Community Resilience Building
WORKSHOP GUIDE

www.CommunityResilienceBuilding.org

Introduction

The need for municipalities, corporations, organizations, and government agencies among others to build community resilience and adapt to extreme weather and hazards is now strikingly evident. Ongoing events continuously reinforce this urgency and compel leading communities to proactively plan and act. This leadership is to be commended as it reduces the vulnerability of residents, employees, students, infrastructure and the environment, and serves as an example of what is possible for other communities. As a response to this ever-increasing need and urgency, the ***Community Resilience Building Workshop*** was created.

Over the last decade the Community Resilience Building Workshop has been tried and tested, and is ***trusted by over one-hundred communities*** that are now on the right path to resilience. The Community Resilience Building Workshop is rooted in extensive experience working with communities by The Nature Conservancy, NOAA's Office for Coastal Management, and countless partners. The Community Resilience Building Workshop provides a ***friendly "anywhere at any scale" process*** for developing resilience action plans for communities including municipalities, agencies, organizations, and corporations (local to global). The Community Resilience Building Workshop employs a unique community-driven process, rich with information, experience, and dialogue, where the participants identify top hazards, current challenges, and strengths and then develop and prioritize actions to improve their community's resilience to all natural and climate-related hazards today, and in the future.

The core directive of the ***Community Resilience Building*** Workshop is to foster collaboration with and among community stakeholders that will advance the education, planning and ultimately implementation of priority actions.

This directive is achieved through a ***carefully crafted, facilitated approach*** centered on a unique catalyst — the Risk Matrix. The Risk Matrix structures the capture and organization of community dialogue and helps to generate the momentum needed to advance resilience building. The Workshop's central objectives are to:

- define extreme weather and natural and climate-related hazards,
- identify existing and future vulnerabilities and strengths,
- develop and prioritize actions for the community and broader stakeholder networks, and
- identify opportunities for the community to advance actions to reduce risks and build resilience.

The following ***Community Resilience Building Workshop Guide*** is designed to provide clear instructions on how to lead your community towards improved resilience. This Guidebook carefully illustrates the essentials of the Community Resilience Building Workshop process as well as the "before" and "after" workshop considerations to help ensure immediate goals, outcomes, and strategic direction are realized within your community.

After nearly a decade in development with over one-hundred communities, we are very proud to offer this Community Resilience Building Workshop Guide. Please join other communities employing this tried, tested, and trusted Workshop approach. For further guidance, support, and coaching please ***contact Dr. Adam Whelchel and visit www.CommunityResilienceBuilding.org*** for more Workshop materials and examples from other communities that have successfully exercised the Community Resilience Building Workshop.

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, equity/inclusion, 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, individual campus or system, 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.

2

Engage stakeholders (core team).

Identify stakeholders for Workshop engagement. Invite a wide range of people to participate based on their background, experience, authority, and where they work and live. Consider individuals or entities — across the entire community — affected in the past by hazards and likely to be impacted in the future? Consider individuals or entities that influence, guide, and/or have the authority to make decisions? Generate list of potential stakeholder, identify date for Workshop, develop outreach material if needed, and begin to secure Workshop participants. Allow six week between initial "save the date" invitations and Workshop. Typical Workshop formats include one day (6-8 hours) or two half-days (4 hrs. apiece) ideally spaced two weeks apart.

Stakeholder Guidance:

For ideas, start with this list of potential stakeholders:
http://coast.noaa.gov/data/digitalcoast/pdf/checklist-risk-vulnerability.pdf

Participant affiliation lists from other Workshops available at:
www.CommunityResilienceBuilding.org.

Get help on how to engage stakeholders from NOAA's *Introduction to Stakeholder Participation:*
http://coast.noaa.gov/data/digitalcoast/pdf/stakeholder-participation.pdf

Committed stakeholders and community leaders engaged in their Community Resilience Building Workshops. *© Adam Whelchel/TNC*

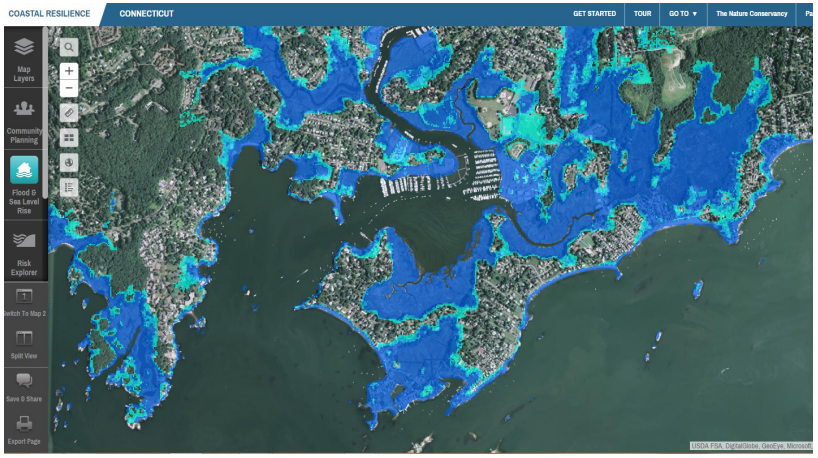
3

Prepare materials for workshop (core team).

Gather and synthesize pertinent information related to the impacts of and responses to hazards in the community including:

- Existing maps and online tools, natural hazard mitigation plans, photos, historical information, damage assessments and claims, and people's stories to help the core team prepare.
- Consider sending a pre-workshop Community Characterization Survey to identified participants to efficiently capture core information about how the community currently perceives, assesses, and acts to reduce risks.

An additional approach, if situations and time permit, is a pre-workshop listening session for stakeholders to verbally and visually present their stories, photos, scientific information on hazards and future projections. Information shared can be synthesized with other materials in preparation for Workshop.



Historic Category-3 Hurricane (1938) with downscaled sea level rise projections.
Source: The Nature Conservancy's Coastal Resilience Tool ***(www.CoastalResilience.org).***

Guidance:

A street map supported by aerial images serves as a basemap (3' x 4') during the Workshop upon which participants identify community features (i.e., schools, bridges, wetlands).

