

Resilient Connecticut

Document by:

UConn's Community Research & Design Collaborative

Director Associate Professor Peter Miniutti

Date: March 12, 2020

UConn's Community Research & Design Collaborative (CRDC) is the umbrella organization for the outreach work of the landscape architecture faculty. Our mission is to be a regional leader in sustainable planning and design. We help our client's plan and design affordable, equitable, and ecologically healthy environments. Our mission is accomplished by providing our client's with objective, multi-disciplinary, state-of-the-art planning and design expertise. We promote and encourage academic-based collaborative research with an emphasis on "real world" projects as they apply to sustainable development.

For additional information, please see:

crdcuconn.wordpress.com

peteprojects.wordpress.com

or email Peter:

peter.miniutti@uconn.edu

UConn



Contents of Today's Talk

1. UConn's Program of Landscape Architecture/CRDC

- **Role** on this Project – Consultant to CIRCA
- **Locational** scope of project

2. Maps produced:

- Topography & flooding projections (2)
- Town level resource maps (3)
- Shared risks (1)

3. Questions & Comments

Contents of Today's Talk

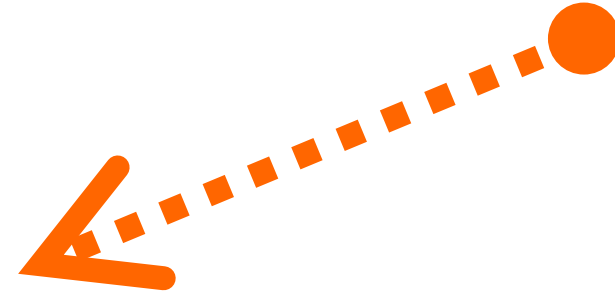
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Overview of UConn's CRDC

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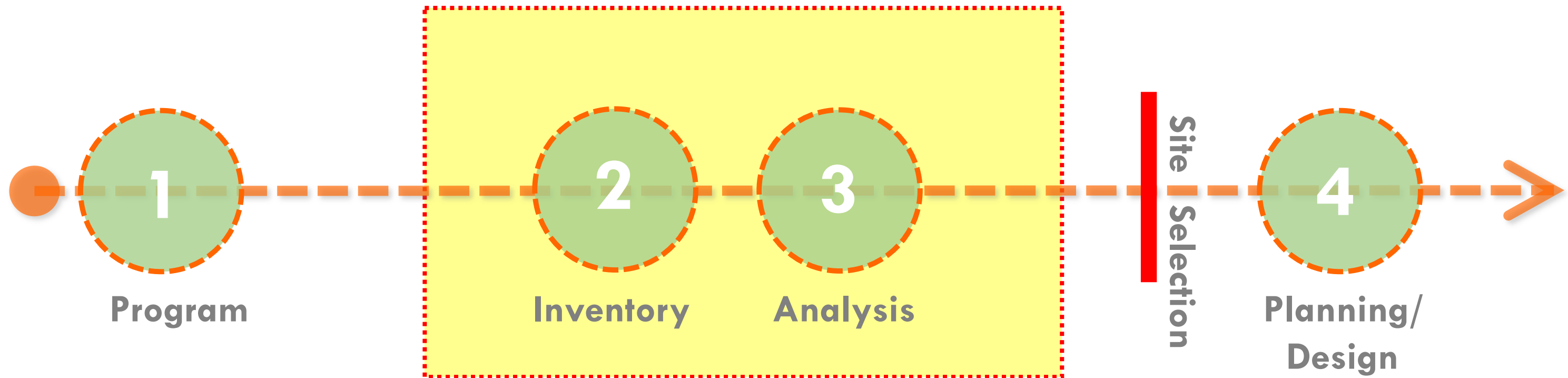
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- We promote and encourage academic-based collaborative research (service learning) with an emphasis on "real world" projects as they apply to sustainable development.



The UConn/CRDC Team Post-Doc Mariana Fragomeni, Associate Professor/Director Peter Miniutti ,Adjunct Instructor Natalie Miniutti, Undergraduates Stephen Kelly & Sybren Hoekstra, PhD student Tao Wu

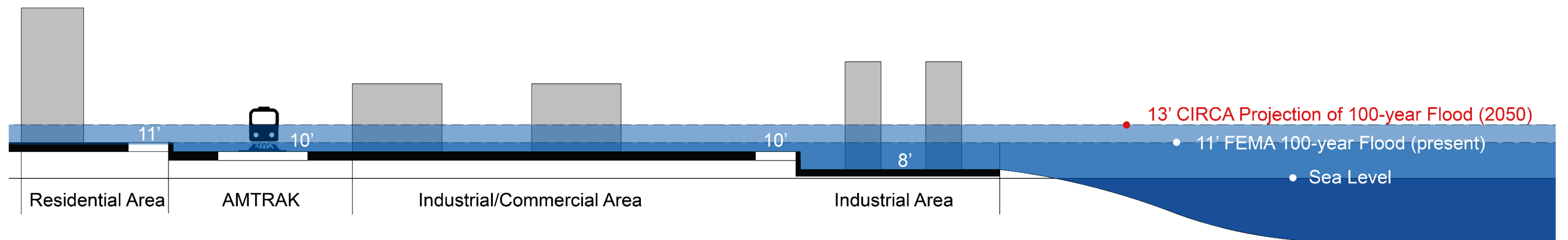
The “Design Process”

Mapping



Inventory and analysis of all pertinent existing information, including town, state, and federal mapping; special interest groups; and previous studies. (both from the private and public sector).

