

# Coastal Community Resilience Indicators and Rating Systems

National Oceanic and Atmospheric Administration

Office for Coastal Management

Prepared by Eastern Research Group, Inc.

Social Coast; February 10, 2016

# Agenda

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# Background (The Need)

- A number of metrics, indicators, and resources for assessing community resilience to coastal hazards exist
- Some communities may be overwhelmed or not know where to start with all of these resources available



# Project Goal

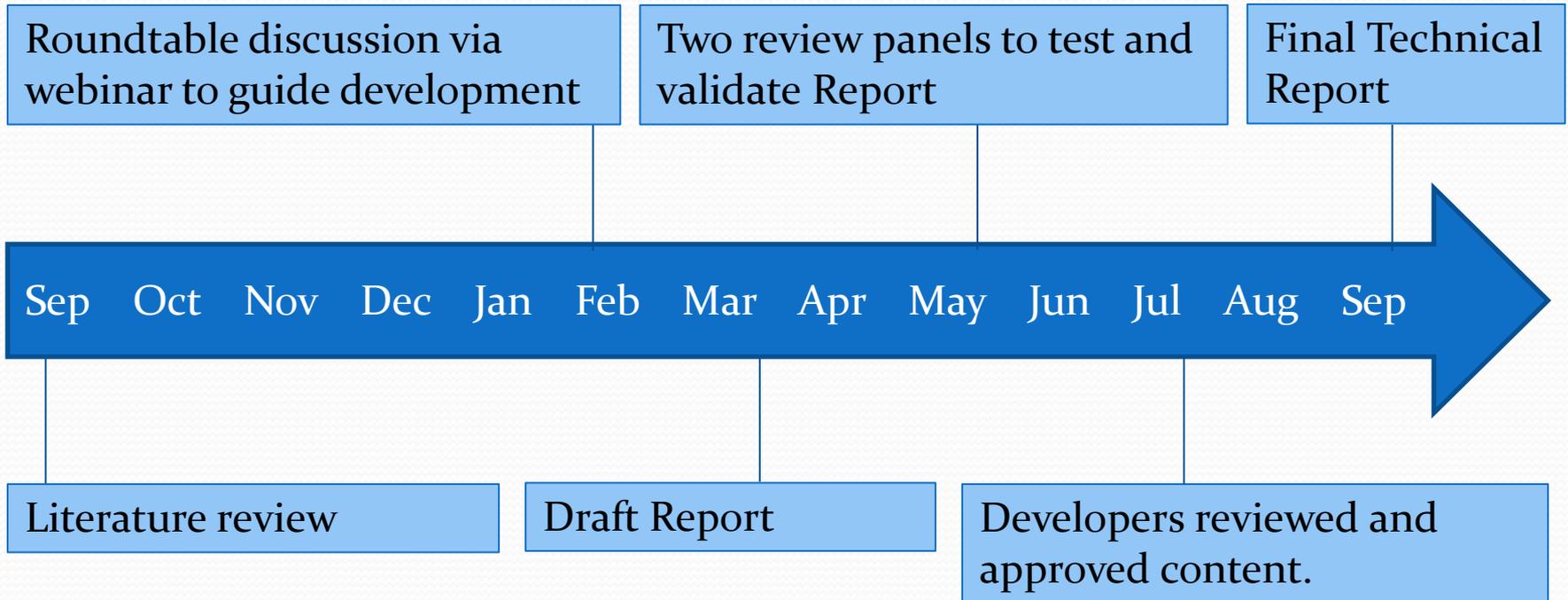
- Develop a report to help communities find the most suitable resources to benchmark and track their resilience to coastal hazards (e.g., storms, precipitation, coastal flooding, sea-level rise)



# Definition

- **Indicator:** Measure of something that we want to know the condition of or that we want to track. Indicators help us understand where we are, where we are going, and how far we are from the goal
  - Drought – water levels of lakes and ponds, rain amounts
  - Climate change – temperatures, sea-level rise
  - Resilience – infrastructure, economy, planning

