Providence's roads are the sixth most vulnerable in the state of Rhode Island to storm surge.

East Providence Bridges Exposed to 100-Year Storm Surge Events

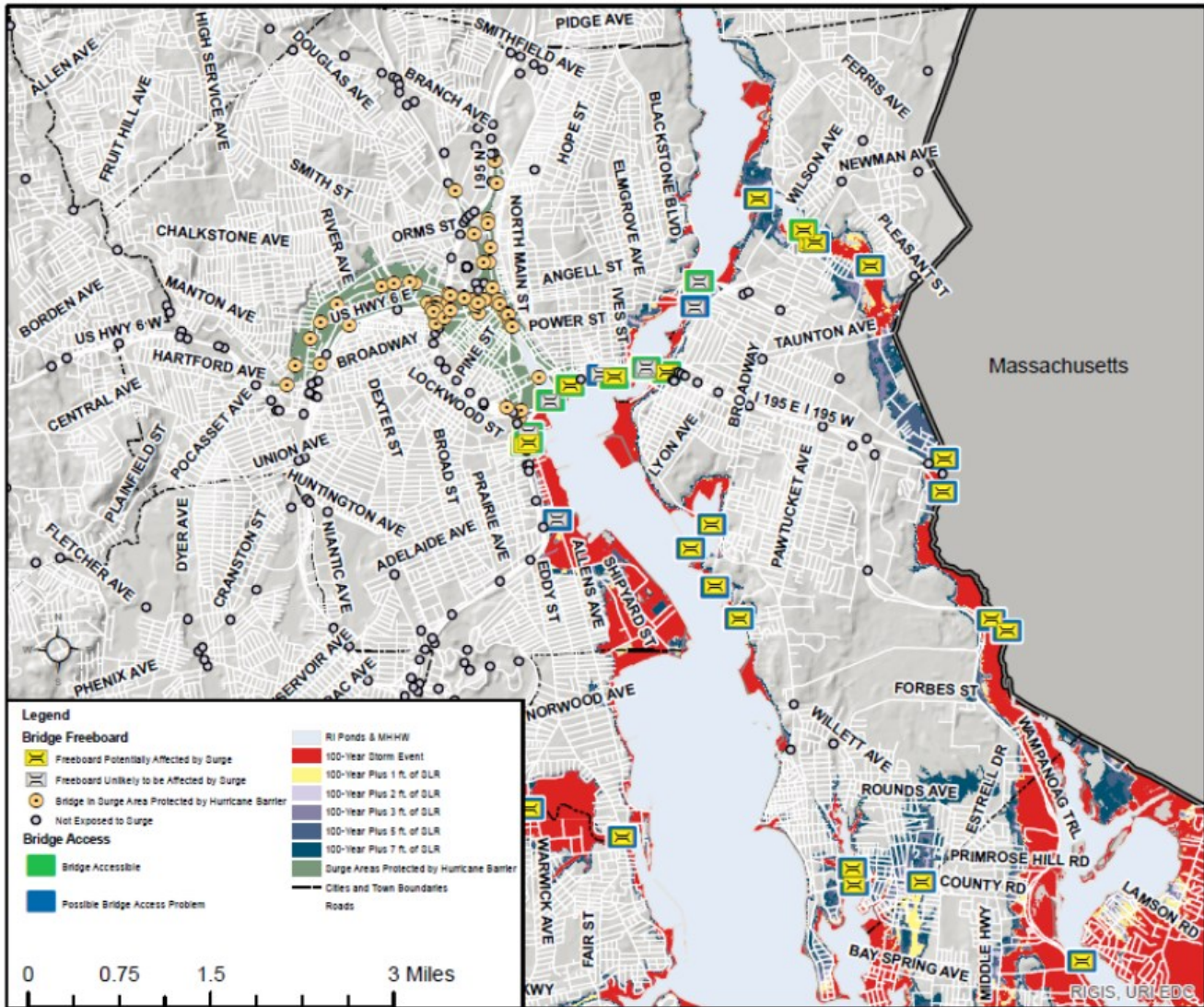
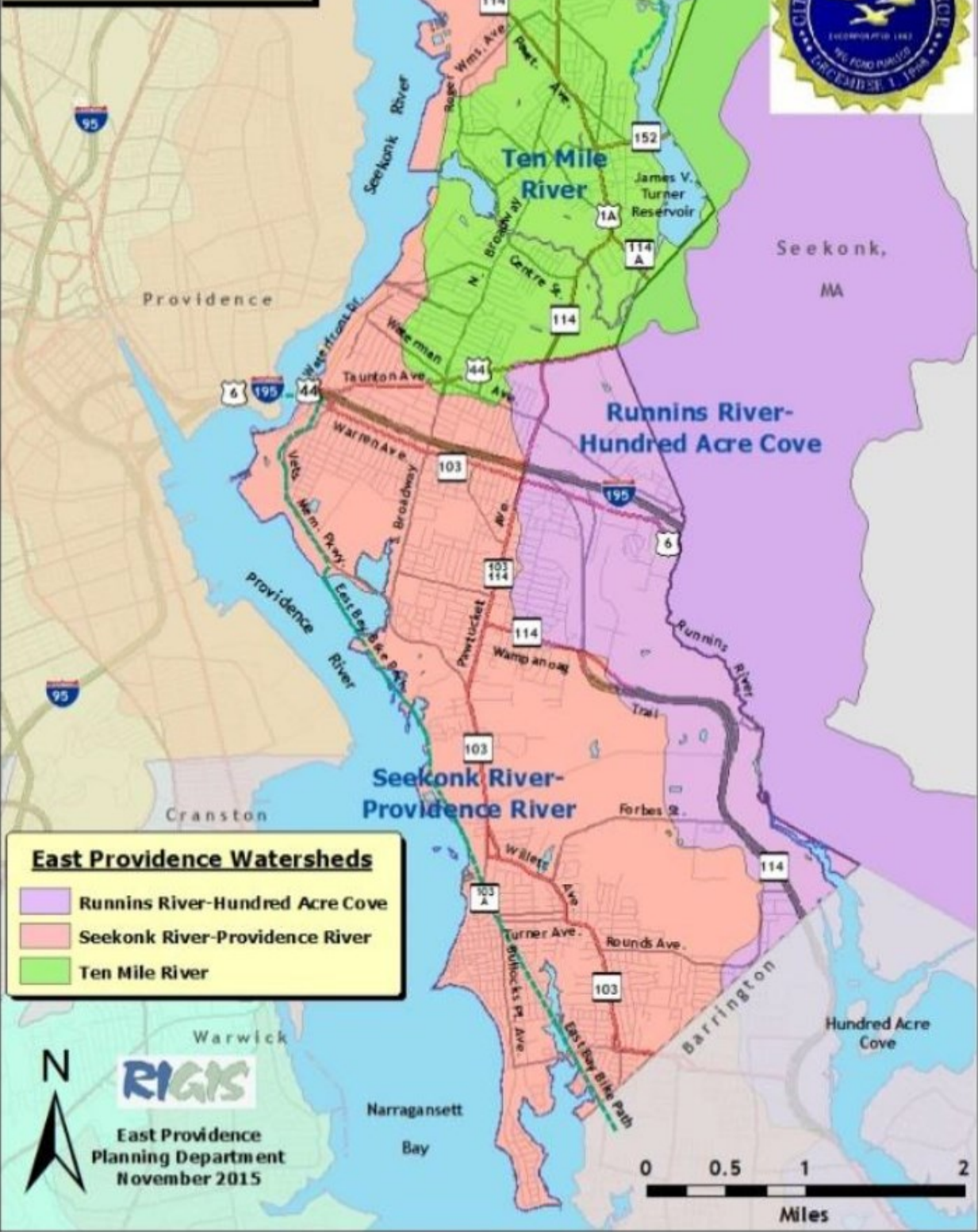


