Community Resilience Building
getting on the right path early…

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Local Solutions Conference 2016

The Nature Conservancy
Protecting nature. Preserving life.™

Architecture

History and Challenges

Community Resilience Building

Regional Resilience Case Study

NOAA

TNC

NOAA

Tropical Storm Irene

CompuWeather

August 2011

Sue Vilanova

Ct Post

Giny Fullam

Seventh-costliest in United States history

$15.6B and 47 lives

Superstorm Sandy

Sandy – October 2012

NASA

Goggle

Whitehouse

Stats:
- Largest Atlantic Hurricane on Record
- 600 miles wide
- 24 states and 7 nations (Florida to Maine to Wisconsin)
- $60B – 286 lives

Common and Shared Challenges

- ➢ **Infrastructure/Industry/Business**

- ➢ **Housing –** more resilient design

- ➢ **Public Health and Safety**

- ➢ **Environment -** natural resources; land-use, access

- ➢ **Property Values & Tax Base**

- ➢ **Population -** seasonal/permanent, renters, elderly

- ➢ **Economic Growth -** future assets/costs/capital

Architecture

History and Challenges

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NOAA

TNC

NOAA

Community Resilience Building

- ❑ **Importance of the Issue for communities**
    - Implications for Residents
    - Business Continuity and Economic Growth
    - Public Services and Amenities
    - Quality of Life
    - Environment

Proactive planning results in better coordination and decisions that avoid future costs

Community Resilience Program

Objective: Lend a helping hand to communities to safely accommodate hazards and climate change...
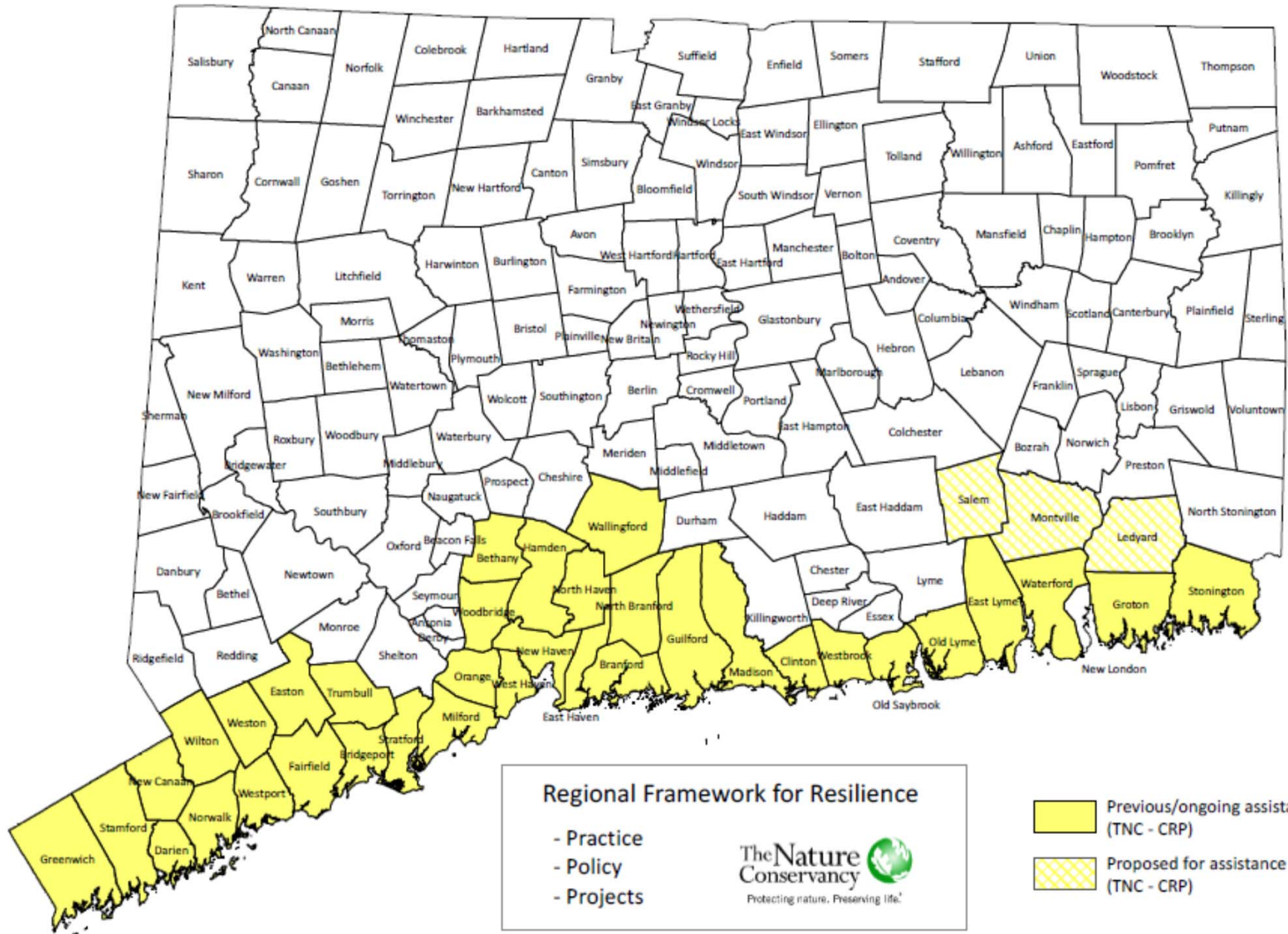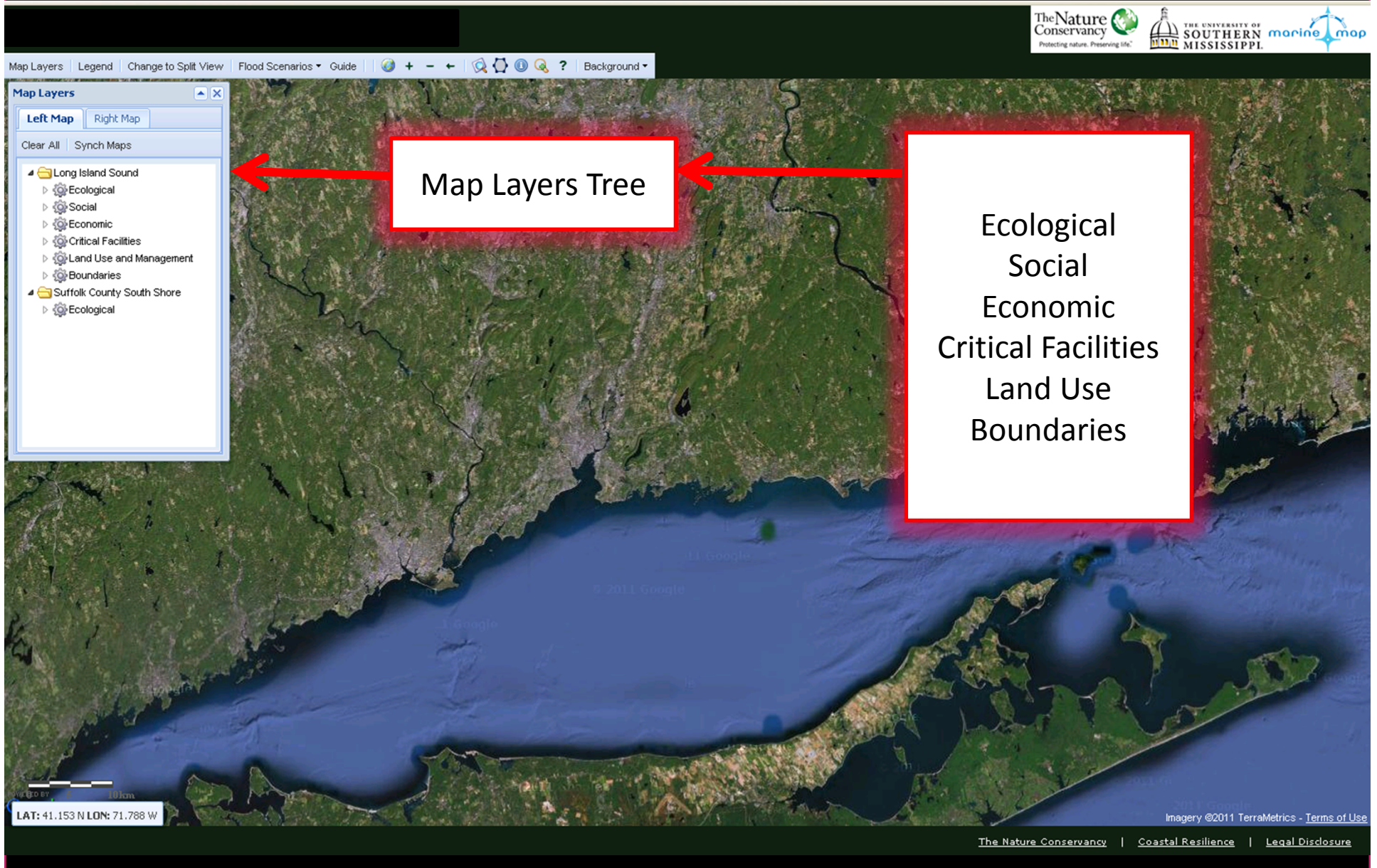

