



WOONASQUATUCKET RIVER  
WATERSHED COUNCIL

# Riverine Climate Resilience: Lessons Learned on the Woonasquatucket River

*Rhode Island Climate Change Impacts Commission &  
Pawtuxet River Flooding Commission*

*March 25, 2026*

*Presented by: Alicia Lehrer, WRWC Executive Director*



**Valley Street, Providence  
January 10, 2024**



**BACKGROUND**



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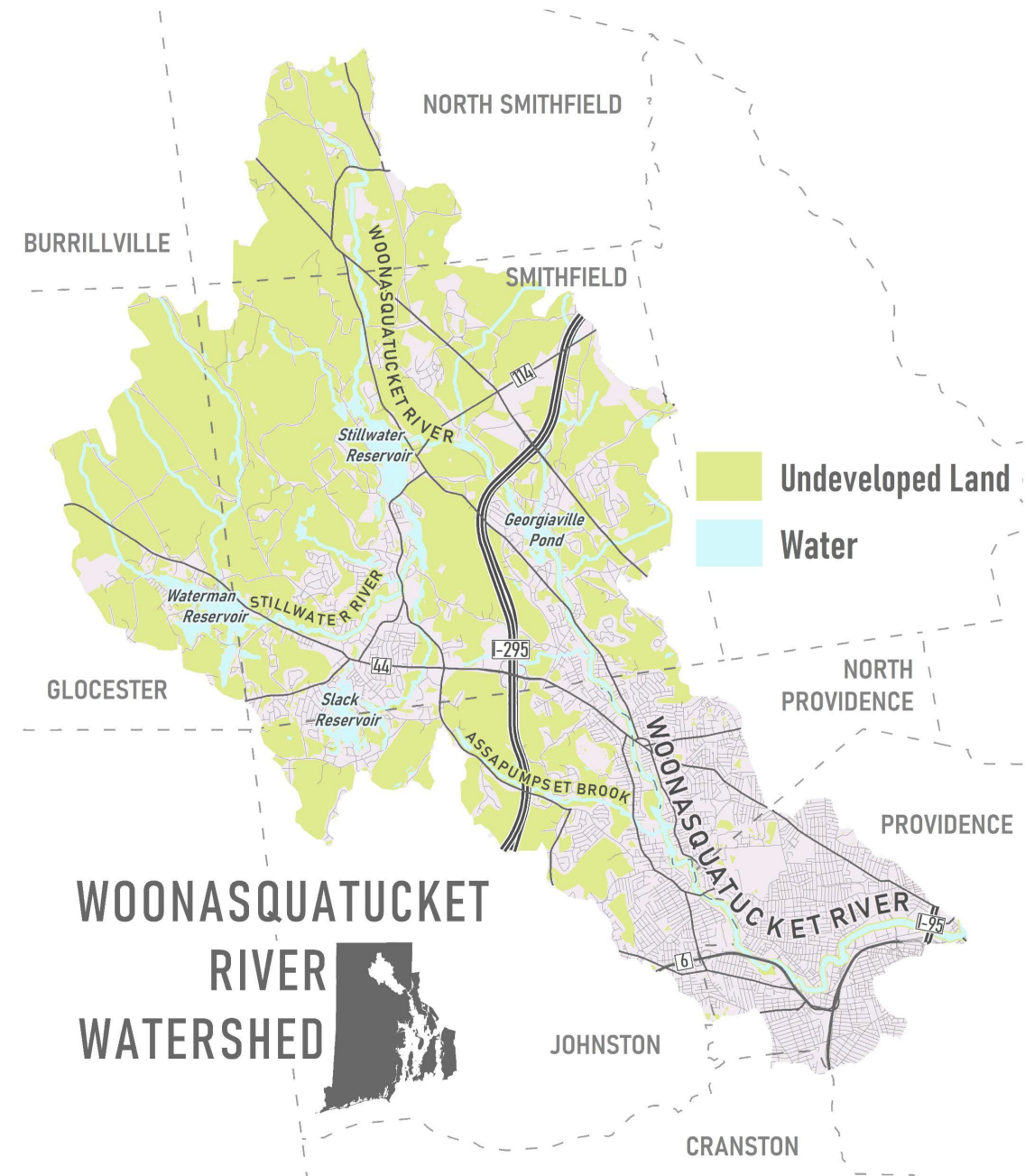
# Communities Impacted by the Woonasquatucket River Watershed