# Project Timeline (9/2014-9/2015)



# Report

- Help communities *quickly* find the most suitable resources to benchmark and track their resilience to coastal hazards (e.g., storms, precipitation, coastal flooding, sea-level rise)
- Introduction (overview, resource selection, benefits, how to use)
- Navigation table (matrix with key information)
- Resource profiles (description, snapshots, and case studies)
- Appendix (w/other literature not in main report)

# What This Report Is and Is Not



# What This Report Is and Is Not

This Product IS:	This Product Is NOT:
Focused on community-based resilience	Focused on ecosystem-based resilience
Focused on resilience to coastal hazards (primarily coastal flooding)	Focused on non-coastal hazards (heat, drought, tornadoes, earthquakes, etc.)
A compilation of resources communities can use to assess themselves (internal).	A compilation of resources that an outside organization (state or federal) could apply to your community
A report highlighting <i>existing</i> indicators/metrics	A <i>new</i> set of indicators/metrics
Information that helps you match a resource to your needs	A recommendation of what existing resources are better than others
A report reviewed by developers of each resource	A comprehensive set of all coastal resilience indicators and metrics

# Report: Introduction

- Context
  - Audience: community planners, natural resource managers
  - Scope: Focus on community-level resilience to coastal hazards
- Criteria for Resources
  - Coastal-hazards
  - Community-level Resilience
  - City, town, county (internal assessment)
  - Provides guidance and direction
  - Developers available to review material & provide content

# Report: Introduction

- Benefits
  - Save time by quickly finding the right resource
  - Bring together local leaders & stakeholders
  - Begin participation in, or earn additional points in, FEMA's Community Rating System
  - Become a more resilient community
- How to Use
  - Use the navigation table to filter your options
  - View the resource profile

# Resources Included

- Climate Change Readiness Index
- American Red Cross Ready Rating Self-Assessments
- Maryland's CoastSmart Communities Scorecard
- Coastal Resilience Index: A Community Self-Assessment
- Community Resilience System
- Community Recovery Tool: Disaster Recovery Tracking Tool
- Getting to Resilience: A Coastal Community Planning Evaluation Tool
- Resilience Alliance: Resilience Assessment Framework
- Rural Disaster Resilience Planning
- STAR Community Rating System Profile

# Report: Navigation Table

- Internal (used to learn about community), External (used to compare to other communities)
- 3rd Party Evaluation Report Performed and Available
- FEMA Community Rating System Point Guidance
- Facilitation Included
- Recommendations for Next Steps
- Recognition for Participants
- Examples or Case Studies Available
- Qualitative Metrics/Indicators, Quantitative Metrics/Indicators
- Local (city/town), County, Region
- Rural, Urban, or Either
- Also Addresses Resilience to Inland Hazards
- Tailored to Specific Geographies (but adaptable)
- Free or Fee for Use

# Report: Navigation Table

NAVIGATION TOOL	Purpose		Features					Metric		Community				Applicability			Cost		Level of Effort			
Name of Metric or Indicator (URL to resource is embedded)	Internal (used to learn about community)	External (used to compare to other communities)	3rd Party Evaluation Available	CRS Point Guidance	Facilitation Included	Recommendations for Next Steps	Recognition for Participants	Examples or Case Studies Available	Qualitative	Quantitative	Local (city/town)	County	Region	Rural	Urban	Addresses Inland Hazards	Addresses Coastal Hazards	Tailored to Specific Geographies (but adaptable)	Free	Fee for Use	Notes	Go to Page (click to go to resource profile page)
<a href="#">Climate Change Readiness Index</a>																					A day or two of focus groups.	6
<a href="#">American Red Cross Ready Rating Self-Assessments</a>																					Several focus group sessions.	11
<a href="#">Maryland's CoastSmart Communities Scorecard</a>																					Single focus group.	15
<a href="#">Coastal Resilience Index: A Community Self-Assessment</a>																					A day or two of focus groups.	20
<a href="#">Community Resilience System</a>																					Around 25 hours of facilitated working groups.	25

# Resource Profile

Title of Resource

Overview and Benefits

Applicability to Your Community

Resources Needed

Purpose  
Resilience cycle  
Features  
Outcomes from using  
Indicator rating type  
Link

Words from the developer:

Community size  
Level of development  
Geographic relevance  
Application to coastal resilience

Cost of resource or tool?  
Type of resource?  
Level of effort for organizer?  
Facilitation sessions?  
Team members needed?  
Assistance available?