Awareness

Risk

Choices

Action

- **Tools, Guidance, Assessments**
- **Community Resilience Building Workshops**

The Nature Conservancy's Coastal Resilience Program
Municipal Engagement in Connecticut

Regional Framework for Resilience

- Practice
- Policy
- Projects

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Previous/ongoing assistance (TNC - CRP)

Proposed for assistance (TNC - CRP)

a tool with a lot of relevant data

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THE UNIVERSITY OF SOUTHERN MISSISSIPPI

marine map

Map Layers | Legend | Change to Split View | Flood Scenarios ▾ | Guide | 🌐 + − ← | 🔍 ⬡ ⓘ 🔍 | ? | Background ▾

Map Layers

| Left Map | Right Map |

Clear All | Synch Maps

▲ 📁 Long Island Sound
  ▷ ⚙ Ecological
  ▷ ⚙ Social
  ▷ ⚙ Economic
  ▷ ⚙ Critical Facilities
  ▷ ⚙ Land Use and Management
  ▷ ⚙ Boundaries
▲ 📁 Suffolk County South Shore
  ▷ ⚙ Ecological

Map Layers Tree

Ecological
Social
Economic
Critical Facilities
Land Use
Boundaries

LAT: 41.153 N LON: 71.788 W

Imagery ©2011 TerraMetrics - Terms of Use

The Nature Conservancy | Coastal Resilience | Legal Disclosure

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www.coastalresilience.org

CAT-3 Hurricane with Estimate Building Loss (%)

Coastal Resilience: New York and Connecticut

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Map Layers | Legend | Change to Single View | Marsh Explorer ▼ | Flood Scenarios ▼ | Super Storm Sandy ▼ | Background ▼