**Population:** 283,757

27% of RI's population

50 square miles

19 miles of river





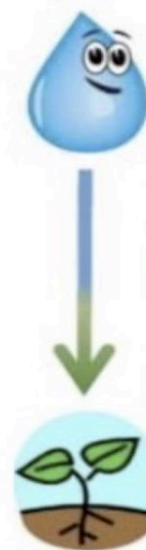
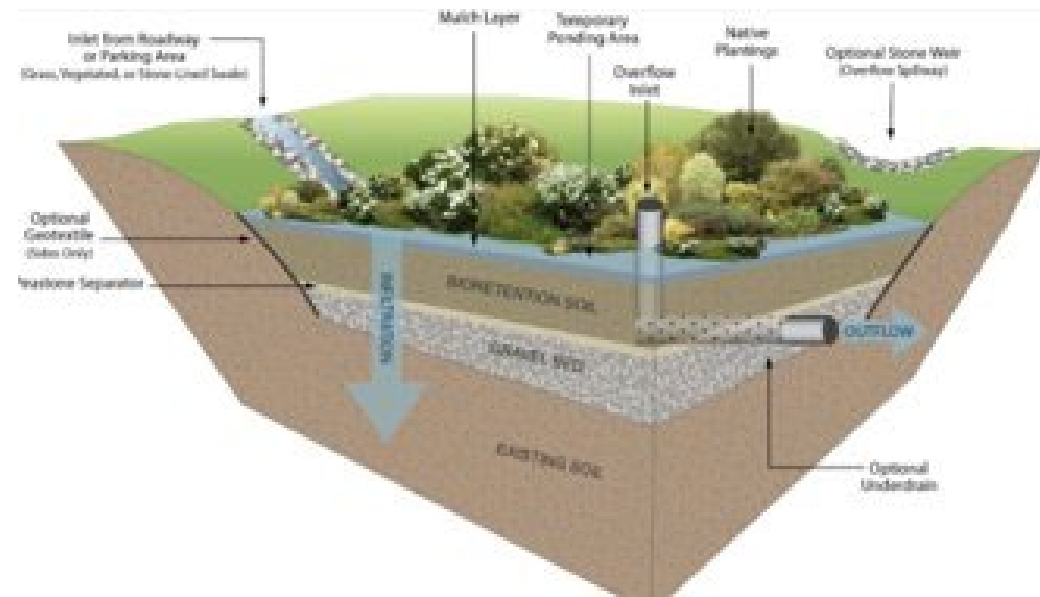


# FLOOD RESILIENCE EFFORTS



# Why green stormwater infrastructure matters...

- Protects **water quality** by filtering pollutants before reaching waterways
- Reduces **flooding** by capturing and slowing runoff to prevent system overload
- Mimics **nature** by using soil and vegetation to absorb and clean water (GSI) while providing needed wildlife & pollinator habitat
- Builds **resilience** by handling large storms and reducing costly damage
- Enhances **community** space