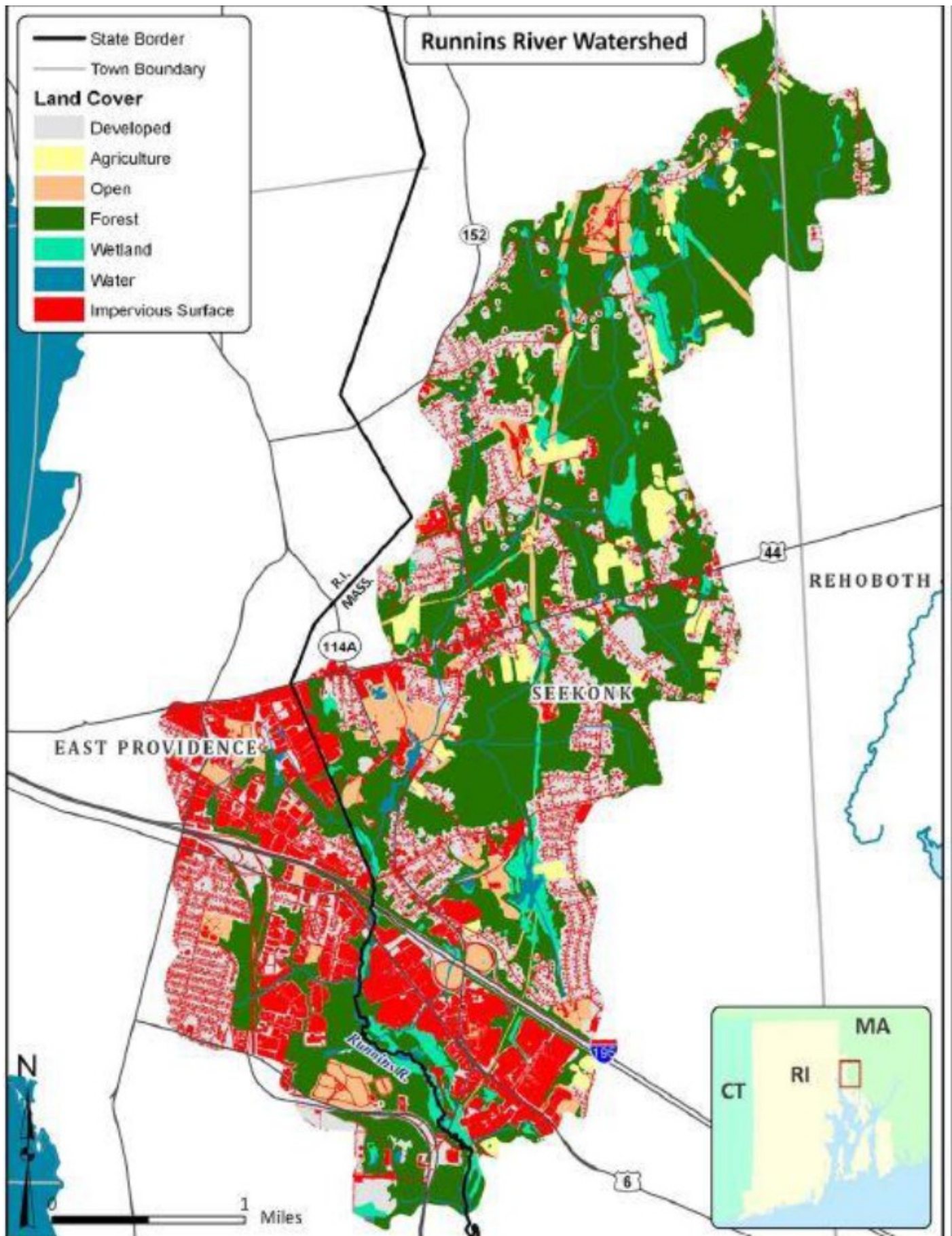
Figure 9

Given seven feet of sea level rise plus a 100-year storm surge event, a total of 148 bridges statewide cause concern either because of potential free-board height or accessibility problems. In East Providence there are 19 bridges of concern, four of which are non-motorized facilities, two of which are railroad facilities, and one of which is local facility that may not be eligible for federal aid. East Providence's bridge infrastructure is the most vulnerable to storm surge in the state of Rhode Island.

