Storm Surge Marketing

ERG

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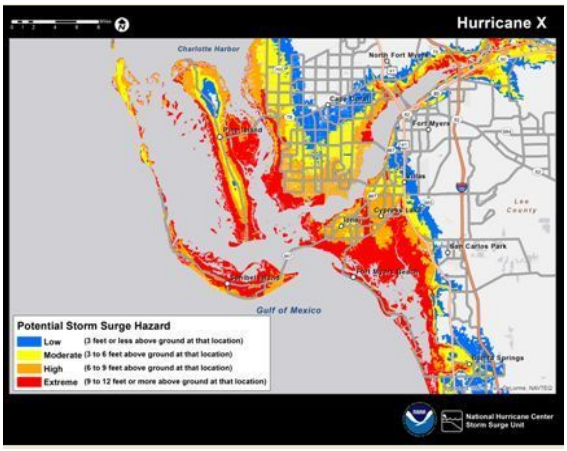
Contents

Final Draft—June 16, 2014

Storm Surge Marketing Plan
2014 Hurricane Season

With plans to have the *Potential Storm Surge Flooding* map ready for experimental use in the 2014 hurricane season, the National Weather Service (NWS)/National Hurricane Center (NHC) is undertaking several important training, coordination, and marketing efforts.[1]



This plan describes marketing objectives, audiences, messages, strategies, and activities for the 2014 hurricane season. The plan is informed by the social science work conducted in 2012 to 2014 that involved testing and refining prototypes of the map, reaching out to stakeholders in four test geographies (Grey, Maine, New Orleans, Louisiana, Morehead City, North Carolina, and Tampa, Florida) to pave the way for implementing the map, and a limited amount of message and product testing with individual stakeholders and focus groups. The plan also offers up ideas for consideration in the years ahead and discusses the need to evaluate marketing activities to determine their reach, level of engagement, and impact.

A Dynamic Document

This marketing plan should be revisited regularly to reflect metrics, changing priorities, and lessons learned. Strategies and tactics may need to be added, deleted, or modified to maximize the effectiveness of the marketing efforts.

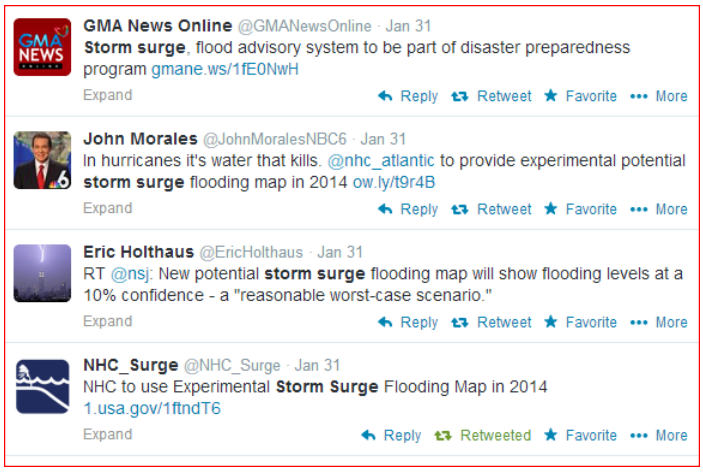
A. Current Situation

Although storm surge is often the greatest threat to life and property from a hurricane, many people do not understand this term or the threat it represents. NWS/NHC has been developing two new products to help increase the public's understanding and response to storm surge: 1) a storm surge warning/watch and accompanying map and 2) the *Potential Storm Surge Flooding* map. NHC has used social science research techniques to guide the development of these new products, engaging its partners and stakeholders throughout the process. NHC plans to use the *Potential Storm Surge Flooding* map experimentally in the 2014 season; the warning product is still in development.

Going into the 2014 season, NWS/NHC is in a strong position to introduce the map experimentally, to increase public awareness and understanding of storm surge, and to help its key partners more effectively convey the dangers of storm surge and the need to make appropriate preparedness and response decisions. During the course of the social science work, it was clear that NWS partners and the

[1] NHC is leading additional marketing, training, and coordination efforts that are not reflected in this plan.

public view NWS and NHC as the respected and authoritative word on hurricanes; the level of trust among NWS's partners and the public is generally very high. Also, with recent storms such as Sandy, the public is more aware of the dangers of hurricanes, and storm surge in particular. Additionally, NHC has already done a lot to pave the way for introducing the map in 2014 through focus groups, meetings, training, and media interviews in both 2013 and 2014. Among its key partners, there is a strong awareness and positive anticipation of the map. Many media outlets have also reported on the map. When NHC has released press releases, there also has been strong social media engagement on storm surge (see just a few of the tweets from Twitter after January 31, 2014, NHC press release at right).



