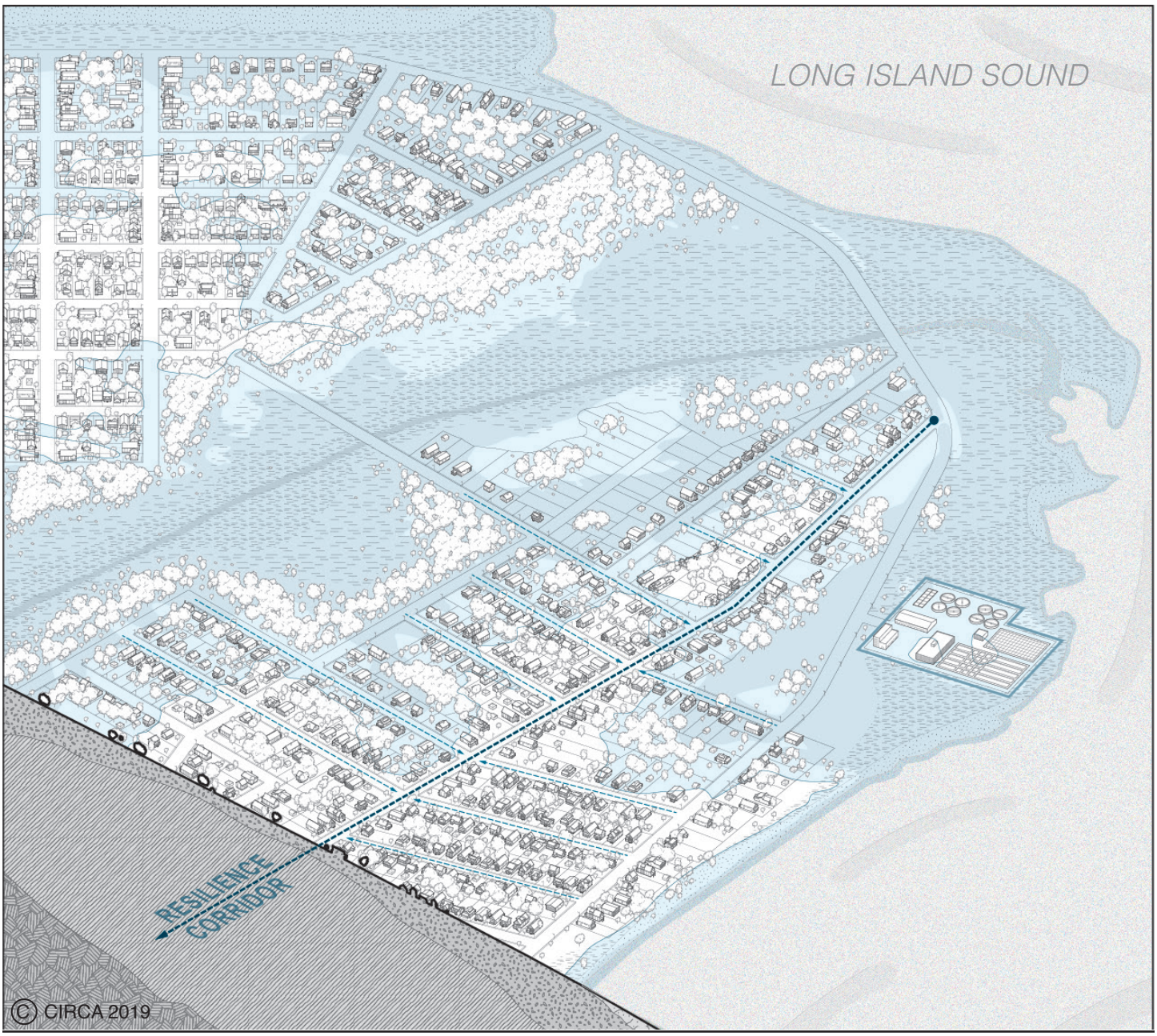
Resilient Connecticut



Planning Framework

Connecticut Institute for Resilience and Climate Adaptation

UCONN
UNIVERSITY OF CONNECTICUT
CIRCA
CONNECTICUT ENERGY ENVIRONMENT
CONNECTICUT
Department of Housing
U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

Resilient Connecticut Planning Framework

Connecticut Institute For Resilience and Climate Adaptation

1080 Shennecossett Road Marine Sciences Building, Groton, Connecticut 06340
Phone: 860.405.9228 Email: circa@uconn.edu Website: https://resilientconnecticut.uconn.edu/
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The Connecticut Institute for Resilience and Climate Adaptation (CIRCA) provides technical analysis and innovative planning tools for a climate resilient Connecticut. Our technical analysis is informed through field research. Information is disseminated through Public engagement. This document outlines strategies for the Resilient Connecticut planning process. The Resilient Connecticut Planning Framework (RCPF) informs the objectives and scope for Phases II & III of Resilient Connecticut.

