



# RESILIENT NORTHEASTERN NJ

## SCENARIO DEVELOPMENT NEWARK - IVY HILL & VAILSBURG, UPPER ROSEVILLE, & WESTERN NEWARK



WAVE 3 MEETING IN A BOX  
SPRING 2022

PLEASE NOTE:

All content is working DRAFT for planning and discussion purposes only  
This document can be used either for individual review or to help guide a meeting

# NOTES TO THE FACILITATOR

**HIDE THIS SLIDE WHEN PRESENTING BY RIGHT CLICKING ON THE SLIDE IN THE PANEL AND SELECTING “HIDE SLIDE” (or delete it)**

- First, thank you so much for helping to ensure there is widespread public involvement in this important project!
- We recommend that one person presents this slide deck, while another takes notes either directly in the form accessible through the QR code to the right or separately such that it can be later logged as feedback via the QR code to the right.
- This deck is intended to help support and guide conversations to obtain the input needed at this phase of the project, but it is not intended to be prescriptive. All content is working DRAFT for planning and discussion purposes only.
- It can be helpful at the beginning of meetings with people new to you to set ground rules to help guide the meeting. Example possible ground rules include: Participate fully, give everyone the chance to speak, seek first to understand then be understood, respect the group’s time.
- Please share your thoughts about what worked and didn’t work about the information provided herein, and how our next rounds of materials can be even better in the feedback form.



**PLEASE  
LOG  
FEEDBACK  
FROM THE  
MEETING  
[HERE](#)**



# Community Meeting Guidelines

TO ENSURE THAT WE ARE ABLE TO MAXIMIZE OUR TIME TOGETHER AS A GROUP

- **Please remain on mute unless speaking**
- **During the main presentation:**
  - Please submit questions in the chat
  - Please turn off video to allow for ASL accessibility
- **During the breakouts:**
  - If you are able and willing to, please consider turning on your camera
  - Use one mic and stack
  - Acknowledge everyone's voice and time. If you find yourself speaking frequently, consider opening the floor to your group members. We look forward to hearing what everyone has to say!
  - Please speak from your own experience
  - If there are several group members with things to share, please use the 'raise hand' function, the chat, or gesticulating in Zoom and a facilitator will call on you
- **Please save discussion for the breakouts and report out**



**Join the conversation!**

**Please use the chat function to ask questions as we go!**

**If the meeting abruptly ends, please be patient and re-join using the same Zoom link. You will also receive an email with the meeting link.**

# TOPICS

- **What's important and at risk in this neighborhood?**
- **For each solution scenario:**
  - **Possible actions**
  - **How the area might change**
  - **Key considerations**
  - **What do you think?**
- **Discussion**
  - **Of everything we discuss, what is most important to advance?**
  - **What do you want to not happen?**

All content working DRAFT for planning and discussion purposes



***“We have tools and ideas, like a carpenter, but this is your house”***

***For this regional level plan, we have broken the community down into geographic areas. This means that there is nuance and community boundaries that might not always be honored. Let us know when we don't get it right.***



# AREA CONTEXT

## Ivy Hill & Vailsburg

- Strong sense of community
- Value of small businesses and commercial strips
- Treasured neighborhood and county parks

### Land Use

#### Residential

- High Density
- Medium to Low Density (Single Unit)

#### Commercial & Industry

- Commercial/Services
- Cultural Attractions
- Industrial & Commercial Complexes
- Industrial
- Transportation, Services & Utilities
- Other Urban/Built-Up Land

#### Natural & Open Space

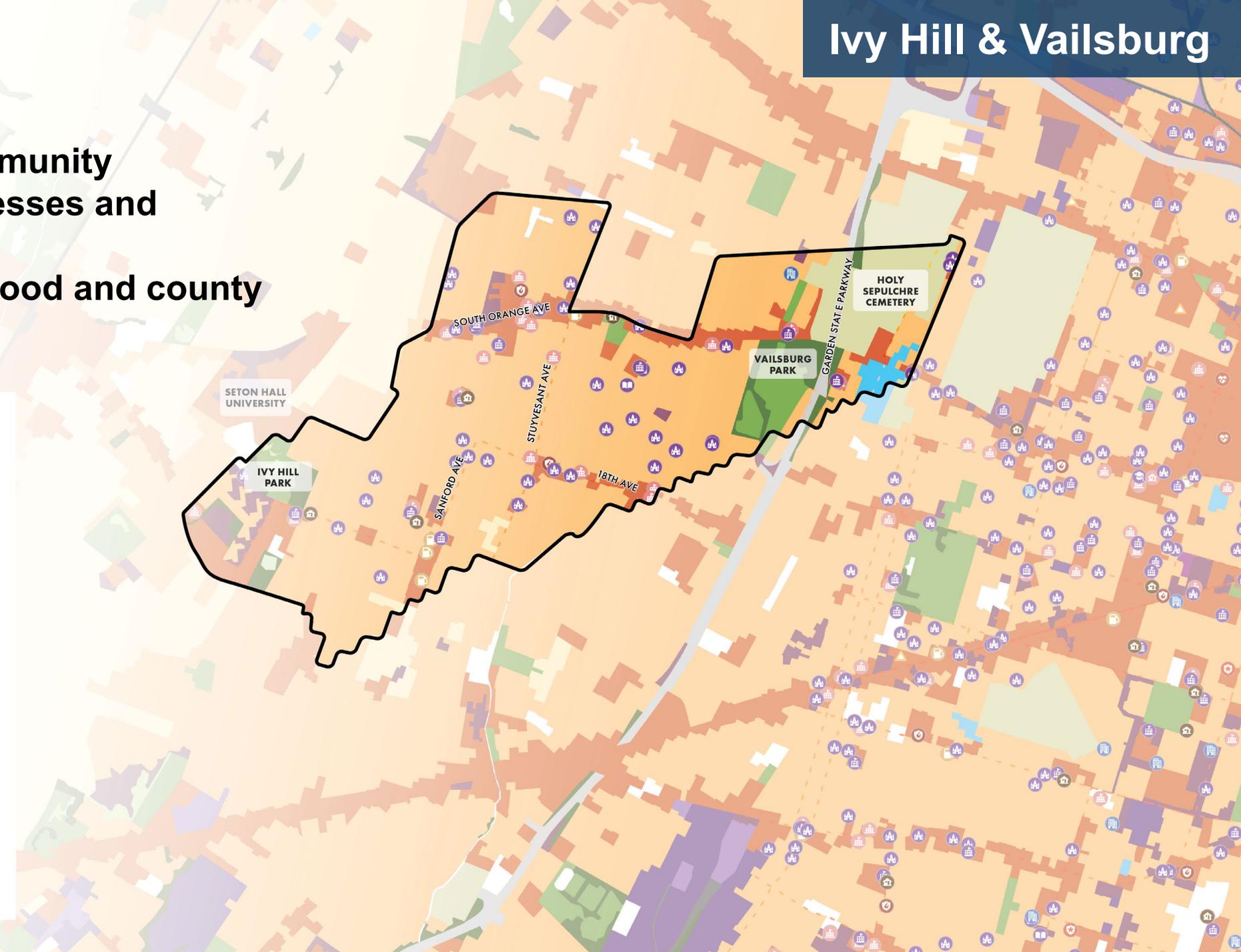
- Mixed Forests
- Coniferous Forests
- Deciduous Forests
- Wetlands/Marshes
- Agriculture
- Recreational Land
- Open Field (< 25% Covered)
- Cemetery
- Phragmites Dominate Areas
- Beaches

#### Other

- Barren Lands
- Altered Lands
- Military Installations
- Transitional Areas

### Asset\_Type

- Hurricane Evacuation Route
- Bus Routes
- Light Rail/Commuter Rail
- Child Care Centers
- Colleges
- Combined Sewer Outfall
- EMS
- Ferry Terminal
- Fire Stations
- Gas Stations
- Hospitals/Medical Centers
- Landfill
- Library
- Major Sports Venue
- Municipal Building
- Nursing Homes
- Other Surface Discharge
- Places of Worship
- Police Stations
- Power Generation
- Public Housing
- Rail Stations
- Schools
- Senior Housing
- Shelters
- Stormwater Discharge
- Substations
- Wastewater Treatment



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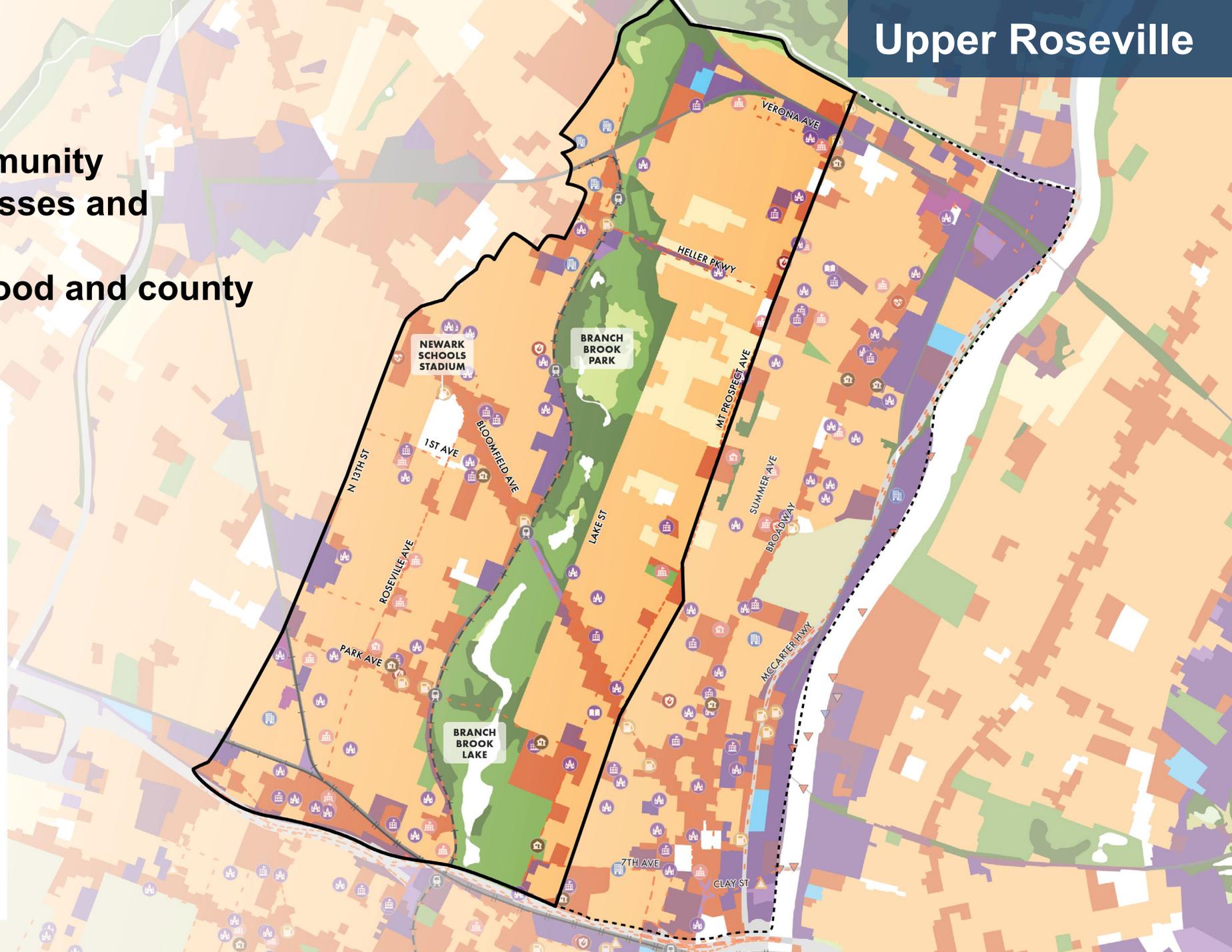
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# RISK CONTEXT

Rainfall flooding can impact large swaths of this area. Local topography can concentrate stormwater flooding, placing critical assets and key transportation corridors at risk.