Legend

Economic
Estimated Percent Building Loss - Category 3 storm

- 1 - 10
- 11 - 20
- 21 - 40
- 41 - 60
- 61 - 68

Social
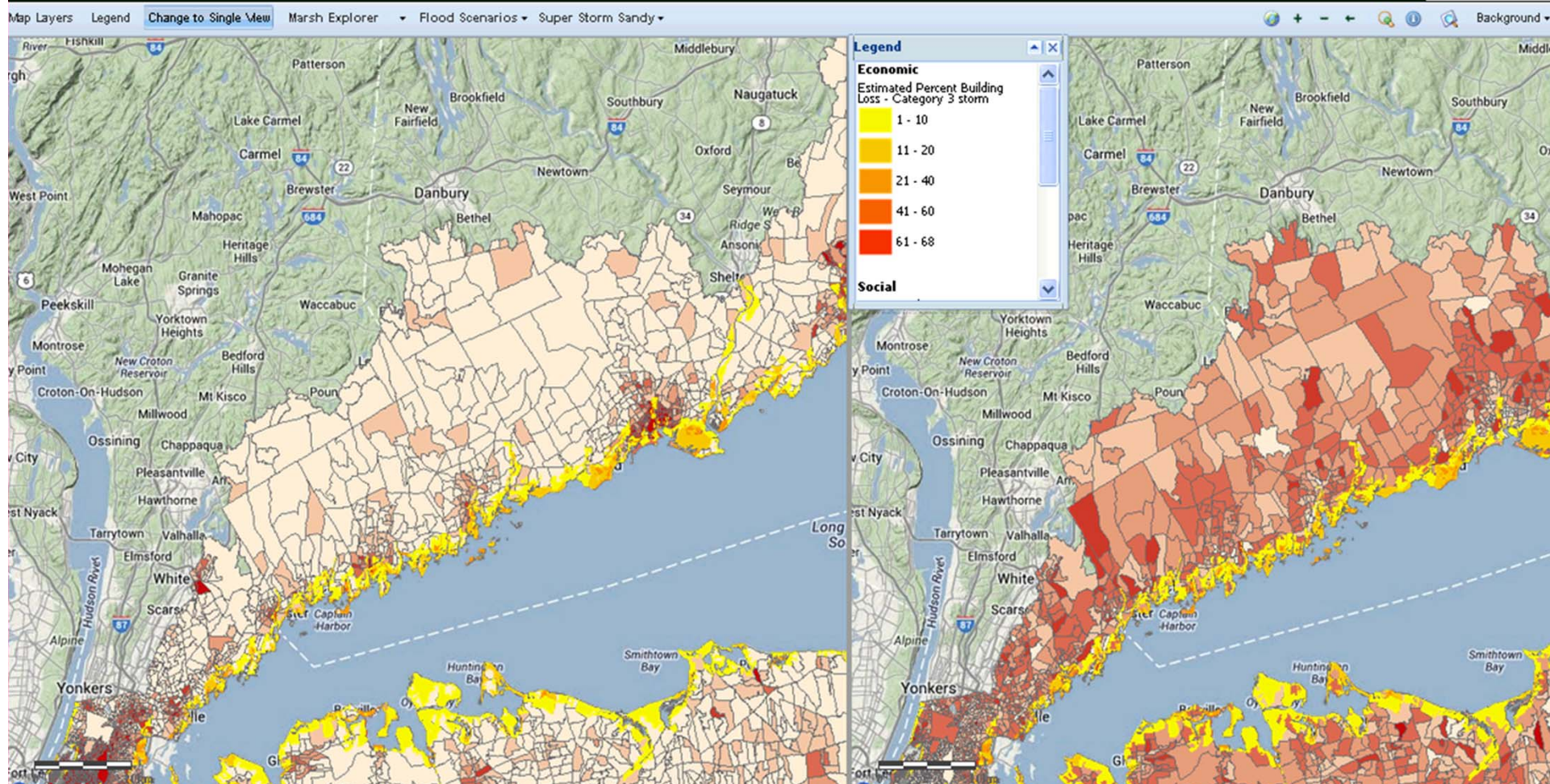
Percent Below Poverty

Age - Percent over 64 yrs

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Municipal Guidance: Zoning, Financing, Land Use Policy

Adapting to the Rise

A Guide for Connecticut's
Coastal Communities

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"Resilient" Conservation:
Salt Marsh Advancement Zone Assessments
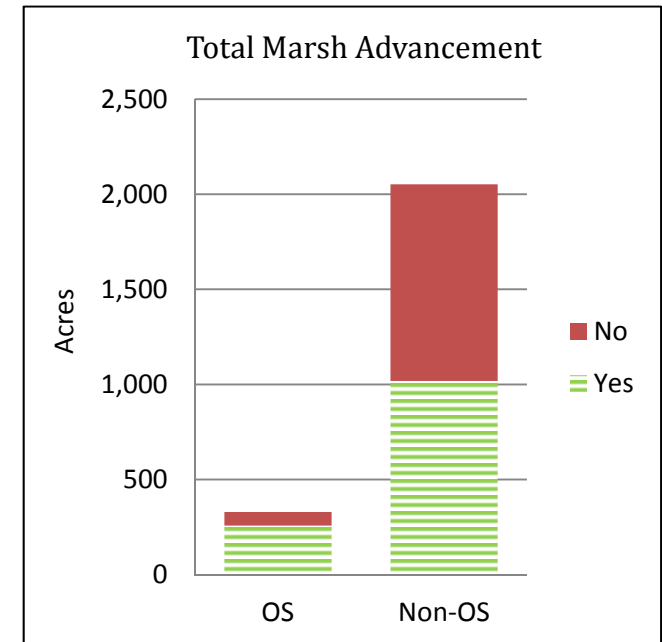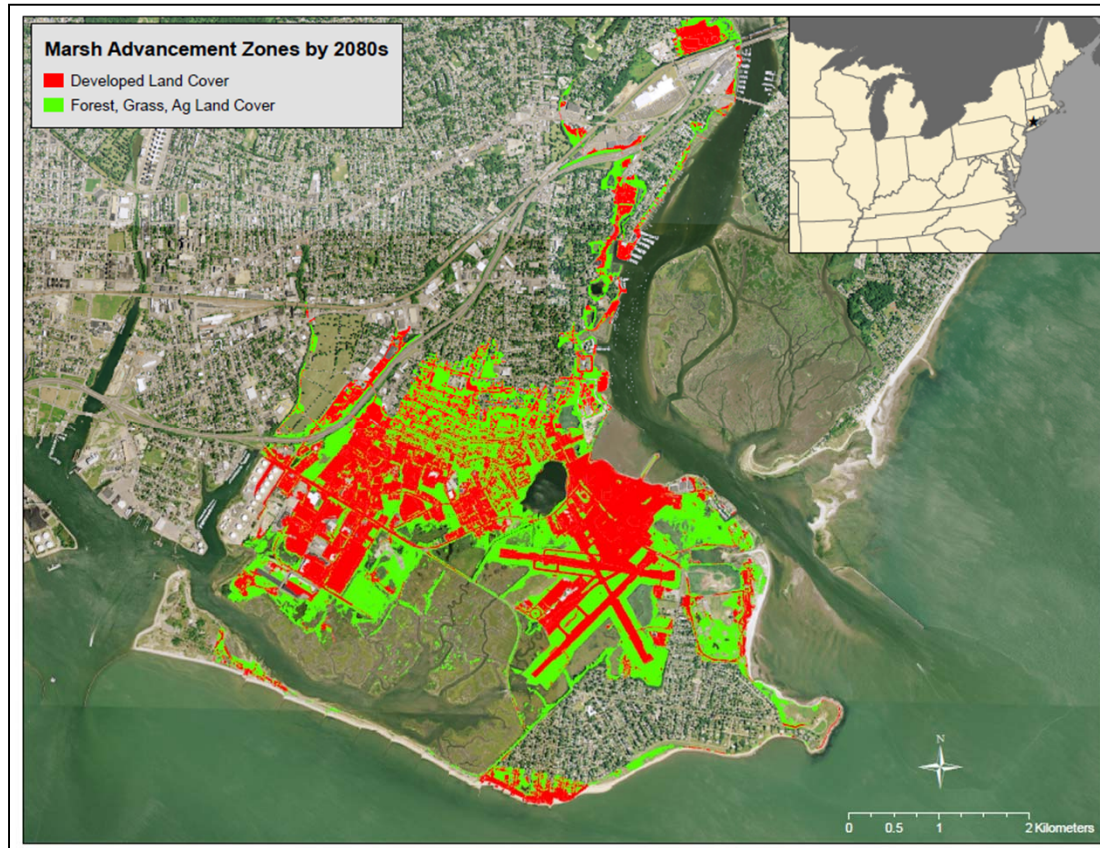
By <u>linking information with process</u>,
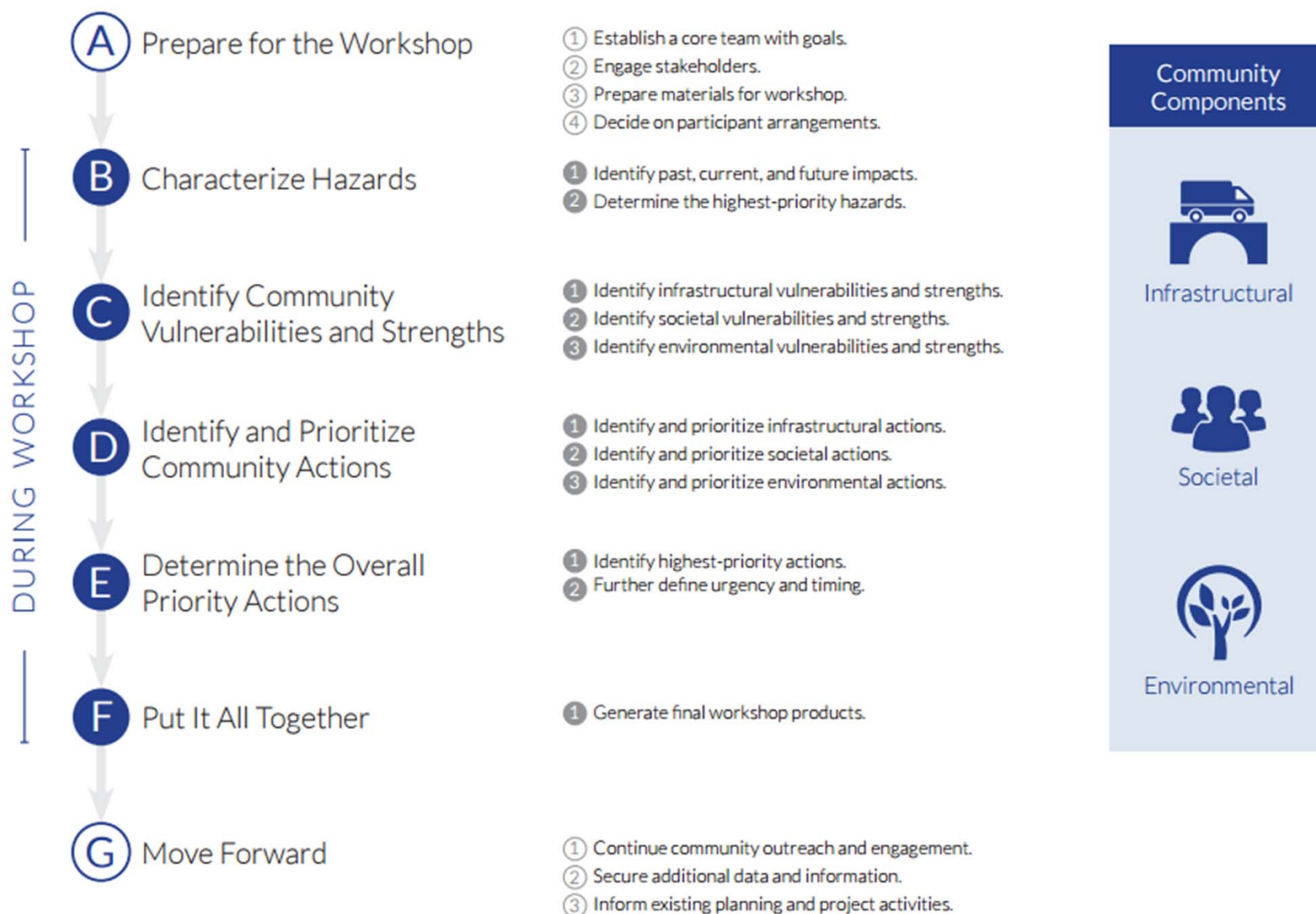**people make better decisions that improve**
resilience and build community…