Methodology – LUV & Shared Risk

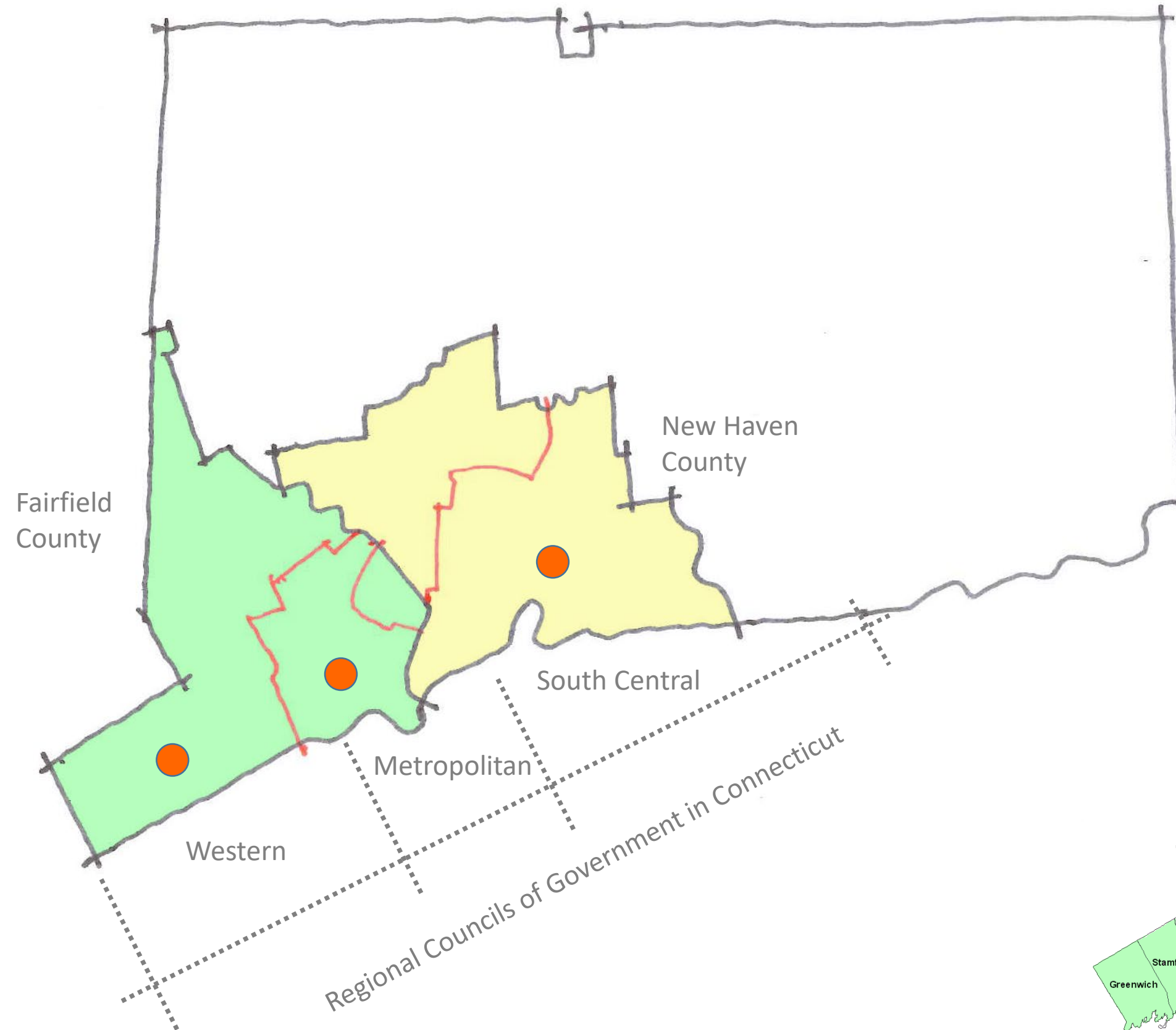


What is the most efficient and effective method to mitigate the negative consequences of water rise while improving the quality of life for all living things (humans, flora & fauna) ?

Location

State of Connecticut:

- 2 counties – Fairfield & New Haven
- 50 Towns/15 on Sound
- 3 Planning agencies
- 3 projects



Location



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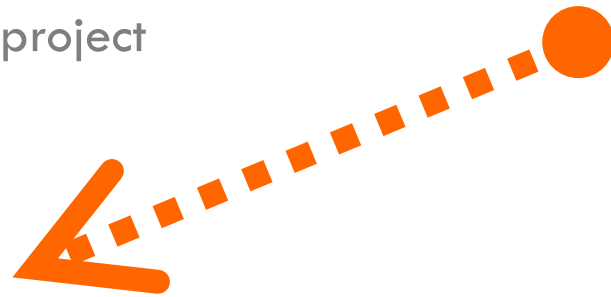
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Our Products

Topography/
Elevation
Map

Projected
Flooding
Map

1

Map FEMA & CIRCA data on sea level rise and produce maps to clearly communicate the affects of projected water rise over time in New Haven and Fairfield Counties.

Ecological
Systems
Map

Structures &
Roadways
Map

Land Uses &
Social
Characteristics
Map

2

Create Town Level Resource Maps to be used by designers (landscape architects, engineers, etc.), decision makers and citizens to understand the context of proposed infrastructure improvements. The goal is to mitigate the negative effects of water rise while improving the overall quality of life of all living things.