## Features

- Third-party evaluation available.
- Provides guidance on attaining CRS points.
- Facilitation included.
- Recommendations for next steps.
- Recognition for participant communities. **Participants can display the Ready Rating member seal for recognition and/or choose to be listed on the Ready Rating [Current Member Listing](#) website.**
- Examples available of other communities using tool.
- Related resources/tools available from the developer. **Participants have access to the [Ready Rating Toolbox](#), which includes resources for encouraging businesses, organizations, and schools to raise emergency planning awareness, develop emergency plans, and create exercises and activities to help with plan implementation.**

# Words from Developer

## **Words from the developer:**

“The Getting to Resilience tool was developed prior to Hurricane Sandy, but has become an essential part of municipal resilience planning post-Sandy. A major benefit of using the tool is that it provides a platform for a diversity of municipal staff and elected officials to discuss their risks and vulnerabilities and subsequent integrated municipal planning and project implementation. Additionally, the tool outputs a series of municipal-specific Community Rating System suggestions and hazard mitigation planning actions. The tool is easy to use, FREE, and the municipalities that have participated in the Getting to Resilience process have seen real success in enhancing resilience in long and short-term municipal planning.”

**Lisa Auermuller, Jacques Cousteau National Estuarine Research Reserve**

# Resource Profile Snapshot

Assessing Risk and Vulnerability		Yes	No
<b>1. Has your community considered the following?</b>			
• Coastal erosion and/or shoreline change	<input type="checkbox"/>	<input type="checkbox"/>	
• Sea-level rise	<input type="checkbox"/>	<input type="checkbox"/>	
• Coastal flooding	<input type="checkbox"/>	<input type="checkbox"/>	
• Storm surge	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2. Has the past extent of the following coastal hazards been identified and mapped based on historical information, existing plans and reports, or scientific and local knowledge?</b>			
• Coastal erosion and/or shoreline change	<input type="checkbox"/>	<input type="checkbox"/>	
• Sea-level rise	<input type="checkbox"/>	<input type="checkbox"/>	
• Coastal flooding	<input type="checkbox"/>	<input type="checkbox"/>	
• Storm surge	<input type="checkbox"/>	<input type="checkbox"/>	
<b>3. Do any plans describe the damage and cost of previous storms, floods, or erosion?</b>			
<b>4. Does the community track repetitive loss properties within the National Flood Insurance Program (NFIP)?</b>			
<b>5. Have historic rates of local sea-level rise been defined through tide-gauges or research?</b>			
<b>6. Does the community have staff trained in mapping or monitoring the following?</b>			
• Coastal erosion and/or shoreline change	<input type="checkbox"/>	<input type="checkbox"/>	
• Sea-level rise	<input type="checkbox"/>	<input type="checkbox"/>	
• Coastal flooding	<input type="checkbox"/>	<input type="checkbox"/>	
• Storm surge	<input type="checkbox"/>	<input type="checkbox"/>	
<b>7. Are maps or spatial data used to define the future extent of the following coastal hazards?</b>			
• Coastal erosion and/or shoreline change	<input type="checkbox"/>	<input type="checkbox"/>	
• Sea-level rise	<input type="checkbox"/>	<input type="checkbox"/>	
• Coastal flooding	<input type="checkbox"/>	<input type="checkbox"/>	
• Storm surge	<input type="checkbox"/>	<input type="checkbox"/>	
<b>8. Do any plans estimate future financial losses that may result from sea-level rise?</b>			
	<input type="checkbox"/>	<input type="checkbox"/>	