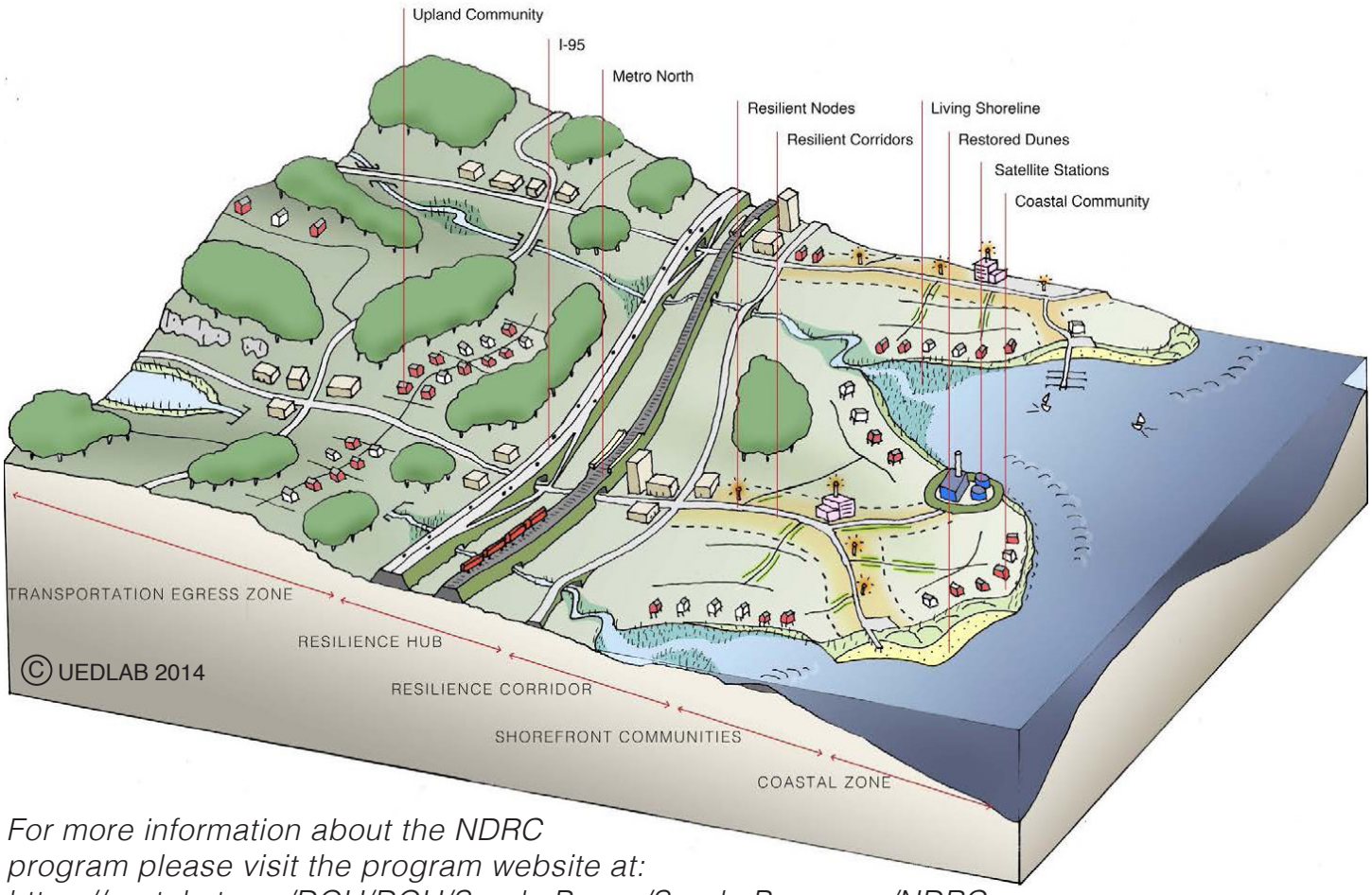
WHAT IS RESILIENT CONNECTICUT?