Areas of Shared Risk
Map & Data

3

Areas of Shared Risk

Topography

Topography/
Elevation
Map

Projected
Flooding
Map

1

Ecological
Systems
Map

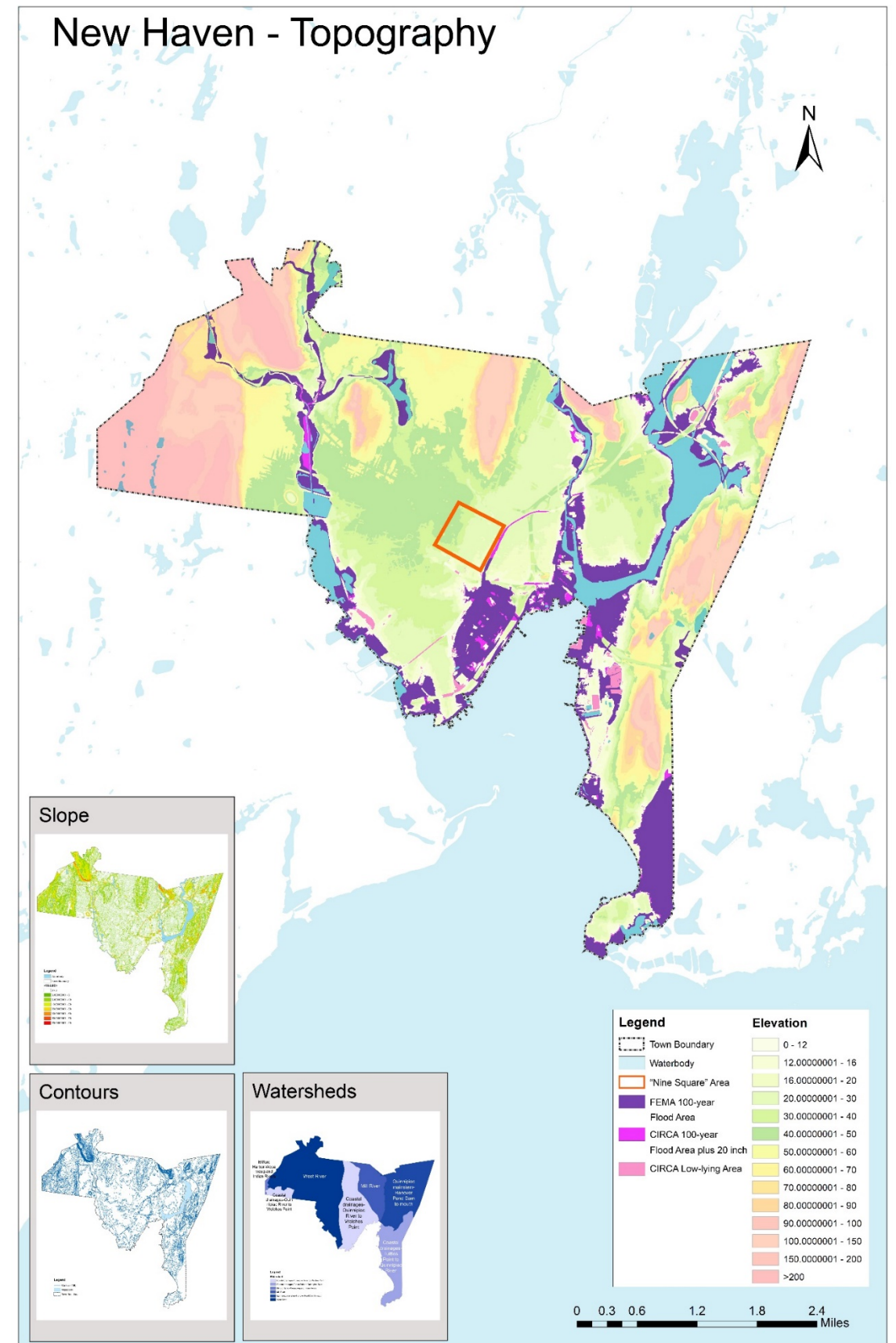
Structures &
Roadways
Map

Land Uses &
Social
Characteristics
Map

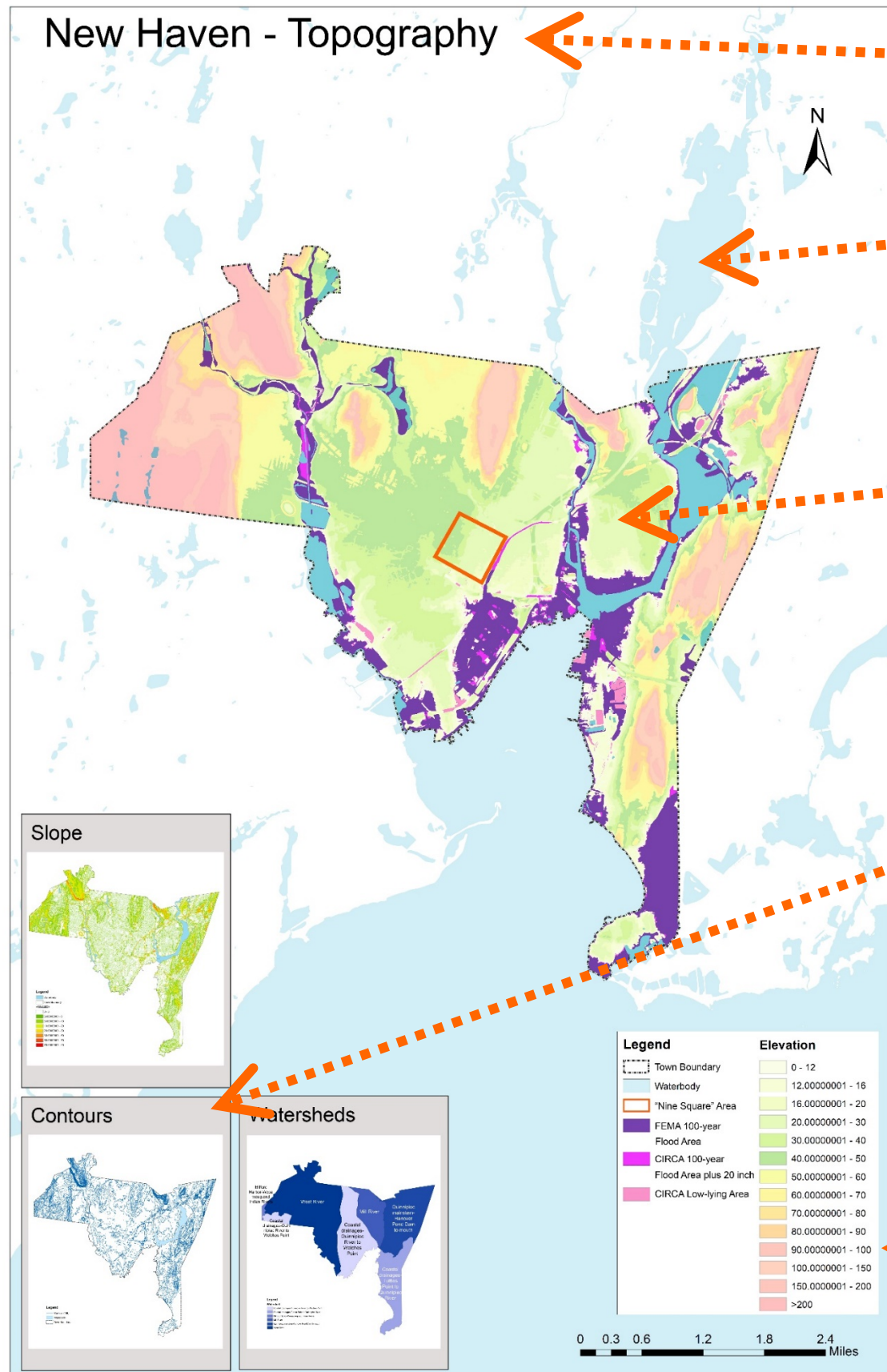
2

Areas of Shared Risk
Map & Data

3



Topography



Map title

Base context information

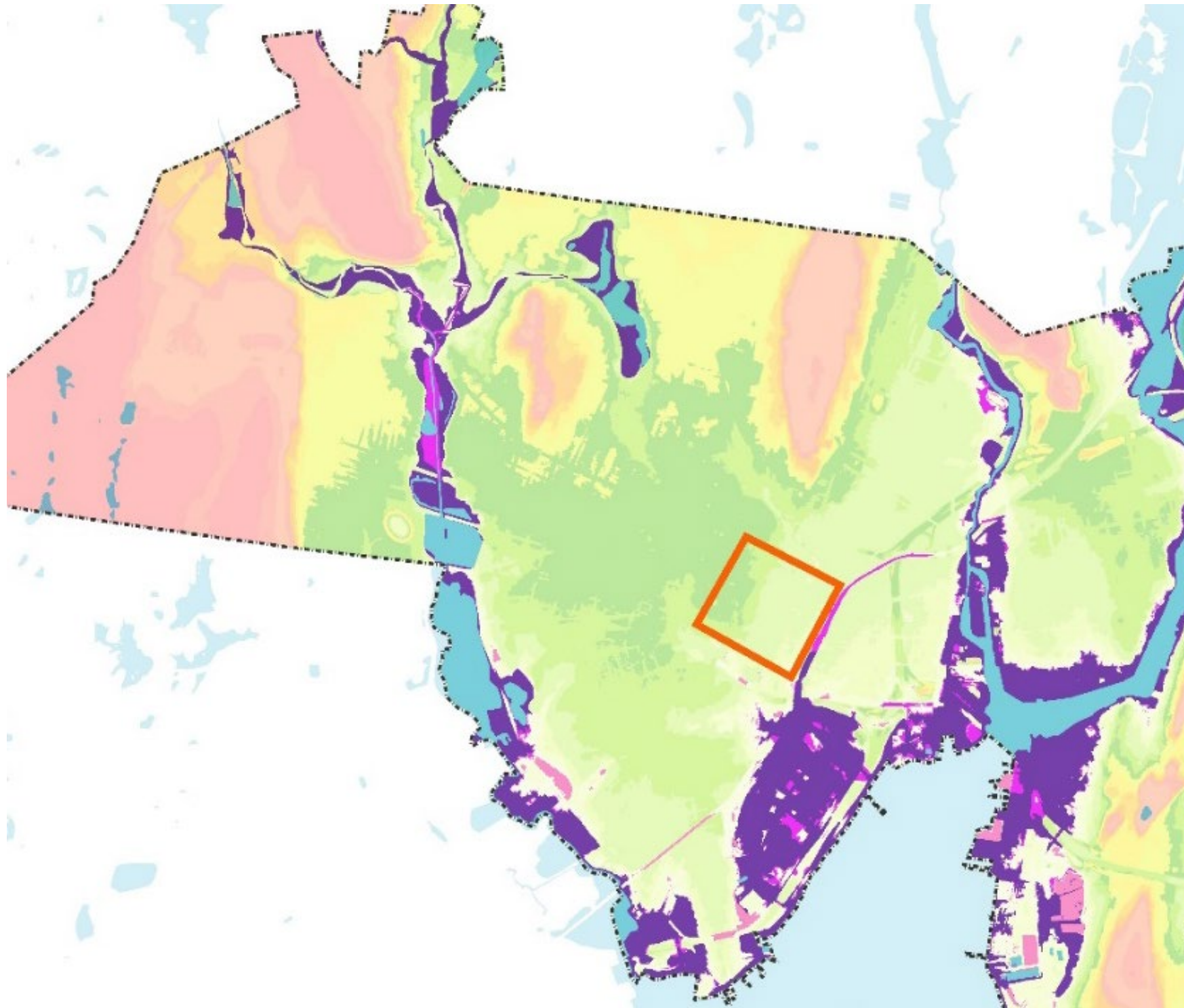
Primary map content

Supporting information:

- Degree of slope
- Contours
- Watersheds

Legend

Topography



Legend

- Town Boundary
- Waterbody
- "Nine Square" Area
- FEMA 100-year Flood Area
- CIRCA 100-year Flood Area plus 20 inch
- CIRCA Low-lying Area

Elevation

- 0 - 12
- 12.00000001 - 16
- 16.00000001 - 20
- 20.00000001 - 30
- 30.00000001 - 40
- 40.00000001 - 50
- 50.00000001 - 60
- 60.00000001 - 70
- 70.00000001 - 80
- 80.00000001 - 90
- 90.00000001 - 100
- 100.00000001 - 150
- 150.00000001 - 200
- >200