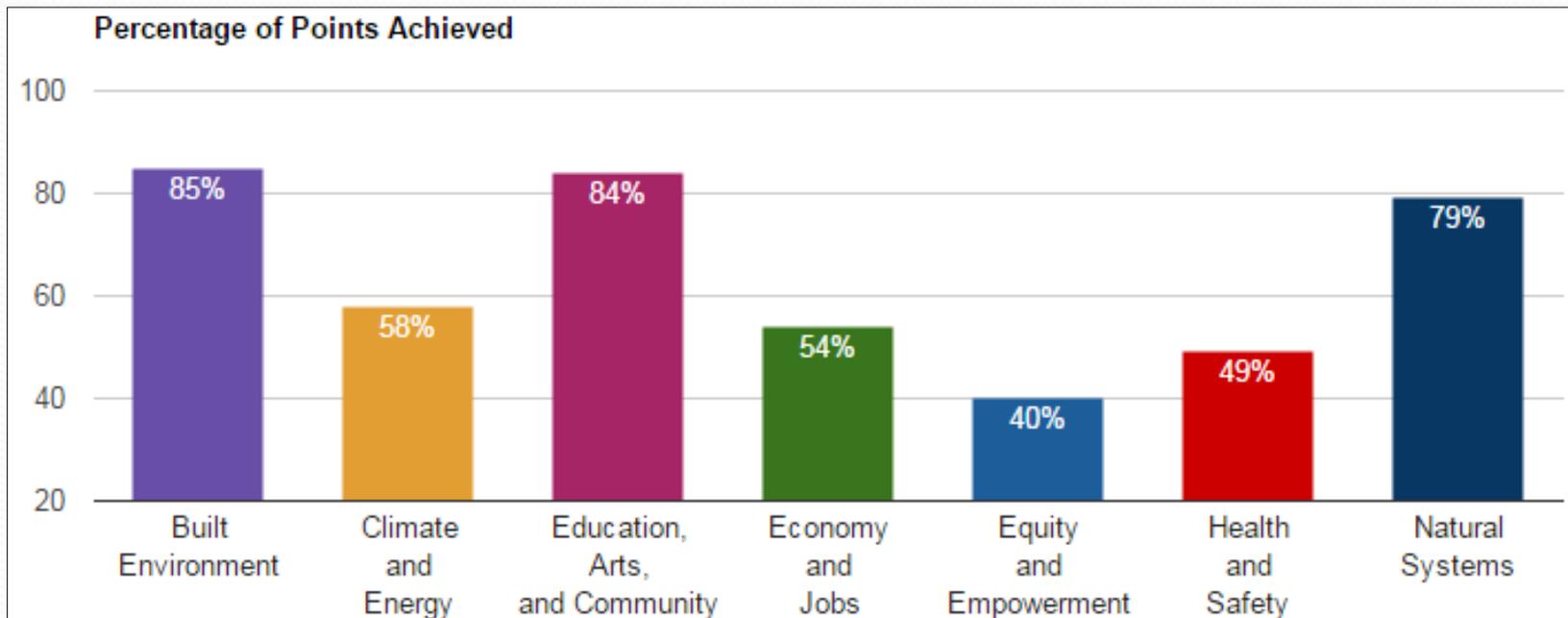


### Community Rating System (CRS) points

- ▶ **Activity 410 - Floodplain Mapping** The objective of this activity is to improve the quality of the mapping that is used to identify and regulate floodplain development (e.g. Higher study standards (HSS), using future-conditions hydrology, including sea level rise), **160 points.**
- ▶ **Activity 510 - Floodplain Management Planning** The objective of this activity is to credit the production of an overall strategy of programs, projects, and measures that will reduce the adverse impact of the hazard on the community and help meet other community needs (e.g. Repetitive loss area analysis (RLAA)), **140 points**

# Resource Profile Case Studies

- When available, case studies with how resource was used, lessons learned, results by actual communities