The Resilient Connecticut Project originated through the development of the State of Connecticut's Phase II application to the HUD National Disaster Resilience Competition (NDRC), and through a partnership between the State Agencies Fostering Resilience Council (SAFR), the Connecticut Department of Housing (DOH), the University of Connecticut Institute for Resilience and Climate Adaptation (UConn, CIRCA) and the Yale University Urban Ecology and Design Lab (UEDLAB). The goal of the Phase II program is to develop a long-term resilience plan for the State of Connecticut to address the challenges of climate change and build a sustainable economic future for the State. The project will generate recommendations for a Statewide Resilience Road map that includes regional resilience and adaptation planning, policy consideration, and actionable priorities. In addition, science-based regional risk assessments will inform municipal to regional scale initiatives and pilot projects. Resilient Connecticut's guiding principle is to establish resilient communities through smart planning that incorporates economic development framed around resilient transit-oriented development, conservation strategies, and critical infrastructure improvements.

To learn more about Resilient Connecticut, visit: https://resilientconnecticut.uconn.edu/

THE PLANNING PROCESS

The Resilient Connecticut regional planning process will look for regional opportunities across vulnerable areas of Fairfield and New Haven Counties where the Team working with stakeholders can develop innovative climate adaptation solutions. Fairfield and New Haven Counties include the region most impacted by Superstorm Sandy, the qualifying disaster for the NDRC Award as determined by HUD.



For more information about the NDRC program please visit the program website at: https://portal.ct.gov/DOH/DOH/Sandy-Pages/Sandy-Programs/NDRC

The long-term vision for establishing resilient communities developed through the NDR application and stakeholder engagement process includes the following themes:

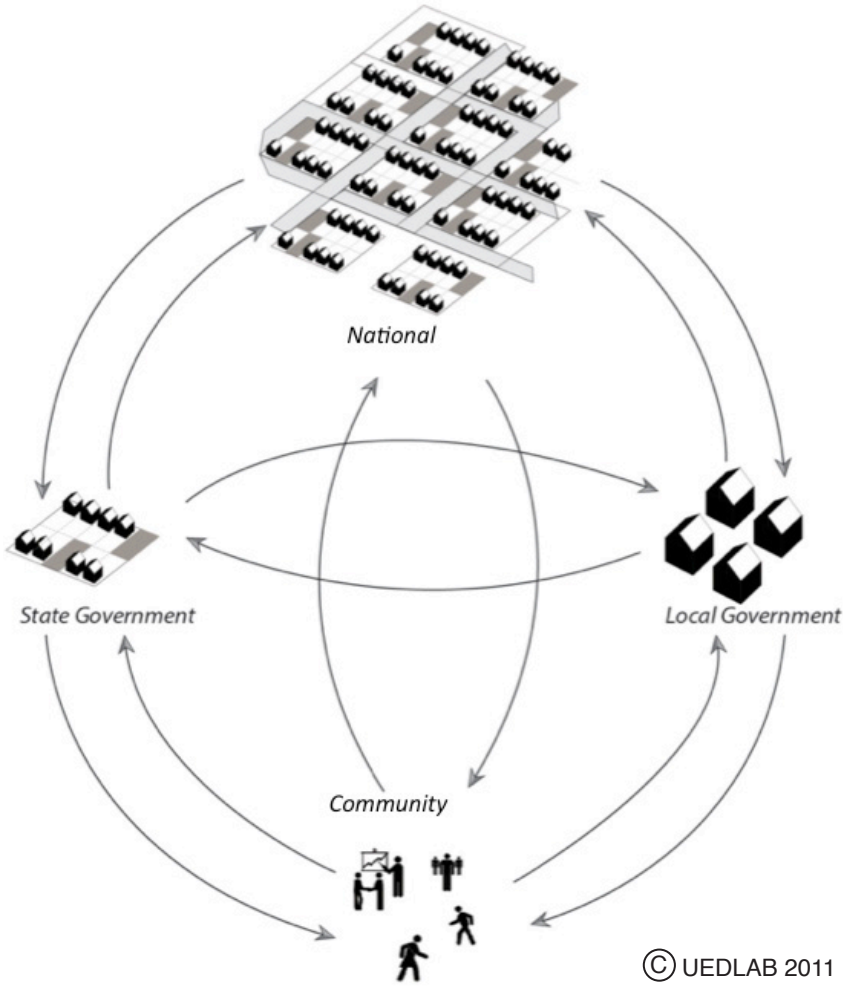
- Focusing community development around transit (resilient TOD);
- Creating corridors resilient to climate change (Resilient Corridors);
- Creating opportunities for affordable housing, and preserving and enhancing the quality of life of existing affordable communities;
- Developing energy, economic, and social resilience;
- Increasing transit connectivity;
- Adapting structures and critical infrastructure in the flood zone to withstand occasional flooding, and;
- Protecting communities through healthy buffering ecosystems, where critical services, infrastructure and transport hubs are located on safer, higher ground, and where strong connections exist between the two.