Flood Projections

Topography/
Elevation
Map

Projected
Flooding
Map

1

Ecological
Systems
Map

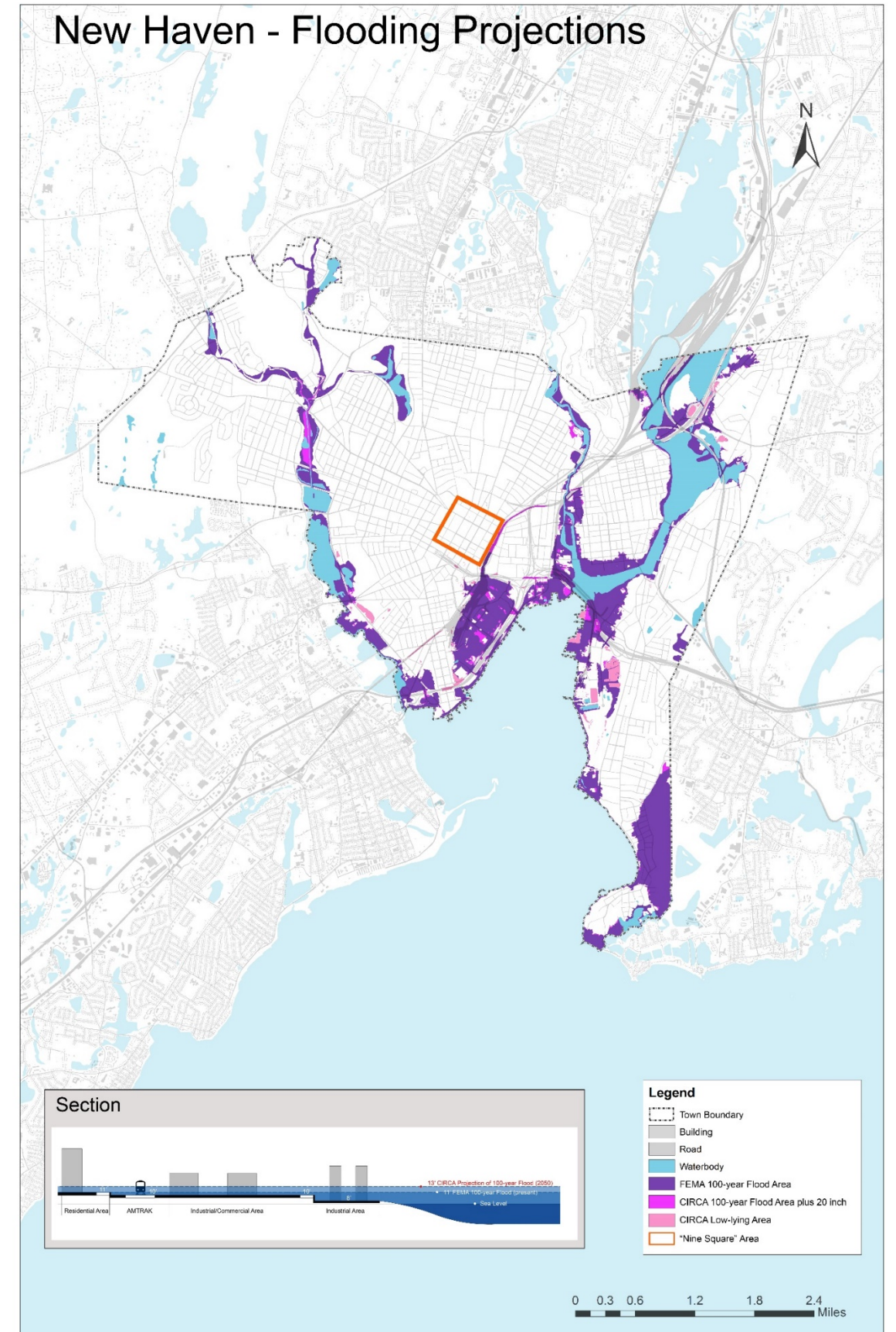
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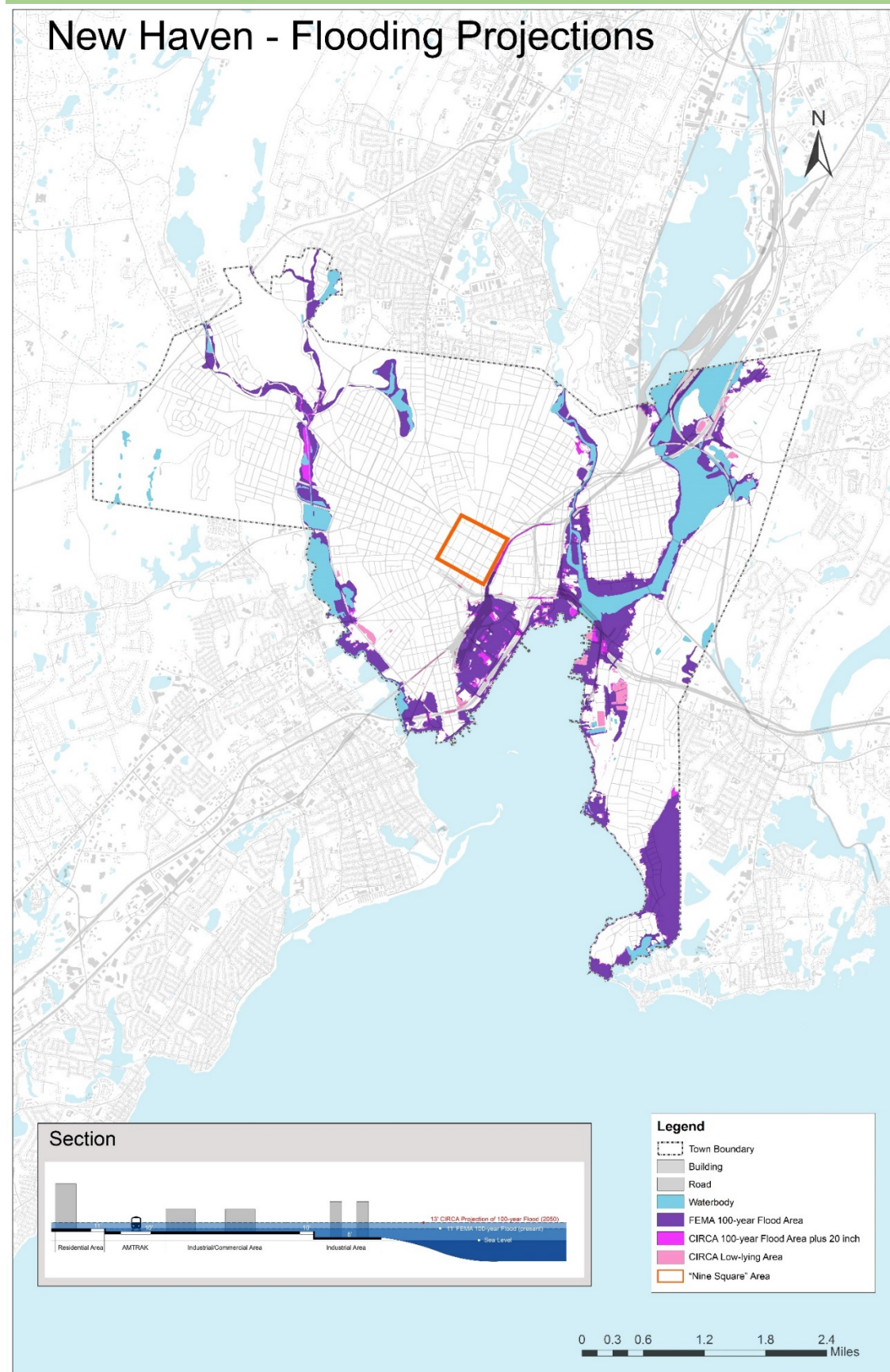
2

Areas of Shared Risk
Map & Data

3



Flood Projections



Based on CIRCA 100 year plus 20 inches projections:

Watersheds

- Approximately 2193.33 acres of the watersheds would be impacted (17.92%).
- Most impacted Subregion Watershed – South Central Shoreline (912.59 acres/ 21.75%) and Quinnipiac River (736.82 acres/ 29.34%)

Infrastructure

- A total of 1678 buildings would be under water and 116.68 acres of roadway areas would be impacted by flooding.









Vulnerability and Opportunity

- Approximately 695.45 acres are socially vulnerable according to the Social Vulnerability Index (CDC)
- An estimated 570.48 acres are areas identified as Opportunity Zones.