Helpful information to show on supporting maps include hazard extent (e.g., flooding, wildfire-prone areas), population density and percent below poverty, current and future land use and zoning, public amenities such as parks and ball fields, protected open space areas, roads, utilities, waterways, land cover, major employers, commercial and industrial areas, and natural resources (e.g., wetlands, floodplains, beaches, forests, coral reefs, etc.).

Review NOAA's *Introduction to Planning and Facilitating Effective Meetings*: https://coast.noaa.gov/digitalcoast/training/effective-meetings.html

Review TNC's Coastal Resilience (www.coastalresilience.org)

Review NOAA's Digital Coast (https://coast.noaa.gov/digitalcoast)
- Search "Coastal Flood Exposure Mapper"
- Search "Sea Level Rise Viewer"

Pre-workshop support materials are available at **www.CommunityResilienceBuilding.org**, including:

1) Steps/Tasks - timelines and activity lists,
2) Workshop invitation language and flyers,
3) Workshop Participant Worksheet and Guidance,
4) Community Characterization Survey questions,
5) Sample maps products and tools, and
6) Blank Risk Matrix.

4

Decide on participant grouping for workshop (core team).

Central to the successful application of the Community Resilience Building Workshop is to open (Section B-1) and close (Section E) the Workshop with large team (all participants) sessions; with small team sessions in between (Section B-2 through Section D). This "large-small-large" team dynamic allows for detailed input from individuals along with a collective synthesis for comprehensive community resilience building. The critical step of assigning participants to small teams depends on attendance with 40-50 participants and 6-8 people per small team (no more than 10) as the ideal. Careful consideration should be directed to diversifying small team membership based on rank, position, roles, responsibilities, and expertise of participants.

Grouping Options for Small Teams:

Single sector – Group participants by like sectors (i.e., infrastructure, emergency management, social services, natural resources, finance) to capture higher levels of detail on select issues. This approach works well if the core team is at a point where very detailed information on risks and actions for a single sector is required. The tradeoff is that a more comprehensive, mixed-sector discovery of actions will need to be synthesized by a large team (Section E) or after the Workshop by the core team (Section F & G).

Mixed sectors – Group participants from diverse sectors together to foster an exchange of different perspectives and actions for community resilience building. This approach helps participants see the connections comprehensively and develop common actions with co-benefits across sectors. In well-attended Workshops, it may be advantageous to have both single- and mixed-sector small teams to get both the detail and development of collaborative, comprehensive actions.

By location – Group participants by geographic location or structural units within an organization (i.e., department, division, agency) to facilitate deeper dialogue on specific aspects of the issue. Small team report-outs are critical here to ensure the various teams can listen for commonalities which ideally result in cross-jurisdictional or multi-organizational actions. This approach works well for Workshops with large and/or complex focus areas with multiple jurisdictions or overlapping governmental/corporate decision-making authority and processes.

Community Resilience Building Workshop participants collaboratively share experiences and create priority actions on the Risk Matrix. © *Adam Whelchel/TNC*

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*

B Characterize Hazards

2

Determine top-priority hazards (small teams).

Divide into pre-determined small teams (see A-3 above). Drawing from the previous large team dialogue (Section B-1), identify the **Top 3 to 4 Hazards** that pose the greatest threat to the community currently and over the next decade or longer and against which the community should take action? After each small team reaches agreement, respectively, write the selections in the Top Hazards section of the **Risk Matrix**. The Risk Matrix captures the community's Top 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.

Small team discusses **Top Hazards and Risk Matrix** in a Community Resilience Building Workshop in Connecticut. © *Adam Whelchel/TNC*

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

				Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)					
				Coastal Flooding	Extreme Precipitation Events	Heat Waves	Wind	**Priority**	**Time**
Features	**Location**	**Ownership**	**V or S**					**H - M - L**	**S**hort **L**ong **O**ngoing
Infrastructural									
Societal									
Environmental									

In this example of a **Risk Matrix**, the small team decided that coastal flooding, extreme precipitation events, heat waves, and wind were the **Top Hazards**. The small team then focused on vulnerability and strengths of features and actions in response to these Top Hazards in their community.

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 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 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.

Features (i) → Locations (ii) → Ownership (iii) → Vulnerability or Strength (iv)

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
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.

C Identify Community Vulnerabilities and Strengths

1

Identify infrastructural vulnerabilities and strengths (small teams).

Infrastructure such as residential housing, schools, commercial building, churches, office parks/campuses, laboratories, roads, bridges, and utilities among others can be vulnerable to hazards as well as serve to strengthen the community. The objective of this step is to identify infrastructural vulnerabilities and strengthens across the entirety of the community.

(i) List infrastructural features. On the **Risk Matrix**, list infrastructural features—such as housing, commercial buildings, roads, and utilities—that have been or could be affected by the **Top Hazards**. Identify those that have withstood, could withstand, and/or are critical to maintain and improve. *Examples:* Communications systems, evacuation signage, and emergency operating centers. Refer to "**Triggering Questions**" to accelerate dialogue.

(ii) Describe locations via participatory mapping. For each feature, describe the specific location. Mark the location on the community basemap provided. Be sure to label in such a way as to be legible after the Workshop.

(iii) Identify ownership. Add information about who owns or has responsibility for each feature listed. *Examples:* City, county, state, private, association, department, agency, and corporate.

(iv) Identify each feature as vulnerability or strength. Assign each listed feature with "V" or "S," or both. In some cases, a community feature is both a vulnerability and strength. *Example:* One municipality identified a pond as a strength and vulnerability because it served as a water source for the community, yet posed a flooding risk to adjacent homes and a church if not drawn down prior to major rainstorms.

Triggering Questions:

- What infrastructure/facilities are exposed to current and future hazards? Transportation, waste water treatment, nursing homes, schools, office park, hazardous materials facility, dams, laboratories, churches, pharmacies, groceries, gas stations?
- What makes this infrastructure vulnerable? Location, age, building codes, type of housing?
- What are the consequences of this infrastructure being vulnerable? Lack of access to critical facilities – urgency care/ pharmacies?