24 HOUR, 100 YEAR STORM

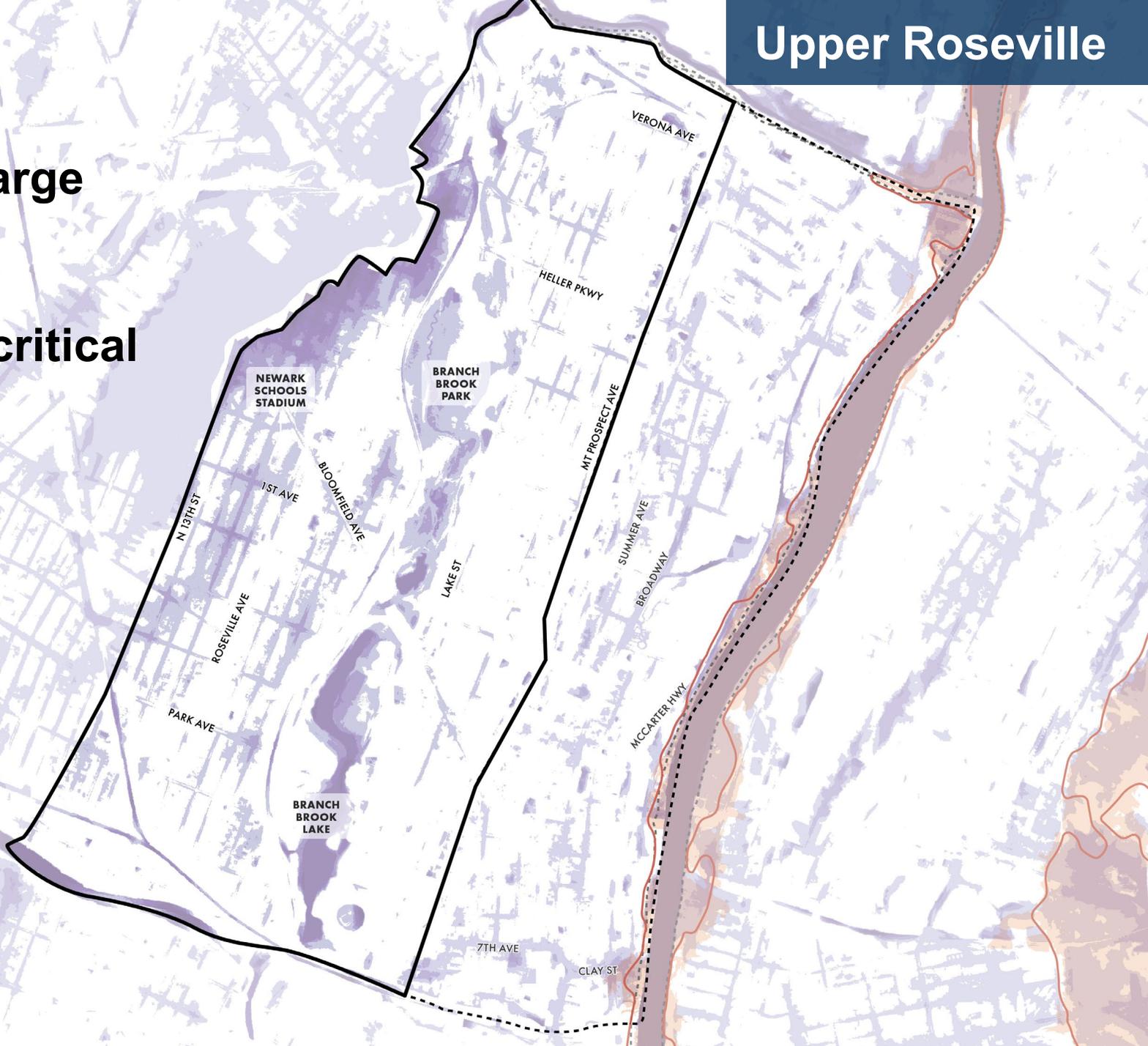
2070 MODEL (HIGH TIDE + SLR  
+ 10% RAINFALL INCREASE)



# RISK CONTEXT

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- 24 HOUR, 100 YEAR STORM**
-  2070 MODEL (HIGH TIDE + SLR + 10% RAINFALL INCREASE)
- STORM SURGE**
-  2070 EXTENT (HURRICANE SANDY + SEA LEVEL RISE)
-  AREAS OF OVERLAP
- SEA LEVEL RISE**
-  2070 MHHW + 2.4' SLR
-  2070 MHHW + 5.0' SLR



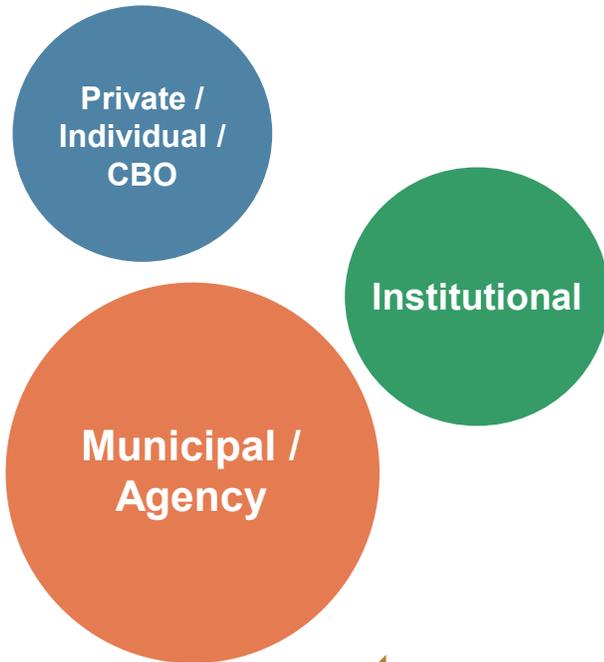


# SCENARIOS

*The scenarios are not alternatives.  
The action plan could be a combination  
of actions from the different scenarios.*

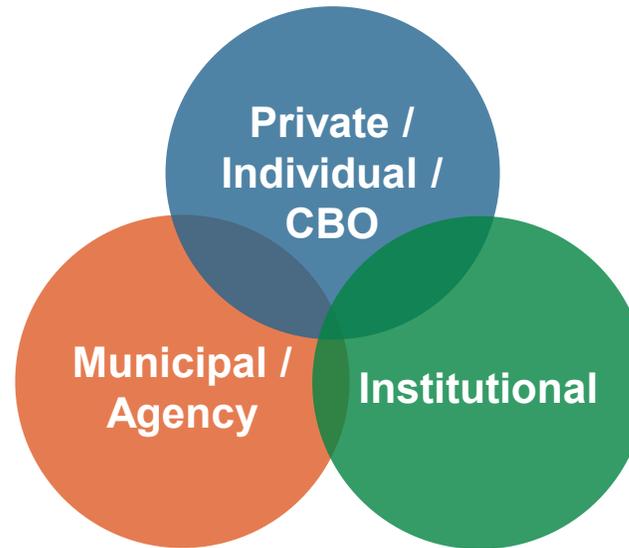
## Scenario 1

Individual Initiative



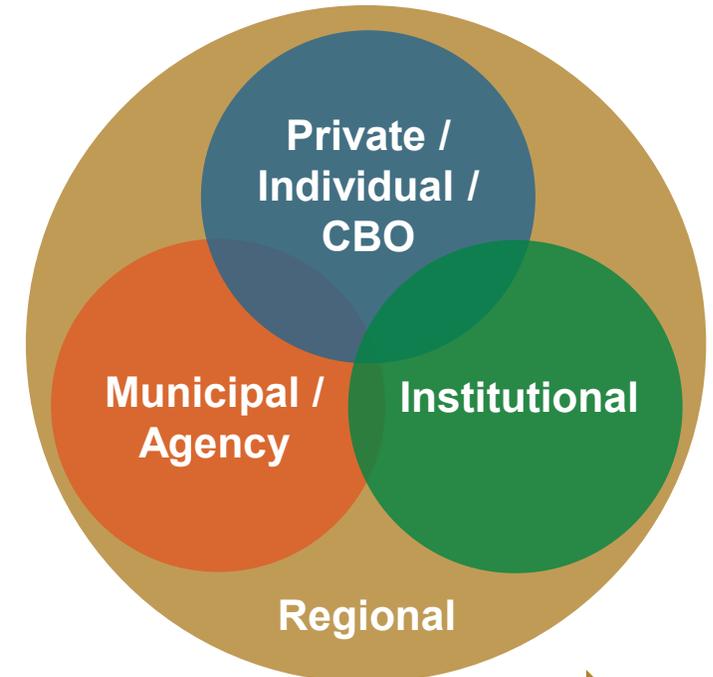
## Scenario 2

Shared Responsibility



## Scenario 3

Regional Coordination

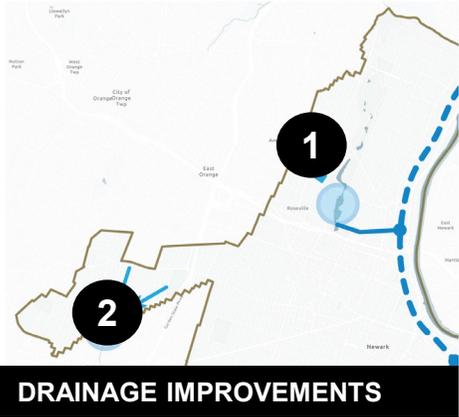


**CBO's are community-based organizations**

← **ENGAGEMENT WITH RESIDENTS AND OTHER STAKEHOLDERS ACROSS ALL** →



# KEY CHANGES, SCENARIO 1 – INDIVIDUAL INITIATIVE



## 1. IMPROVED STORMWATER SURFACE CONVEYANCE

Waterplein Bentemplein  
Rotterdam, Netherlands



## 2. URBAN STORMWATER RETENTION PARKS

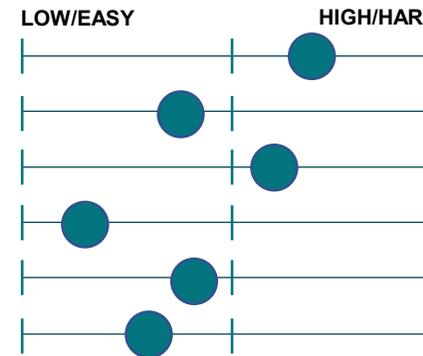
Venice Island  
Philadelphia

### OBJECTIVES, SCENARIO 1

Improve drainage along existing pathways, taking advantage of areas that can be easily separated from the combined sewer system.