Flood Projections



Legend

-  Town Boundary
-  Building
-  Road
-  Waterbody
-  FEMA 100-year Flood Area
-  CIRCA 100-year Flood Area plus 20 inch
-  CIRCA Low-lying Area
-  "Nine Square" Area

Ecological Systems

Topography/
Elevation
Map

Projected
Flooding
Map

1

Ecological
Systems
Map

Structures &
Roadways
Map

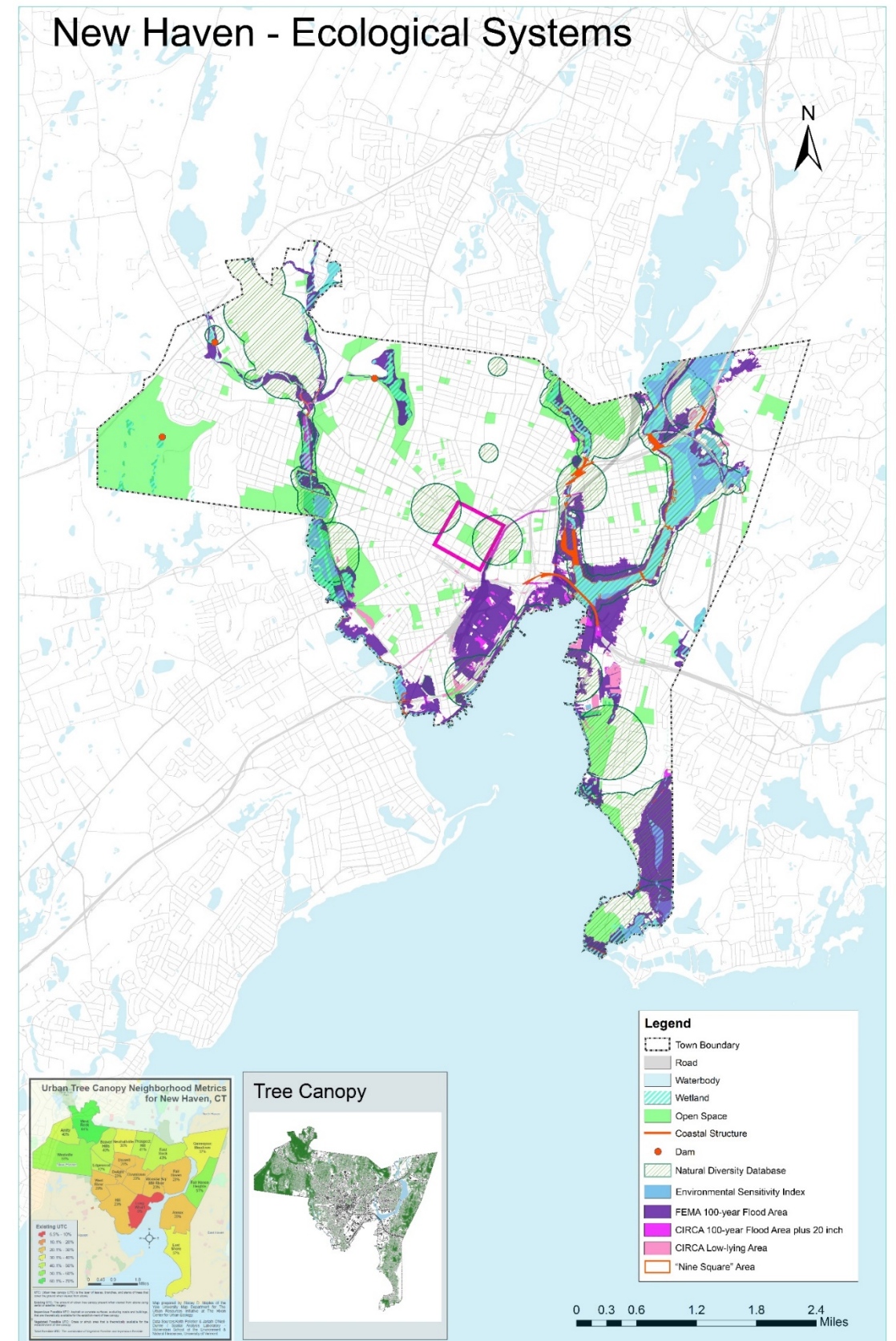
Land Uses &
Social
Characteristics
Map

2

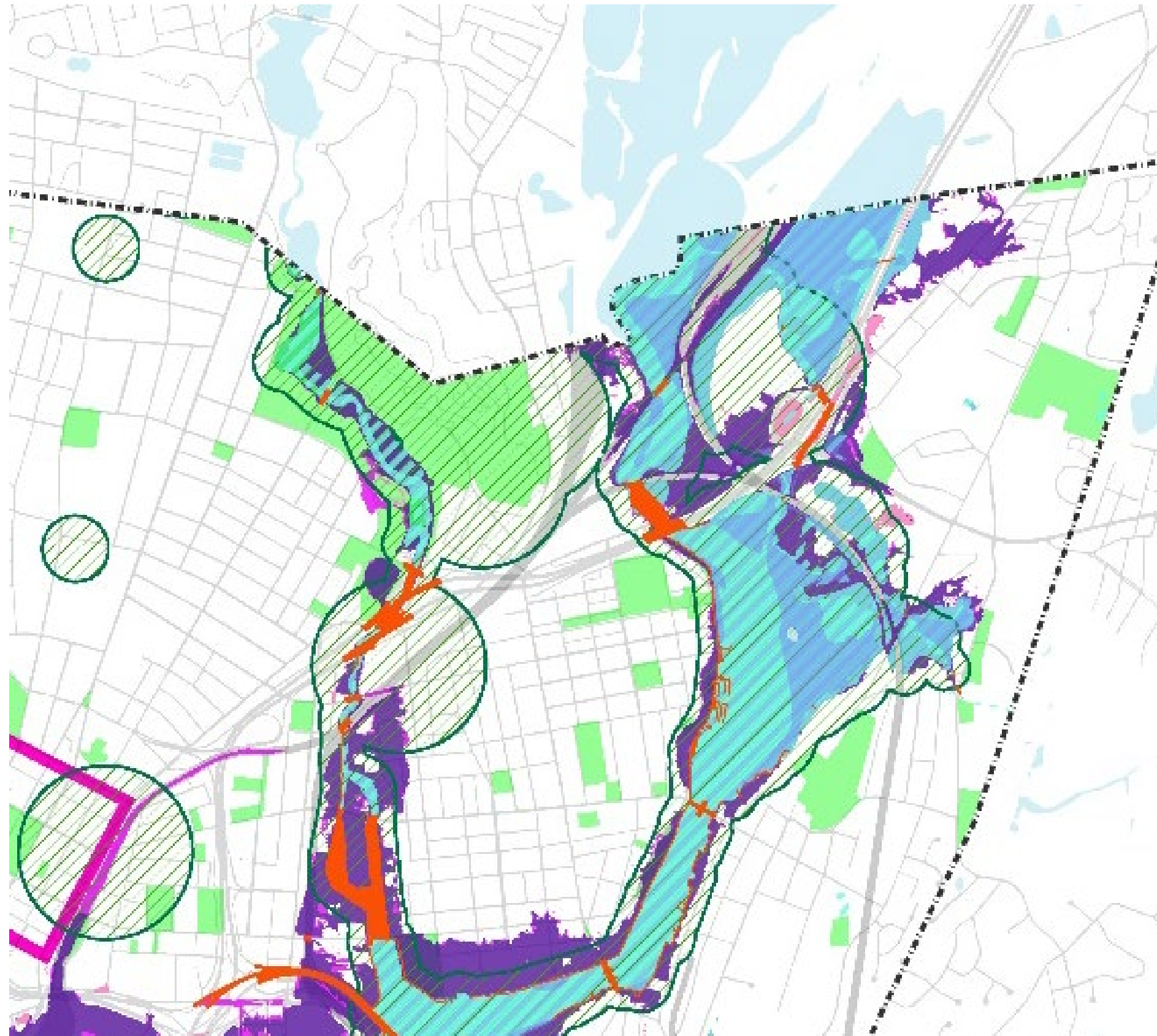
Areas of Shared Risk
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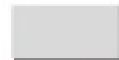


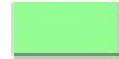








New Haven - Ecological Systems



Ecological Systems



Legend

-  Town Boundary
-  Road
-  Waterbody
-  Wetland
-  Open Space
-  Coastal Structure
-  Dam
-  Natural Diversity Database
-  Environmental Sensitivity Index
-  FEMA 100-year Flood Area
-  CIRCA 100-year Flood Area plus 20 inch
-  CIRCA Low-lying Area
-  "Nine Square" Area

