



Communicating Future Conditions and Evolving Risks

Evaluating Community Needs and Best Practices

Association of State Floodplain Managers Annual Conference
June 20, 2018



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Assessing the Landscape



- What is the marketplace for tools and resources on future conditions?
- Who is using them?
- Are they fitting the need?
- Where are the gaps?



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Future Conditions Study Scope

The study assessed community needs, as well as the strengths and limitations of existing resources meant to frame communication around future conditions and empower local stakeholders to make well-informed decisions, with seven focus areas:

- 1 Audiences for future conditions products
- 2 Strengths and limitations of existing tools and resources
- 3 Data considerations and challenges
- 4 Data presentation and product types
- 5 Product delivery platforms
- 6 Best practices for communicating future conditions

The study comprised an analysis of online existing tools and resources; a literature review focused on identifying existing future conditions information, products, and risk communication tactics that are most useful to communities; and informal internal interviews with community engagement and hazard mitigation professionals.

Who Needs Future Conditions Information?



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National Scale Tools

COASTAL Resilience

Mapping portal

[Learn more](#)

Coastal Resilience is a program led by The Nature Conservancy to examine nature's role in reducing coastal flood risk. The program consists of an approach, a web mapping tool, and a network of practitioners around the world supporting hazard mitigation and climate adaptation planning.

Australia



Caribbean



Indonesia



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ENGAGEMENT

100

Communities

across 11 countries trained in Coastal Resilience planning & action

AWARENESS

90

Publications

making the case for nature-based solutions that reduce risk

ACTION

25

Restoration or Conservation projects implemented using our decision support tools



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Community-Level Needs: Data

Diverse information to support diverse audiences



WHAT IS IT?

The incorporation of information on future conditions and future risks into hazard mitigation and community resilience planning typically takes place at the local level, which means that audiences for this information—as well as their needs—are extraordinarily diverse. Given the diverse needs of end users, it is impossible for a single dataset or product to meet all of those needs.

High-resolution data for detailed assessments to support decision making



WHAT IS IT?

The most common limitation of national and regional datasets is the coarse resolution of the available data, which makes it inappropriate for use at the parcel or structure level. As a result, communities often commission studies to develop high-resolution products that can be utilized in local vulnerability and economic impact assessments to inform planning and decision-making processes or regulatory requirements.

Sea level rise impacts tied to frequencies



WHAT IS IT?

Sea level rise is one of the principal concerns about which communities seek information. For future conditions information, and specifically sea level rise information, to be useful for risk, vulnerability, and economic analyses, it must be presented within the context of event frequency. Both high frequency (e.g. MHHW) and lower frequencies (e.g. 1-percent annual chance) are needed.

Vulnerability and economic impacts



WHAT IS IT?

Map products are the most common form of information produced for communicating future conditions hazards. For communities to make the decision to reduce losses, maps are not enough. Vulnerability assessments and economic impact analyses are important to answer the questions “So what?” and “Now what?” Completing these analyses helps to garner attention from decision makers, prioritize mitigation actions, and gain political will for resilience efforts.