### KEY CONSIDERATIONS, SCENARIO 1

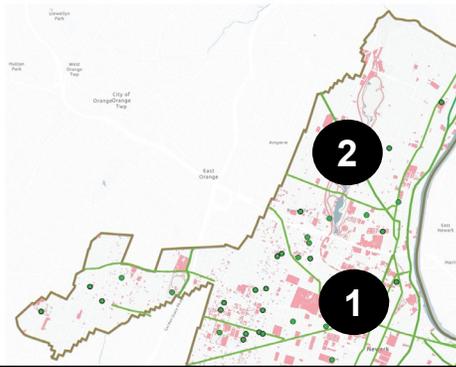
- CONSTRUCTION TIME
- IMPACT TO PUBLIC ACCESS & USE
- COSTS
- PERMITTING
- CONSTRUCTABILITY
- LEVEL OF PROTECTION



### ISSUES TO CONSIDER

Separating stormwater and directing to green corridors gets water out of the sewer system and improves water quality **BUT** requires significant investment and coordination before benefits can be realized.

## KEY CHANGES, SCENARIO 1 – INDIVIDUAL INITIATIVE



GREEN INFRASTRUCTURE



### 1. PERMEABLE PARKING SURFACES

TU Delft  
Netherlands



### 2. R.O.W GREEN INFRASTRUCTURE

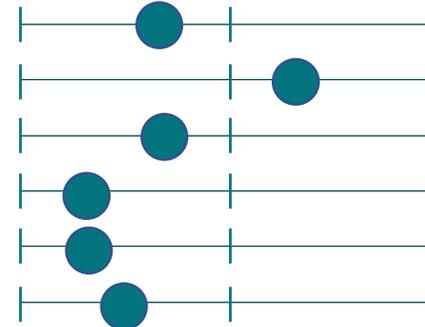
Queens, New York City

## OBJECTIVES, SCENARIO 1

Expand green infrastructure installations on public property targeting key primary corridors and lots with significant impervious area.

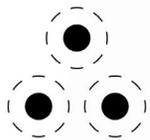
## KEY CONSIDERATIONS, SCENARIO 1

- CONSTRUCTION TIME
- IMPACT TO PUBLIC ACCESS & USE
- COSTS
- PERMITTING
- CONSTRUCTABILITY
- LEVEL OF PROTECTION



## ISSUES TO CONSIDER

Green infrastructure projects can treat stormwater at the source and add other benefits to the city **BUT** will compete with other needs in the public right of way and is limited in treating large storm events.



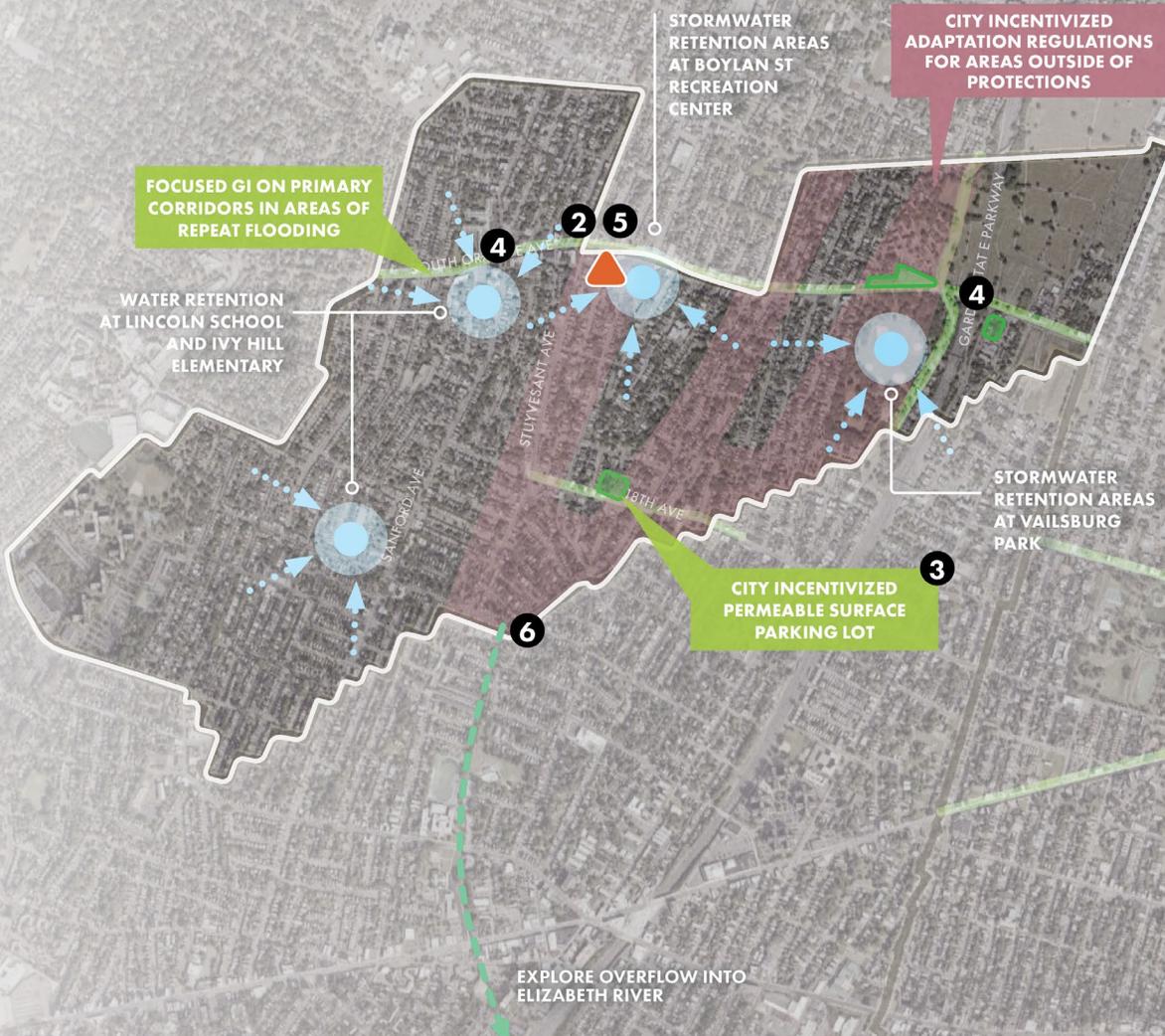
# SCENARIO 1

## INDIVIDUAL INITIATIVE

# Ivy Hill & Vailsburg

-  ROW GREEN INFRASTRUCTURE
-  SUGGESTED BLUE AND GREEN ROOFS
-  SUGGESTED PIPED FLOW PATHS
-  SUGGESTED PIPED FLOW PATHS TO RETENTION SITES
-  SUGGESTED DITCH DRAINAGE FLOW PATHS
-  RESILIENCE HUB
-  AREAS TO ADAPT

- ### NON-PHYSICAL SOLUTIONS
- 1** ADOPT ORDINANCES TO STATE MODELS & GUIDANCE
  - 2** GI PROGRAM FOR CITY PROPERTIES
  - 3** GUIDELINES FOR GI ON OPEN SPACE
  - 4** TREE CANOPY PROGRAMS
  - 5** RESILIENCE HUBS AT CITY PROPERTIES
  - 6** MUNICIPAL TRASH CLEANUP & CATCH BASIN PROGRAMS
  - 7** PROMOTE & INCORPORATE RESIDENT FLOOD REPORTING
  - 8** INTER-DEPARTMENT & MUNICIPAL COORDINATION