B. Goals and Objectives

In preparation for the 2014 hurricane season, NHC needs to communicate the availability of the new *Potential Storm Surge Flooding* map to its audiences (see Section C), ensure their correct understanding and interpretation of the map, and strive for consistent messaging around the map among NWS partners.

During the season, it will be important to test messages, track outreach, and identify "lessons learned" for addressing any barriers encountered and for continually improving marketing efforts.

Overall Goals

The ultimate goal of these marketing efforts, both in 2014 and beyond, is to **save lives** by:

1. Helping NWS partners that interface with the public during hurricanes and tropical/extratropical storms be better equipped to convey the risks of storm surge.
2. Encouraging the public to take the appropriate preparedness and response actions in the event of a storm surge.

Objectives for 2014 Season

1. Raise awareness and understanding of the new *Potential Storm Surge Flooding* map.
2. Raise the public's awareness of storm surge hazards and encourage the public to take appropriate preparedness and response actions.
3. Ensure the smooth implementation of the map by key NWS partners and consistent messaging about the map.

C. Audiences

NWS/NHC relies on its public and private partners to help disseminate forecast products and information. NWS Weather Forecast Offices (WFOs) interact more directly with some of these partners at a regional or local level; however, all audiences look to NWS/NHC for official forecast information and guidance during a hurricane. During the 2013 focus groups, participants were asked how risk communication flows during a storm event in their communities. They were also asked to draw the flow or chain of communication in their communities (see Appendix A for a diagram that represents collective input from this exercise). As this diagram shows, participants perceived NWS/NHC/WFOs to be at the top of the pyramid, the source from which all information flows.

Key Audiences for 2014

- **NWS partners** are the **primary audience** target leading up to the 2014 season because they need to know and understand the map if it is used this season, be able to help explain the map to the public, and be able to consistently message about the map.
- High-level **decision-makers** are also a key audience because they already are showing interest in the new map and will be evaluating how the map is used.
- Another audience is the **general public** since members of the public may reach out to NWS or seek out the map on their own and not have the benefit of intermediaries to help explain the map.

The key entities in the risk communication chain are:

- **WFOs.** WFOs are on the front lines in a storm. They work closely with the local emergency management community, the media, decision-makers, and community groups. Many WFO staff members have very positive, long-term relationships with these groups, and communities see the WFOs as trusted messengers and the "face" of NWS.
- **Emergency management community.** Seasoned and newly appointed emergency managers (EMs), local/state/federal emergency services directors and coordinators, operations personnel, and fire and rescue chiefs all need risk information that they can 1) easily communicate to the public, 2) use to plan appropriate public safety measures, and 3) explain the potential hazards to local decision-makers. EMs need succinct, easy-to-understand forecast information and messaging leading up to a storm, as well as ongoing educational needs.
- **Media.** Broadcast meteorologists and newspaper reporters/editors need jargon-free forecast information that they can easily synthesize and distill for their media. Broadcast media have a need for both very short (e.g., a few seconds) messaging and for longer (e.g., several minutes) educational pieces that they can use when they have more air time to fill. The media also need high-resolution graphics; many work with vendors to create specialized graphics for their needs.

How EMs Educate the Public

Some EMs still heavily rely on printed materials for educating the public and want documents that they can tailor to their needs, such as writable PDFs or documents in customizable formats. Others are creating increasingly robust websites and interactive maps, and also becoming more engaged in social media.

- **Community decision-makers.** Many other groups are involved in decision-making, storm preparation, and relief efforts at the local, state, and regional levels. These include transportation officials, town/county managers, park rangers, public works officials, state department of

environment/natural resources officials, local/state/regional planners, and school/university officials.

- **Community groups.** Many community groups work closely with EMs to help convey hurricane hazard information within a community. These organizations include associations for the elderly or the disabled, hospital and eldercare staff, citizen emergency response groups, and disaster relief groups. Some of these groups also work closely with neighborhood groups or faith-based organizations that are the trusted messengers in a community. WFOs work closely with many of these groups.
- **General public.** Members of the general public want to protect themselves, their families, and their property from danger. As a hurricane approaches, they tend to interpret hurricane forecast information in terms of risk of personal injury or property damage. This interpretation is based not only on the actual risk information being communicated, but also on emotions evoked by the information, the credibility of the message and the messenger, and the public's level of familiarity with the technical terms and science underlying the information product.

D. Public Messages

A number of key messages are important to communicate in the 2014 hurricane season to help people understand the *Potential Storm Surge Flooding* map and to better understand the dangers of storm surge. The following messaging platform has been crafted for the public audience, and it focuses broadly on storm surge. All marketing and outreach efforts for the public should be built around this platform for the 2014 hurricane season.