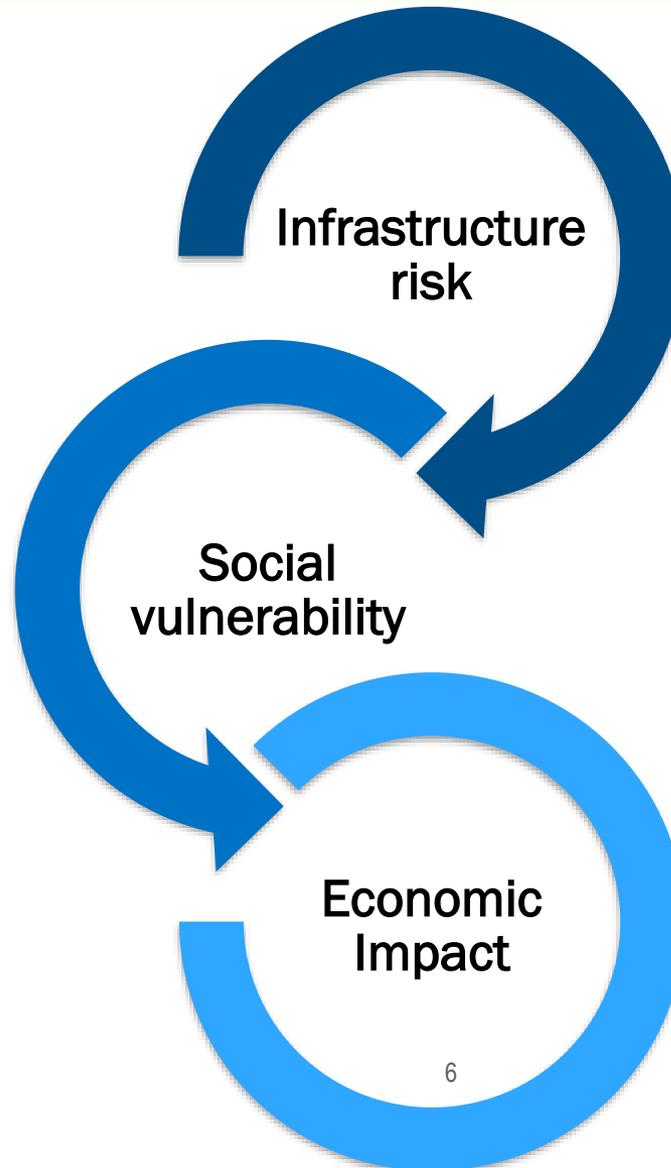
Clarity on best available data for local needs and the know-how to use it



WHAT IS IT?

Future conditions and particularly sea level rise information is available from a host of reputable sources, which leads to “analysis paralysis” – confusion as to what the data really means for individual communities and which dataset they should be using. Communities need clarity on how to identify the best available data or their various local efforts.

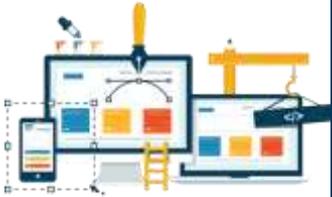
Community-Level Data Needs: Risk and Vulnerability Assessments



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Community-Level Needs: Product Delivery and Communication

Preference for Online Platforms & Resources



WHAT IS IT?

As society continues to place a high value on instant access resources like online products or mobile applications, it is no surprise that digital resources are the preferred option. However, lower capacity communities may still desire paper maps or, at a minimum, PDFs.

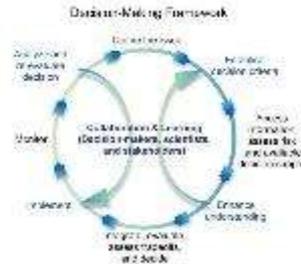
Relevance in data delivery and facilitating use



WHAT IS IT?

Data must be supplemented with information that better communicates why the data is important for local communities and how the data could/should be used to support local resiliency initiatives.

Decision Support Resources



WHAT IS IT?

To make well-informed decisions, communities must not only be fully aware of their risk, but also understand how to interpret, prioritize, integrate, and implement solutions. Without comprehensive decision support tools, compiling, interpreting, and applying future conditions and flood risk information may overwhelm a community.

Make it LOCAL and speak their language



WHAT IS IT?

For data platforms, the ability to supplement national datasets with local information is necessary. Effective engagement requires an understanding of audience, an ability to tailor language to meet the audience at their level of understanding, and the use of local visual aids to help people connect with complex concepts and terms.

Don't go at it alone!

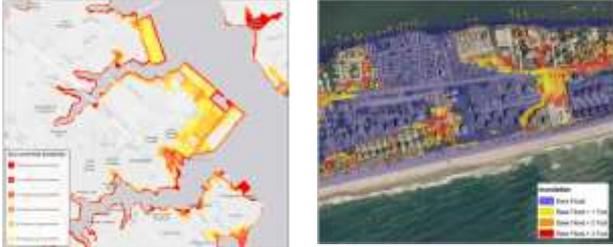


WHAT IS IT?

FEMA is not alone in its efforts to promote coastal resiliency, and other Federal agencies, including NOAA, USACE, and the USGS, serve essential roles. Given the synergies among agency programs, well-designed collaborative partnerships can leverage platforms, data, products, and engagement opportunities to provide valuable benefits to communities as they work to improve community resiliency.