All content working DRAFT for planning and discussion purposes

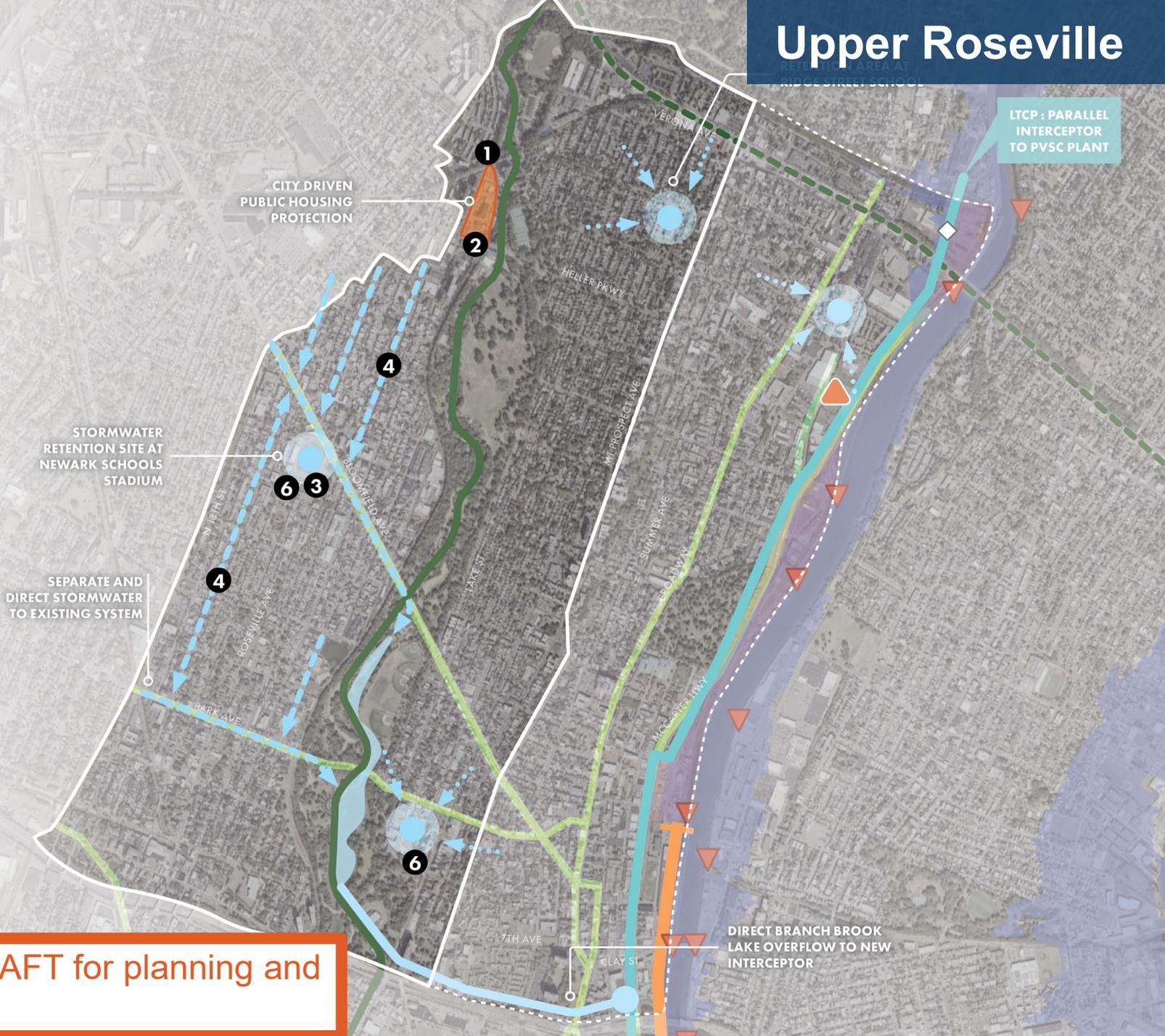


# SCENARIO 1 INDIVIDUAL INITIATIVE

- EXISTING CONDITIONS**
- ◇ PROJECTS ALREADY PLANNED OR IN PROGRESS
  - ▼ EXISTING OUTFALLS
  - PROPOSED LTCP INTERCEPTOR
- RESILIENT NJ MEASURES**
- COASTAL PROTECTION ALIGNMENTS
  - POTENTIAL ALTERNATE COASTAL ALIGNMENTS
  - GREEN INFRASTRUCTURE CORRIDORS
  - SUGGESTED FLOW PATHS
  - SUGGESTED RETENTION AREAS
  - ▽ NEW STORMWATER OUTFALLS
  - PROPOSED GREENWAY CORRIDORS
  - AREAS OUTSIDE PROTECTIONS
  - SITES TO ADAPT
  - ▲ POSSIBLE RESILIENCE HUB LOCATION

- NON-PHYSICAL SOLUTIONS**
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CITY DRIVEN PUBLIC HOUSING PROTECTION

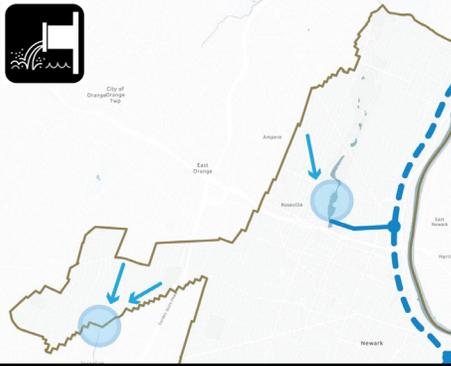
STORMWATER RETENTION SITE AT NEWARK SCHOOLS STADIUM

SEPARATE AND DIRECT STORMWATER TO EXISTING SYSTEM

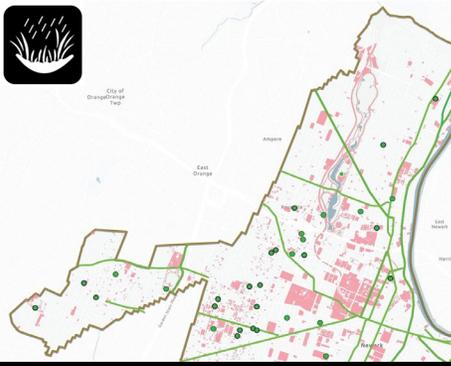
DIRECT BRANCH BROOK LAKE OVERFLOW TO NEW INTERCEPTOR

LTCP : PARALLEL INTERCEPTOR TO PVSC PLANT

# NON-PHYSICAL SOLUTIONS, SCENARIO 1



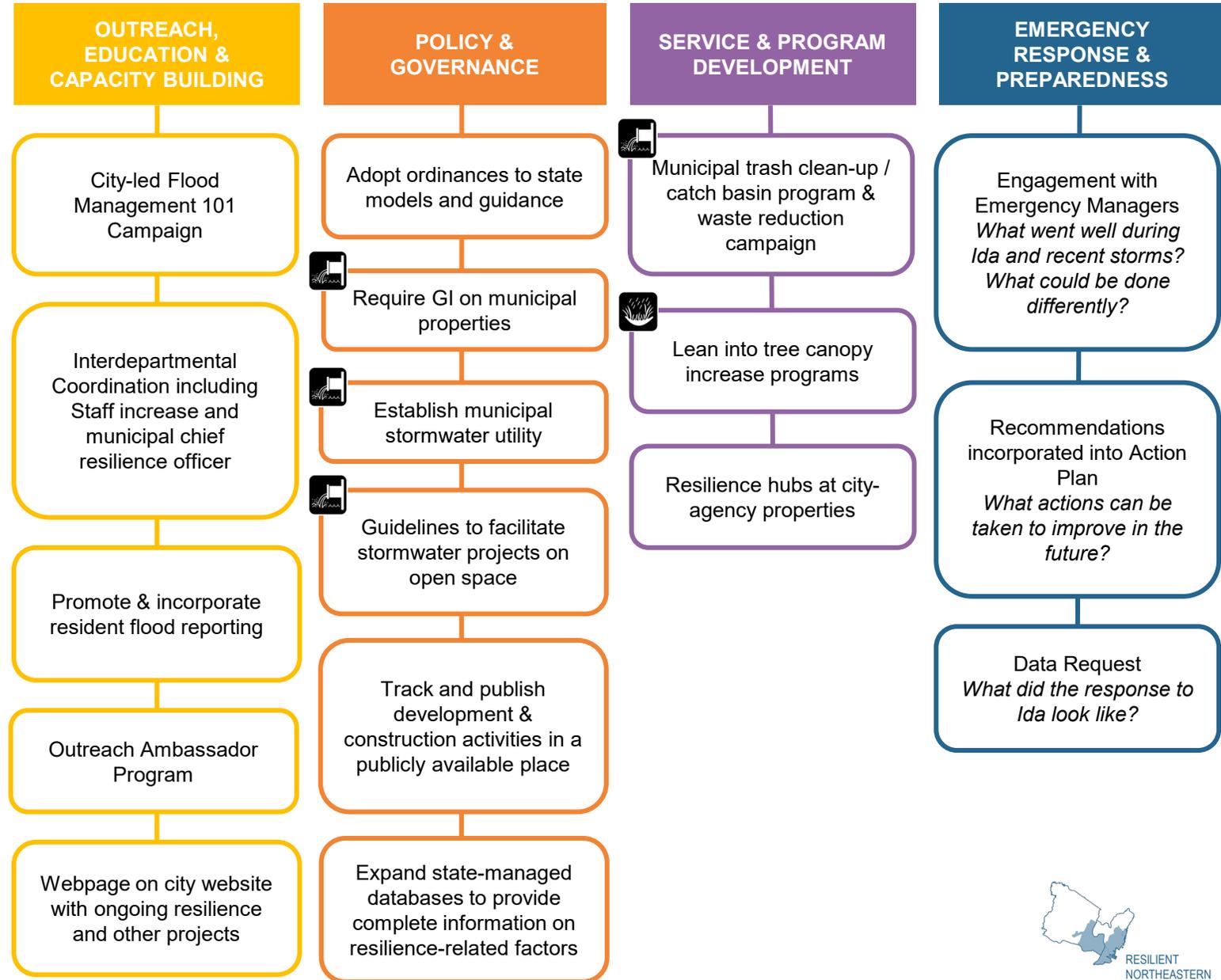
**DRAINAGE IMPROVEMENTS**

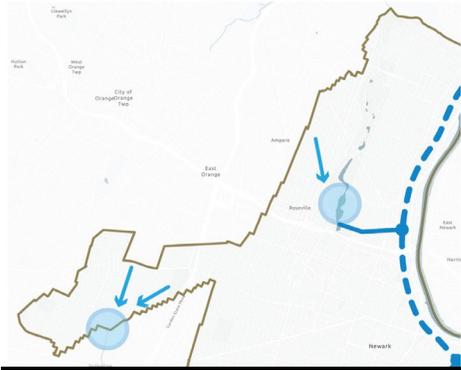


**GREEN INFRASTRUCTURE**

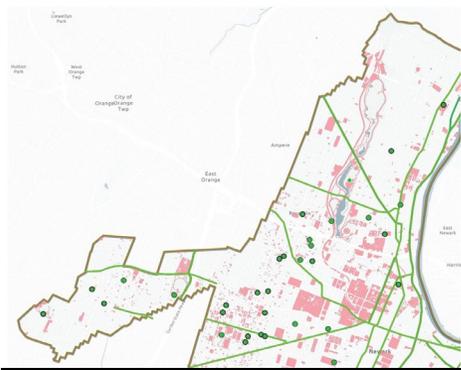
Policy based measures like trash clean-up & catch basin programs help with drainage efficiency while larger measures like a Municipal Stormwater utility increase resilience equity.

Measures like tree programs and Green Infrastructure requirements on public open-space are essential to meeting resilience goals in Scenario 1.





**DRAINAGE IMPROVEMENTS**



**GREEN INFRASTRUCTURE**

**QUESTIONS TO CONSIDER**

- Which streets or city properties do you want to see transformed?
- What greening projects would appeal to you most?
- Where would you like to see Resilience Hubs?



**PLEASE  
LOG  
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**WHAT DO YOU LIKE ABOUT SCENARIO 1?**

Empty dashed box for feedback on Scenario 1.

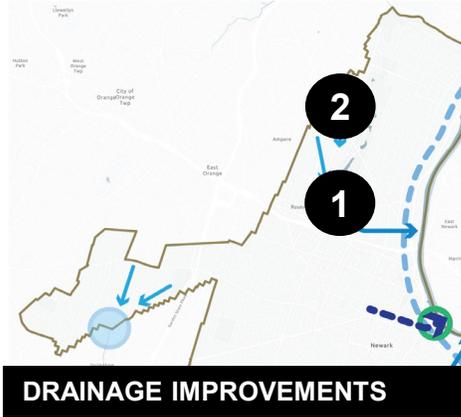
Empty dashed box for feedback on Scenario 1.

**WHAT DO YOU DISLIKE ABOUT SCENARIO 1?**

Empty dashed box for feedback on Scenario 1.

Empty dashed box for feedback on Scenario 1.