**City of East Providence
Hazard Mitigation Plan**

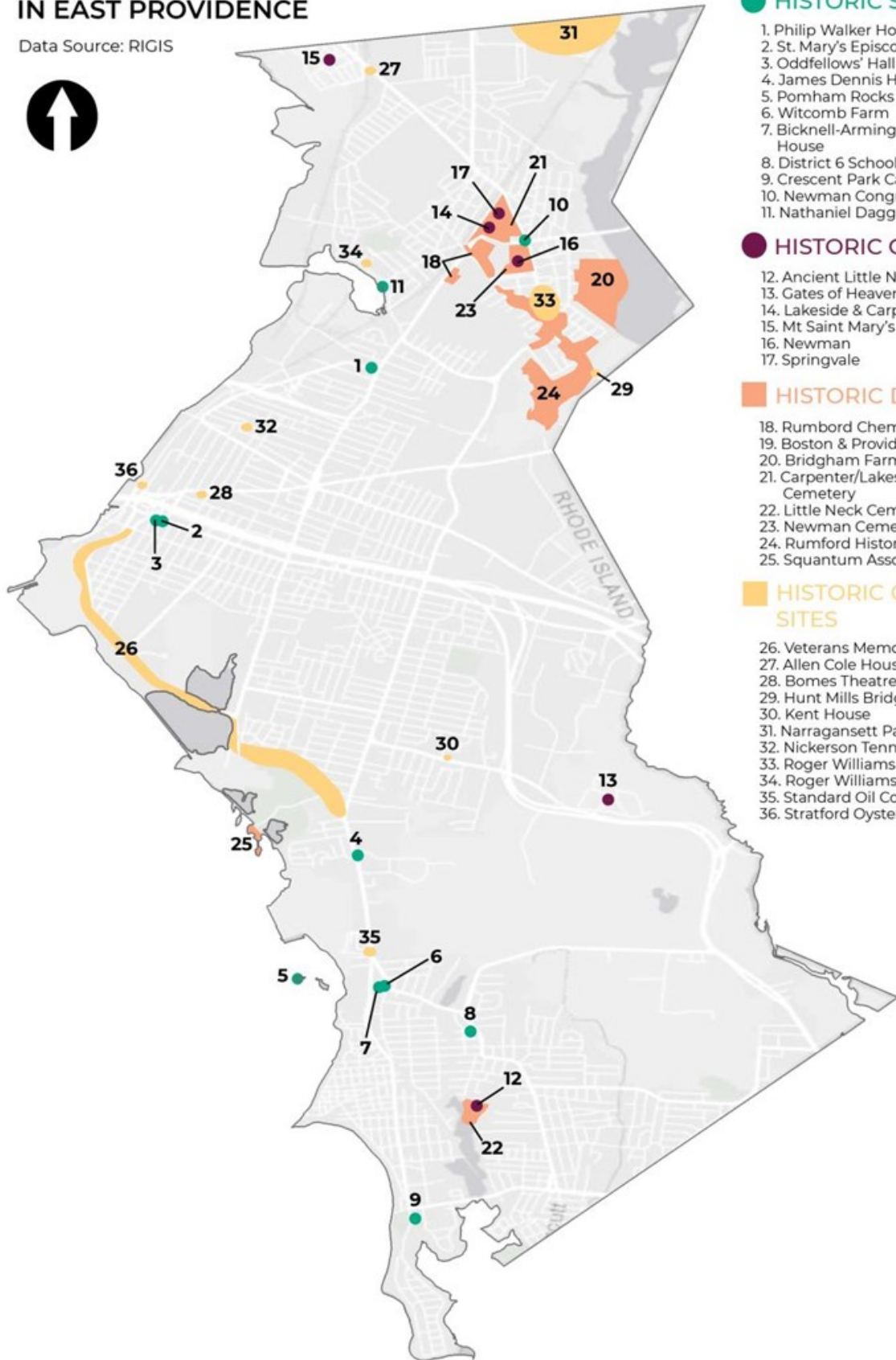






HISTORY AND CULTURE IN EAST PROVIDENCE

Data Source: RIGIS



HISTORIC SITES

1. Philip Walker House
2. St. Mary's Episcopal Church
3. Oddfellows' Hall
4. James Dennis House
5. Pomham Rocks Light Station
6. Witcomb Farm
7. Bicknell-Armington Lightning/ Splitter House
8. District 6 Schoolhouse
9. Crescent Park Carousel
10. Newman Congregational Church
11. Nathaniel Dagget House

HISTORIC CEMETERIES

12. Ancient Little Neck Burial Ground
13. Gates of Heaven
14. Lakeside & Carpenter
15. Mt Saint Mary's
16. Newman
17. Springvale

HISTORIC DISTRICTS

18. Rumbord Chemical Works
19. Boston & Providence Railroad Bridge
20. Bridgham Farm
21. Carpenter/Lakeside/Springvale Cemetery
22. Little Neck Cemetery
23. Newman Cemetery
24. Rumford Historic District
25. Squantum Association

HISTORIC CANDIDATE SITES

26. Veterans Memorial Parkway
27. Allen Cole House
28. Bomes Theatre
29. Hunt Mills Bridge
30. Kent House
31. Narragansett Park
32. Nickerson Tennis Court
33. Roger Williams Grange
34. Roger Williams Spring
35. Standard Oil Company Bridge
36. Stratford Oyster Company