Examples of Vulnerabilities:

- Main road floods during storms, blocking emergency response.
- Power outages during heat waves lead to health concerns.
- Wildfire and high winds resulting in supply chain interruptions.
- Sewer pump stations become submerged and inoperable.
- Compromised rail system due to heat-related warping of tracks.

Examples of Strengths:

- Critical road elevated and passable by emergency management.
- Hurricane roof installed at school with improved sheltering capacity.
- Hardened utility lines reduce outages due to ice storms.
- Undersized culvert replaced to reduce flooding in key intersection.
- Improvement to communication systems during extreme weather.

C Identify Community Vulnerabilities and Strengths

2

Identify societal vulnerabilities and strengths (small teams).

Social vulnerability is a combination of the factors and forces that affect the susceptibility of various groups within a community to harm as well as their collective ability to respond positively after extreme event and/or more routine, ongoing hazards. Social vulnerability involves such factors as the availability of health care services and access to lifelines (food/water, emergency response personnel, etc.). Social strengths are often represented by those support networks that connect and maintain the supply of goods and services to impacted groups within the community. The objective of this step is to identify the people, places, and services that are at risk from the **Top Hazards** as well as those that currently add strength to the communities' overall resilience.

(i) List societal features. On the **Risk Matrix**, list societal features. Consider factors that affect the ability of groups to deal with adverse impacts from hazards. Conversely, consider factors or characteristics that increase the capability of groups to negate, withstand, and quickly recover from hazards. Refer to "**Triggering Questions**" to accelerate dialogue.

(ii) Describe locations via participatory mapping. For each feature, describe the location. Be as specific as possible. Legibly mark the location on the community basemap provided. *Examples*: Is a population of elderly residents located in a particularly high-hazard area? Are other services such as gas stations, supermarkets, data server facilitates, critical hospital care units, pharmacies, churches, emergency command centers, shelters, public works facilities, and fire stations located in vulnerable locations?

(iii) Identify ownership. Add information about who owns or has responsibility for each feature listed. *Example:* Senior population may live in retirement communities (private) or senior housing (public).

(iv) Identify each feature as vulnerability or strength. Assign each listed feature with "V" or "S," or both.

Triggering Questions:

- What are the population characteristics of the people living in high-risk areas? Elderly, low/moderate income, special needs, languages spoken?
- What are the strengths and vulnerabilities of people in your community? Active civic groups, organizations, associations; full-time police, fire, and emergency medical services; strong lines of communication for emergency information?
- How can hazards intensify these characteristics? Where are areas for improvement in the community?

Examples of Vulnerabilities:

- Senior housing without back-up generators during heat waves.
- Residents without access transportation during hurricane evacuation.
- Household contaminate and sewage mobilization during flooding.
- Limited areas of refuge in elementary schools during tornados.

Examples of Strengths:

- Reliable communications protocols across departments for all employees.
- "Neighbor-helping-neighbor" program aligned with emergency operations.
- Well-supported volunteer organizations (fire, ambulance, CERTs).
- Faith-based and civic groups with hazard preparedness plans.

3

Identify environmental vulnerabilities and strengths (small teams).

Cataloguing the vulnerabilities and strengths of natural systems can be complex. Existing factors such as pollution, haphazard development/redevelopment, and invasive species can reduce the ability of natural systems to respond and assist with hazard impact reduction. Previous and ongoing open-space protection in high-risk areas (i.e., unstable slopes, low-lying floodplains) is viewed as a strength that often directly increases community resilience. Other benefits of natural systems to communities include flood storage, recreation, tourism, elevated property values, cooling during heat waves, and water filtration, among others. Understanding these factors can help facilitate collaborative approaches between development and conservation that fosters community resilience building.

(i) List environmental features. On the **Risk Matrix**, list environmental features. Consider natural resources that are vulnerable to hazards or that can provide protection for people, property, and amenities from top hazards. Refer to "**Triggering Questions**" to accelerate dialogue.

(ii) Describe locations via participatory mapping. For each feature, describe the location. Be as specific as possible. Legibly mark the location on the community basemap provided. *Example:* Identify where wetlands are in relation to current development (e.g., marinas, road crossings, fire stations, historic building, cemeteries, neighborhoods, nursing homes, etc.).

(iii) Identify ownership. Add information about who owns or has responsibility for each feature listed. *Examples:*

- Local beach with boat ramp owned by city.
- Nature preserve owned by local land trust.
- Grassland and forest owned by federal agency.
- Floodplain privately owned by farm.

(iv) Identify feature as vulnerability or strength. Assign each listed feature with "V" or "S," or both.

Triggering Questions:

- What natural resources are important to your community?
- What benefits do these natural resources provide (storm buffering, fire breaks, erosion control, water quality improvement, slope stabilization, recreation)?
- Which natural resources are exposed to current and future hazards?
- What have been the effects of these hazards on these natural resources?
- Where are the high-risk areas and what vulnerabilities exist for the environment?

Examples of Vulnerabilities:

