

Municipal Work Session on Adaptation Planning for Coastal Hazards Charlestown, RI

Town Hall
October 29, 2015
1:00pm-4:00pm

Agenda

Meeting Purpose: Increase awareness of:

- RI Mapping tools & planning resources available, where to find them (particularly STORMTOOLS);
- New state planning requirements for climate change and natural hazards, as well as the linkages between comprehensive plans and local hazard mitigation plans; and
- Example municipal adaptation strategies and where to get more information.

1:00 **Welcome & Introductions**

- *Please share one issues of concern of yours related to planning for natural hazards & climate change?*

1:15 **Overview of Issues and Ongoing Initiatives**-Teresa Crean, *URI Graduate School of Oceanography Coastal Resources Center & RI Sea Grant (CRC/RISG)*

- RI Shoreline Change Special Area Management Plan- James Boyd, *RI Coastal Resources Management Council*
- Natural Hazards & Climate Change in Local Comprehensive Plans- Caitlin Greeley, *RI Statewide Planning*
- Hazard Mitigation Planning- Jess Stimson, *RI Emergency Management Agency*

1:45 **Discussion**

- *Where are you at currently with your Comp Plan and Haz Mit Plan?*
- *Have you started to plan for or adapt to sea level rise, storms, or erosion?*
- *Issues you are struggling with related to coastal hazards & adaptation?*

2:00 **Break**

2:20 **Overview of STORMTOOLS: A new RI tool developed to understand exposure to sea level rise & storm flooding** – Dawn Kotowicz, *CRC/RISG*

2:30 **Review of Adaptation Strategies**– Teresa Crean, *CRC/RISG*

3:30 **Keypad Polling & Discussion**- Dawn Kotowicz, *CRC/RISG*

3:50 **Wrap Up & Next Steps**- Pam Rubinoff, *CRC/RISG*

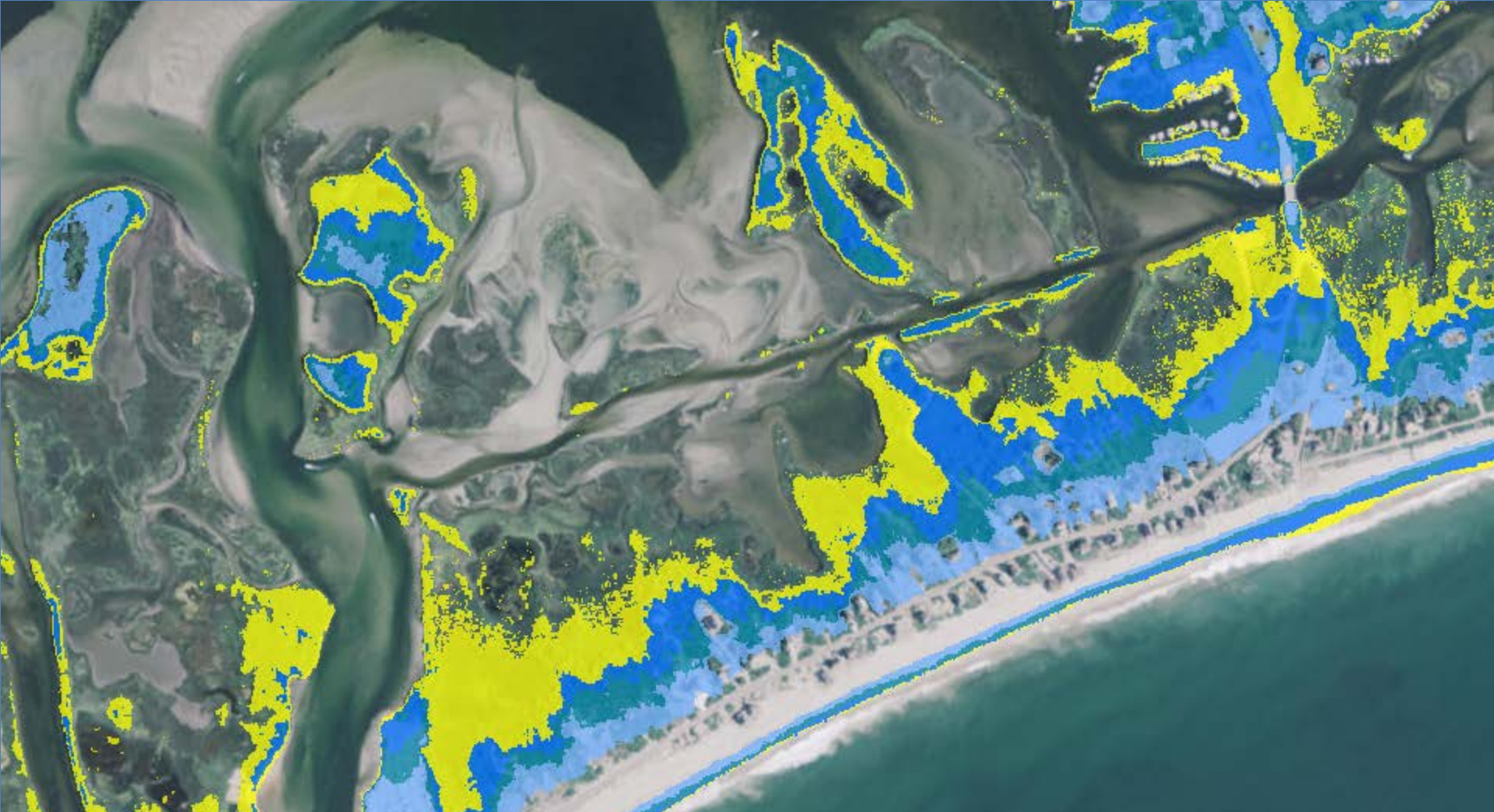
- What are your challenges/barriers?
- What do you need help with?
- What are some actions that you can start working on in the short term? No regret actions?