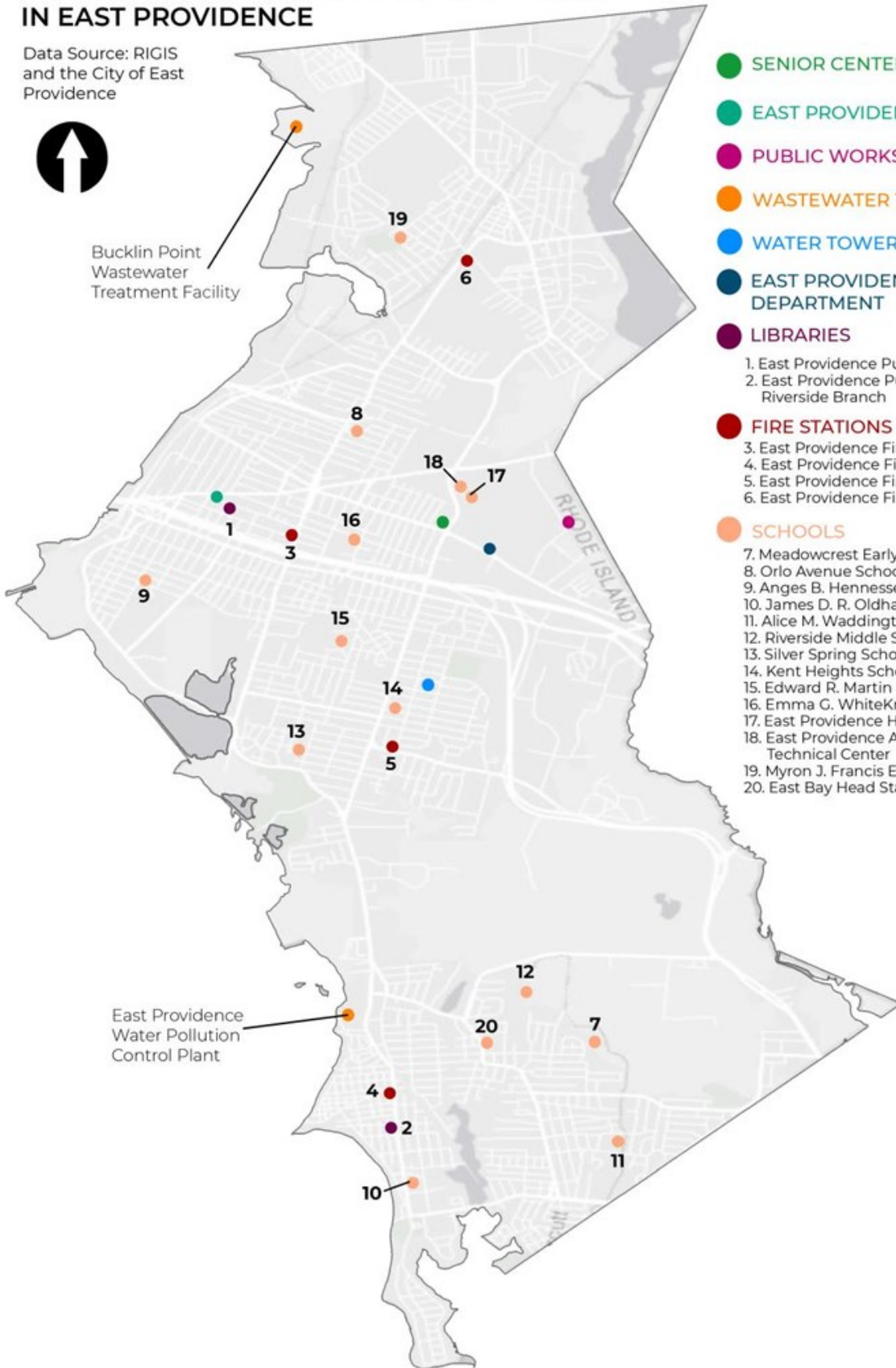
PUBLIC FACILITIES AND SERVICES IN EAST PROVIDENCE

Data Source: RIGIS and the City of East Providence