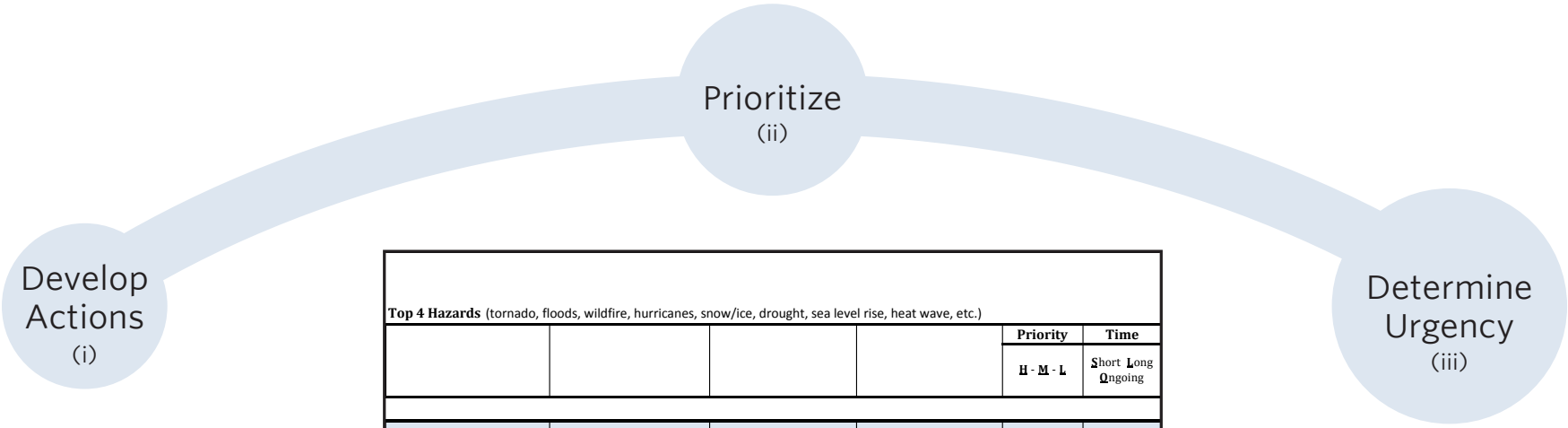
- Beachfront development reducing protection provided by dunes.
- Proliferation of subdivisions in wildfire and flood prone areas.
- Lack of urban tree canopy increasing heat island effects.

Examples of Strengths:

- Oyster reefs and tidal wetlands help reduce wave damage to property.
- Forested watersheds maintain drinking water supply during droughts.
- Native, vegetated slopes remain stable after intense 24-hour rain events.
- Floodplains provide stormwater storage and downstream flood reduction.

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 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 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.



Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)				**Priority**	**Time**
				H - M - L	**S**hort **L**ong **O**ngoing

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).

D Identify and Prioritize Community Actions

1

Identify and prioritize infrastructural actions.

Example of a **Risk Matrix** filled in with infrastructural actions, priorities, and level of urgency.

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S	Coastal Flooding SLR/Storm Surge	Inland Flooding and Rain Events	Ice and Snow	Wind	Priority H - M - L	Time Short Long Ongoing
Infrastructural									
Town Campus	Specific	Town	V	Verify risk from flooding events; Identify alternative locations during peak flooding; Verify maintenance plan annually				H	S
Evacuation Routes - Roads	Town-wide	Town/State	V	Install highly visible signage for evacuation routes; Develop and implement communication program				H	S
Electrical Distribution System	Multiple	CL&P/Town	V	Within floodplain area, establish plan to address protection and long-term relocation of equipment		Upgrade transformers; Maintain power line protection zone (tree trimming)		H	O-L
Dams (inland and coastal)	Multiple	Private	V	Prevent possibility of catastrophic dam failure; Identify and remove dams to minimize downstream flooding due to failure				H	L
Railway and State Bridges	Multiple	Amtrak/State	V	Improve communications between parties; Expand green/gray infrastructure and improve bridge structures; Assess vulnerability and prioritize infrastructure improvement list				M	S
State Roads/Intersections	Town-wide	State/Town	V	Coordinate with DOT, volunteers, public works to improve response; Need signage to warn of flooding risk in critical intersections				M	L
Wharves and Shore Infrastructure	Shore	Town-State-Private	V	Pursue comprehensive shoreline management plan; Establish community dialogue on retaining/relocating infrastructure				L	S
Waste Water Treatment Facility	Specific	Town	V	Conduct alternative siting feasibility study; Relocate to low risk area within next 25 years.				L	L
New Ambulance Center	Specific	Town	S	Continue to support services in budget; Add additional staff and vehicle in next annual cycle					Ongoing
Zoning Regulations (maintain large lot size)	Multiple	Town	S	Current building codes control development in risky areas; Consider additional zoning incentives (TDRs) to reduce risk to residential units					Ongoing

More examples of actions:

- Improved access in high-risk locations
- Reduce housing stock in vulnerable areas
- Prioritize development in low-risk areas
- Integrate future risks in capital improvement plans
- Flood-proof manhole covers
- Secure new generators for critical facilities

When prioritizing, consider factors such as:

- Funding availability and terms
- Agreement on outstanding impacts from recent hazard events
- Necessity for advancing longer-term outcomes
- Contribution towards meeting existing local and regional planning objectives

Examples of urgency:

- Current project to install hurricane-proof roof on school is an ongoing **(O)** action.
- Ensuring evacuation procedures are updated annually is considered a short-term **(S)** action.
- Reducing housing stock in high-risk areas, elevating a road, or replacing a bridge are long-term **(L)** actions.

D Identify and Prioritize Community Actions

2

Identify and prioritize societal actions.

Example of a **Risk Matrix** filled in with societal actions, priorities, and level of urgency.

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S	Coastal Flooding SLR/Storm Surge	Inland Flooding and Rain Events	Ice and Snow	Wind	Priority H - M - L	Time Short Long Ongoing
Societal									
Elderly Citizens (facilities)	Multiple	Private	V	Assess and identify vulnerabilities to determine residents needs during emergencies; Coordinate emergency planning efforts; Conduct routine evacuation drills				H	S
Neighborhood Cooperation	Town-wide	Private	V	Assist associations in identifying and conducting best practices to reduce risk; Advance a "Neighbor helping Neighbor" Program through Community Center training				H	S
Faith-based Organizations	Multiple	Private	V	Coordinate organizations in identifying and conducting best practices amongst members to reduce risk				H	S
Homeless Population	Town-wide	Town	V	Extreme weather flyers and communications about available services				M	S
Vulnerable Neighborhoods	South side	Town/Private	V	Identify level and location of vulnerable units; Develop longer term plan to reduce vulnerability				M	L
Coordinated Evacuation Plan	Town-wide	Town/State	V	Reconfigure evacuation routes; Update signage along critical routes				L	S
Sheltering Facility (upgrades)	Town/Region	Town/State	V	Conduct feasibility analysis for regional sheltering facility; Seek to construct over next 15 years.				L	L
Shelter Management Plan	Town-wide	Town	S	Review and update as needed on annual basis; More resources required (cots, shampoo, etc.)					Ongoing
Lower Household Expenses (flood insurance)	Town-wide	Town	S	Continue enrollment in FEMA Community Rating System (CRS);Reduced number flood insurance rate payers through volunteer buyouts/relocation					Ongoing
Volunteer Fire Department	Town-wide	Town	S	Continue support (well equipped and experienced) to further strengthen services - volunteer outreach					Ongoing