4:00 **Adjourn**

This effort has been made possible through funding from the U.S. Department of Housing and Urban Development & the Rhode Island Community Development Block Grant – Hurricane Sandy Disaster Recovery

www.beachsamp.org

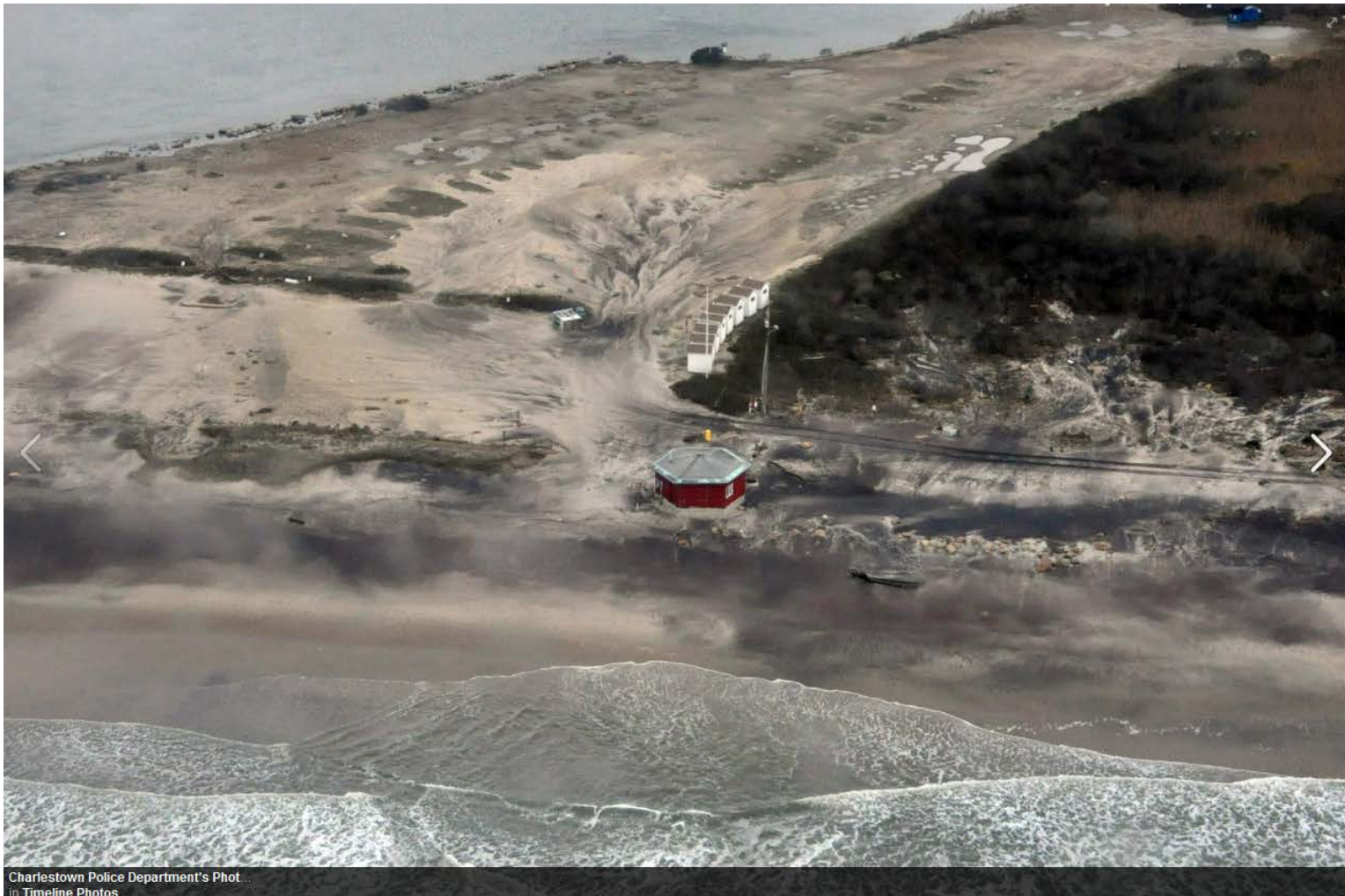




**Municipal Work Session on Adaptation Planning for Coastal Hazards
Town of Charlestown- October 29, 2015**



Post-Sandy, Breachway Campground



Charlestown Police Department
November 4, 2012

Hard hit Charlestown Breachway State Campground

Judy Joy, Tracy Halsey Rosko, Beth Carchidi Fies and 10 others like this.

29 shares

View 9 more comments

Jodi Brusseau LaCroix There is a campground in there still!
November 5, 2012 at 12:26am

Phil Smith Is that where the boat launch is?
November 5, 2012 at 4:30am

Charlestown Police Department Boat ramp is at the top of the picture. The sand the town stockpiled there may have to be trucked away due to contamination.
November 5, 2012 at 6:42am

Suzan Morris Wow
November 5, 2012 at 10:53am

Cathy Hinchliffe-Johnson Unreal!!
November 5, 2012 at 2:20pm

Christopher Tucker I still can't believe it... 😞
November 6, 2012 at 5:54pm

Post-Sandy, Charlestown Breachway



Charlestown Police Department

November 2, 2012 · 0

Charlestown Breachway booth

Caroline Connor likes this.

4 shares



Kristi-Anna Cooley I'm literally staring at all of these in shock

November 2, 2012 at 9:47am



Peggy Sue Long so sad.. Can't believe the difference between East Beach and Charlestown Beach! wow

November 2, 2012 at 10:34am



Cathy Hinchliffe-Johnson Grew up on this beach, wanted to cry!

November 5, 2012 at 2:26pm

Charlestown, RI

Chlstn Beach Rd | Washington County

King Tide Report by Pam Rubinoff



"Charlestown Breachway boat ramp on Ninigrer Pond"

📅 09/30/2015 | 9:58 am

NEAR HIGH TIDE (0 hours 14 minutes before high tide)



WEATHER OVERVIEW



Wind Speed: 12.4 MPH

Wind Direction: 154°

Temperature: 70°F

Rainfall (Calendar Day): 2.18"

Rainfall (Past 24 Hours): 0.62"

[\(Click here for full weather details\)](#)



Review of Adaptation Strategies

#1- Identify Areas At Risk