1. Set the Stage – Establish Project Partnerships, Goals and Regional Scope Informing Locations and Scales

a. Define relevant partnerships between stakeholders, building on existing and creating new collaborative partnerships where needed (e.g. between municipalities, regional councils of governments, state agencies, utilities, and others) to identify climate vulnerabilities and to enable comprehensive regional adaptation approaches that reduce shared risks. Capitalize on existing communication, coordination, and working relationships between municipalities and regional councils of government. Promote inter-municipal coordination, cooperation, and assistance to address shared hazards.

b. Establish clear goals and objectives including project scales and boundaries considering the project context, participants, scope, budget and time frame.

c. Build on the state's approach of assessing the patterns imposed by Connecticut's geologic, watershed, and political boundaries, overlaid with existing infrastructure to define regional project scales. This includes looking at regional transportation, energy, water, housing, health, ecological, and commercial infrastructure systems and the unique geography of Connecticut.



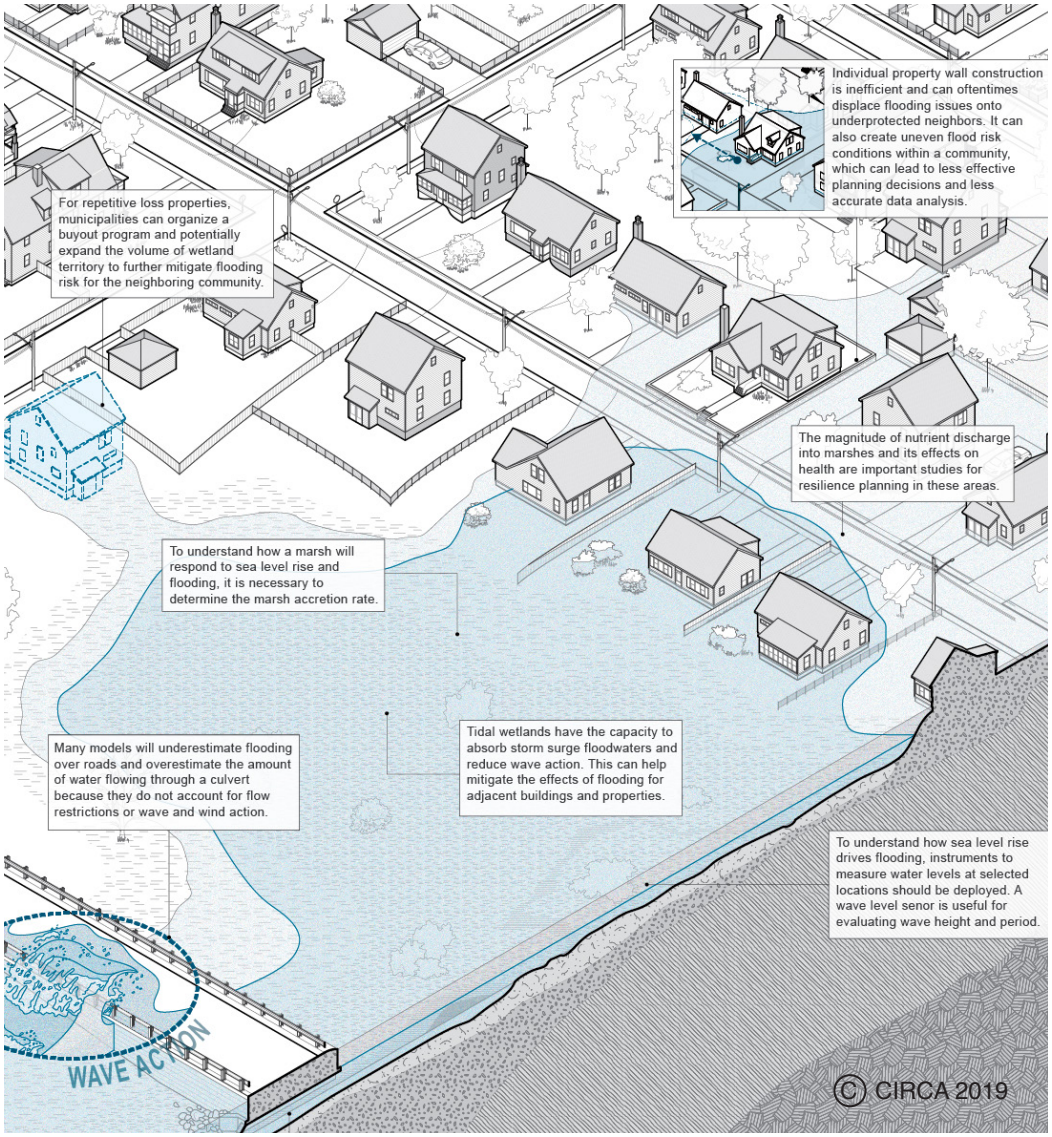
d. Collect, organize and evaluate available planning documents and data sources, identify critical assets, and areas of planned conservation and development. Identify existing planning processes within and between towns, regional councils of government, and state agencies, building on previous climate adaptation efforts where possible and avoiding duplicative efforts. Identify barriers and opportunities in the planning process to achieving local and regional resilience.