Bucklin Point Wastewater Treatment Facility

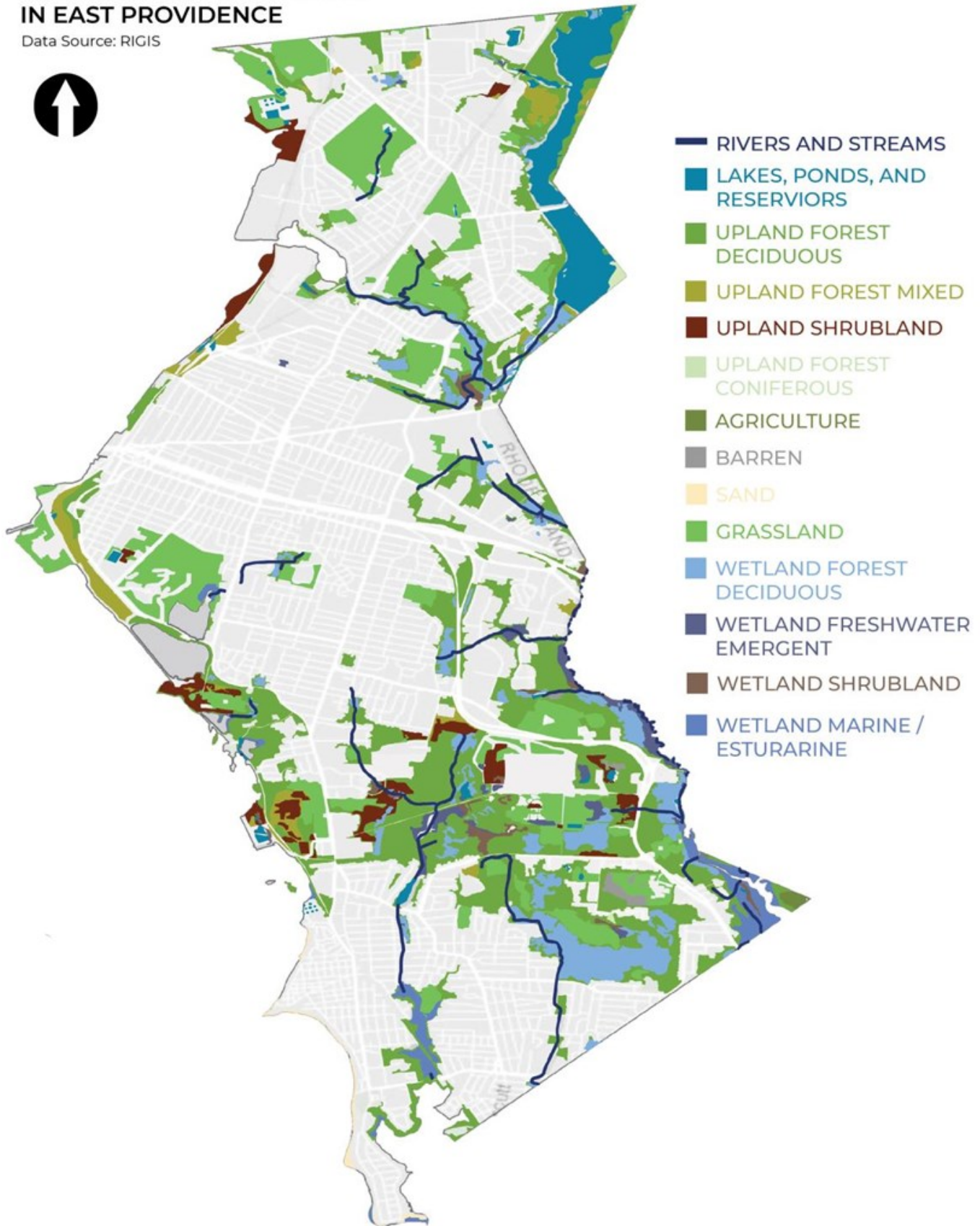
East Providence Water Pollution Control Plant