Community-Level Needs: Mapping Products

Flood Extent Maps (Polygon & Raster)



Flood Depth Grids



Flood Hazard Maps



STRENGTHS

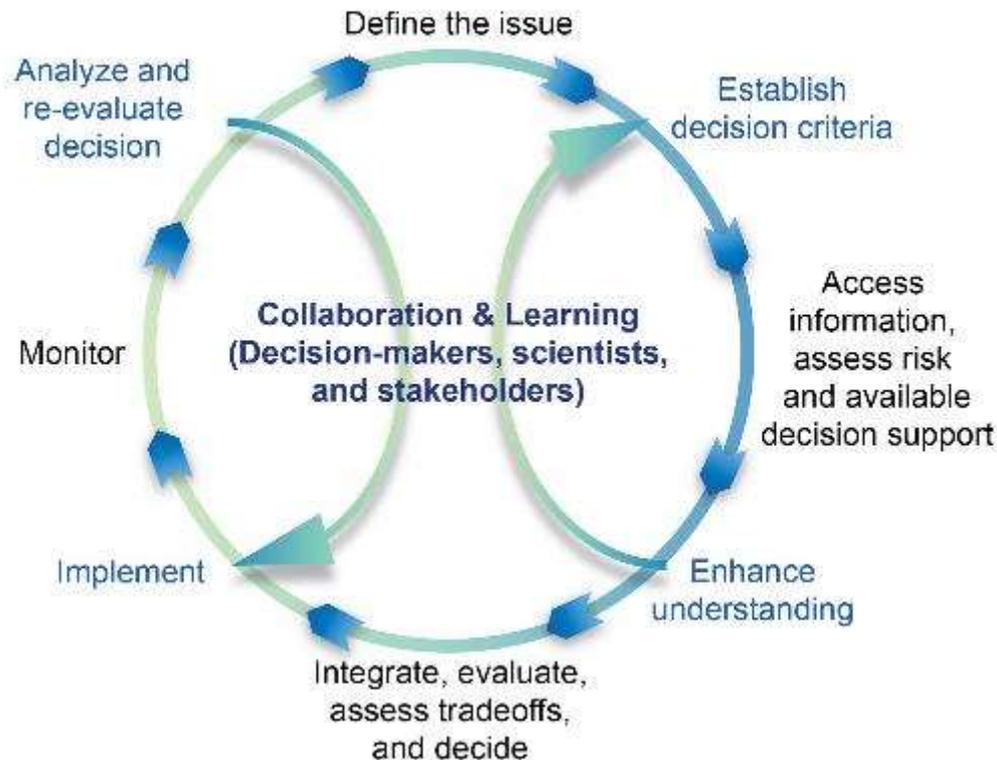
- A simple map to help communities determine which areas are affected by various levels of flooding.
- Can overlay multiple future conditions scenarios on one map, which makes it possible to compare flooding scenarios simultaneously and see where additional areas of flooding will be under higher flood conditions.
- Communities value the simplicity of extent maps, since they make it easy to see what areas are “in” and “out,” and they can apply that information to planning and zoning objectives.
- Useful to communicate more nuanced information related to variable flood depths at individual raster grid cells.
- Communities are able to quantify the depth of flooding for specific roadways, buildings, or other infrastructure of interest—a typical component of vulnerability and economic analyses
- Contain important information to inform community planners and engineers about areas of high wave hazards and future conditions Base Flood Elevations (BFEs).
- The additional information provided in these maps helps decision makers visualize the magnitude and hazards associated with future conditions flooding across areas of the project site for severe flood events.

LIMITATIONS

- Does not inform about other hazards, such as wave impacts and flood depths.
- Communities often need that additional information for vulnerability and economic analyses.
- Difficult to compare mapping for multiple future conditions scenarios simultaneously.
- Much more detailed than the extent maps, making it more expensive to produce and more difficult to compare mapping for multiple future conditions scenarios simultaneously.
- Due to cost and effort, it is also more difficult to provide the data for larger areas (e.g., statewide, regionally, or nationally).