2. Apply Robust Science and Technical Analysis to Planning

a. Utilize projected climate change scenarios using CIRCA's vulnerability assessment and other tools to establish a shared baseline understanding of climate change risks and their regional impacts in Connecticut.

b. Identify and model climate risks and interdependencies of critical regional infrastructure systems such as transportation, ecology, energy, water, housing, health, and socio-cultural spaces.

c. Define regional scale challenges and downscale the modeling of climate change impacts (e.g. the predicted effects of sea-level rise, precipitation, and temperature changes) across near, mid, and long term timescales.



d. Use analysis to identify regional challenges. Map "Zones of Shared Risk" at regional, sub-regional, and municipal scales in New Haven and Fairfield Counties. Identify areas of vulnerability exacerbated by issues of existing environmental degradation, economics, health, or historically disadvantaged communities.

e. Define additional data needed including social, ecological, and economic factors to inform technical and planning practices and to refine CIRCA's vulnerability assessment.

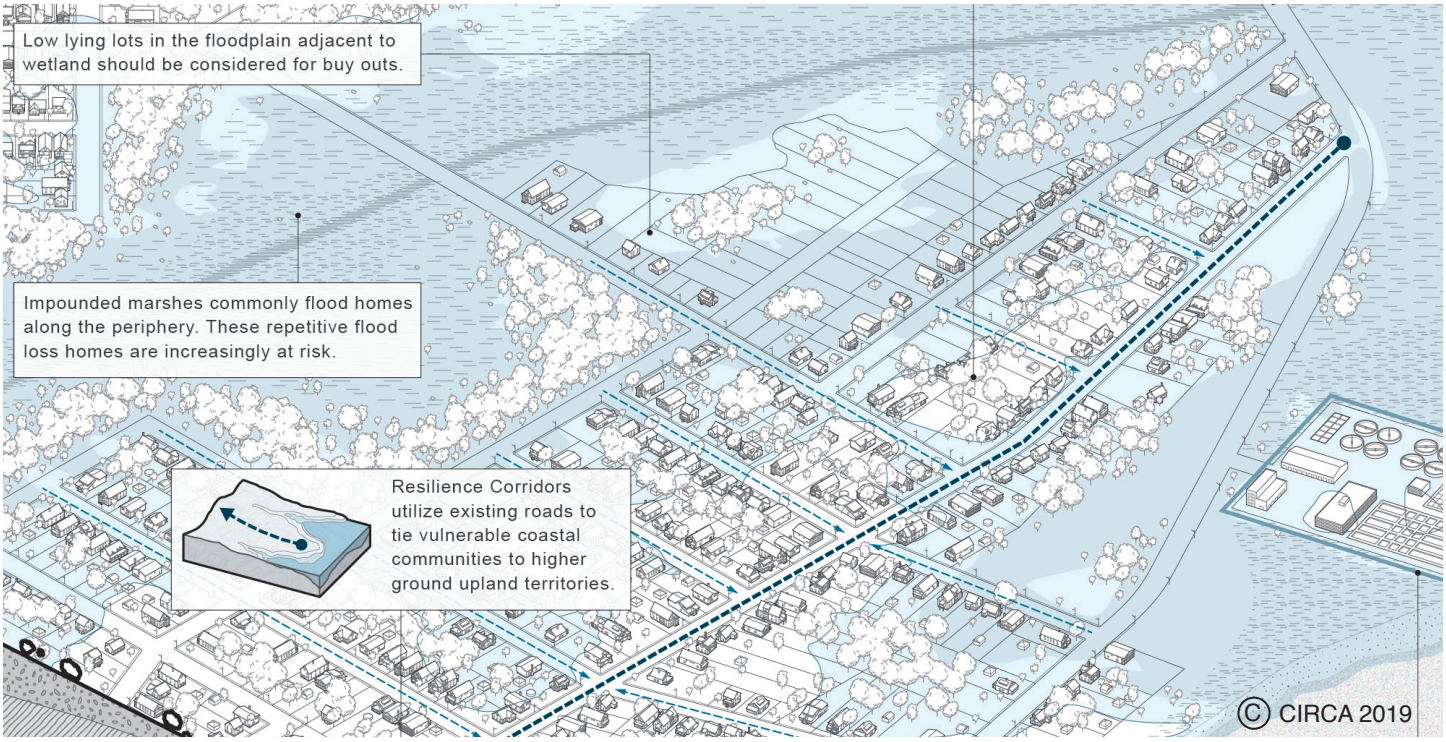
f. Collaborate with research scientists and practitioners to establish field research protocols and modeling to further refine the assessment of climate risks and inform adaptation scenarios.