Structures & Roadways

Topography/
Elevation
Map

Projected
Flooding
Map

1

Ecological
Systems
Map

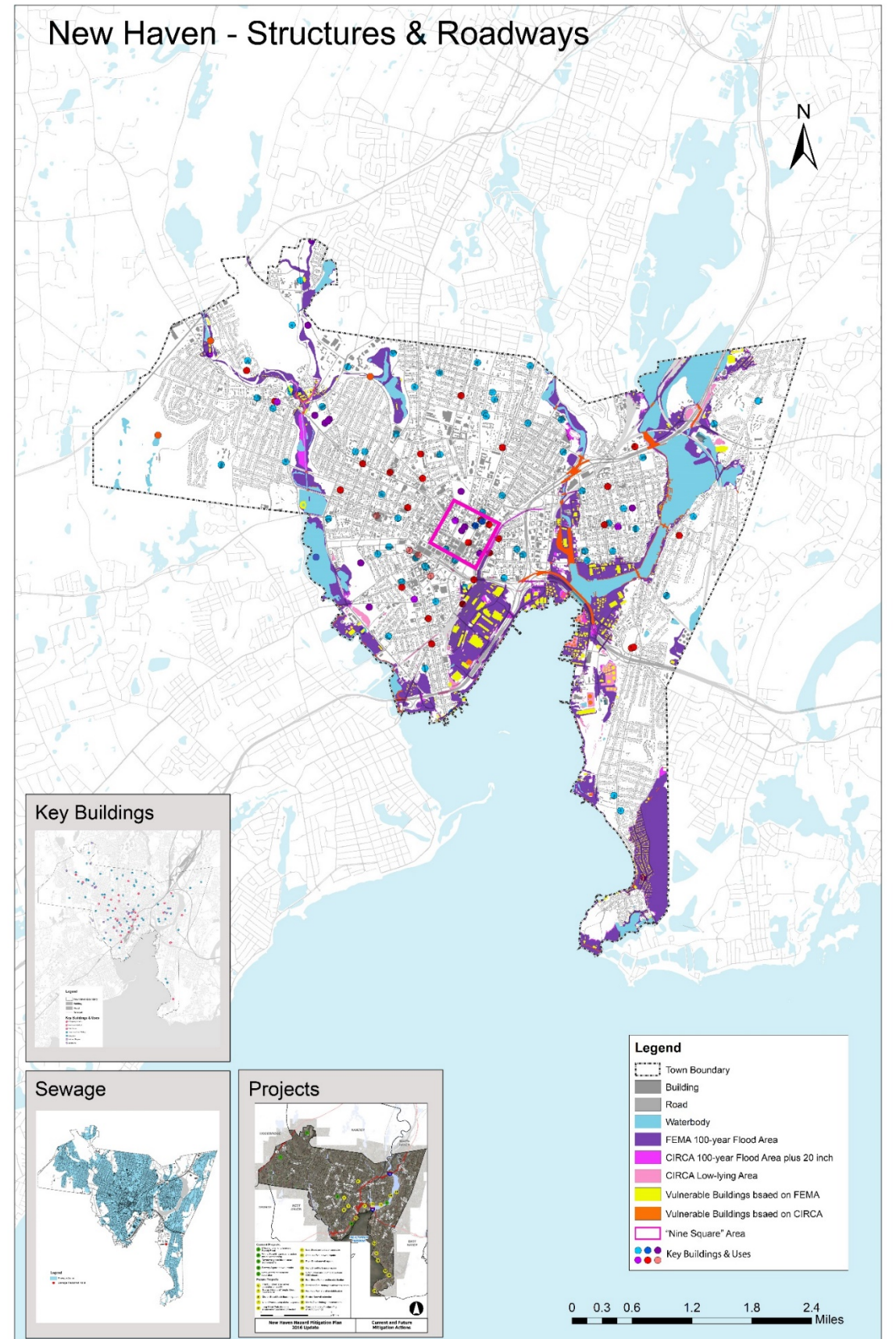
Structures &
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Land Uses &
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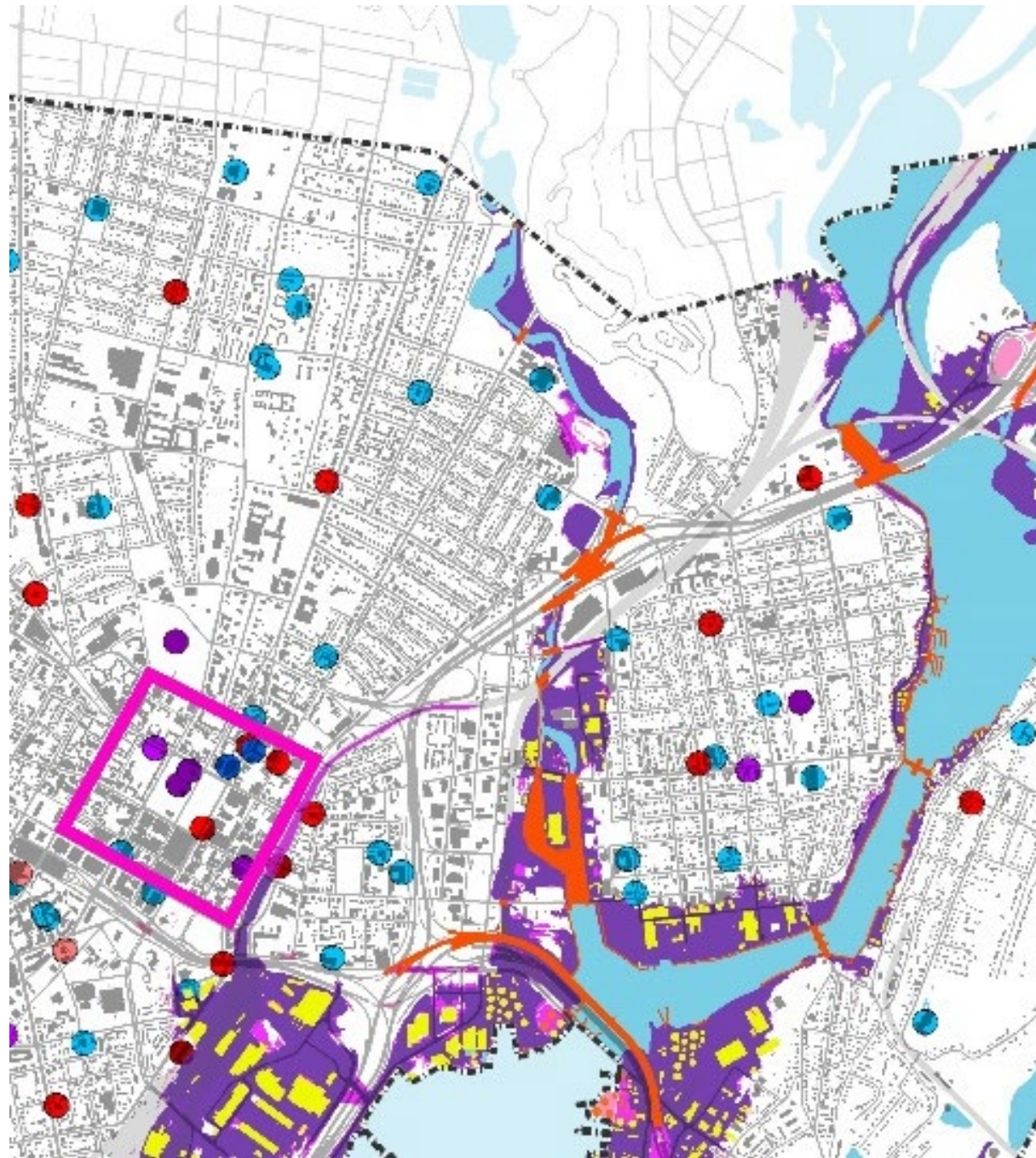
2

Areas of Shared Risk
Map & Data

3



Structures & Roadways



Legend

-  Town Boundary
-  Building
-  Road
-  Waterbody
-  FEMA 100-year Flood Area
-  CIRCA 100-year Flood Area plus 20 inch
-  CIRCA Low-lying Area
-  Vulnerable Buildings based on FEMA
-  Vulnerable Buildings based on CIRCA
-  "Nine Square" Area
-  Key Buildings & Uses