More examples of actions:

- Strengthen volunteer opportunities for residents
- Increase hazard awareness in high risk areas through education and outreach
- Foster a neighbor-helping-neighbor program across the community

When prioritizing, consider factors such as:

- Funding availability and terms
- Agreement on outstanding impacts from recent hazard events
- Necessity for advancing longer-term outcomes
- Contribution towards meeting existing local and/or regional planning objectives

Examples of urgency:

- A current regional sheltering and shared services agreement is an ongoing **(O)** action.
- A communication campaign on hazard impacts implemented in next six months is a short-term **(S)** action.
- Relocating affordable housing from high-hazard areas is a long-term **(L)** action.

D Identify and Prioritize Community Actions

3

Identify and prioritize environmental actions.

Example of a **Risk Matrix** filled in with environmental actions, priorities, and level of urgency.

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S	Coastal Flooding SLR/Storm Surge	Inland Flooding and Rain Events	Ice and Snow	Wind	Priority H - M - L	Time Short Long Ongoing
Environmental									
Beaches & Dunes	Multiple	State-Town-Private	V/S	Maintain existing beaches & dunes; Assess values and key locations relative to people and property				H	S
Forest (uniform age structure)	Town-wide	Town/State	V	Seeks management that diversifies the age structure of forests in Town; Assess and identify key vulnerabilities from tree fall				H	S
Salt Marsh	Multiple	State/Private	V/S	Maintain existing marsh; Consider additional regulatory protection (increased setbacks) to prevent impacts to resource; Assess risk reduction potential from existing and future wetlands				H	S
Open Space Acquisition (for flood impact reduction)	Town-wide	Town-State-Private	V	Secure state funding; Salt marsh advancement zones	Secure state/federal funding	Include land protection needs Master Plan		H	S-L
State Parks	Specific	State	V	Encourage the State to work more closely with Town to comprehensively maintain town-wide natural resources, amenities, and water quality; Coordinate with state regarding evacuation procedures				M	S
Rippowam River	Specific	State/Town	V		Improve risk reduction characteristics of waterway through natural infrastructure & riparian buffer enhancements			M	S-L
Drinking Water Reservoir	Multiple	State-Private	V	Conduct assessment to comprehensively identify vulnerabilities and develop action plans to increase resilience of natural resources and long term water quality/quantity; Implement improvements				L	L
Protected Open Space	Multiple	State-Town-Private	S	Maintain existing open space to help reduce risk to Town; Seek to increase open space with the highest risk reduction characteristics					Ongoing
Tree Inventory	Town-wide	Town	S	Continue to utilize tree inventory to develop comprehensive, priority-based tree maintenance plan along transportation/utility corridors					Ongoing
River Restoration Projects	Specific	Town/Private	S	Continue implementation of projects to restore river buffer and remove dam to reduce risk to adjoining homes and businesses					Ongoing

More examples of actions:

- Conserve high value salt marsh advancement zones
- Protect/manage lands located in flood zones
- Establish community-based green infrastructure proximate to high-risk locations
- Stabilize vulnerable slopes with native vegetation
- Increase urban tree canopy in low to moderate income neighborhoods

When prioritizing, consider factors such as:

- Funding availability and terms
- Agreement on outstanding impacts from recent hazard events
- Necessity for advancing longer-term outcomes
- Contribution towards meeting existing local and/or regional planning objectives

Examples of urgency:

- Protecting existing dunes by not permitting future development on the dunes is an ongoing **(O)** action.
- A dune restoration project implemented shortly after a hurricane is a short-term **(S)** action.
- Relocating homes to reduce risk and help expand the dune system to improve localized resilience is a long-term **(L)** action.

E Determine the Overall Priority Actions

Section E Objective: Develop agreement among workshop participants on the highest-priority actions across profiles—Infrastructural, Societal, Environmental—that will help reduce vulnerability or reinforce strengths resulting in greater community resilience. Once the large team has reconvened at the opening of this Section, directed report-outs by each small team (3-5 minutes per team using their Risk Matrix) in immediate succession is highly recommended.

1. Identify highest-priority actions (large team).

In Section D, participants in small teams created lists of actions for each feature across the infrastructural, societal, and environmental profiles. To ensure meaningful and more immediate community resilience building actions, the large team must reach agreement on a shorter (3 to 5) "highest-priority" action list. his Workshop step provides a vehicle to vet individual voices and for the large team, with all participants as a whole, to reach agreement on priorities for community resilience building.

2. Further define urgency and timing (large team).

To help move to a "highest-priority" action list, the large team should reconsider existing needs and urgency as expressed during the small team report-outs using their respective **Risk Matrixes**. The large team should also consider existing programs into which priority actions can be integrated easily or used to strengthen related actions with existing funding. In some cases, it may be advantageous to select a lower priority action if an opportunity for immediate integration and funding presents. Community resilience building is about creating irresistible and sustainable momentum through collaborative and routine action over time.

Facilitation Guidance: Several techniques are available to facilitate agreement by the large team on highest-priority actions. Directed report-outs by small teams (using **Risk Matrix**) with sequential capture and reinforcement of commonalities via flip charts is a very effective way to reach agreement on 3-5 highest-priority actions. This requires a facilitated dialogue and verbal agreement on highest-priority actions immediately following the small group reports. Providing an emphasis on "commonalities", as well as "differences", across small teams is an effective technique to accelerate agreement.