Risk Information That Resonates

- Personal, dramatic, and emotional
- Free of technical terms or jargon
- Visually engaging with graphics

1. Storm surge is often the greatest threat to life and property from a hurricane.
2. Storm surge can cause water levels to rise quickly, leaving no time to take action if you have not evacuated.
3. Tropical storms, category 1 or 2 hurricanes, major (category 3 to 5) hurricanes, and post-tropical cyclones can all cause life-threatening storm surge.
4. Storm surge can also occur with non-tropical storms like Nor'easters and other winter storms.
5. Many U.S. Gulf and East Coast areas are vulnerable to storm surge, including areas up to several miles inland from the coastline.
6. Storm surge can occur before, during, or after the center of a storm passes through an area.
7. During the peak of a storm surge event, it is unlikely that emergency responders will be able to reach you if you are in danger.
8. Even if your community is not directly affected by storm surge, it could experience other hazards from the storm and face dangerous conditions such as impassable roads, water and sewage problems, and power outages. If power remains on, downed electrical wires can pose an electrocution risk.
9. Weather conditions and the forecast can change.

10. Local officials issue evacuation or other instructions for many reasons. Always follow the instructions of local officials.

"Sound Bites" and Slogans Highlighted in Outreach

The recurring sound bites and slogans are highlighted in the 2014 communications materials:

- **Storm Surge Can Be Deadly!** Just **six inches** of fast-moving flood water can knock over an adult. It takes only **two feet** of rushing water to carry away most vehicles—including pickups and SUVs.
- **Know Your Map. Know Your Zone.** Find out **today** if you live in a storm surge evacuation zone.

Additional messages for the public are centered on the map itself:

- The map tells you where dangerous storm surge can occur and how high the flooding could be in your community.
- The map cannot tell you exactly how high the water will be at your house.
- The map will change as the forecast changes.
- The map does not account for waves; the impacts can be worse at the coast because of large and dangerous breaking waves.
- The map does not account for rainfall; flooding could be worse with heavy rains.
- The map can differ from evacuation zones and FEMA flood insurance rate maps.

E. Key Points for NWS Partners

NWS partners need the public messaging platform outlined above to communicate to their constituents, but they also need more detailed information about the map for their own operations. In particular, they need to know the following key points:

1. The map shows land areas where storm surge could occur, based on the latest NHC forecast, and how high the water could reach in those areas.
2. The potential water depths are shown as above ground, not above mean sea level or normal tide levels.
3. Local land elevations are taken into account, along with tides.
4. The depicted water levels do not account for rainfall or waves.
5. The map will typically be issued when a hurricane or tropical storm watch is first issued for any portion of the Gulf or East Coast, or approximately 48 hours before the anticipated onset of tropical storm force winds.
6. The map is subject to change every six hours in association with every new NHC full advisory package.
7. Due to the processing time required to produce the map, it will not be available until about 45 to 60 minutes following advisory release.

8. The map is based on the forecast movement and intensity of the current tropical storm or hurricane, and it takes into account likely forecast errors.
9. The map represents a reasonable estimate of worst-case scenario flooding of normally dry land at particular locations due to storm surge. There is a 1-in-10 chance that the storm surge flooding at any particular location could be higher than the values shown on the map.
10. The map is created from multiple runs of the Sea, Lake, and Overland Surges from Hurricanes (SLOSH) model.

F. Marketing Strategies

Strategies for the 2014 Hurricane Season

The social science work conducted in 2012 to 2014 was instrumental in laying out the following marketing strategies for the 2014 hurricane season:

1. NWS/NHC needs to get messages out **repeatedly to raise awareness of the map and of storm surge in general.** In addition to media interviews and briefings, NWS/NHC can **facilitate viral information sharing** by making it easy for people to share messages on social media sites, or by using tools with sharing features, such as widgets.
2. NWS/NHC needs to provide its messages in **multiple formats** (such as brochures, pictures, websites, and media), to develop products that can be displayed on **Web pages, mobile apps, and social media.**
3. When talking about storm surge, NWS/NHC needs to use **strong and forceful language.**
4. Outreach must be **concise, understandable, and jargon-free** for the general public, and it must grab and quickly hold people's attention.
5. NWS/NHC should provide **visual images** that reinforce risk communication and storm surge messages. **Visualizations** are often more effective than text messages, and images are easily shared on social media channels (and the Internet as a whole).

2014 Marketing at a Glance

Who?
NWS partners, high-level decision-makers, and the public.