Community Resilience Building
WORKSHOP GUIDE

Overview of the Process (Steps & Tasks)

DURING WORKSHOP

(A) Prepare for the Workshop

1. Establish a core team with goals.
2. Engage stakeholders.
3. Prepare materials for workshop.
4. Decide on participant arrangements.

(B) Characterize Hazards

1. Identify past, current, and future impacts.
2. Determine the highest-priority hazards.

(C) Identify Community Vulnerabilities and Strengths

1. Identify infrastructural vulnerabilities and strengths.
2. Identify societal vulnerabilities and strengths.
3. Identify environmental vulnerabilities and strengths.

(D) Identify and Prioritize Community Actions

1. Identify and prioritize infrastructural actions.
2. Identify and prioritize societal actions.
3. Identify and prioritize environmental actions.

(E) Determine the Overall Priority Actions

1. Identify highest-priority actions.
2. Further define urgency and timing.

(F) Put It All Together

1. Generate final workshop products.

(G) Move Forward

1. Continue community outreach and engagement.
2. Secure additional data and information.
3. Inform existing planning and project activities.

Community Components

Infrastructural

Societal

Environmental

(A) Prepare for the Workshop

Section A Objective: In advance of a Community Resilience Building Workshop, lay groundwork for an effective and collaborative exchange amongst participants and eventual implementation of community-originated actions by a broader array of stakeholders. Initiate this pre-workshop section 2-6 months prior to the actual Workshop – depending on current state of community readiness.

(1) Establish a core team with goals.

Engage and secure consent of leadership (i.e., mayor, commissioner, CEO, or equivalent) to hold Workshop and assign key staff to core team, if appropriate. Establish core team—with clear roles and responsibilities—and organize the implementation of the Community Resilience Building Workshop. Define specific Workshop goals by asking why the community needs to discuss current and future impacts of hazards. In addition, predetermine how the community will use the information and decisions constructed during the Workshop. Finally, develop a reasonable timeline over which all Workshop steps ("before", "during", "after") will be completed. Reconnect with leadership once core team with goals/timeline is secure.

Core team reviews goals, responsibilities, and timelines before their Community Resilience Building Workshop. © Adam Whelchel

Goal Setting Questions:

- Will the CRB Workshop start a new conversation and identify next steps?
  Or: Will the CRB Workshop help to augment other specific planning needs such as natural hazard mitigation plans, master plans, supply-chain stability assessments, sustainability plans, capital improvements, and/or others?

- Will the CRB Workshop help to identify a list of at-risk neighborhoods, employers/employees, wetlands, and other community features across the entire community?
  Or: Will the CRB Workshop be focused on a single segment of a municipality, department within an agency, individual sector of a business, and/or other?