## KEY CHANGES, SCENARIO 2 – SHARED RESPONSIBILITY



### 1. URBAN STORMWATER RETENTION PARK

Qunli Stormwater Wetland Park  
Haerbin, China



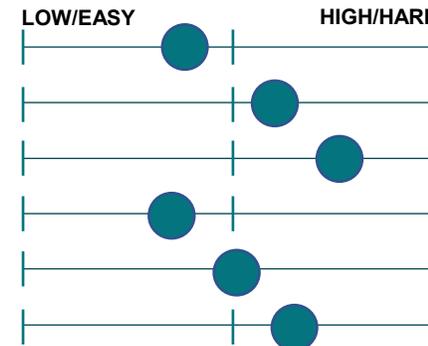
### 2. STORMWATER MEDIAN

## OBJECTIVES, SCENARIO 2

Consolidate drainage infrastructure to create new and expanded conveyance pathways and expand retention areas, such as Branch Brook Park, in conjunction with partners, such as Seton Hall University.

## KEY CONSIDERATIONS, SCENARIO 2

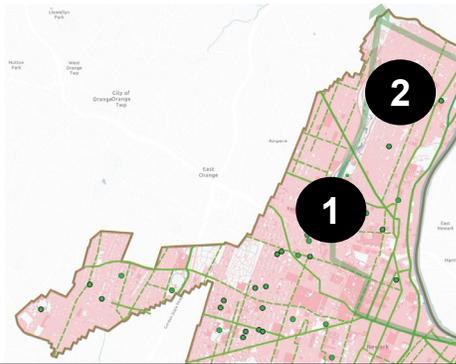
**CONSTRUCTION TIME**  
**IMPACT TO PUBLIC ACCESS & USE**  
**COSTS**  
**PERMITTING**  
**CONSTRUCTABILITY**  
**LEVEL OF PROTECTION**



## ISSUES TO CONSIDER

Expanding sewer separation and temporary storage areas further improves conveyance and water quality **BUT** requires significant investment and coordination before benefits can be realized.

## KEY CHANGES, SCENARIO 2 – SHARED RESPONSIBILITY



GREEN INFRASTRUCTURE



### 1. GREEN INFRASTRUCTURE ON PRIVATELY OWNED SPACES

First Avenue Water Plaza  
Manhattan, New York City



### 2. BLUE & GREEN ROOFS

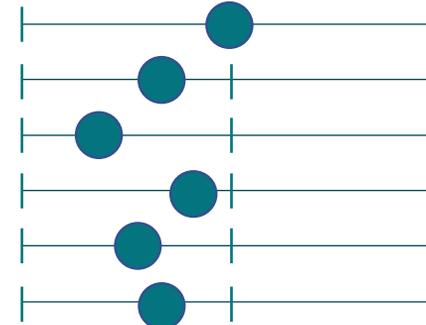
Osbourne Association  
South Bronx, New York City

## OBJECTIVES, SCENARIO 2

Expand green infrastructure to secondary corridors and beyond public sites to incentivize additional GI on private properties. Target large parcels to implement regional GI practices.

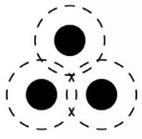
## KEY CONSIDERATIONS, SCENARIO 2

- CONSTRUCTION TIME
- IMPACT TO PUBLIC ACCESS & USE
- COSTS
- PERMITTING
- CONSTRUCTABILITY
- LEVEL OF PROTECTION



## ISSUES TO CONSIDER

Expanding GI to private properties provides broader watershed management **BUT** results in a greater number of assets that need to be inspected and maintained to provide protection.



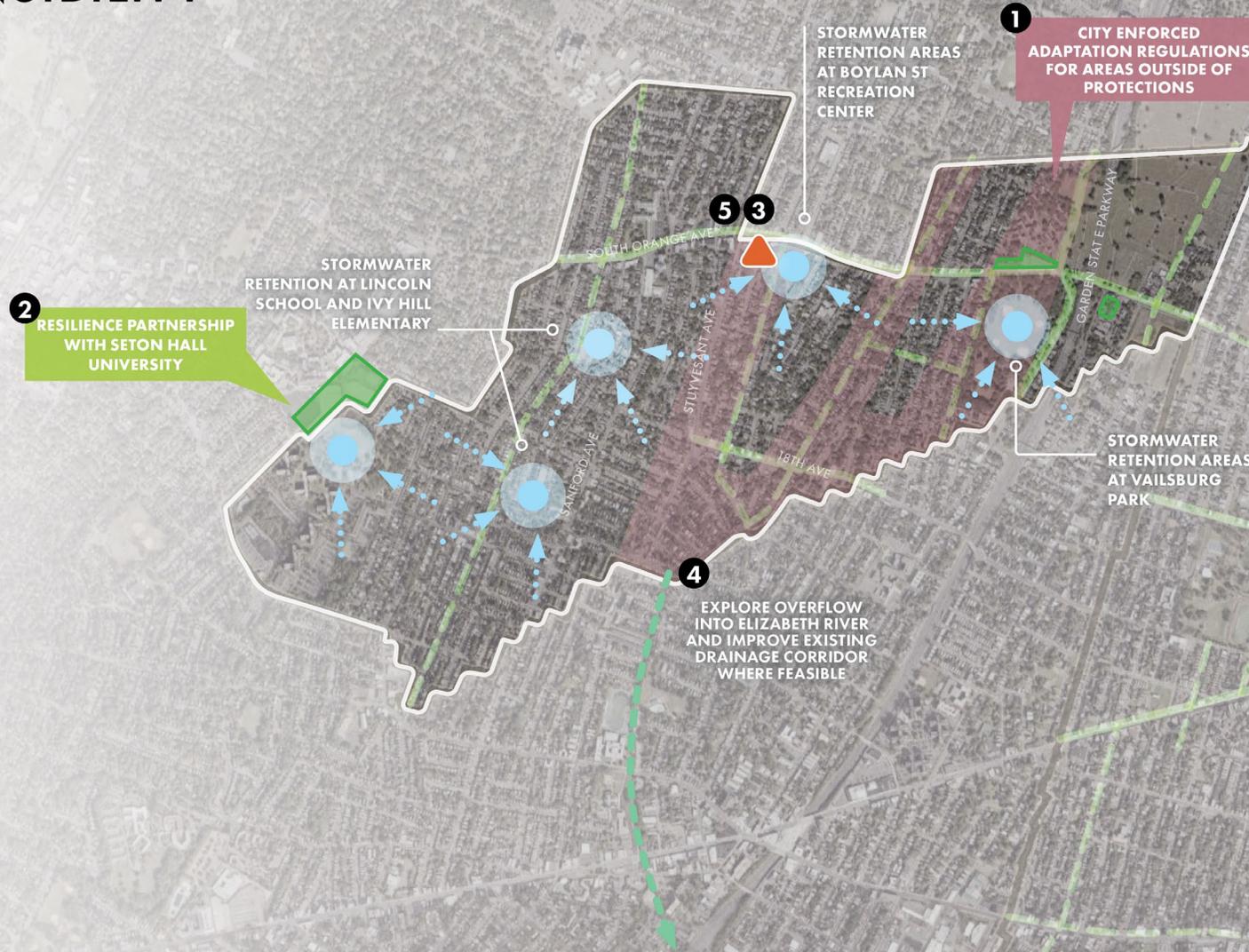
# SCENARIO 2

## SHARED RESPONSIBILITY

-  ROW GREEN INFRASTRUCTURE
-  SUGGESTED BLUE AND GREEN ROOFS
-  SUGGESTED PIPED FLOW PATHS
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-  RESILIENCE HUB
-  AREAS TO ADAPT

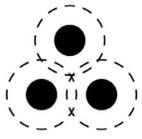
### NON-PHYSICAL SOLUTIONS

- 1** INCORPORATE RESILIENCE INTO REDEVELOPMENT PLANS
- 2** INCENTIVIZE GI ON PRIVATE PROPERTIES
- 3** RESILIENCE LEADER OUTREACH AND TRAINING PROGRAM
- 4** TRASH CLEAN-UP DAYS AND COMMUNITY GARDENS THROUGH PARTNERSHIPS
- 5** RAIN BARREL DISTRIBUTION & GUIDE FOR INSTALLATION