What?
Partners and the public need to understand there is a **new map** that can help them make decisions if a **tropical cyclone storm surge** is forecast for their area. Decision-makers need to know NHC is putting out this new map to enhance its forecast communication and public education, with the ultimate goal of **saving lives**.

Where?
Through **multiple formats** (such as brochures, pictures, websites, and media).

When?
Repeatedly in advance of/during the season to raise awareness of the map and of storm surge in general.

How?
With **strong, forceful language** and **visual images.**
With **concise, understandable, jargon-free, and attention-getting** messaging and outreach.

Strategies Beyond 2014

Additional strategies can be considered beyond the 2014 season, when partners have become more acquainted with the map and NWS/NHC has additional time and experience to customize its marketing efforts. These include:

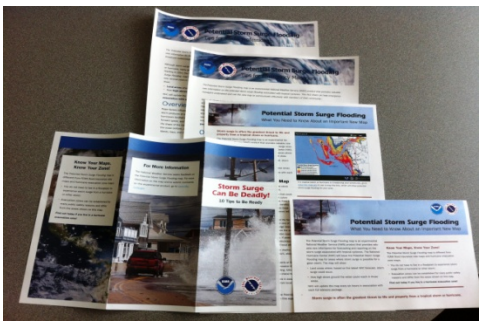
1. Consider how to **personalize** information—for example, by using "storm veterans" and testimonials from people who have weathered horrendous storms, since personal experiences are viewed as persuasive means of communicating threats.
2. Consider how to make information as **localized** as possible so that people can relate to it, such as by providing partners customizable outreach templates and tool kits.
3. Consider ways to enable partners to effectively help spread messages, such as by developing **portable content**—such as mobile applications, widgets and online videos—that can easily extend reach beyond NHC's website to provide credible, timely, and accurate content for partners and others.
4. Consider ways to ensure **continuing education, outreach, and awareness-building** throughout the year, not just during a storm.
5. Recognize **specialized or hard-to-reach** populations not tied into traditional communication channels, those with language barriers, and those who do not trust government or media sources. Use trusted messengers to reach these groups, like senior centers, neighborhood associations, and churches and faith-based groups.

G. Activities Completed or Underway

Tipsheets

Based on the social science gathered from the project, a series of tipsheets was developed for different audiences:

- "Storm Surge Can Be Deadly—10 Tips to Be Ready" (for the public)
- "Potential Storm Surge Flooding: What You Need to Know About a New Map" (for the public; **in review**)
- "Potential Storm Surge Flooding: Tips for Emergency Managers"
- "Potential Storm Surge Flooding: Tips for Media Professionals"



The "Storm Surge Can Be Deadly" tipsheet provides general information about storm surge, including content to address some common misconceptions or misunderstandings about storm surge gleaned from the social science work. It was developed in two formats to maximize its usefulness by NWS and NWS partners: 1) as a one-page fact sheet with a blank side that can be customized by EMs and other partners; and 2) as a brochure with more graphics and visual engagement that can be distributed without any additional customization. Another tipsheet for the public, "Potential Storm Surge Flooding:

What You Need to Know About a New Map" (now in review), provides more detail about the map. This tipsheet emerged after testing with focus groups (see Appendix B) in early 2014.

All of the tipsheets are available on NHC's website, and NHC has also distributed them in training sessions and workshops. The tipsheets also are being translated into Spanish. They also have been used to brief officials at many levels. NHC has commented that the tipsheets make it easy for its staff, even those that are not well acquainted with the storm surge work, to quickly respond to inquiries and ensure consistent messaging.

NHC Press Releases and Media Briefings

NHC has generated press releases and conducted many media briefings and interviews about storm surge and the new map with key media outlets. More are planned in advance of the 2014 season. NHC press releases also tend to trigger social media activity.

Other Activities Underway

1. **Product description.** NHC is developing a text product that explains the map, the methodologies used to produce the map, and its limitations. This product description will be posted on NHC's website.
2. **Social media/blog.** NHC has several active Twitter and Facebook accounts, and it already posts information about hurricanes, storm surge, and preparedness on these platforms and engages with its audiences through these mechanisms. NHC will be posting frequently in the 2014 season and launching a blog to communicate information about storm surge, to engage in dialogue with stakeholders, and to address questions.
3. **Video.** A short, 2- to 3-minute video is in development that will present the map and the public messaging platform. The video zooms in to different portions of the map to explain important concepts about it, and includes background information on storm surge. A shorter video has also been produced that focuses the messaging more succinctly. This short video simply alerts people to the new map and directs people to NHC's website for more information.