Example Goals:

- The CRB Workshop will be a new initiative to immediately integrate community-derived priorities into a natural hazard mitigation plan and 5-year capital improvement budget.

- The CRB Workshop will augment an existing inter-department directive to meet both resilience and sustainability targets.

- The CRB Workshop will help build resilience by generating greater awareness, prioritization, and ideally launch action plans in five at-risk neighborhoods within three years.

B Characterize Hazards

Section B Objective: Develop agreement among Workshop participants on top four hazards for facilitated discussions on vulnerabilities and strengths of the community's people, infrastructure, departments, supply chain, and natural resources among others.

1

Identify past, current, and future hazards (large team).

Direct participants to make a list of hazards (causes of impacts) that the community has dealt with, currently faces, and anticipates experiencing in the future (i.e., tornados, ice/wind storms, drought, wildfire, tsunamis, sea level rise, landslides, earthquakes, etc.). Utilize the following triggering questions to accelerate dialogue and surface initial agreement on top four hazards.

- What hazards have impacted your community in the past? Where, how often, and in what ways?
- What hazards are impacting your community currently? Where, how often, and in what ways?
- What effects will these hazards/changes have on your community in the future (5, 10, 25 years)?
- What is exposed to hazards and climate threats within your community?
- What have been the impacts to operations and budgets, planning and mitigation efforts?
- Others concerns or considerations related to impacts?

A **Hazard** is like the sun. The **Risk** from that hazard is sunburn. The **Vulnerability** includes the length of **Exposure** of skin to the sun. The **Action** to reduce risk from the hazard is to apply sunscreen or seek shade.

Top to bottom: © Rich Reid/TNC, © Devan King/TNC, © Jay Harrod/TNC

C Identify Community Vulnerabilities and Strengths

Section C Objectives (small teams): **Develop a comprehensive understanding or profile of the community's (1) infrastructural, (2) societal, and (3) environmental components that are impacted by the Top 4 Hazards (B-2), as well as those features that help to make the community stronger and more resilient against these top hazards. The Risk Matrix captures the community's Top 4 Hazards, vulnerabilities, strengths, and actions. The Risk Matrix provides information necessary to develop strategies, inform community plans and advance actions to lessen hazard impacts and build resilience.**

Locations
(ii)

Ownership
(iii)

Features
(i)

Vulnerability or Strength
(iv)

Community Resilience Building Workshop Risk Matrix			
H-M-L priority for action over the Short or Long term (and Ongoing) V = Vulnerability S = Strength			
Features	Location	Ownership	V or S
Infrastructural			
Societal			
Environmental			
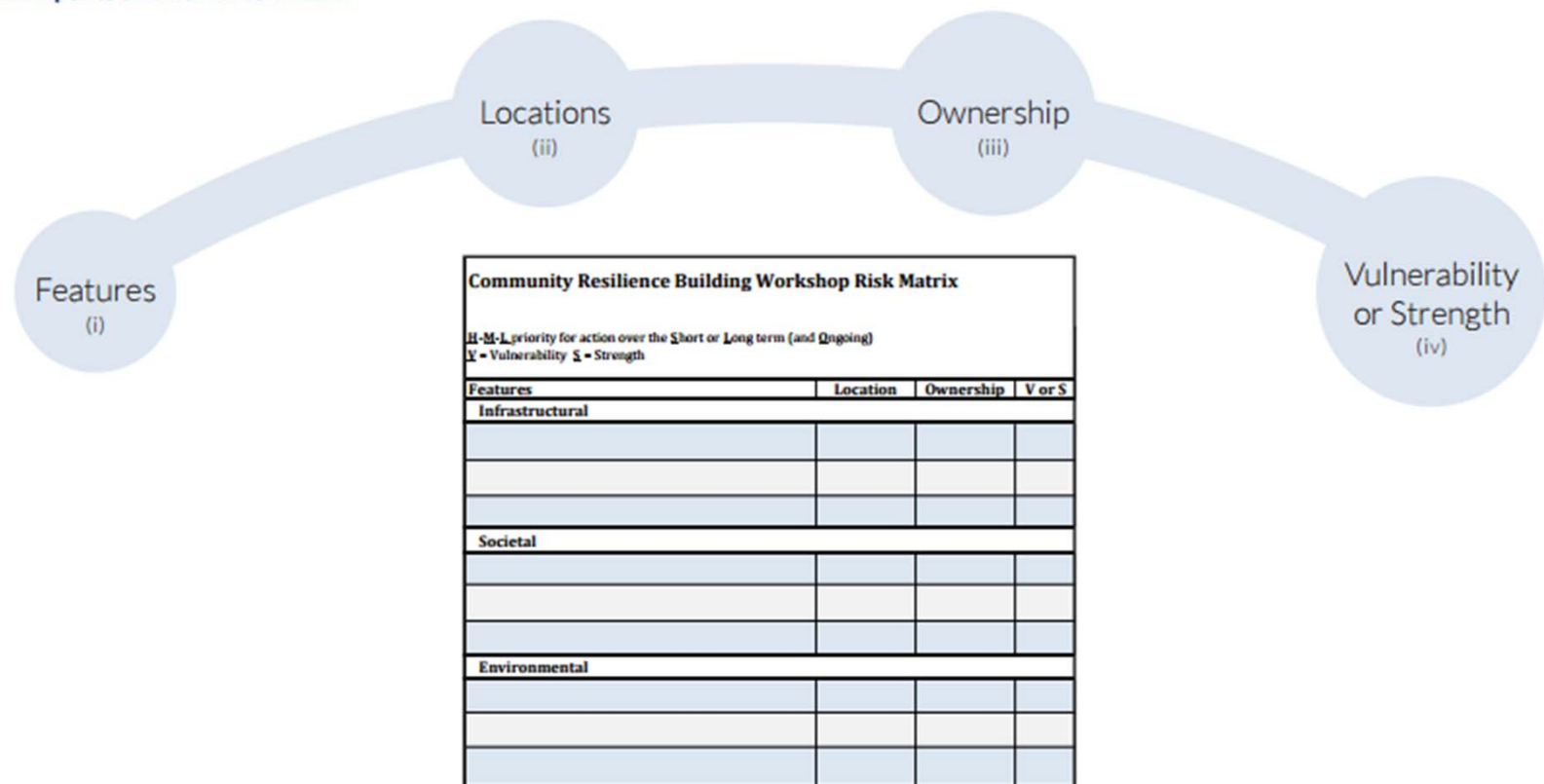
Steps C1, C2 and C3 below focus on identifying intrastructural, societal and environmental vulnerabilities and strengths. Each step requires three tasks to complete the Risk Matrix: **(i)** identify features, **(ii)** describe feature locations, **(iii)** identify feature ownership, and **(iv)** identify each feature as a vulnerability or strength, or both.