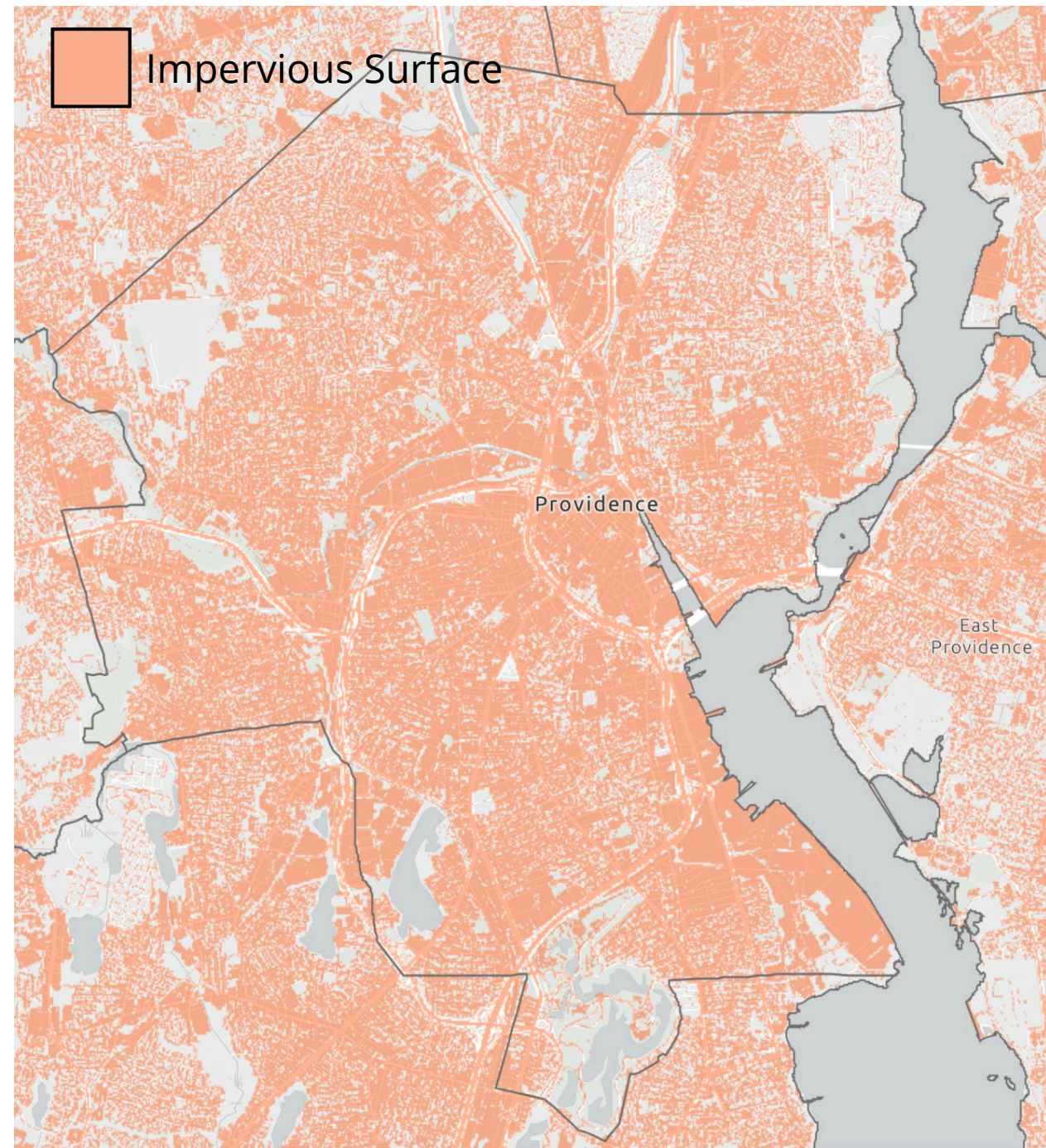
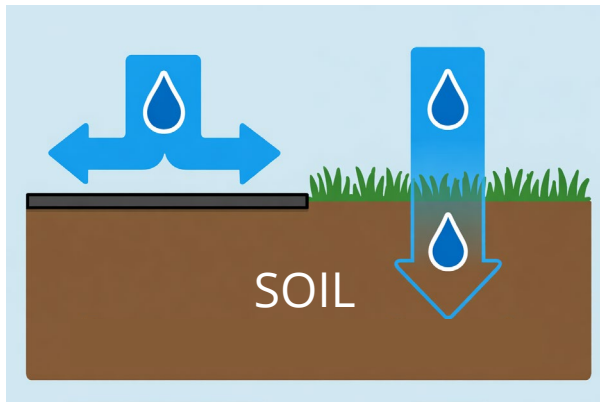


- ① “Collect” the water
- ② “Capture” sediment and debris
- ③ “Move & Filter” to clean the water
- ④ “Overflow” for larger storms



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# The Problem: Too Much Impervious Cover





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# One Cost Effective Solution: Pavement Removal

Replace pavement with permeable surfaces to promote water infiltration and reduce runoff