Some Video Sharing Resources

YouTube: http://www.youtube.com/
Yahoo: http://screen.yahoo.com/
Google: http://www.google.com/videohp
Vine: https://vine.co/
Vimeo: http://www.vimeo.com

4. **Storm surge visualization.** The NOAA Coastal Services Center is developing a visualization to describe surge, the damage it can do, and how people can prepare. The focus will be on the sound bite: ***Storm Surge Can Be Deadly!*** *Just* ***six inches*** *of fast-moving flood water can knock over an adult. It takes only* ***two feet*** *of rushing water to carry away most vehicles—including pickups and SUVs.*
5. **Webinars.** Dr. Betty Morrow is planning a webinar presentation for WFO staff on social marketing principles and improving communication around storm surge.

H. Additional Activities to Consider for 2014 or Beyond

1. **NHC storm surge Web pages.** As the 2014 hurricane season approaches, there will likely be more traffic on NHC's website—and outreach (including social media) will hopefully drive even more traffic to the site.

    - **Analytics** could be consulted both now and during the season to ascertain who visits the storm surge pages, how they get to the pages, how long they stay there, etc. with the goal of understanding where and how these pages could be enhanced.
    - **Improvements** could also be made to http://www.nhc.noaa.gov/surge, such as revising and updating content, prominently displaying graphics, adding social media icons/blog, adding interactivity, layering information, etc. A rotating banner (if allowed) would be a way to quickly update and freshen up the page (and parallel http://www.noaa.gov). One element of the banner could be the new inundation graphic; another could be "Five Things You Need to Know About Storm Surge" (e.g., storm surge is typically the most life-threatening impact of a hurricane, storm surge is not reflected in the Saffir-Simpson Wind Scale, storm surge can affect communities many miles inland). NWS websites, including the NHC and WFO sites, should be updated to include information about the map—and more content about storm surge, if possible. It would be desirable to have consistent content and messaging across sites.

2. **Infographics.** One or more infographics could be developed about tropical cyclones, storm surge, and the map to help educate the public in an engaging way. These could be focused both broadly on hurricane statistics (e.g., deadliest hurricanes, costliest hurricanes) and incorporate the broad platform of messaging described above. Infographics can be shared via social media and posted on websites. Due to their strong graphic design and narrative quality, infographics have strong potential to "go viral."

3. **Storm surge image sharing.** Image sharing is a valuable social media tool for sharing information and making risk communication resources available to the public. Image sharing often involves posting images (photos, artwork, etc.) to public websites where they can be viewed, tagged, categorized, and even used by others. Images of the destructive nature of storm surge, its impacts, and water levels are all possibilities. Online communities that provide image sharing services (e.g., Flickr) can offer an organized, universal gateway to such pictures. Partners can use these images for reference, teaching, presentations, and outreach.

4. **Water level animation.** An animation that shows what different water levels look like could be helpful in educating people about the dangers of storm surge. Different organizations are developing pictures or simulations along these lines, which NWS/ NHC could publicize. NHC could also develop its own animation, which could be posted on its website, used in presentations, posted to YouTube, linked on Twitter and Facebook pages, and publicized along with **http://oceantoday.noaa.gov/hurricanestormsurge**.

5. **Widget.** A widget is an application that can be utilized by partners to display featured content directly on their desktop, website, or social media site. Widgets provide interactive information and fresh content with minimal user maintenance. The content in a widget can be updated automatically, ensuring access to up-to-date and credible content. NWS/NHC could provide a widget (in both English and Spanish) on storm surge facts, statistics, preparedness tips, and other information.

6. **Audio or podcast series.** NHC may be able to tape audio files or post portions of media interviews on its website and even build a library of audio files over time. Podcasts help to deliver information

in a convenient and enjoyable format, and can be played "on the go" from a mobile device. Podcasts can also be accessed through websites. NWS/NHC partners could then be able to easily download podcasts from noaa.gov, post podcasts to their own Web pages, provide links to the NHC podcast page from their website, and subscribe to podcast series.

7. **Survivor video or podcasts**. NWS/NHC could develop a series of personal testimonials from storm surge survivors. Focus groups repeatedly voiced this suggestion, stating that messaging from "someone who has lived through it" would be very powerful and persuasive.
8. **Google Hangouts.** Many government agencies are effectively using Google Hangouts as an educational and engagement tool. NWS/NHC would need to provide an expert to answer viewers' questions about storm surge and a moderator to screen the questions.
9. **National campaign.** A broad-based, national storm surge campaign could be considered leading up to next season, with an initial splash followed by different elements designed to roll out during the season. The campaign should be designed to reach a broad public base, as well as hard-to-reach populations, with community partners.
10. **Storm surge app.** Once the map moves into the operational phase, it may be possible to develop an app for people to access the map, get action items based on water levels and other hazard information, and get other educational information before, during, and after a storm.