g. Coordinate with regional councils of governments, state agencies, and municipalities to refine the technical tools for ease of use and communication.

3. Develop Adaptation Scenarios Through Inclusive and Participatory Engagement and Effective Planning

a. Incorporate an inclusive and participatory stakeholder engagement process; working towards the development of regional and cross-jurisdictional capacity for shared decision-making, investment, and project implementation.

b. Through an inclusive engagement process, incorporate local knowledge from diverse perspectives to further refine a shared understanding of vulnerabilities and strengths. Share the results of the scientific and technical analysis with stakeholders to build community capacity.



c. Identify regional “resilience corridors ” and “resilient transit-oriented development opportunities” at the watershed and cross-jurisdictional scales, tying adaptation planning to economic development opportunities; build on the concept of community identified strengths and opportunities.

d. Work with engineering, planning, and design teams to identify, design and evaluate adaptation strategies incorporating modeling, field research, and technical analysis to inform planning scenarios. Capture ordinances, codes, and/or regulations that may or may not hinder implementation of the projects.

4. Enact Equitable & Informed Prioritization of Site-scale Pilot Projects

a. Identify the highest priority projects through inclusive stakeholder engagement processes.

b. Focus on implementable projects or include buildable projects as components of larger visionary projects.

c. Incorporate the Resilient Connecticut PERSISTS decision support criteria to assess near, mid, and long term strategies:

Permittable	can get all necessary federal, state and local permits
Equitable	considers impacts to vulnerable populations
Realistic	can be realistically engineered and is plausibly fundable
Safe	reduces risks to people and infrastructure
Innovative	process has considered innovative options
Scientific	apply and improve on the best available science
Transferable	can serve as a model for other communities
Sustainable	socially, economically, and ecologically sustainable and supported by the public and leadership

d. Prioritize and select pilot projects and develop implementation plans including conceptual designs, cost estimates, and proposed funding pathways.

e. Develop a quantitative and qualitative cost/benefit analysis of identified projects.

5. Develop Funding, Policy, Implementation and Monitoring Strategies with Recommendations for a Statewide Resilience Road map