Alternatively, "sticky-dot voting" is a frequently used technique for determining which proposed actions are more important. With sticky-dot voting, a clear process is paramount, often including the following:

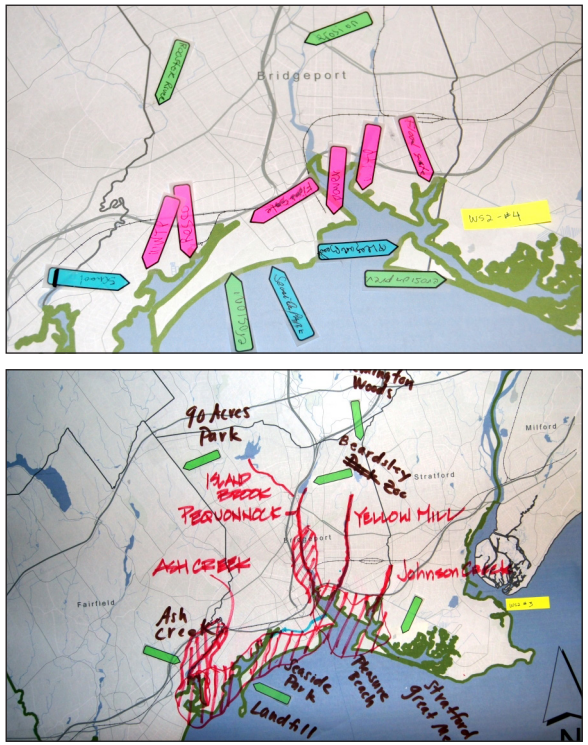
- Participants are given small dots (3-5) with an adhesive backing and told to place dots next to the actions on the Risk Matrixes they feel are of highest priority for the community.
- Specific criteria and instructions can be used to guide voting. For examples, participants may be given the option of placing all their dots next to one action, or directed to distribute among actions.
- Finally, the facilitator(s) tallies up dots to determine the 3-5 highest-priority actions. Final acknowledgement from participants on the 3-5 actions selected is paramount here.

F Put It All Together

Section F Objective: Develop comprehensive summary products from Community Resilience Building Workshop that will help reduce vulnerability or reinforce strengths resulting in greater community resilience.

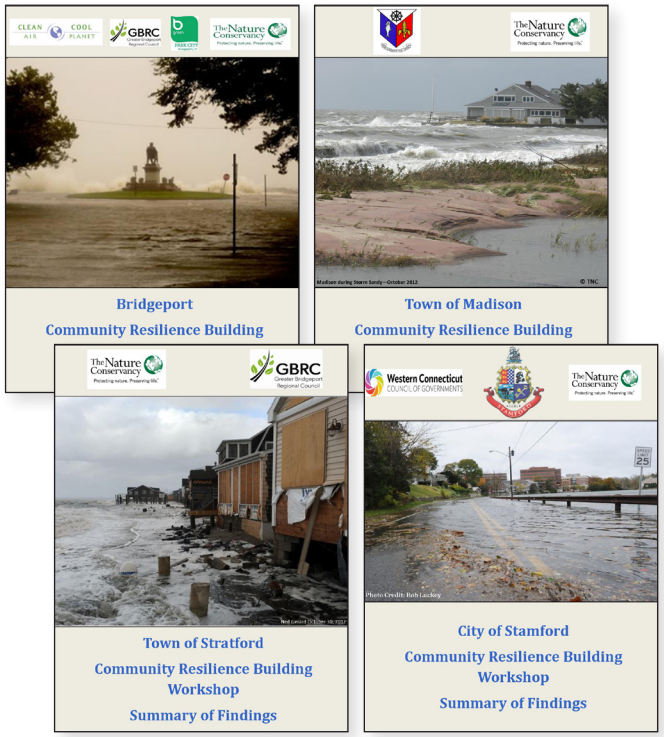
Generate final workshop products (core team).

In the aftermath of a **Community Resilience Building Workshop**, the core team must reconvene to generate a summary of findings report to be returned upon completion to participants and broader stakeholders. To achieve this outcome, the core team will need to 1) integrate and generate one master **Risk Matrix** for the community, 2) summarize top hazards and associated impacts (past, current, future), 3) distill the principal vulnerabilities and strengths, ownership, and locations, and 4) and organize a list of actions based on relative priority and urgency with emphasis on the 3-5 "highest-priority" actions. The final report should also list the affiliation of all invited and attending participants. Examples of completed summary of findings reports are available for review at **www.CommunityResilienceBuilding.org**. Public presentations of final findings from the Community Resilience Building Workshop are highly recommended to help increase awareness and receptivity amongst residents, citizens, staff, and/or employees.



Participatory mapping on Base Maps (Sections B & C)

Priority actions with agreement (Sections D & E)



CRB Workshop Summary of Findings (Section F)

G Moving Forward

Section G Objective: Advance the Community Resilience Building Workshop outcomes ultimately resulting in greater community resilience. Successful approaches and techniques that can help with community resilience building after the Workshop include:`

1. Continue community outreach and engagement.

- Develop a strategy to secure formal approval by leadership (council, boards, commissions, etc.) to advance priority actions.
- Establish working groups and leads to enhance momentum for identified priority actions.
- Start conversations with those not involved in developing the **Risk Matrix** and the Community Resilience Building Workshop with focus on impacts where people live and work.
- Share stories of successfully completed actions with others across the community and beyond.
- Pursue and secure funding for priorities and projects.

2. Secure additional data and information.

- Define and establish partnerships to assist with data and information needs.
- Implement data collection to help fill gaps and inform additional assessments.
- Prioritize where to focus more in-depth, data/information gathering efforts.
- Integrate monitoring protocols and procedures into projects and policies to ensure future resilience efforts are continuously re-informed and improving.
- Pursue funding to help with additional analysis and/or projects.

3. Inform existing planning and project activities.

- Identify existing efforts to reduce risks and provide protection to people, property, and the environment. This can provide a foundation on which to build a stronger, more comprehensive, community resilience strategy.
- Inform existing hazard mitigation, comprehensive, capital investment, stormwater, natural resources, housing, and sustainability planning with **Risk Matrix**.
- Examine current policies such as building codes and land use policies and update as needed to accommodate climate-related concerns and/or hazards prioritized in **Risk Matrix**.
- Set priorities and targets for community resilience building over time via clearly defined and agreed upon partnerships.