Outreach Activities by Audience Targets				
Product/Activity	**WFO**	**EMs**	**Media**	**Public**
Completed/Underway Activities				
Tipsheets	✓	✓	✓	✓
Spanish Language Tipsheets	✓	✓	✓	✓
Media briefings, interviews			✓	✓
WFO webinar	✓			
Video (2 to 3 minutes)	✓	✓	✓	✓
Video (45 seconds)				✓
Social media/blog		✓	✓	✓
Additional Activities to Consider				
Website update (storm surge pages)	✓	✓	✓	✓
Infographics			✓	✓
Widget	✓	✓	✓	✓
Image sharing	✓	✓	✓	✓
Water level animation	✓	✓	✓	✓

NWS/NHC audio or podcast series			✓	✓
Survivor podcasts or videos			✓	✓
Google Hangout				✓
National campaign	✓	✓	✓	✓
Storm surge app	✓	✓	✓	✓

I. Measurement

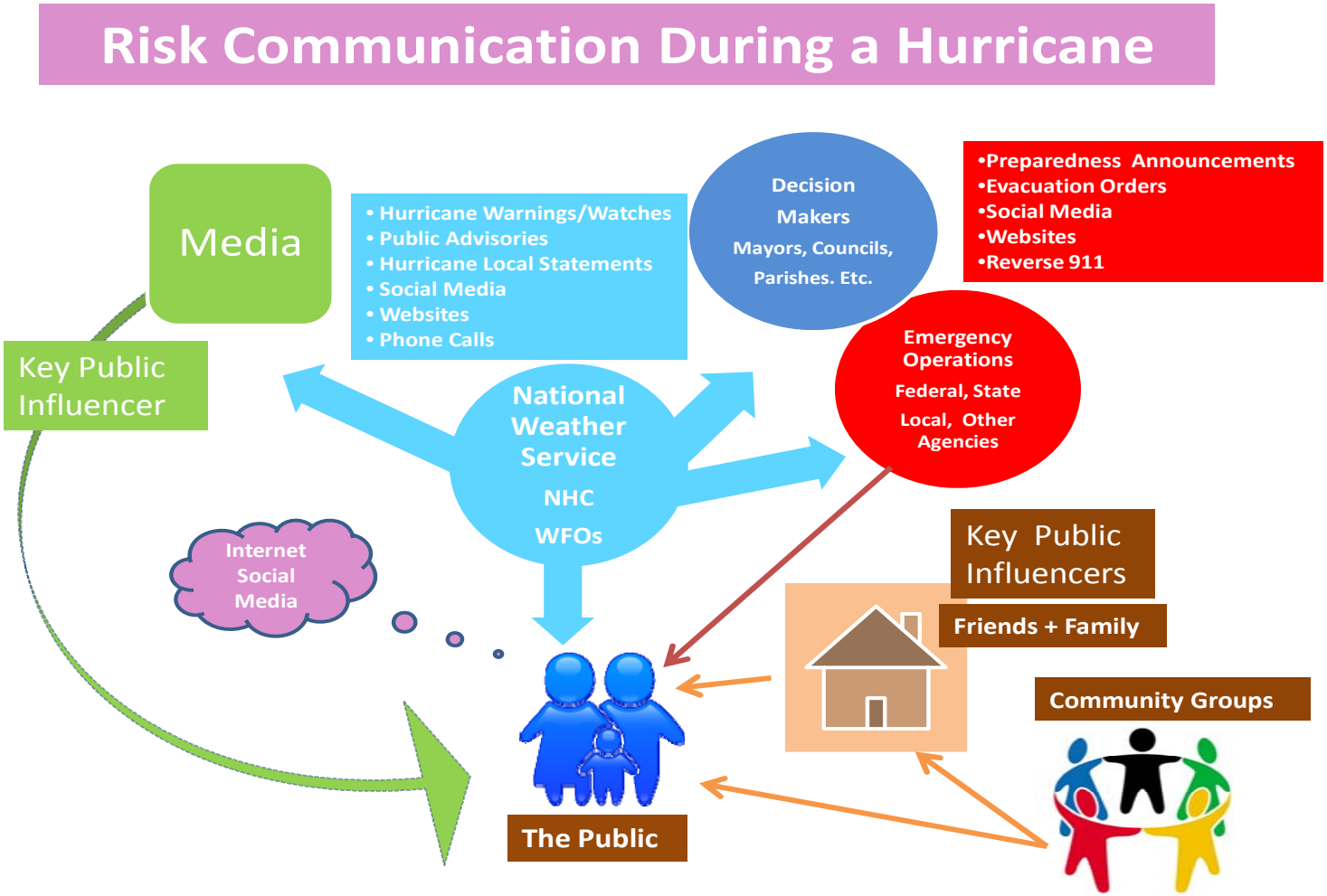
Metrics provide direct insights on how audiences perceive key messages and use outreach platforms and products. Tracking meaningful metrics on a regular basis provides important information about the success or failure of each outreach activity, which can inform future efforts.