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# Greening the Greenway



- Pilot Project 2018
- Citizens Bank Parking Lot
- Pavement Removal & Infiltration
- 18 Projects Completed to Date

# Another Solution: Capture and Infiltrate at Homes

## Capture Roof Runoff



Rain Barrels –  
The Gateway Jug



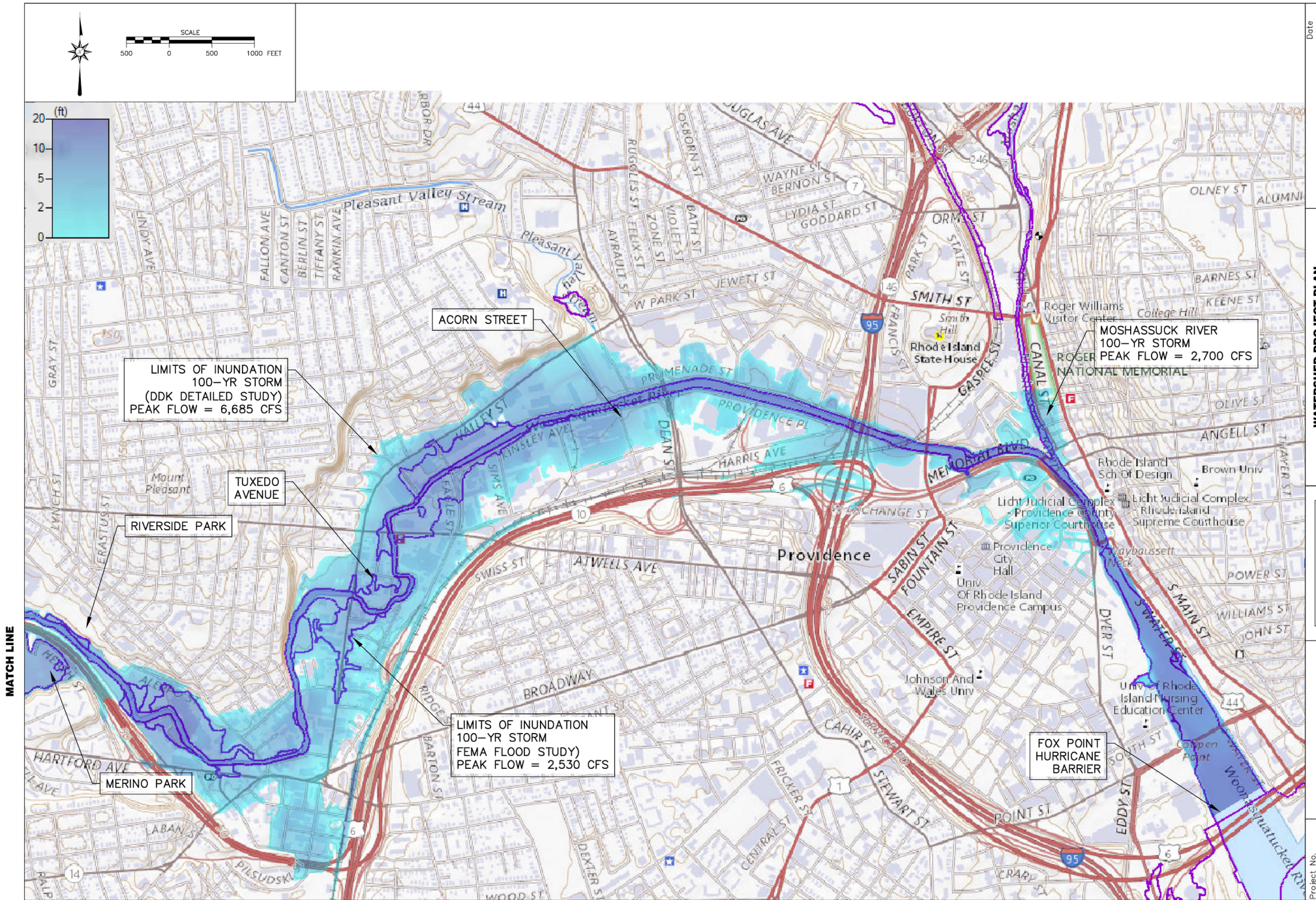
Rain Gardens – Infiltrating into Landscape