Land Uses & Social Characteristics

Topography/
Elevation
Map

Projected
Flooding
Map

1

Ecological
Systems
Map

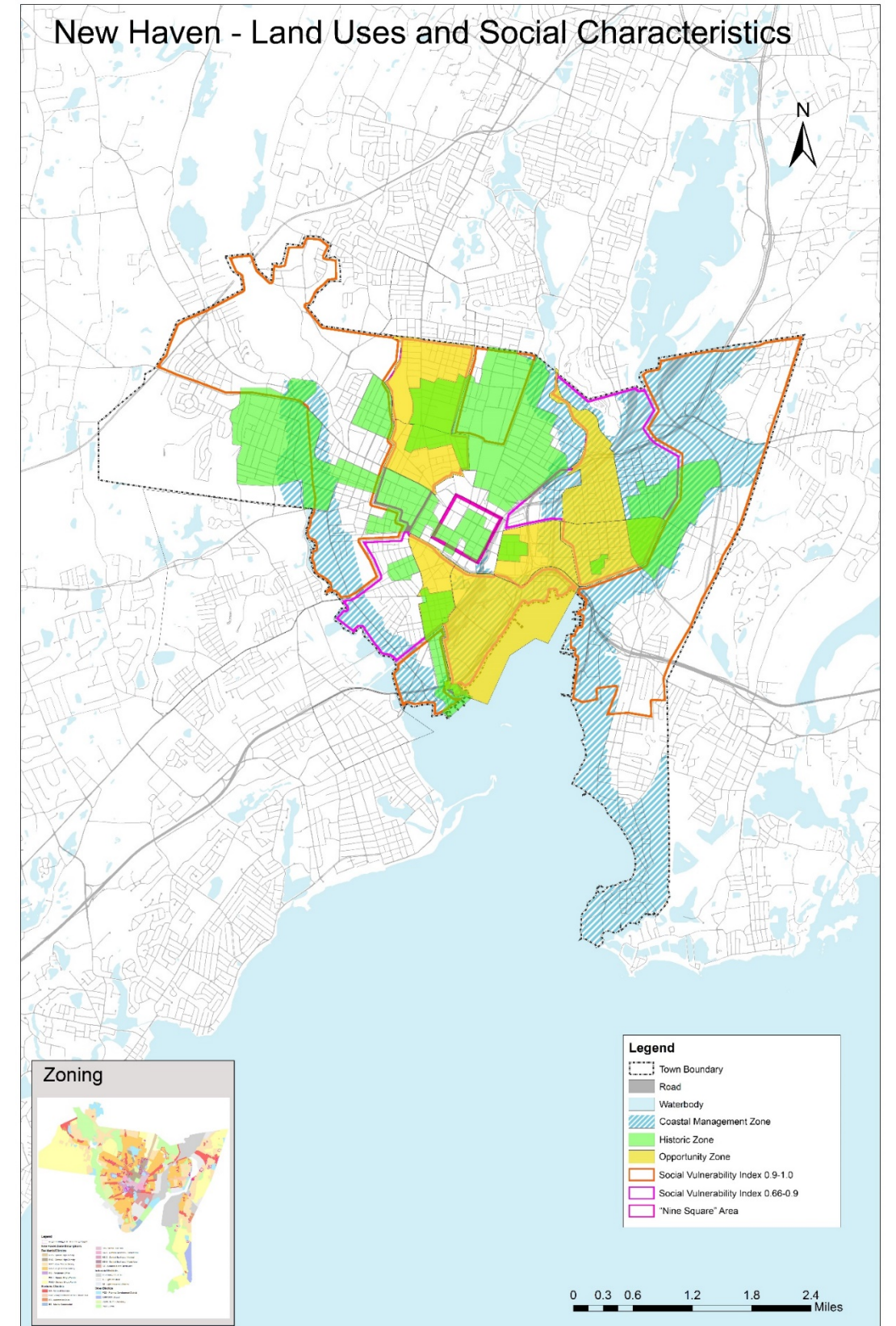
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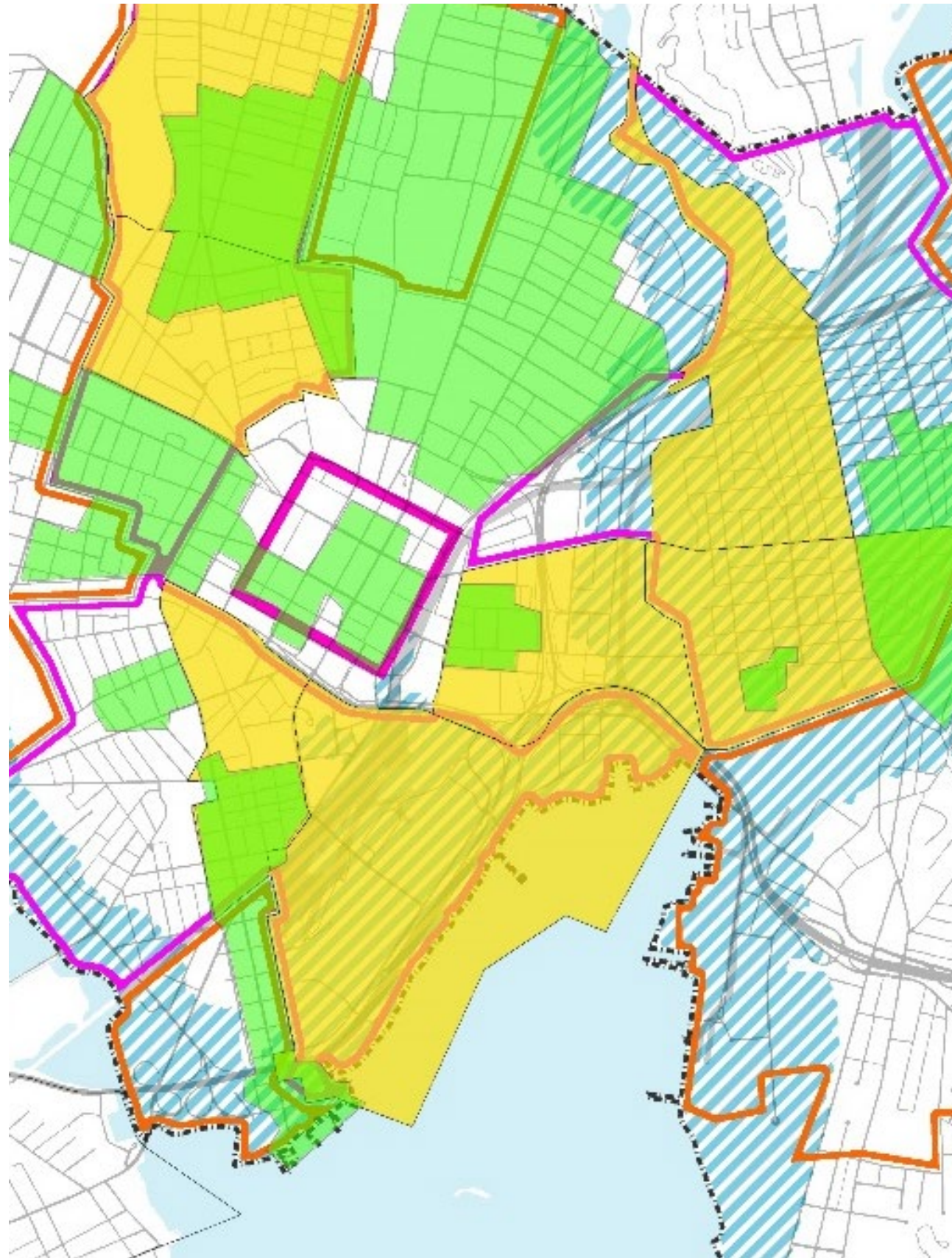
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Areas of Shared Risk
Map & Data



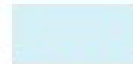

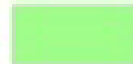
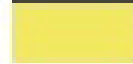