D Identify and Prioritize Community Actions

Section D Objective: For each profile – Infrastructural, Societal, Environmental – carefully identify and then prioritize actions to help reduce vulnerability or reinforce strengths for each or all of the Top 4 Hazards. Continue to work as small teams through the following three steps for each profile and capture dialogue, in detail, on the respective Risk Matrix. The Risk Matrix captures the community's Top 4 Hazards, vulnerabilities, strengths, and actions. The Risk Matrix provides information necessary to develop strategies, inform community plans and advance actions to lessen hazard impacts and build resilience.

Prioritize
(ii)

Develop Actions
(i)

Determine Urgency
(iii)

Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)				Priority	Time
				H - M - L	Short Long Ongoing

Steps D1, D2 and D3 below focus on identifying and prioritizing intrastructural, societal and environmental actions. Each step requires three tasks to complete the Risk Matrix: **(i)** develop actions, **(ii)** prioritize actions (**H**igh, **M**edium, **L**ow), and **(iii)** determine urgency (**O**ngoing, **S**hort-term, **L**ong-term).

Choices to Actions

Infrastructure

➤ Risk design/planning: re/development & infrastructure

➤ Policy: building codes, zoning, incentives

Environmental

➤ Low Impact Development/Green Infra.

➤ Conserve Open Space, Wetlands, Buffers

Social

➤ Sheltering capacity & preparedness

➤ Resources: power, food/water, healthcare

Architecture

History and Challenges

Community Resilience Building

Regional Resilience Case Study

NOAA

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Regional Resilience Frameworks

Core Question:

How do we **create collaborative actions** across/between municipalities to ensure a **regional integration** of resilience via **strong and growing partnerships**?

...connecting the pieces for a more resilient whole...

The Nature Conservancy's Coastal Resilience Program
Municipal Engagement in Connecticut

Regional Resilience in Southeastern CT

Regional Resilience in Southern CT

Regional Framework for Resilience
- Practice
- Policy
- Projects

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Previous/ongoing assistance (TNC - CRP)

Proposed for assistance (TNC - CRP)

Regional Framework for Resilience in Southern Connecticut
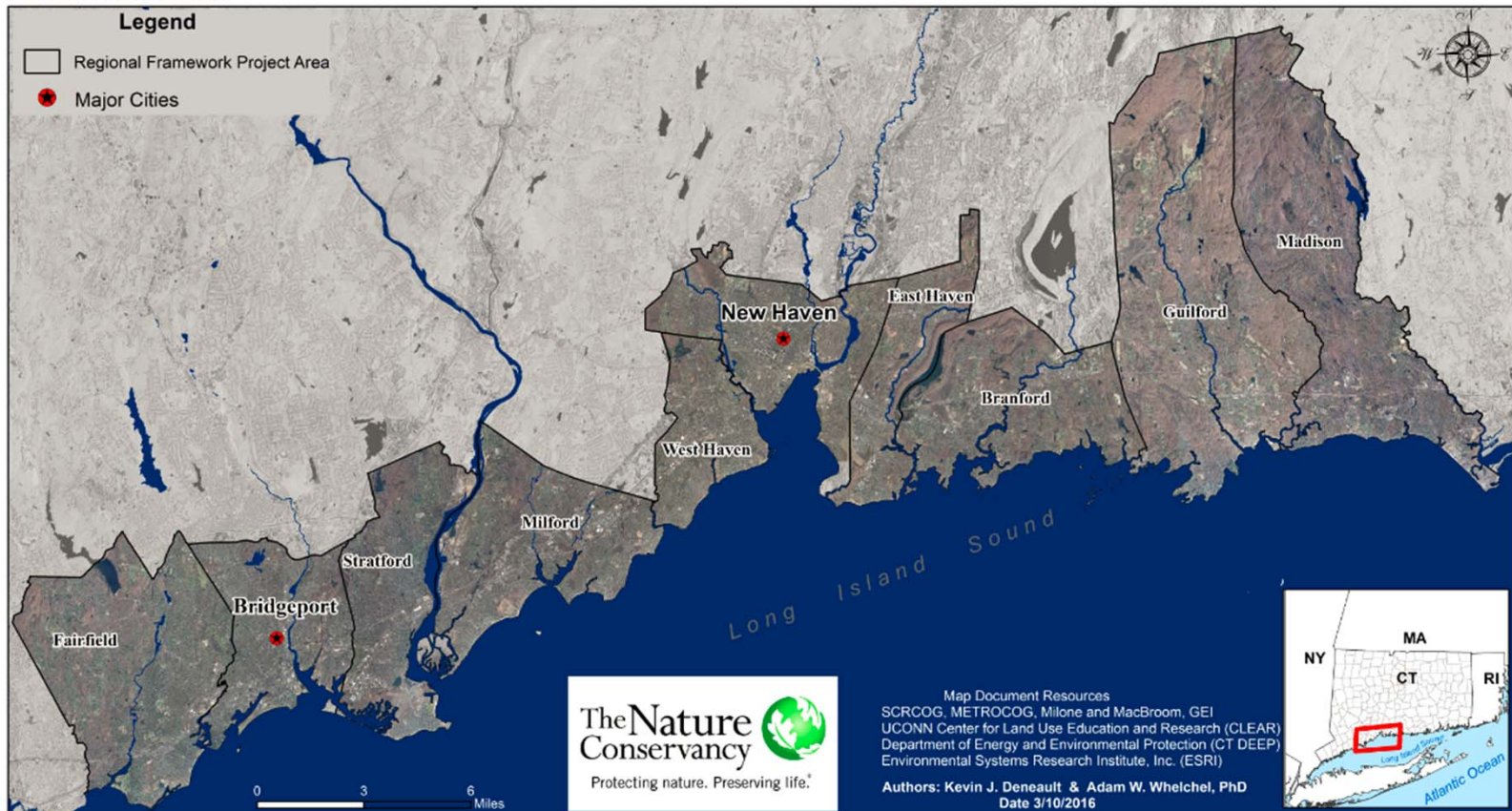
...connecting the pieces for a more resilient whole...

Guiding Questions

- **Can we reduce hazard risks with resilience projects?**

- **Will our eco-services be enhanced via projects?**

- **Do your projects benefits local and regional?**

- **What value do you get from this Regional Partnership?**

Regional Resilience Frameworks

Community Building Steps:

- Project Team Structure

- Catalogue "all" resilience projects (325+)

- Prioritization workshops & field visits

- Maps and apps to build momentum

- Conceptual design for priority projects

Lots of projects but fragmented & without vision...