Rainboxes –  
Space saving solution

# Flood Resilience Project

- Began in 2022 through NRCS
- City of Providence
- Town of Smithfield





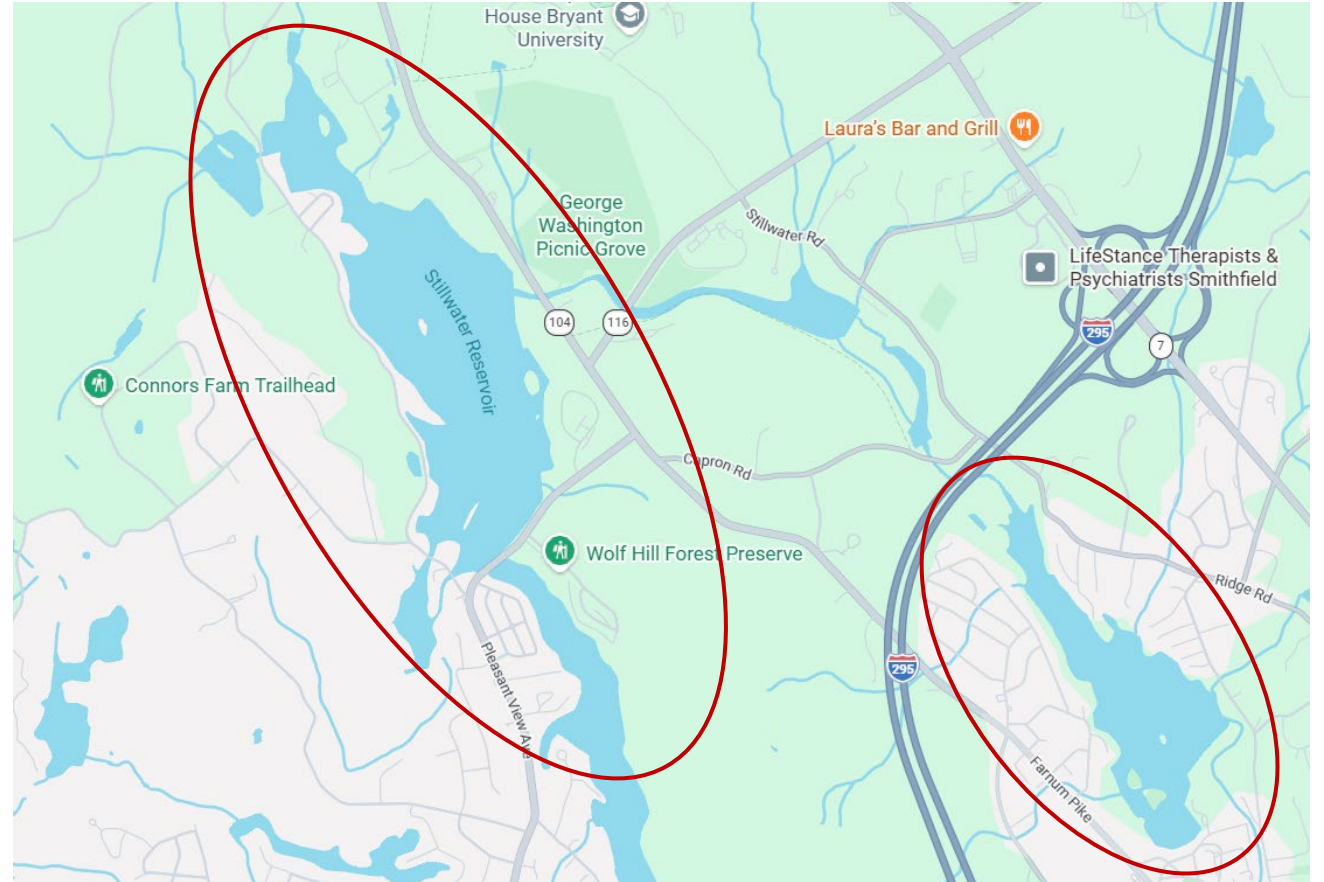
# Can We Mitigate Flooding? How Much is Enough?