Risk Matrix Guide

Page numbers for the Workshop Steps & Tasks to complete each section of the **Risk Matrix**

B 2 Page 9

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S					Priority H - M - L	Time Short Long Ongoing
Infrastructural									
Societal									
Environmental									

C 1 Page 11

C 2 Page 12

C 3 Page 13

D 1 Page 15

D 2 Page 16

D 3 Page 17

Risk Matrix

The **Risk Matrix** captures the community's priority hazards, vulnerabilities, strengths, and actions. The **Risk Matrix** provides information necessary to develop strategies, inform community plans and advance conversations on how to lessen impacts from hazards and build resilience. Use the **Risk Matrix** and final summary report to inform ongoing discussions and decisions. Periodically revisit and update the **Risk Matrix** as your community makes progress on priority actions.

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S					Priority	Time
								H - **M** - **L**	**S**hort **L**ong **O**ngoing
Infrastructural									
Societal									
Environmental									

Recommended Risk Matrix size for Workshops is 24"x36" (Arch D) - large enough to legibly capture input and provide a focal point during and after Workshops.

Example of Completed Risk Matrix: Infrastructural

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S	Coastal Flooding SLR/Storm Surge	Inland Flooding and Rain Events	Ice and Snow	Wind	Priority H - M - L	Time Short Long Ongoing
Infrastructural									
Town Campus	Specific	Town	**V**	Verify risk from flooding events; Identify alternative locations during peak flooding; Verify maintenance plan annually				**H**	**S**
Evacuation Routes - Roads	Town-wide	Town/State	**V**	Install highly visible signage for evacuation routes; Develop and implement communication program				**H**	**S**
Nursing Homes/Elderly Care Facilities	Multiple	Private	**V**	Improve power generation; Review building codes and zoning for existing and future facilities				**H**	**S**
Homeowners Associations/Neighborhoods	Town-wide	Town/Private	**V**	Engage Neighborhood Associations and develop cooperative response plan with Town: Advance "Neighbor helping Neighbor" Program; Develop comprehensive neighborhood-based emergency plans				**H**	**S**
Electrical Distribution System	Multiple	CL&P/Town	**V**	Within floodplain area, establish plan to address protection and long-term relocation of equipment		Upgrade transformers; Maintain power line protection zone (tree trimming)		**H**	**O-L**
Dams (inland and coastal)	Multiple	Private	**V**	Prevent possibility of catastrophic dam failure; Identify and remove dams to minimize downstream flooding due to failure				**H**	**L**
Railway and State Bridges	Multiple	Amtrak/State	**V**	Improve communications between parties; Expand green/gray infrastructure and improve bridge structures; Assess vulnerability and prioritize infrastructure improvement list				**M**	**S**
Septic Systems	Town-wide	Private	**V**	Assess opportunities for community systems or alternative treatment technology; Upgrade regulations to reduce contamination in water ways				**M**	**L**
State Roads/Intersections	Town-wide	State/Town	**V**	Coordinate with DOT, volunteers, public works to improve response; Need signage to warn of flooding risk in critical intersections				**M**	**L**
Wharves and Shore Infrastructure	Shore	Town-State-Private	**V**	Establish community dialogue regarding retaining/relocating infrastructure; Advance comprehensive shoreline management plan				**L**	**S**
Waste Water Treatment Facility	Specific	Town	**V**	Conduct alternative siting feasibility study; Relocate to low risk area within next 25 years.				**L**	**L**
New Ambulance Center	Specific	Town	**S**	Continue to support services in budget; Add additional staff and vehicle in next annual cycle					**Ongoing**
Zoning Regulations (maintain large lot size)	Multiple	Town	**S**	Current building codes control development in risky areas; Consider additional zoning incentives (TDRs) to reduce risk to residential units					**Ongoing**
Business District (power generators)	Specific	Town/Private	**S**	Downtown business district with power generators in place; Prioritize pharmacy and gas stations					**Ongoing**

Example of Completed Risk Matrix: Societal

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S	Coastal Flooding SLR/Storm Surge	Inland Flooding and Rain Events	Ice and Snow	Wind	Priority H - M - L	Time Short Long Ongoing
Societal									
Elderly Citizens (facilities)	Multiple	Private	**V**	Assess and identify vulnerabilities to determine residents needs during emergencies; Coordinate emergency planning efforts; Conduct routine evacuation drills				**H**	**S**
Neighborhood Cooperation	Town-wide	Private	**V**	Assist associations in identifying and conducting best practices to reduce risk; Advance a "Neighbor helping Neighbor" Program through Community Center training				**H**	**S**
Faith-based Organizations	Multiple	Private	**V**	Coordinate organizations in identifying and conducting best practices amongst members to reduce risk				**H**	**S**
Municipal & Regional Tabletop Exercise	Town/Region	Town	**V**	Need to conduct exercises to maximize readiness; Better regional planning/communication plan to discuss vulnerabilities, share ideas, and resources				**H**	**S**
Homeless Population	Town-wide	Town	**V**	Extreme weather flyers and communications about available services				**M**	**S**
Database (locations of vulnerable population)	Town/Region	Town/State	**V**	Need to improve database to ensure high level responses and safety				**M**	**S**
Vulnerable Neighborhoods	South side	Town/Private	**V**	Identify level and location of vulnerable units; Develop longer term plan to reduce vulnerability				**M**	**L**
Coordinated Evacuation Plan	Town-wide	Town/State	**V**	Reconfigure evacuation routes; Update signage along critical routes				**L**	**S**
Coastal Homeowners	Coastline	Private	**V**	Review building codes and zoning regulations; Continue e communication about risks and evacuation procedures				**L**	**S**
Sheltering Facility (upgrades)	Town/Region	Town/State	**V**	Conduct feasibility analysis for regional sheltering facility; Seek to construct over next 15 years.				**L**	**L**
Code Red (Reverse 911)	Town-wide	Town	**S**	Maintain and upgrade as needed					**Ongoing**
Shelter Management Plan	Town-wide	Town	**S**	Review and update as needed on annual basis; More resources required (cots, shampoo, etc.)					**Ongoing**
Lower Household Expenses (flood insurance)	Town-wide	Town	**S**	Continue enrollment in FEMA Community Rating System (CRS);Reduced number flood insurance rate payers through volunteer buyouts/relocation					**Ongoing**
Volunteer Fire Department	Town-wide	Town	**S**	Continue support (well equipped and experienced) to further strengthen services - volunteer outreach					**Ongoing**