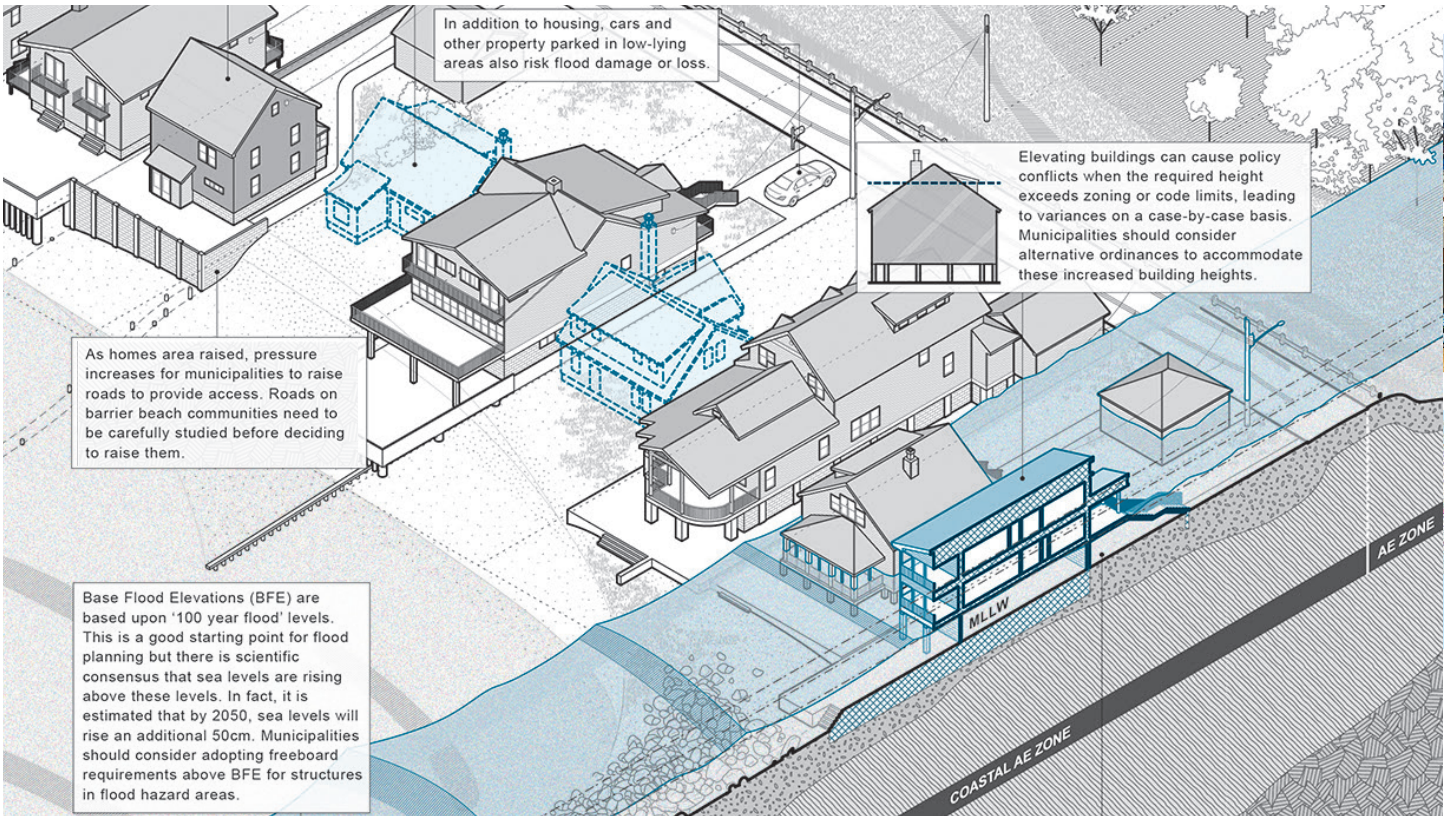
a. Develop funding strategies for selected projects.

b. Develop projects towards implementation with design drawings and budgets.

c. Identify models of inter-agency cooperation across scales, jurisdictions, and missions that can continue to build capacity moving forward.

d. Inform legislative strategies for a statewide climate adaptation and resilience program.

e. Develop monitoring protocols to measure the impact of resilience strategies over time.



f. Generate recommendations for a Statewide Resilience Road Map, including:

- State and local policies
- Opportunities to improve existing planning processes and capacity at local, regional, and state levels
- Resilient Transit-Oriented Development
- Innovative planning, design, and engineering approaches
- Science and research needs going forward
- Communication and engagement
- Future funding for climate adaptation

Definitions

Resilient Connecticut Team (RCT): includes CIRCA staff, Regional Councils of Governments staff, Municipal Government staff, and State Agency Partners.

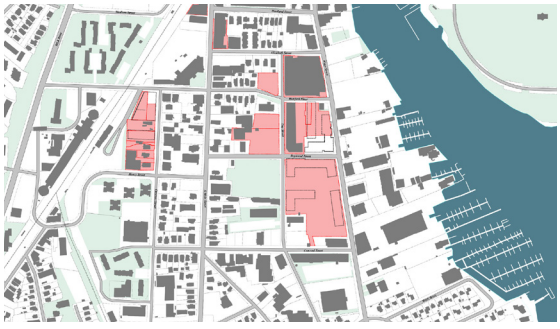
Resilient Connecticut Planning Framework (RCPF): The RCPF outlines strategies for the Resilient Connecticut planning process, and informs the objectives and scope for Phases II & III of Resilient Connecticut.