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Ivy Hill & Vailsburg



# SCENARIO 2

## SHARED RESPONSIBILITY

### EXISTING CONDITIONS

◇ PROJECTS ALREADY PLANNED OR IN PROGRESS

▼ EXISTING OUTFALLS

— PROPOSED LTCP INTERCEPTOR

### RESILIENT NJ MEASURES

— COASTAL PROTECTION ALIGNMENTS

— POTENTIAL ALTERNATE COASTAL ALIGNMENTS

— GREEN INFRASTRUCTURE CORRIDORS

→ SUGGESTED FLOW PATHS

● SUGGESTED RETENTION AREAS

▽ NEW STORMWATER OUTFALLS

— PROPOSED GREENWAY CORRIDORS

■ AREAS OUTSIDE PROTECTIONS

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5 RAIN BARREL GUIDE FOR IN

All content working DRAFT for planning and discussion purposes

SEPARATE AND DIRECT STORMWATER TO EXISTING SYSTEM

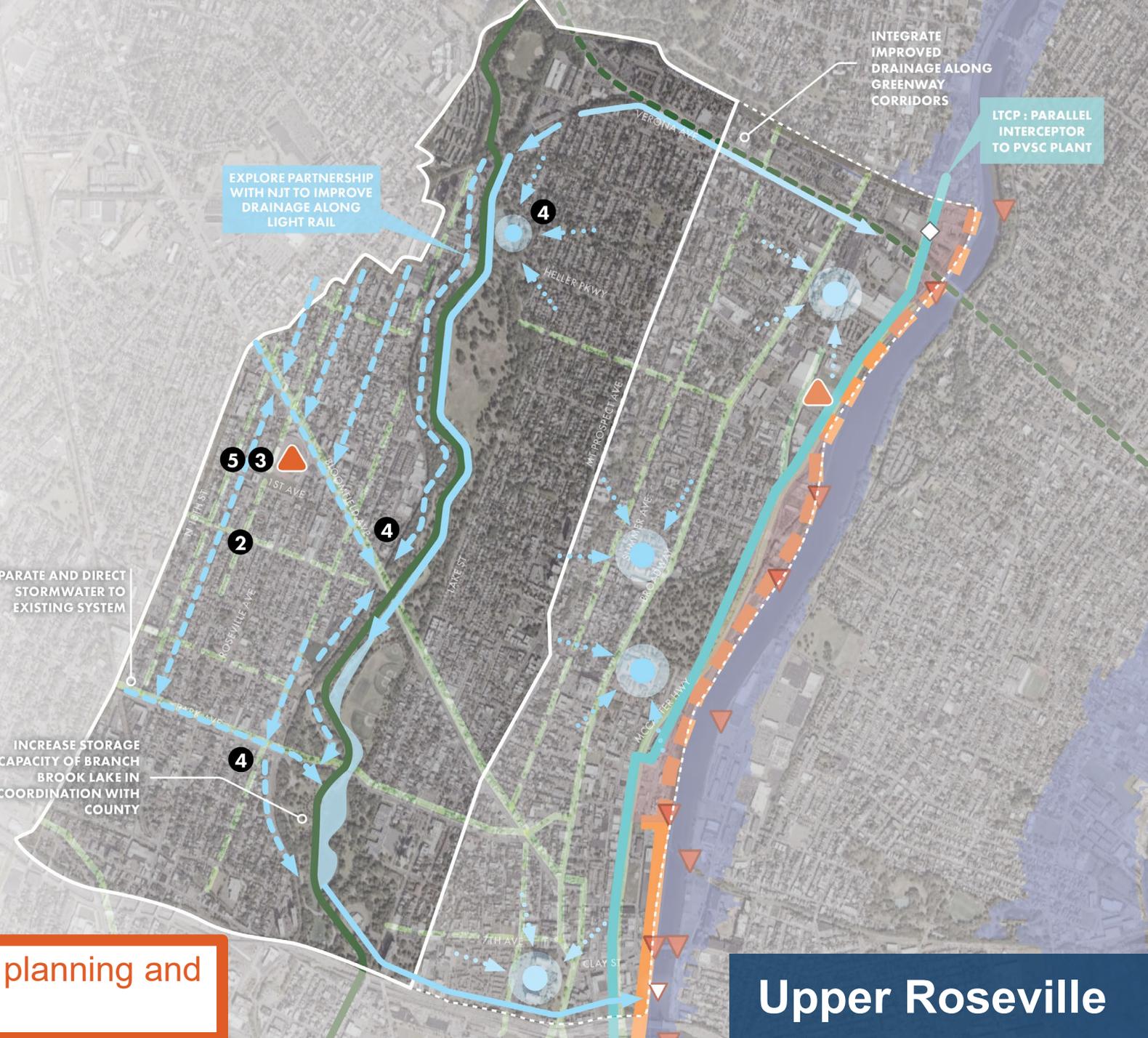
INCREASE STORAGE CAPACITY OF BRANCH BROOK LAKE IN COORDINATION WITH COUNTY

EXPLORE PARTNERSHIP WITH NJT TO IMPROVE DRAINAGE ALONG LIGHT RAIL

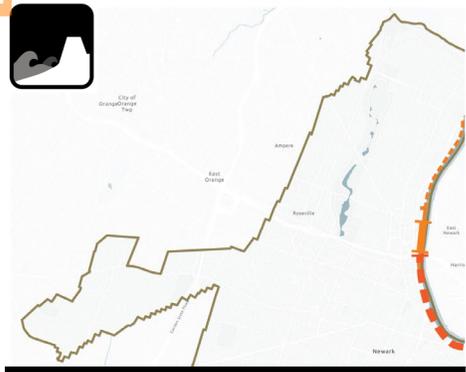
INTEGRATE IMPROVED DRAINAGE ALONG GREENWAY CORRIDORS

LTCP : PARALLEL INTERCEPTOR TO PVSC PLANT

Upper Roseville

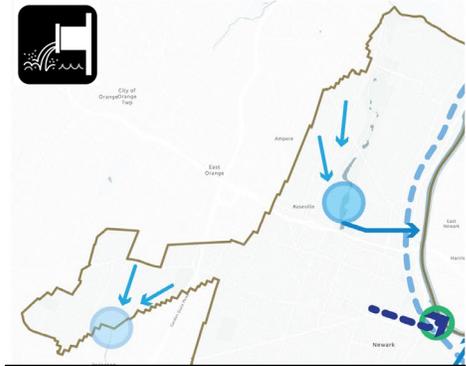


# NON-PHYSICAL SOLUTIONS, SCENARIO 2 SHARED RESPONSIBILITY



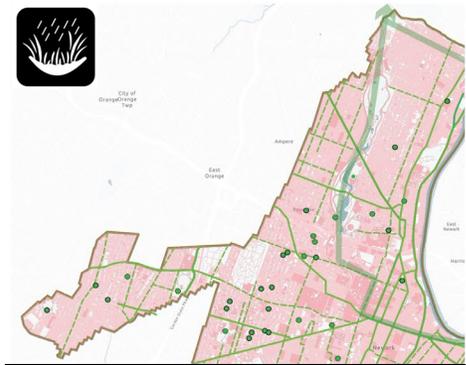
**OVERALL RESILIENCE**

Resilience advancements deepened through collaboration with community members, schools, and community-based organizations



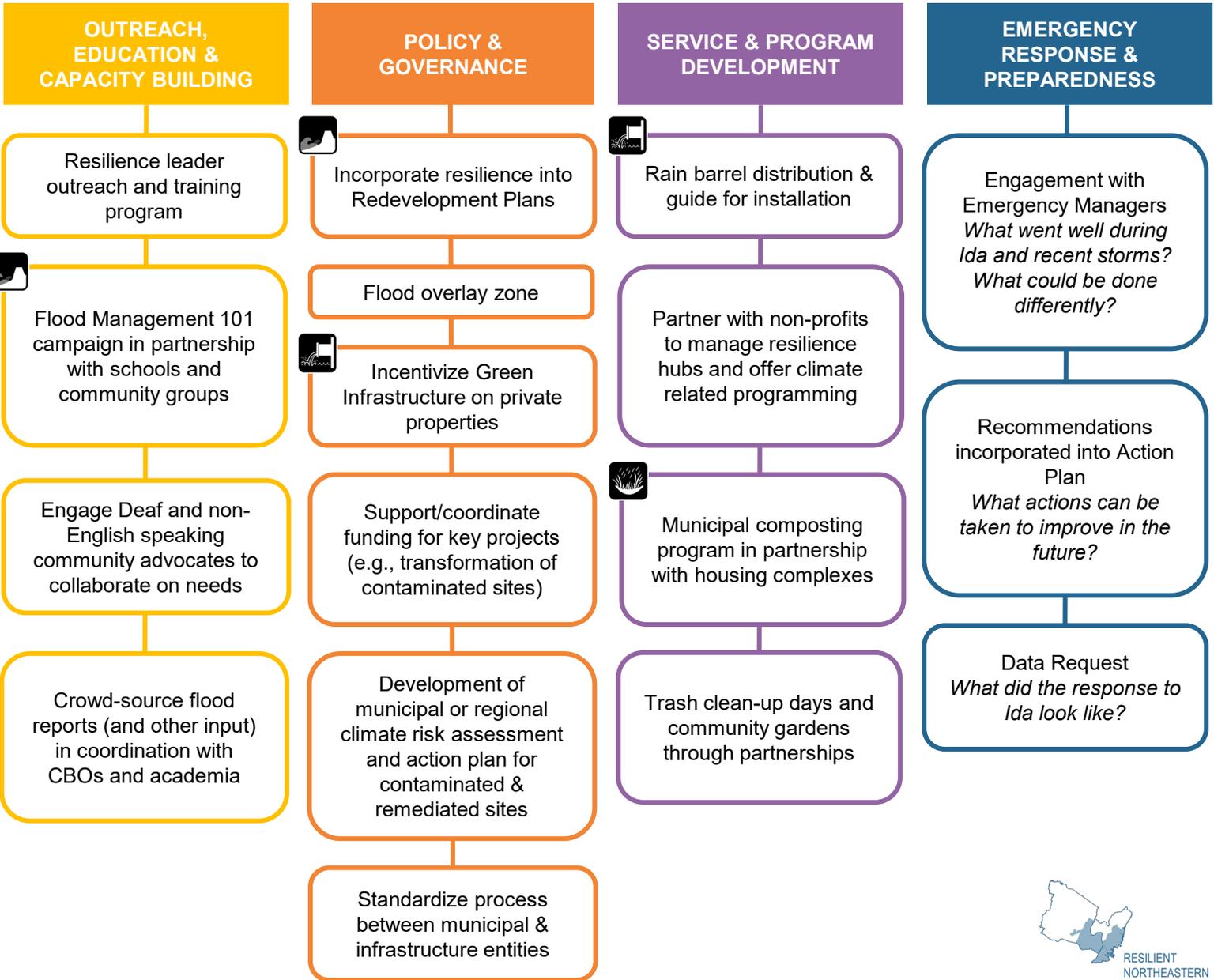
**DRAINAGE IMPROVEMENTS**

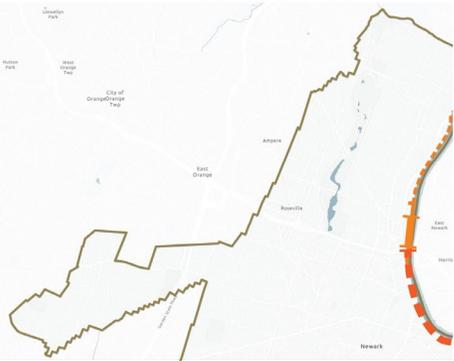
Partnerships in composting and trash clean-up help reduce drainage system clogging



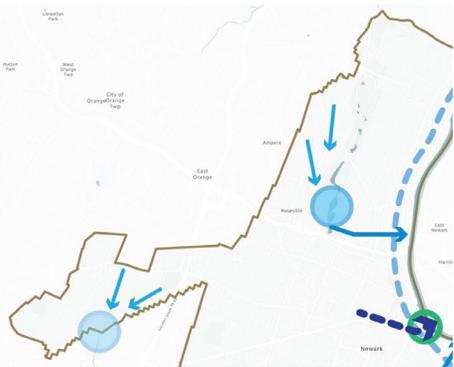
**GREEN INFRASTRUCTURE**

Public private partnerships expand green infrastructure benefits

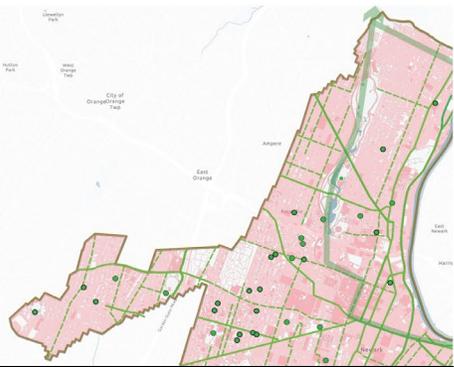




**OVERALL RESILIENCE**



**DRAINAGE IMPROVEMENTS**



**GREEN INFRASTRUCTURE**

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Empty dashed box for feedback on what is liked about Scenario 2.