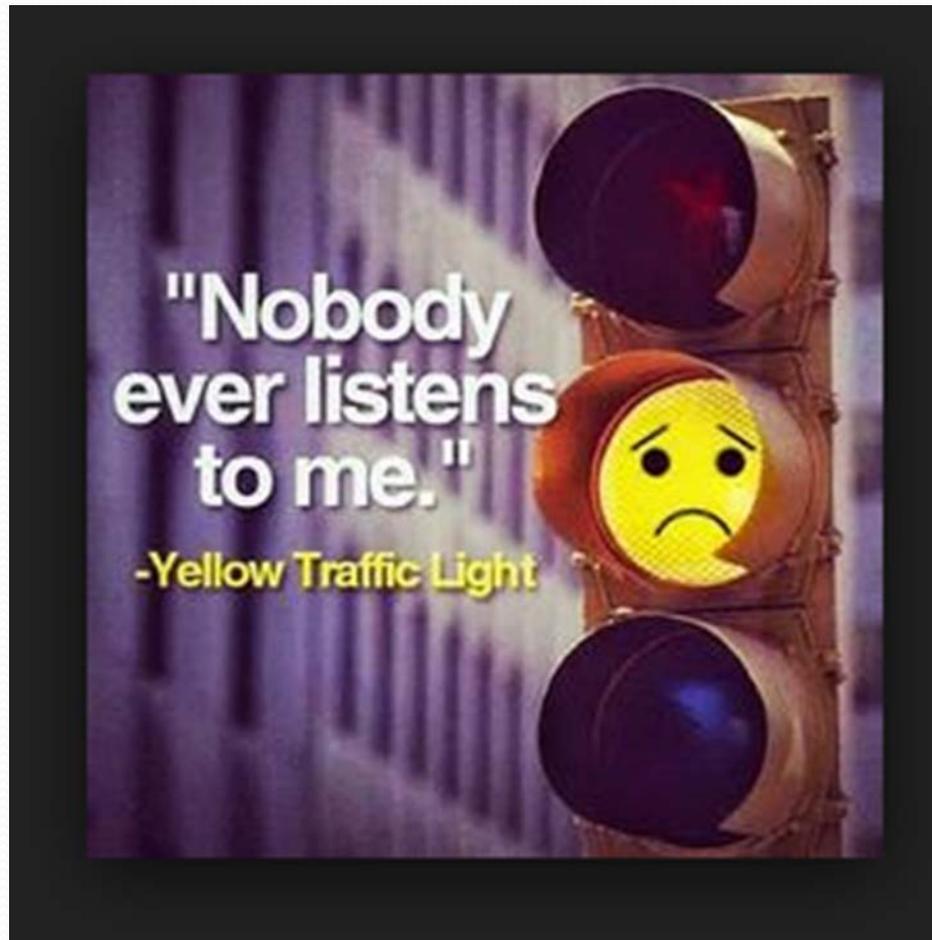
# Literature Review

- Collected and reviewed approximately 100 sources with indicators addressing resilience
- Organized into four tables:
  - Assessment Tools & Guidance Documents
  - Case studies
  - Academic papers
  - Miscellaneous resources
- Will soon be posted on the NOAA Office for Coastal Management website alongside report

# Future Steps

- Recommend this be developed as a web-based guide as this was a common request from webinar and meeting participants during product development and user testing.

# The Yellow Card is Out: Time to Go Faster



# Now Available

<https://coast.noaa.gov/digitalcoast/publications/resilience-indicators>



**DigitalCoast**  
OFFICE FOR COASTAL MANAGEMENT

About

Data

Tools

## Coastal Community Resilience Indicators Systems

Local planners can be overwhelmed by the large number of resilience-indicator resources available to them, and what each has to offer. The primary purpose of this report is to help minimize the obstacles a community may face when starting to assess community resilience. The report is designed to connect communities to the tools and resources (e.g., guidance documents, approaches, frameworks) best suited for moving them forward in the planning process, whether it be a simple initial risk and vulnerability assessment or a post-hazard response process. The intended audience is community planners, natural resource managers, or similar professionals who might be involved with development of local plans (land use, hazard mitigation, transportation, and others)—or anyone assisting communities with development of these plans. Each community that is able to begin discussing or assessing resilience strengthens the coastal resilience of the nation.

### Coastal Community Resilience Indicators and Rating Systems



Written under contract for the  
NOAA Office for Coastal Management  
<http://www.coast.noaa.gov>

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