...connecting the pieces for a more resilient whole...

Project Team Structure & Approach

Core Team

SCRCOG — SOUTH CENTRAL REGIONAL COUNCIL OF GOVERNMENTS

METROCOG — Connecticut Metropolitan Council of Governments

The Nature Conservancy — Protecting nature. Preserving life.™

10 Municipalities

Advisors

Interested Public

Catalogue Resilience Projects (325+)

Urban Streams/Parks
Green Infrastructure

Infrastructure
Abandonment

Living Shorelines
Hybrid Solutions

Dune Creation

Integrated Flood Control

Buy-outs/Elevation

Workshops & Field Visits
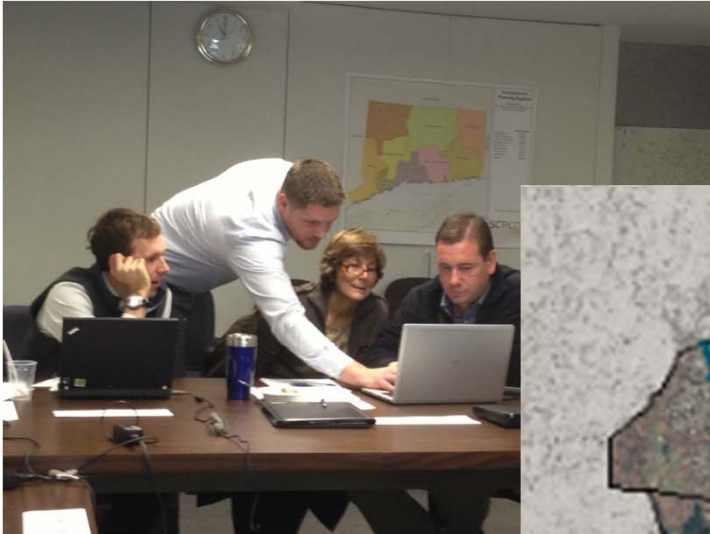
Build Community

SeaSketch
www.seasketch.org

New Haven - Bridgeport
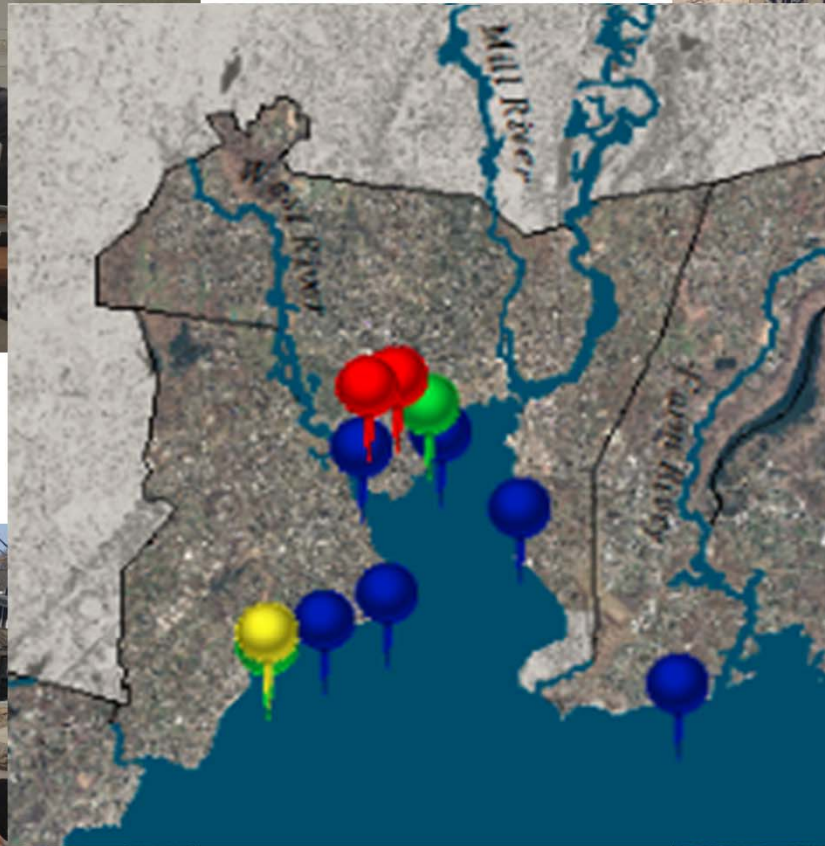
Prioritize
Projects

Maps & Apps
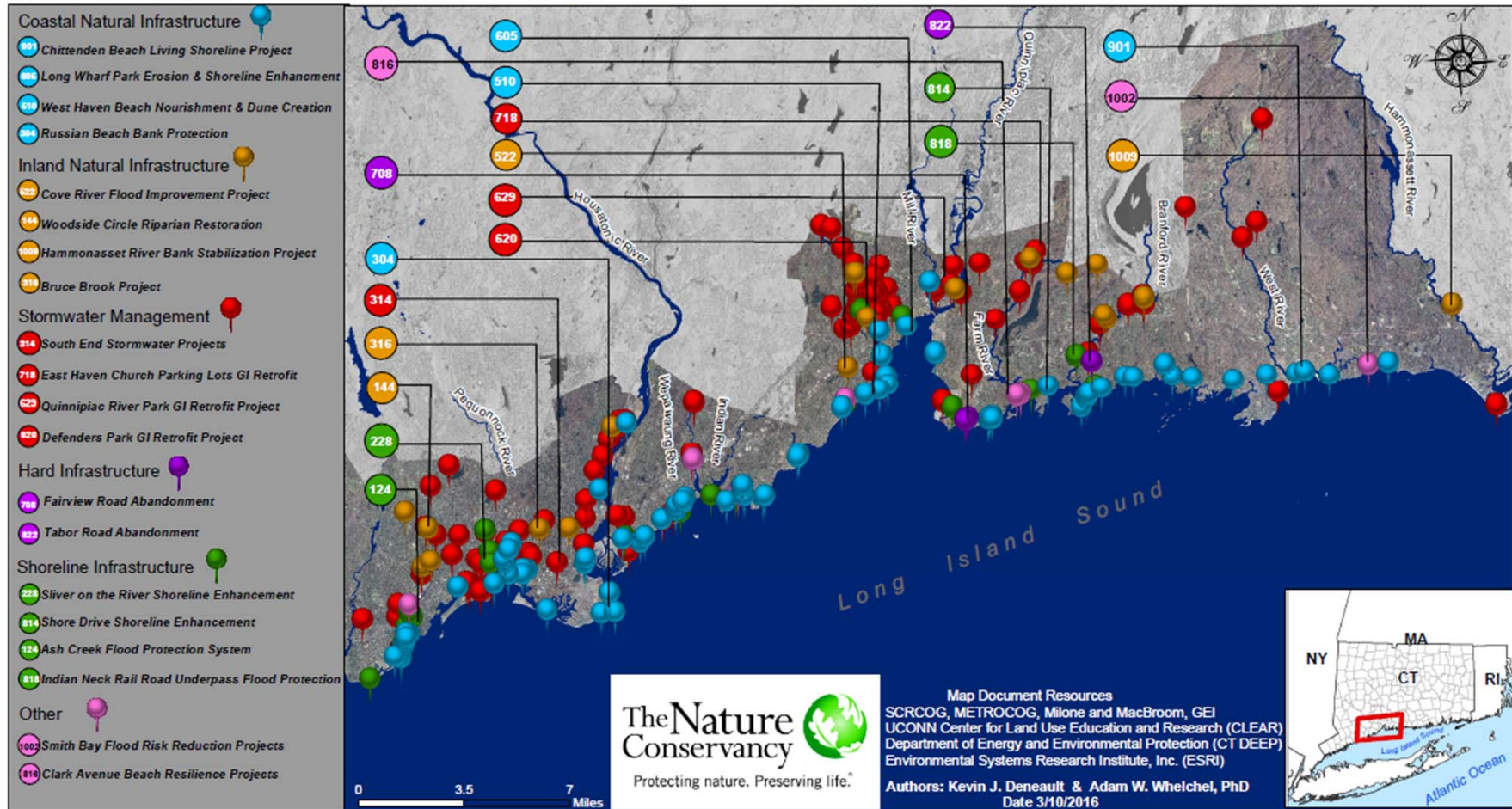
Project Types: Coastal Natural Infrastructure; Inland Natural Infrastructure; Stormwater Management; Hard Infrastructure; Shoreline Infrastructure.