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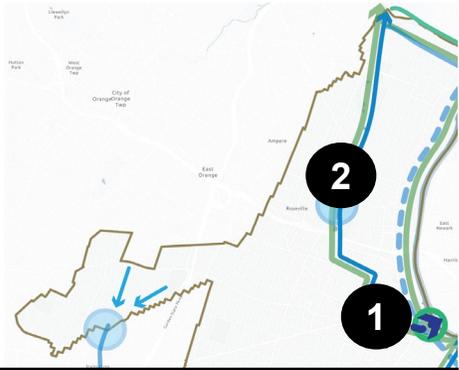
**WHAT DO YOU DISLIKE ABOUT SCENARIO 2?**

Empty dashed box for feedback on what is disliked about Scenario 2.

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Empty dashed box for feedback on what is disliked about Scenario 2.

# KEY CHANGES, SCENARIO 3 – REGIONAL COORDINATION



**DRAINAGE IMPROVEMENTS**



## 1. DEEP TUNNEL STORMWATER CONVEYANCE & STORAGE

DigIndy  
Indianapolis, Indiana



## 2. INLAND STORMWATER DETENTION POND

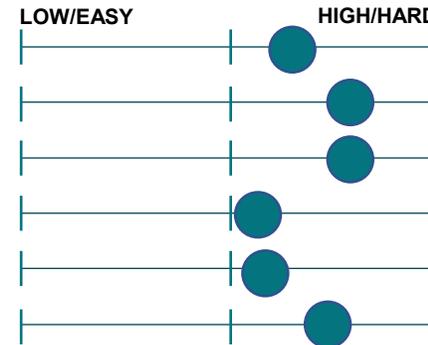
Louisiana

### OBJECTIVES, SCENARIO 3

Complete sewer separation and re-direct to dedicated drainage pathways, leveraging large properties such as Branch Brook Park for extended storage and peak flow mitigation.

### KEY CONSIDERATIONS, SCENARIO 3

- CONSTRUCTION TIME
- IMPACT TO PUBLIC ACCESS & USE
- COSTS
- PERMITTING
- CONSTRUCTABILITY
- LEVEL OF PROTECTION



### ISSUES TO CONSIDER

Interior drainage corridors align with natural topography **BUT** require land use changes for surface conveyance or pumping for subsurface conveyance.

# KEY CHANGES, SCENARIO 3 – REGIONAL COORDINATION



## 1. REGIONAL URBAN GREENWAY

The BeltLine  
Atlanta, Georgia



## 2. CORRIDOR GREEN INFRASTRUCTURE FOR STORMWATER MANAGEMENT

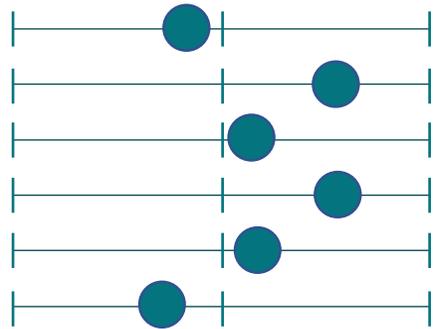
Swale on Yale  
Seattle, Washington

### OBJECTIVES, SCENARIO 3

Build additional green infrastructure improvements into drainage corridors and other projects to promote a “dig once” approach.

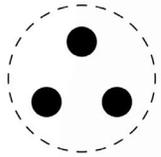
### KEY CONSIDERATIONS, SCENARIO 3

- CONSTRUCTION TIME
- IMPACT TO PUBLIC ACCESS & USE
- COSTS
- PERMITTING
- CONSTRUCTABILITY
- LEVEL OF PROTECTION



### ISSUES TO CONSIDER

Incorporating additional GI into drainage corridors and other projects improves cost-effectiveness **BUT** requires conversion of existing uses to natural stormwater management.

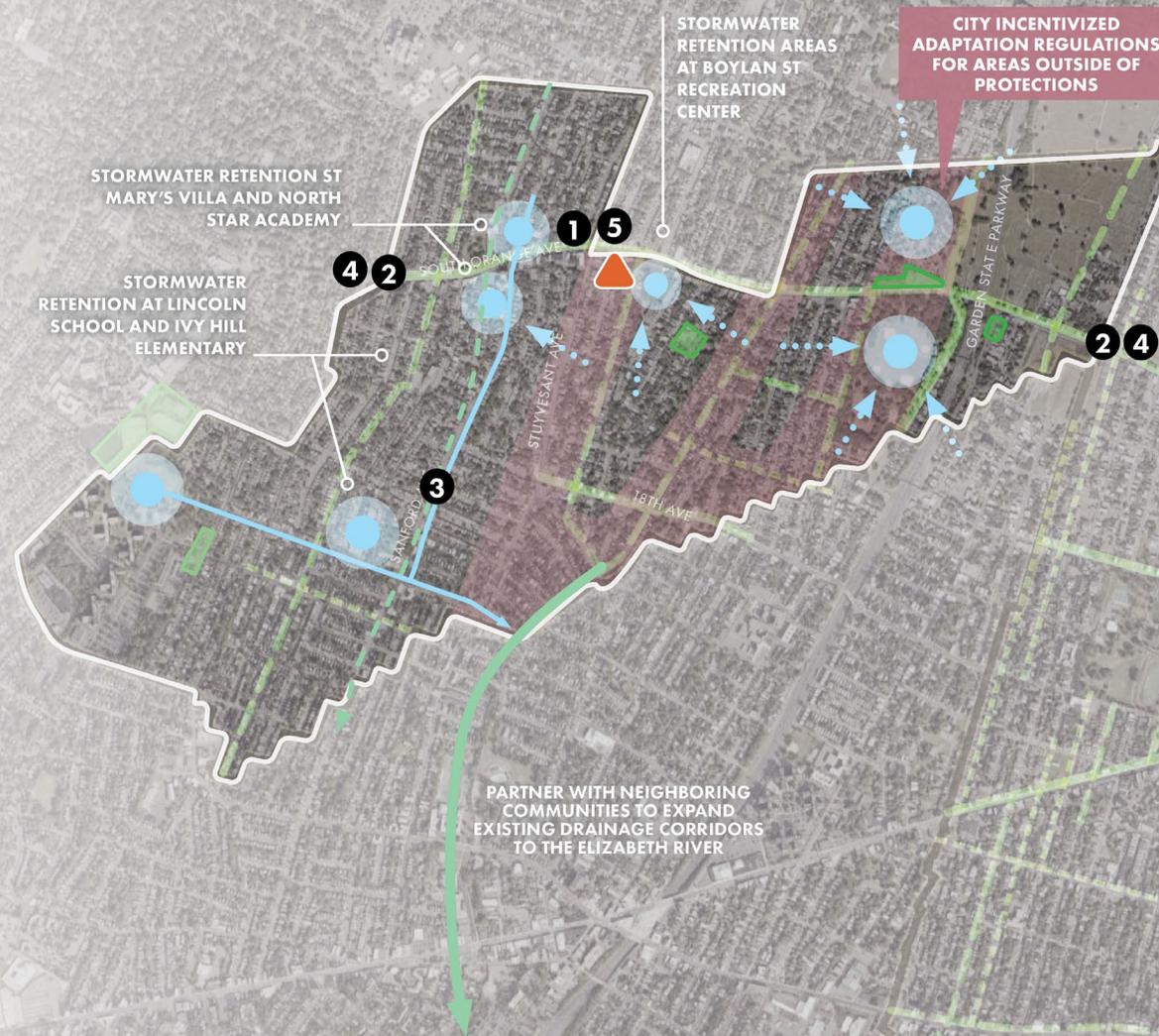


# SCENARIO 3 REGIONAL RESPONSIBILITY

-  ROW GREEN INFRASTRUCTURE
-  SUGGESTED BLUE AND GREEN ROOFS
-  SUGGESTED PIPED FLOW PATHS
-  SUGGESTED PIPED FLOW PATHS TO RETENTION SITES
-  SUGGESTED DITCH DRAINAGE FLOW PATHS
-  RESILIENCE HUB
-  AREAS TO ADAPT

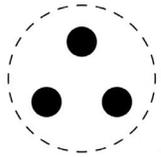
## NON-PHYSICAL SOLUTIONS

- 1** CREATE A "SINGLE SOURCE OF TRUTH" FOR RESILIENCE-RELATED INFORMATION AND RESOURCES
- 2** REGIONAL GI CHAMPIONS TRAINING PROGRAM
- 3** DEVELOP PIPELINE OF SITES FOR STORMWATER MANAGEMENT / RESILIENT TRANSFORMATION OF BROWNFIELDS & CONTAMINATED SITES
- 4** REGIONAL TREE PLANTING PROGRAM
- 5** REGIONAL NETWORK OF RESILIENCE HUBS
- 6** REGIONAL PROGRAM DEVELOPMENT AND SUPPORT FOR COMPOSTING AND WASTE REDUCTION CAMPAIGNING