Monitoring trends and discussions on social media networks can also be a valuable way to better understand current interests, knowledge levels, and potential misunderstandings or myths about storm surge. Social media provides a direct feedback loop with audiences. By analyzing the feedback available through social media tools, NWS/NHC can adjust its social media strategy, reshape messages, improve processes, or shift tactics.

People access information in different ways, at different times, and for different reasons. Using social science, metrics, and other data can help determine the channels to use. Each channel is different and has differing engagement, content, and community norms. Understanding the way people naturally use or participate in these channels is helpful for tailoring of messages and improving communications efforts. Various types of measurement efforts are listed on the next page, along with possible metrics.

Measurable Outreach Activity or Product	Metrics	Tools and Methods	Tracking Frequency
Printed materials	# print copies distributed or requested	Count and record manually	Weekly or monthly totals for two months after launch
	# feedback/request order	Count and record manually	Monthly
	# Web clicks and downloads	Google Analytics (for distribution of Web version)	Weekly or daily for two months after launch
Media engagement and press releases *(track conversion rate)*	# media subscribers # website mentions # print and Web media clips and placements	NHC's current media tracking services Google Search and Google Alerts	Track daily for 14 days after release
Podcasts	# listeners # requests for information # feedback responses	Evaluation/comment box (email)	Track monthly
Webinars	# registrations # participants # partners promoting # questions asked	Registration (Web) Attendees (track through platform used) Website mentions on partner sites (Google search or OSHA knowledge)	Track after event
Facebook tactics	# posts # comments # likes # shared # impressions/views # reached	Facebook Insights	Track daily for 7 days after posting
Twitter tactics	# times hashtags used # retweets # replies # comments	Twitter metrics	Track daily for 7 days after tweeting
Google alerts Internet searches of keywords Optional: clipping service	# blog posts # articles in newspapers or newsletters # mentions on partner websites	Track press mentions of NHC activities through a clipping service or Internet searches and or a system such as Google Alerts	Track daily for 3 to 4 weeks after campaign launch; monthly thereafter

Appendix A


Risk Communication During a Hurricane
Media
Key Public Influencer
• Hurricane Warnings/Watches
• Public Advisories
• Hurricane Local Statements
• Social Media
• Websites
• Phone Calls
Decision Makers
Mayors, Councils, Parishes. Etc.
•Preparedness Announcements
•Evacuation Orders
•Social Media
•Websites
•Reverse 911
Emergency Operations
Federal, State
Local, Other Agencies
National Weather Service
NHC
WFOs
Internet Social Media
Key Public Influencers
Friends + Family
Community Groups
The Public

Appendix B

Storm Surge Community Focus Groups

ERG conducted two focus groups on February 6, 2014, with community members in two coastal Massachusetts communities: Scituate and Buzzards Bay. The goal of the focus groups was to get community input on two outreach products, developed for NHC, on the new "Potential Storm Surge Flooding" map. The first product was a short PowerPoint with a recorded voice-over narration to give the groups a sense of a video in development. The second product was a fact sheet about storm surge and the new map (participants also looked at an alternative, tri-fold pamphlet version of the fact sheet—see box at right). The groups were asked what they remembered and liked about the products, as well as how they felt the products could be improved.

The participants included long-time shoreline residents, members of a seawall committee, members of neighborhood associations, town planning board members, independent aquaculture farmers, coastal engineers and technicians, and others. Many of them were quite knowledgeable and sophisticated about weather, storms, and shoreline issues. The groups included a mix of men and women. Most members of the groups were likely between 40 and 75 years old; a few members may have been in their late 30s.