- 5 to 10 square miles of flood storage needed throughout watershed to mitigate effects of 100-year flood
- 500 projects like pilot at Citizens Bank



# Create Storage in Reservoirs

- Stillwater Reservoir (Stump Pond) and Georgiaville Pond in Smithfield are great candidates
  - ✓ Lower water levels in October when storage is needed most
  - ✓ Raise water levels for recreation in April or May when it is dryer





# Rebuild the Floodplain

- Examples across the country
- This one is Milwaukee





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# Providence's First Floodable Park

- Part of Kinsley/Promenade Greenway
- New as of 2025
- Captures, stores and filters stormwater from the neighborhood





# Community Led Decision-Making is a Must



# Introducing "Nuevas Voces" (New Voices)

- Launched in 2020
- 10-month bilingual leadership program
- Focused on empowering neighbors to become local advocates
- Nuevas Voces fosters a deep understanding of
  - local history
  - civic engagement
  - environmental science
  - environmental justice
- 75 graduates ready to lead



# Considerations

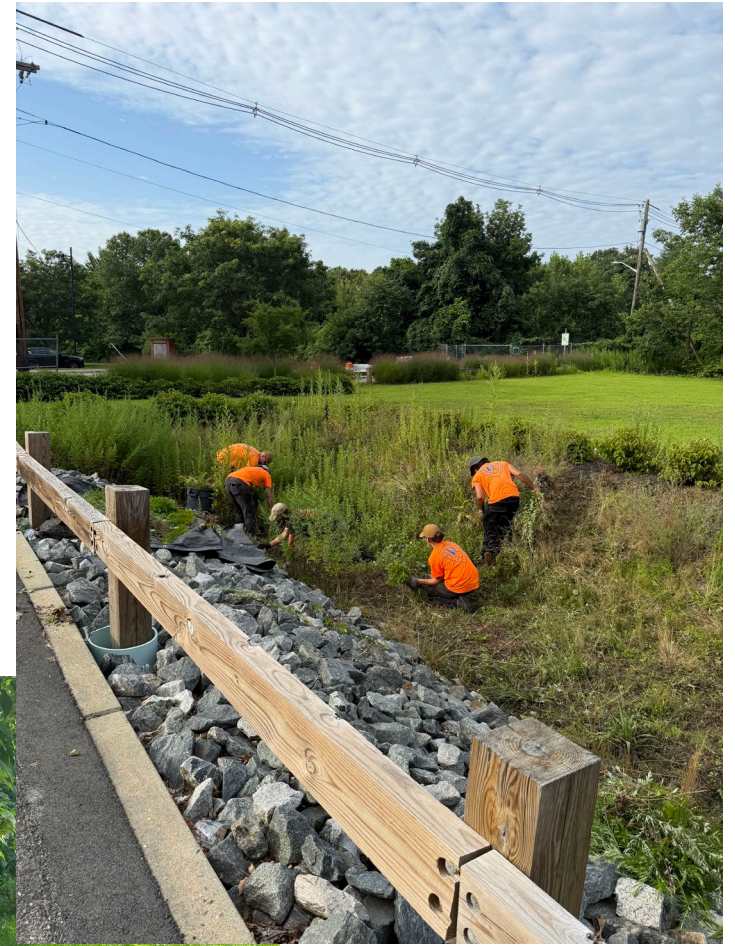




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# Maintenance is a Must

- Trash removal
- Invasive Plant Management
- Regrading
- Sediment removal
- Performance monitoring
- Clean-out pipe assessment





# Real Community Engagement Takes Time and Money

- Stipends  
(\$25/hr/person)
- Food
- Child Care
- Transportation
- Coordinating people  
and partners



# Retrofits and Changes Are Expensive

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- Rainbarrels - \$50 each
- Rain gardens - \$1,500 each
- Kinsley & Eagle Floodable Park - \$750,000
- Resizing culverts - millions
- Buyouts - millions





# Recommendations



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# 1. Build Your Partnerships & Coalitions