All content working DRAFT for planning and discussion purposes

Ivy Hill & Vailsburg



# SCENARIO 3

## REGIONAL COORDINATION

### EXISTING CONDITIONS

◇ PROJECTS ALREADY PLANNED OR IN PROGRESS

▼ EXISTING OUTFALLS

▬ PROPOSED LTCP INTERCEPTOR

### RESILIENT NJ MEASURES

▬ COASTAL PROTECTION ALIGNMENTS

▬ POTENTIAL ALTERNATE COASTAL ALIGNMENTS

▬ GREEN INFRASTRUCTURE CORRIDORS

▬ SUGGESTED FLOW PATHS

● SUGGESTED RETENTION AREAS

▽ NEW STORMWATER OUTFALLS

▬ PROPOSED GREENWAY CORRIDORS

▬ AREAS OUTSIDE PROTECTIONS

▬ SITES TO ADAPT

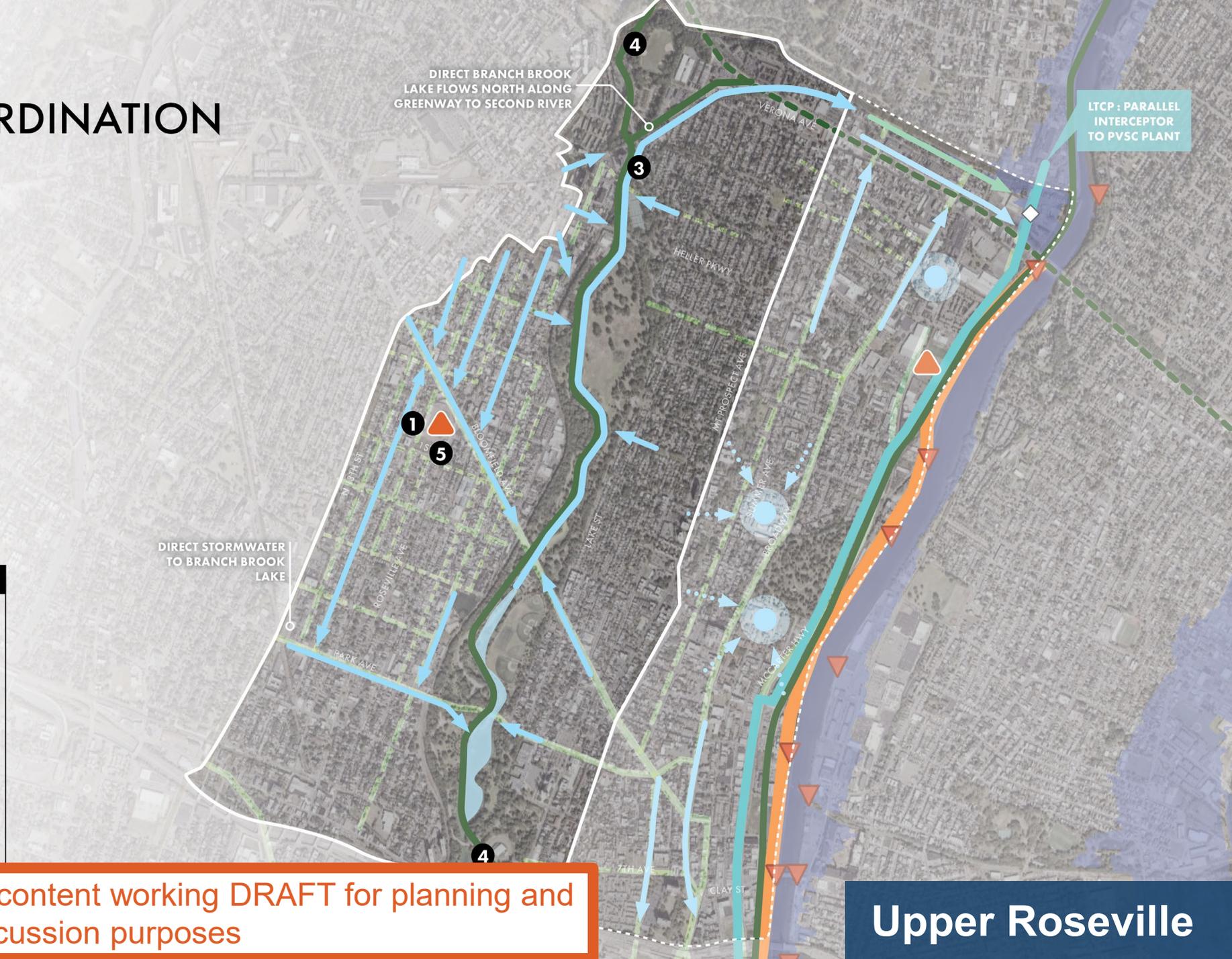
▲ POSSIBLE RESILIENCE HUB LOCATION

### NON-PHYSICAL SOLUTIONS

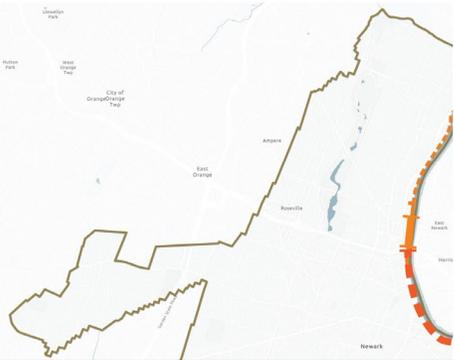
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All content working DRAFT for planning and discussion purposes

Upper Roseville

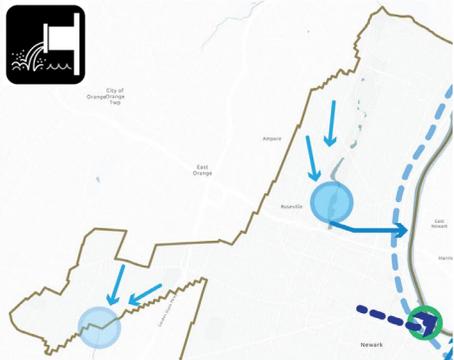


# NON-PHYSICAL SOLUTIONS, SCENARIO 3



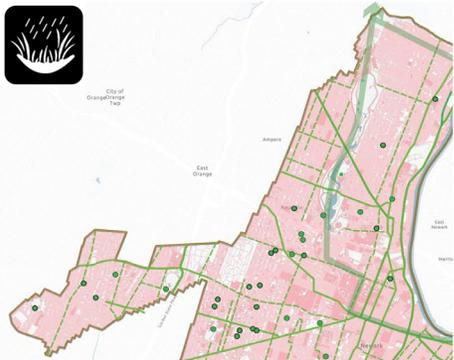
**OVERALL RESILIENCE**

Continuing and expanding the Resilient NENJ program could allow the region to learn from, build on, and advance work completed to date



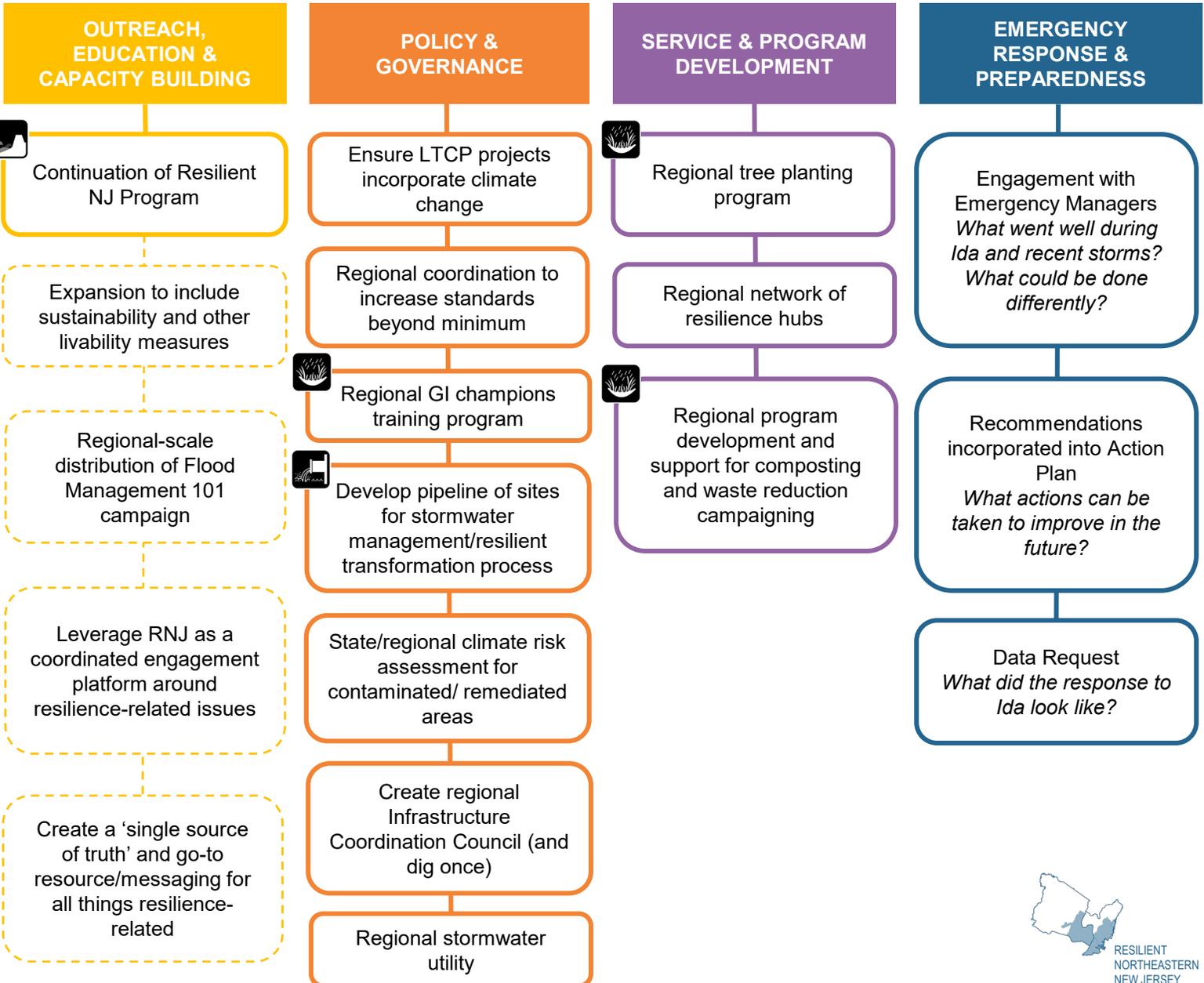
**DRAINAGE IMPROVEMENTS**

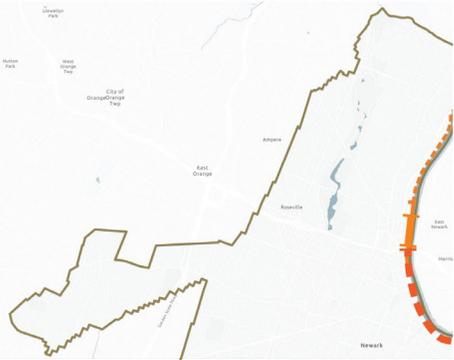
A regional infrastructure coordination council help maximize resilience in planned infrastructure improvements and limit disruption to communities



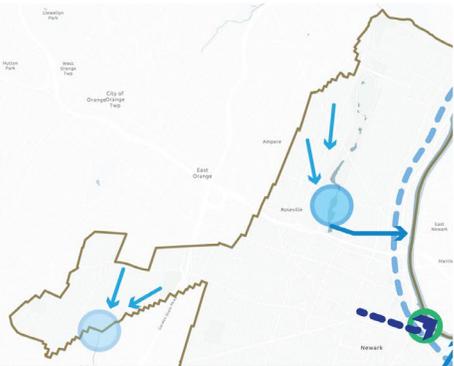
**GREEN INFRASTRUCTURE**

A regional network of resilience hubs could help CBOs and municipalities coordinate and share resources and information in times of disaster





**OVERALL RESILIENCE**



**DRAINAGE IMPROVEMENTS**



**GREEN INFRASTRUCTURE**

**QUESTIONS TO CONSIDER**

- Which streets or city properties do you want to see transformed?
- What Greening projects would appeal to you most?
- Where would you like to see Resilience Hubs?



**PLEASE  
LOG  
FEEDBACK  
FROM THE  
MEETING  
[HERE](#)**

**WHAT DO YOU LIKE ABOUT SCENARIO 3?**

Empty dashed box for feedback on what is liked about Scenario 3.

Empty dashed box for feedback on what is liked about Scenario 3.

Empty dashed box for feedback on what is liked about Scenario 3.

**WHAT DO YOU DISLIKE ABOUT SCENARIO 3?**

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# DISCUSSION & QUESTIONS

*Of everything we've discussed, what is the most important thing to advance in this area?*

*What do you want to make sure does not happen?*