- SENIOR CENTER
- EAST PROVIDENCE CITY HALL
- PUBLIC WORKS COMPLEX
- WASTEWATER TREATMENT PLANTS
- WATER TOWER
- EAST PROVIDENCE POLICE DEPARTMENT
- LIBRARIES
 - 1. East Providence Public Library
 - 2. East Providence Public Library - Riverside Branch
- FIRE STATIONS
 - 3. East Providence Fire Dept Station 1
 - 4. East Providence Fire Dept Station 2
 - 5. East Providence Fire Dept Station 3
 - 6. East Providence Fire Dept Station 4
- SCHOOLS
 - 7. Meadowcrest Early Childhood Center
 - 8. Orlo Avenue School
 - 9. Angas B. Hennessey School
 - 10. James D. R. Oldham School
 - 11. Alice M. Waddington School
 - 12. Riverside Middle School
 - 13. Silver Spring School
 - 14. Kent Heights School
 - 15. Edward R. Martin Middle School
 - 16. Emma G. WhiteKnact School
 - 17. East Providence High School
 - 18. East Providence Area Career & Technical Center
 - 19. Myron J. Francis Elementary School
 - 20. East Bay Head Start-Willett Avenue

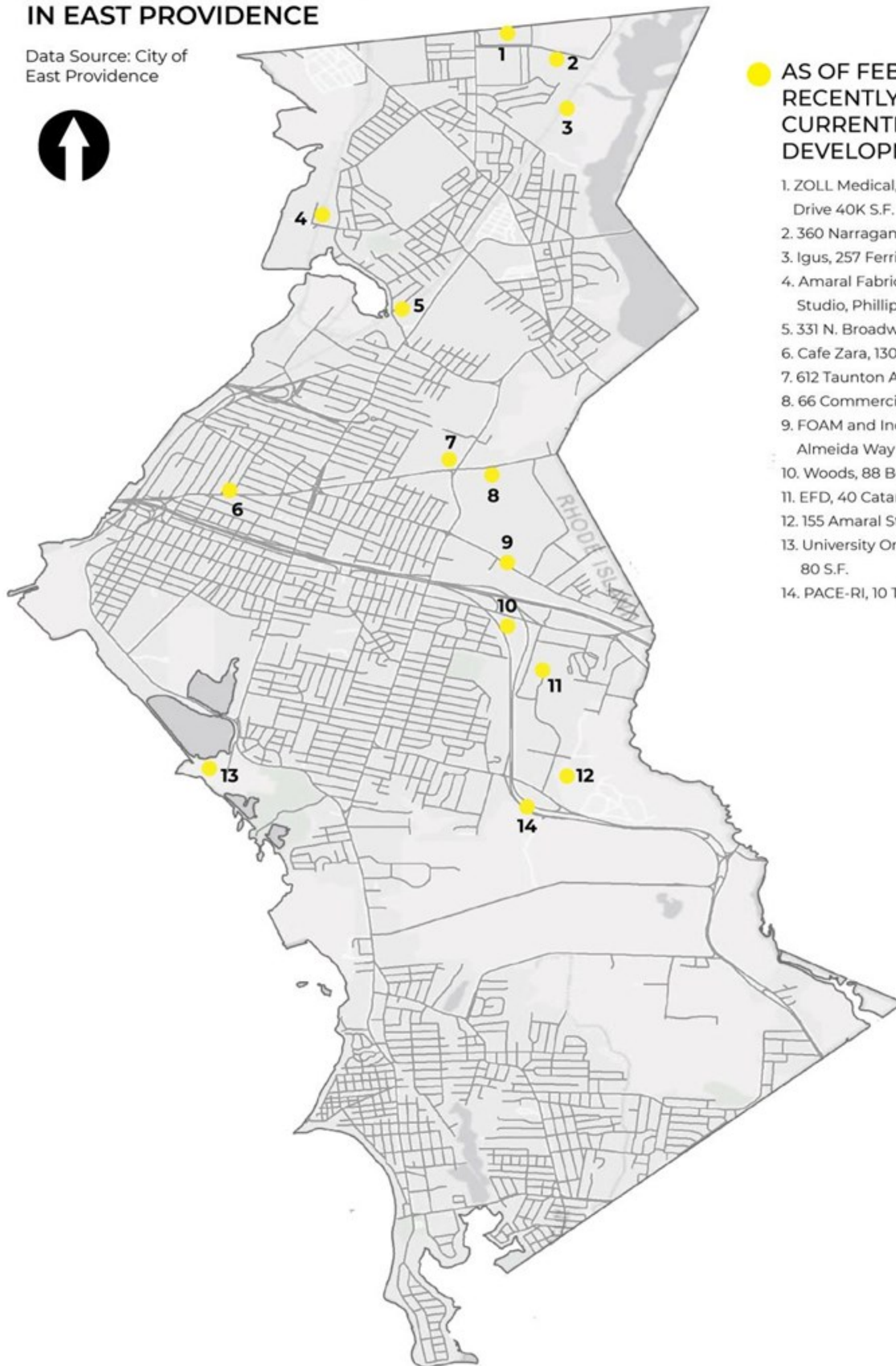
NATURAL RESOURCES IN EAST PROVIDENCE

Data Source: RIGIS



NEW COMMERCIAL/ INDUSTRIAL DEVELOPMENT PROJECTS IN EAST PROVIDENCE

Data Source: City of
East Providence

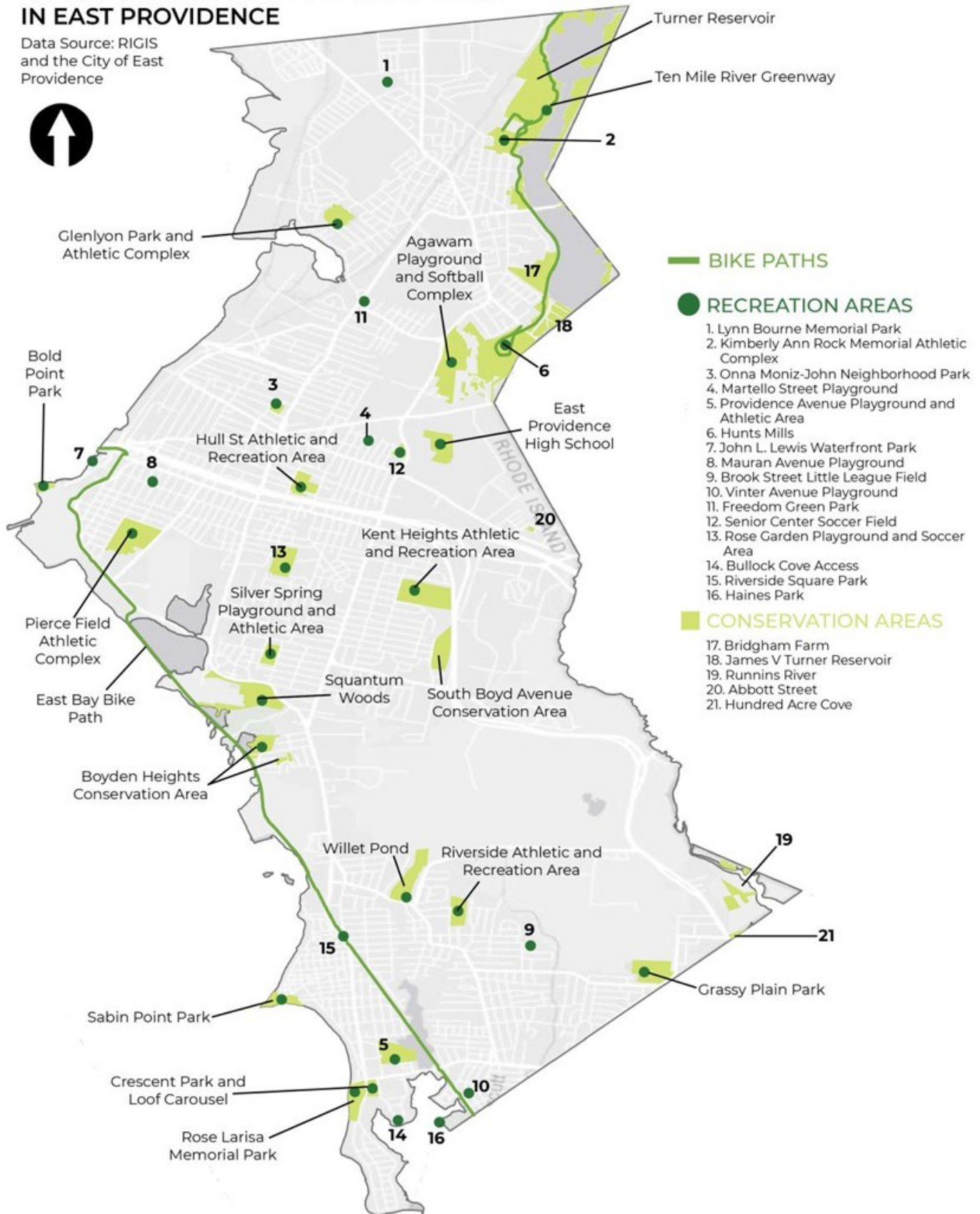


**● AS OF FEBRUARY 2021,
RECENTLY PURCHASED
CURRENTLY UNDER
DEVELOPMENT**

1. ZOLL Medical, 525 Narragansett Park Drive 40K S.F.
2. 360 Narragansett Park Drive 40K S.F.
3. Igus, 257 Ferris Ave 200K S.F.
4. Amaral Fabrications, EnoTap, Dunn Studio, Phillipsdale Landing 30K S.F.
5. 331 N. Broadway 29K S.F.
6. Cafe Zara, 130 Taunton Ave 29K S.F.
7. 612 Taunton Ave 10K S.F.
8. 66 Commercial Way 10K S.F.
9. FOAM and Independent Pipe on Almeida Way 116K and 28K S.F.
10. Woods, 88 Boyd Ave 26K S.F.
11. EFD, 40 Catamore Blvd 199K S.F.
12. 155 Amaral Street 29K S.F.
13. University Orthopedics, 1 Kettle Point 80 S.F.
14. PACE-RI, 10 Tripps Lane 66K S.F.