Councils of Government (COG) / Regional Councils of Government (RCOG): in the State of Connecticut. West COG, Metro COG, Naugatuck Valley COG, and South Central Regional COG are participants in HUD NDR.

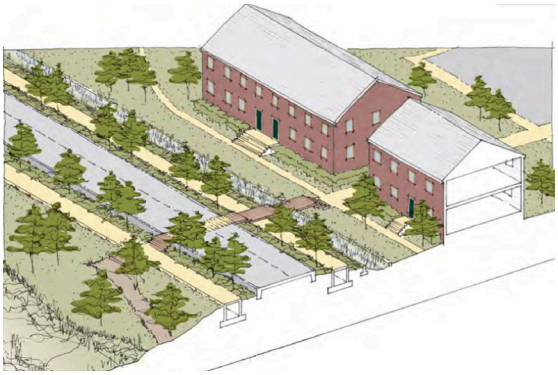
Resilient Transit-Oriented Development Opportunities (RTOD): The investment and development of residential, commercial, and employment centers that fosters smart growth and that meet transit supportive standards for land uses, built environment densities, and walkable environments. Resilient TOD Opportunities consider the impacts of climate change and ensure community investments will be resilient in the future. They are typically built within one-half mile of walking distance of public transportation facilities, including rail and bus rapid transit and services.

Resilient Corridors: These are converted from one-half mile diameter zones around transit hubs (TOD) into corridors running along selected evacuation routes and connecting upland areas where resources exist down to shore front communities across transit hubs. They serve as strategic investment zones resilient to climate change that reinforce egress and access routes. These urban redevelopment corridors support transportation, utilities, stormwater and habitats, and economic development.

Zones of Shared Risk (ZoSR): are areas of land with groups of people who face common challenges. This can include the houses, land, infrastructure, hydrology, ecology, and social elements. Zones of shared risk can include a variety of criteria including issues of access (entry/exit blocked by flooding), location (low-lying land within an area), proximity (low-lying adjacent land), and function (natural areas providing flood protection). Risks are shared among or between groups of people that may have different perspectives and priorities for coastal living.



CDBG-DR: Community Development Block Grant –Disaster Recovery. The CDBG-DR program utilizes congressionally appropriated funding as Disaster Recovery grants to rebuild affected areas and provide seed money to start recovery processes.



Resilient Bridgeport: The U.S. Department of Housing and Urban Development (HUD) allocated supplemental CDBG-DR funds through the RBD competition and CDBG-NDR to the CT Department of Housing to assist recovery in the most impacted and distressed areas declared a major Hurricane Sandy disaster. $42 million was allocated to develop pilot projects to improve Bridgeport's South End resilience including: A flood risk reduction & coastal defense system, green & gray infrastructure for stormwater management, & a Resilience Center.

Rebuild by Design (RBD): The State of Connecticut received $10 million for the development of a multi-neighborhood strategy and for the implementation of a pilot project that achieves flood risk reduction in the South End of Bridgeport's public and affordable housing.

Implementation Planning: Ensuring that projects can be implemented is a key goal of this grant. Strategies require considering logistics, costs and constraints. A schedule and time line are required. Estimating the cost by developing cost benefit analyses, feasibility studies, and preliminary design and engineering drawings for implementable projects and other analysis is essential. Developing construction schedules is also necessary.

Figures

Cover (CIRCA: Vittorio Lovato and Alex Felson); Page 4 (UEDLAB: Andy Sternad and Alex Felson); Page 5 (UEDLAB: Timothy Terway and Alex Felson); Page 6, 7 and 9 (CIRCA: Vittorio Lovato and Alex Felson); Page 8 (CIRCA: Alex Felson); UEDLAB is the Urban Ecology and Design Lab originally at Yale University); Page 10 top and upper middle (UEDLAB: Andy Sternad and Alex Felson), lower middle (UEDLAB: Timothy Terway and Alex Felson, Guilford); bottom (Ecopolitan Design, Chella Strong and Alex Felson, South Norwalk); Page 11 top and middle (WB unabridged w/ Yale ARCADIS, RBD), bottom Leslie Yager, Binney Park pond dredge progress. 09.09.2017)

For additional information contact: John.truscinski@uconn.edu