Community-Level Needs: Decision-Support Tools

Decision-Making Framework



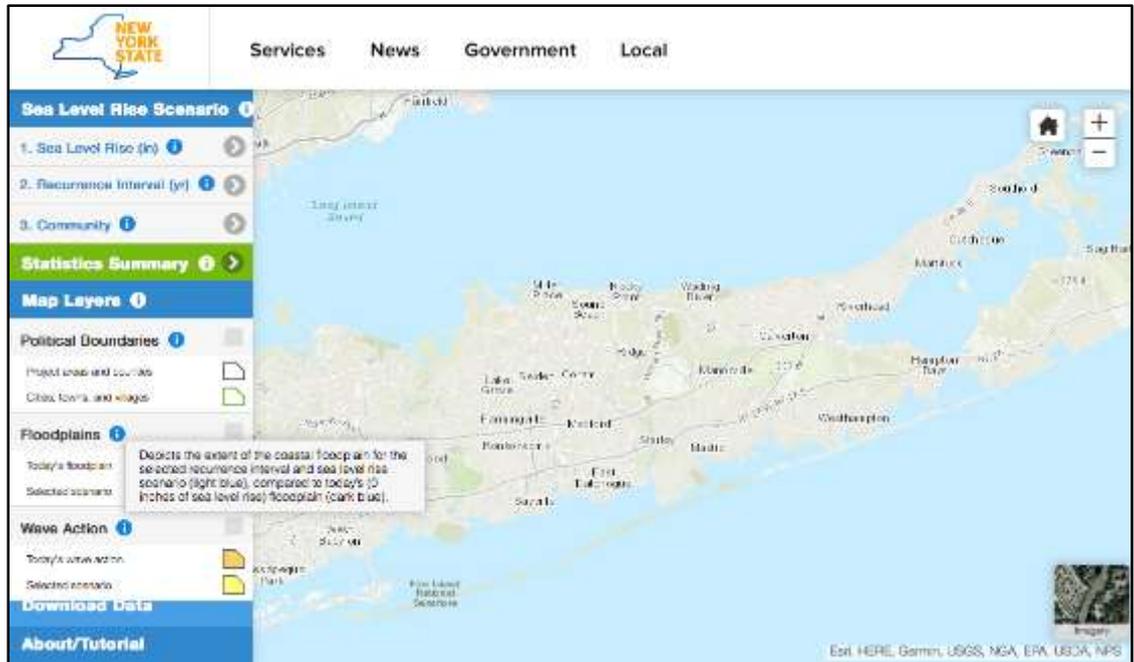
From: NCA, 2014 (<https://nca2014.globalchange.gov/report/response-strategies/decision-support>)



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Community-Level Needs: Product Delivery Platforms

- Digital over paper
- Web-based over proprietary software
- National platforms with flexibility for local data



Community-Level Needs: Communicating Risk and Uncertainty

Uncertainty can make people feel helpless
– unless they are given the tools to act

- ▶ Understand your audience
- ▶ Avoid jargon
- ▶ Use visuals

WE NEED SOME NEW JARGON,
THE PUBLIC ARE STARTING TO
UNDERSTAND WHAT WE'RE
TALKING ABOUT!



Risk and Uncertainty: Communications Best Practices

Virtual Reality



Experience San Francisco in Virtual Reality with the Look Ahead App

Engage potential users, build trust, and empower, and help San Francisco meet its climate action goals.

Get involved with the Look Ahead app. Experience the virtual reality app in person at the Look Ahead app launch event on October 10th, 2018. The app is available on the App Store and Google Play.

Download the app on your smartphone, tablet, or computer. The app is available on the App Store and Google Play. The app is available on the App Store and Google Play.

Get started with the Look Ahead San Francisco virtual reality app!

The Look Ahead App is a free virtual reality app that allows you to explore the future of San Francisco. The app is available on the App Store and Google Play. The app is available on the App Store and Google Play.

Storytelling



Participatory Mapping



Now Let's Hear From You!

- ▶ Are you tackling evolving flood risk in your own communities?
- ▶ Who or what is your chief motivation? (In other words, **who is asking?**)
- ▶ How are you incorporating a diversity of perspectives into planning?
- ▶ How are you bringing everyone to the table?



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