- WRWC's Partners



RHODE ISLAND  
GREEN INFRASTRUCTURE  
COALITION



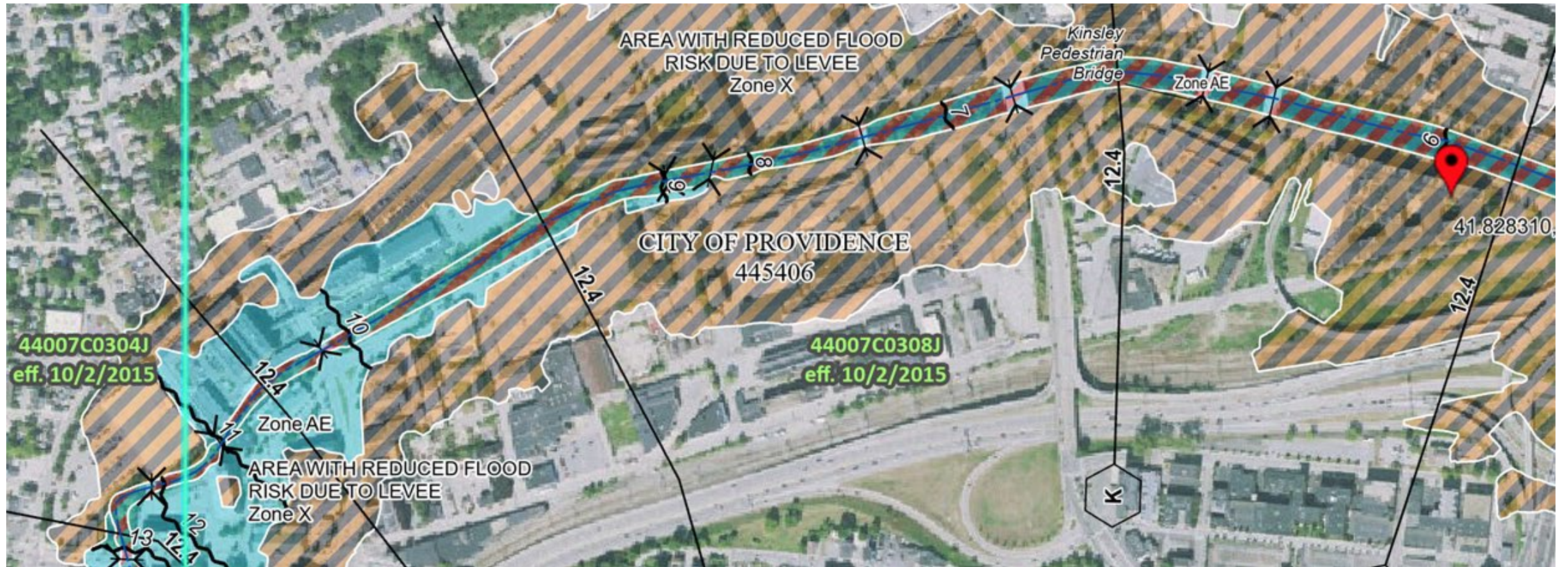
Rhode Island  
Foundation



USDA  
NRCS



## 2. Invest in the model





## 3. Engage the Community In Decision-Making



- Invest in learning so residents have the capacity, colleagues and motivation to participate
- Bring community into visioning and development processes as early as possible
- Community co-development leads to impactful and out-of-the-box intervention/problem solving



## 4. Make the Green Bond Greener

- Add more clean water \$ to the bond
- Protect more open space
- Fund green and complete streets, including multi-use trails like the Woonasquaket River Greenway
- Green Bond funds leverage federal funds!



## 5. Invest in long-term maintenance

- Hire statewide coordinator(s) to track projects and convene partners, and leverage funds statewide
- Set aside funds to pay non-profit partners like WRWC, Groundwork RI, and RINLA to care for green stormwater infrastructure
- Invest in GSI workforce development across municipal and state agencies to ensure a trained workforce and to address interconnected concerns



# SUCCESS

We Can Do It!



It Happened in Portland, OR

**A MOVEMENT  
DISGUISED AS A PARTY**





**THE  
BIG X  
FLOAT  
10 YEARS OF RIVERLUTION**