OPEN SPACE AND RECREATION IN EAST PROVIDENCE

Data Source: RIGIS
and the City of East
Providence



BIKE PATHS

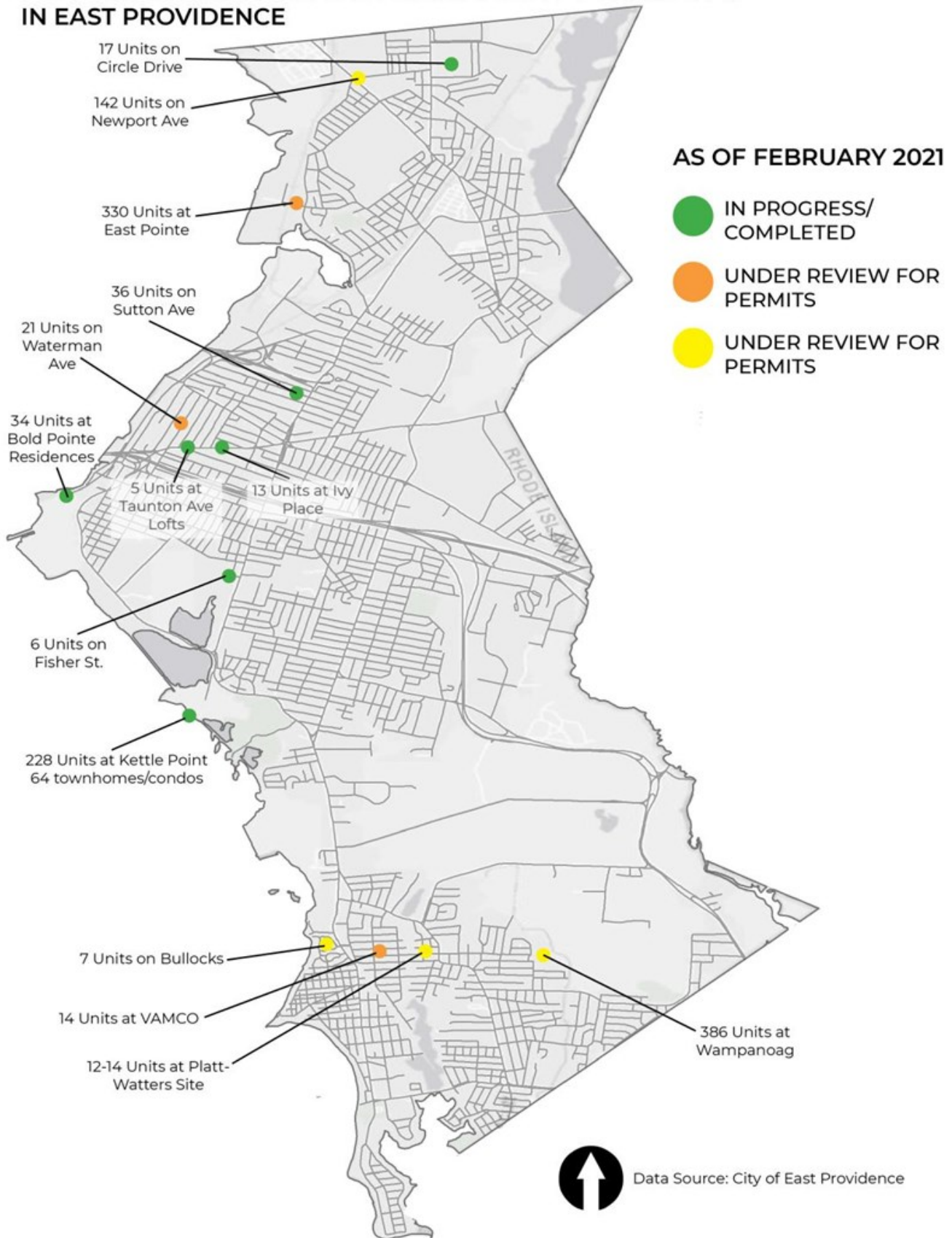
RECREATION AREAS

- 1. Lynn Bourne Memorial Park
- 2. Kimberly Ann Rock Memorial Athletic Complex
- 3. Onna Moniz-John Neighborhood Park
- 4. Martello Street Playground
- 5. Providence Avenue Playground and Athletic Area
- 6. Hunts Mills
- 7. John L. Lewis Waterfront Park
- 8. Mauran Avenue Playground
- 9. Brook Street Little League Field
- 10. Vinter Avenue Playground
- 11. Freedom Green Park
- 12. Senior Center Soccer Field
- 13. Rose Garden Playground and Soccer Area
- 14. Bullock Cove Access
- 15. Riverside Square Park
- 16. Haines Park

CONSERVATION AREAS

- 17. Bridgham Farm
- 18. James V Turner Reservoir
- 19. Runnins River
- 20. Abbott Street
- 21. Hundred Acre Cove

NEW RESIDENTIAL DEVELOPMENT PROJECTS IN EAST PROVIDENCE





www.CommunityResilienceBuilding.org