Maps & Apps
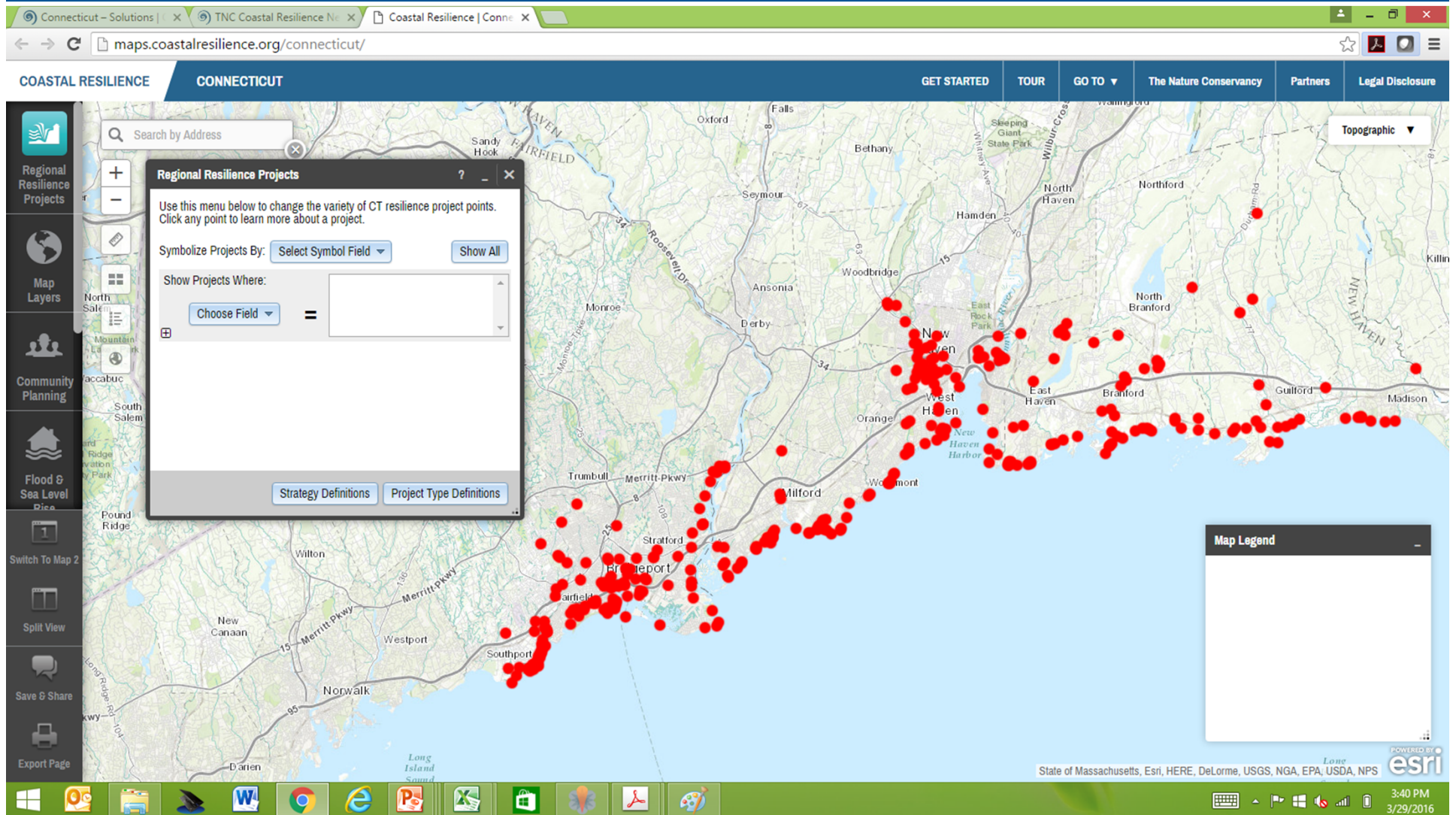
maps.coastalresilience.org/connecticut/

Maps & Apps

maps.coastalresilience.org/connecticut/

Maps & Apps

Create and Export Images

maps.coastalresilience.org/connecticut/

Conceptual Designs

<u>The Carrot!</u>

➢ **20 Priority Projects across Region**

➢ **2 per Municipality**

➢ **CD Process Strengthens Partnerships**

➢ **Funding: FEMA HMG; CDBG-DR; NRCS EWP**

Summary

✓ Know your community's history/challenges

✓ Use Community Resilience Building Workshops

✓ Resilience Frameworks = Partnerships & Projects

- Team Structure

- Catalogue Resilience Projects

- Workshops & Field Visits

- Maps and Apps

- Conceptual Design

✓ Regional Resilience Master Plan

...connecting the pieces for a more resilient whole...

Thank You!

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