3



Land Uses & Social Characteristics



Legend

-  Town Boundary
-  Road
-  Waterbody
-  Coastal Management Zone
-  Historic Zone
-  Opportunity Zone
-  Social Vulnerability Index 0.9-1.0
-  Social Vulnerability Index 0.66-0.9
-  "Nine Square" Area

Shared Risk Zones

Topography/
Elevation
Map

Projected
Flooding
Map

1

Ecological
Systems
Map

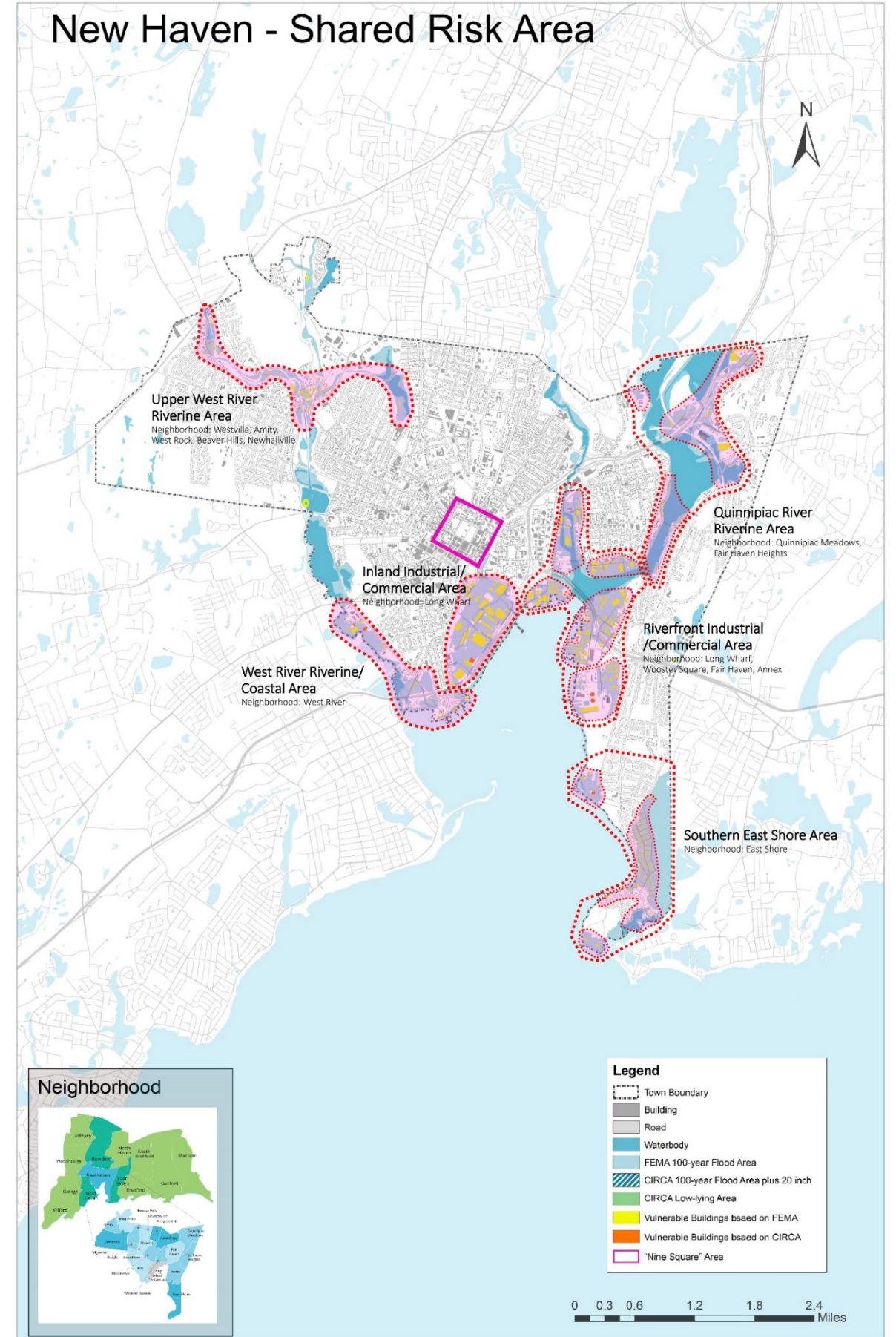
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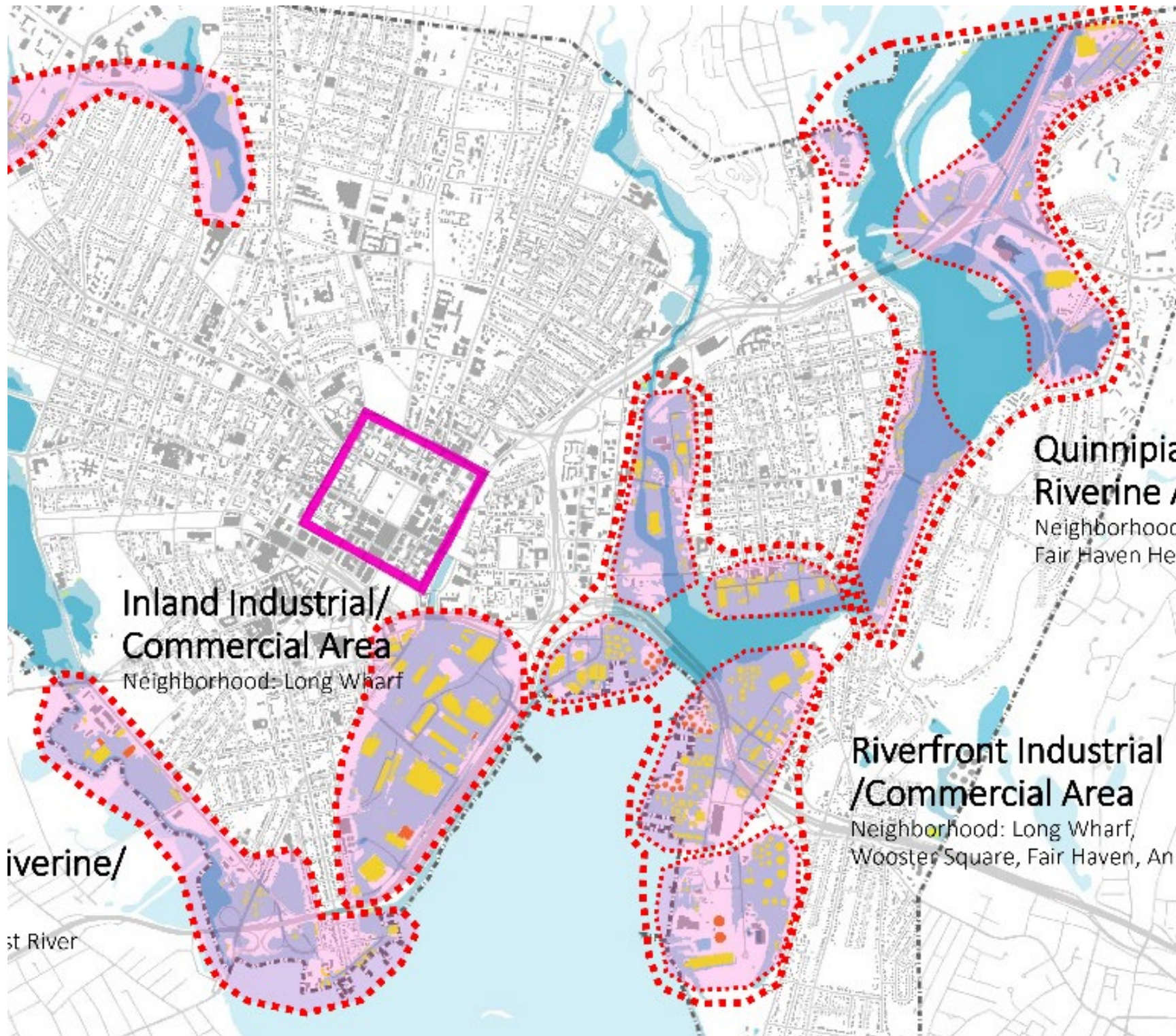
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Areas of Shared Risk
Map & Data

3



Shared Risk Zones



Legend

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