Overall Conclusions

- **Video:** The two groups agreed that the video was a good length and could even be longer. They also agreed that they would like more technical details about the map, who is producing it, and what it is showing (what the colors mean, what level of certainty is being assumed, etc.). They also agreed they would like a stronger, more emotional message, particularly at the beginning of the video. They want the video to say that storm surge kills people. Many participants liked the idea of hearing from a storm surge survivor, someone who has lived through a deadly storm surge. A number of them also thought that the video could make use of Sandy footage or stories, since this recent event is still very much in people's minds. The groups also agreed on the concept of a local (or at least regional) video, stating that people will connect much better to local landmarks and a local or regional map. Both groups commented that the information about how 6 inches of water could sweep an adult off his or her feet and that 2 feet of water could carry away a car was compelling and memorable. They also commented positively on the messaging about the perils of not evacuating.
- **Fact sheets:** The two groups agreed that the products provided good "Storm Surge 101" information but that they would like more on the technical details of the map. Most people gravitated to the tri-fold and liked the use of photos. They also liked that the photos were not of palm trees. However, a number of people thought both formats were useful—and, again, they liked the idea of a local official being able to tailor the fact sheet for their locality.

Scituate, 2:00–4:00 p.m.

Video

Messaging that resonated

- Good points about isolation; being cut off if you don't evacuate
- 2 feet and 6 inches stats were compelling

Want more detail about the map

- The part about the map went too fast
- Hit home harder every six hours updated

Historical comparisons

- Have something so people can compare from one storm to another—here people want to know wind
- Include historical benchmarks—immediacy
- People remember…the water was here on this street

Consider regional videos

- May need regional videos
- One size does not fit all
- Everything is local
- Have a subset for a more local situation—institutional knowledge—let it be specialized for a specific location

Opening/stronger emotional messaging

- Say storm surge can kill you—start off with heavy
- Need emotional impact
- Evacuation can be horrific during an event
- Open with a story that someone that weathered a storm…one person thinks of a daughter slipping away
- Fires another hazard, power can be shut off even if not disrupted by storm
- Have a fire or EM say the consequences of not evacuating…you might be on your own

Length

- It could be longer

Fact Sheets: Comments on One-Pager

Want more detail about the map

- Want more information about how to use the map
- Want the map bigger
- The title is "tips to be ready," but it is not telling me how to be ready

Want more detail about storm surge

- Tell us what storm surge is
- Need some pictures—add a diagram of what it is

Want more emotional messaging

- Talk about the deadly part!
- Add that people can die
- Communicate to people personally

Information that was not clear or could be added

- Add that food can be a problem, a long-term one if you don't evacuate
- Say a little bit more about the map and who is producing it and what it is saying
- Think the map is easy to read, don't have to say much…think the map is coming through
- Do want to know about whether this is a worst case scenario; there is a hyping of every storm; want to build confidence that map is accurate
- Talk about modeling, why should we have confidence in this map; want a reality check
- Caveat that the map can't tell you about breaches—seawalls, levees…

Format

- Keep one side about storm surge generally; put the map on the other side
- Leave room for tailoring by a local official
- Want a local map
- Name one fact sheet "Facts About Storm Surge," the other "What You Need to Know About the Map"
- Many people preferred the trifold, liking its size and the fact that it can be mailed out; others liked both of them and thought both had a purpose; some would put the one-pager on the refrigerator

Buzzards Bay 7:00–9:00 p.m.

Video

Messaging that resonated

- Good to start out with how deadly it can be
- Good to show that evacuation zones might not line up, but also that you could be cut off
- Good—liked visuals
- Liked the combination of words and visuals
- Liked stat about 2 feet and 6 inches

Length

- Good length

Other information/visuals they would like

- Animation of water levels might be nice
- Would like to see strength of surge, how fast—show
- Strengthen language that waves are not included, hit it harder that there could be wave action that can be very destructive
- Go into more detail on the map, add more technical stuff…

Frame around a recent event

- Talk about Sandy—use video from it, strengthen language message
- Sandy good example of low category hurricane with storm surge
- Like the use of numbers and words—helpful

How to use video

- Any audience that you hand map out to, show the video
- Good as prime product—develop a more detailed video on the map
- Here is the map for your area—this is what this map is telling you—pay attention
- Put on NWS site, with public advisory/clickable: here is a video that explains what this map means

Things they don't like

- Don't show daredevils
- Take out X on house

Fact Sheets

Messaging/information that resonated

- Wonderful to have "above ground," people expect this; they don't understand above sea level
- The trifold pictures look like they could be local (good not to show palm trees)

Information that was not clear or could be added

- Would like to see wind direction on the map
- Add how to find out if I am in an evacuation zone
- Add why you can experience storm surge even if you don't live in a floodplain
- People expect the weather forecast is what will happen; talk about uncertainty
- On the map it is clear that "flooding" is being shown, but the text is about storm surge, so thought the map was showing surge not flooding
- Have a regional fact sheet with a map in the region

Format

- This fact sheet is storm surge 101; we do need one on the map itself
- Have another fact sheet, "Learn About a New Map"