Example of Completed Risk Matrix: Environmental

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Top 4 Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)

Features	Location	Ownership	V or S	Coastal Flooding SLR/Storm Surge	Inland Flooding and Rain Events	Ice and Snow	Wind	Priority H - M - L	Time Short Long Ongoing
Environmental									
Beaches & Dunes	Multiple	State-Town-Private	**V/S**	Maintain existing beaches & dunes; Assess values and key locations relative to people and property				**H**	**S**
Forest (uniform age structure)	Town-wide	Town/State	**V**	Seeks management that diversifies the age structure of forests in Town; Assess and identify key vulnerabilities from tree fall				**H**	**S**
Salt Marsh	Multiple	State/Private	**V/S**	Maintain existing marsh; Consider additional regulatory protection (increased setbacks) to prevent impacts to resource; Assess risk reduction potential from existing and future wetlands				**H**	**S**
Shoreline Erosion	Coastal/Rivers	Town/Private	**V**	Assess impacts to various scenarios; Identify green infrastructure/living shoreline projects				**H**	**S**
Open Space Acquisition (for flood impact reduction)	Town-wide	Town-State-Private	**V**	Secure state funding; Salt marsh advancement zones	Secure state/federal funding	Include land protection needs Master Plan		**H**	**S-L**
Riparian Buffers	Town-wide	Town	**V**	Identify areas with greatest restoration potential; Areas for future acquisition that can prevent flooding to adjoining infrastructure				**M**	**S**
State Parks	Specific	State	**V**	Encourage the State to work more closely with Town to comprehensively maintain town-wide natural resources, amenities, and water quality; Coordinate with state regarding evacuation procedures				**M**	**S**
Rippowam River	Specific	State/Town	**V**		Improve risk reduction characteristics of waterway through natural infrastructure & riparian buffer enhancements			**M**	**S-L**
Drinking Water Reservoir	Multiple	State-Private	**V**	Conduct assessment to comprehensively identify vulnerabilities and develop action plans to increase resilience of natural resources and long term water quality/quantity; Implement improvements				**L**	**L**
Harbor Sedimentation	Coastal	Town	**V**	Reuse dredged sediment to augment natural infrastructure (beneficial reuse)				**L**	**L**
Protected Open Space	Multiple	State-Town-Private	**S**	Maintain existing open space to help reduce risk to Town; Seek to increase open space with the highest risk reduction characteristics					**Ongoing**
Beach/Dune Resiliency Plan	Coastal	Town/State	**S**	Continue to implement/update the Plan					**Ongoing**
Tree Inventory	Town-wide	Town	**S**	Continue to utilize tree inventory to develop comprehensive, priority-based tree maintenance plan along transportation/utility corridors					**Ongoing**
River Restoration Projects	Specific	Town/Private	**S**	Continue implementation of projects to restore river buffer and remove dam to reduce risk to adjoining homes and businesses					**Ongoing**

Quick Reference

Ⓐ Prepare for the Workshop

Ⓑ Characterize Hazards

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

Ⓒ Identify Community Vulnerabilities and Strengths

1. **Infrastructural**
2. **Societal**
3. **Environmental**

Ⓓ Identify and Prioritize Community Actions

1. **Infrastructural**
2. **Societal**
3. **Environmental**

Ⓔ Determine the Overall Priority Actions

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

Ⓕ Put It All Together

1. **Finalize report.**

Ⓖ Move Forward

Community Resilience Building Workshop Risk Matrix

H-**M**-**L** priority for action over the **S**hort or **L**ong term (and **O**ngoing)
V = Vulnerability **S** = Strength

Features	Location	Ownership	V or S	Priority (H - M - L)	Time (Short Long Ongoing)
Top Priority Hazards (tornado, floods, wildfire, hurricanes, snow/ice, drought, sea level rise, heat wave, etc.)					
Infrastructural					
Societal					
Environmental					

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Triggering Questions:

Hazards Ⓑ 2

- 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 yrs.)
- What's 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?

Infrastructural Profile Ⓒ 1 Ⓓ 1

- Transportation, waste water treatment, nursing homes, schools, office park, hazardous materials facility, dams, laboratories, churches, pharmacies, groceries, gas stations?
- What makes this infrastructure vulnerable? Location, age, building codes, type of housing?
- What are consequences of this infrastructure being vulnerable? Lack of access to critical facilities – urgency care/pharmacies?

Possible Actions: Improve access, reduce housing stock in vulnerable areas, prioritize future development in lower-risk areas, integrate future risks in capital improvement plans?

Societal Profile Ⓒ 2 Ⓓ 2

- Elderly, low/moderate income, special needs, languages spoken, citizens/employees?
- What are the strengths and vulnerabilities of people in your community? Active civic groups, organizations, associations; Full time police, fire, and emergency medical services; Strong lines of communication for emergency info?
- How can hazards intensify these characteristics? Where are areas for improvement in the community?

Possible Actions: Improve existing programs (which ones)? Increase awareness via education/outreach on hazards? Increase involvement by citizens/employees (on what and with whom)?

Environmental Profile Ⓒ 3 Ⓓ 3

- What natural resources are important to your community?
- What benefits do these natural resources provide (storm buffering, fire breaks, erosion control, water quality improvement, slope stabilization, recreation)?
- Which natural resources are exposed to current and future hazards?
- What have been the effects of these hazards on these natural resources?
- Where are the high risk areas and what vulnerabilities exist for the environment?

Possible Actions: Conserve high value resource areas? Protect land in flood zone from future development via codes, zoning, and/or land use policy?

Notes

Highest Priority Actions:

1. _____
2. _____
3. _____
4. _____
5. _____

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