- **Use STORMTOOLS to map:**
 - 1 foot, 3 feet and 5 feet of sea level rise
 - Flood extent a 4% annual flood event (25 year return period) and a 1% annual flood event (100 year return period)
 - Examine the combined impacts of storm surge and sea level rise to better understand the impacts of future storm related flooding using the following scenarios:
 - 4% annual flood event (25 year return period) plus 1 foot of sea level rise; and
 - 1% annual flood event (100 year return period) plus 5 feet of sea level rise.
- **Use CRMC Shoreline Change Maps to Examine Erosion Risk over Design Life of Infrastructure**



An aerial photograph of a coastal region, likely a wetland or marsh area, with a large body of water on the right. The land is green and brown, with a network of waterways and canals. Numerous small circles are overlaid on the map, representing property locations. Some circles are white with black outlines, while others are solid red, black, or green. A yellow line traces the boundary of a flooded or high-risk area, which is shaded in light blue and yellow. The text is overlaid on a semi-transparent white box in the upper left and lower left.

#2- Develop a database of property & infrastructure exposed to sea level rise and flooding

- **Notify property owners of exposure to projected sea level rise**

#3- Integrate Sea Level Rise & Storm Surge into Municipal Permit/Variance Review Process

Example:

- Add a checkbox to application forms “Is proposed project located within the Special Flood Hazard Area or exposed to projected sea level rise?”

CHECKLIST FOR DEVELOPMENT PLAN REVIEW

The following material is required to be submitted for a Development Plan Review Application unless specifically exempted by the Planning Board. All material should be submitted to the Planning Board not less than 21 days prior to its Regular Meeting date.

1. A list of the names and addresses of all property owners within 200 feet of all property lines of the subject property.

Submitted: _____

Waiver Requested: _____

2. A copy of all Variances, Modification and/or Special Use Permit approvals attached to the property.

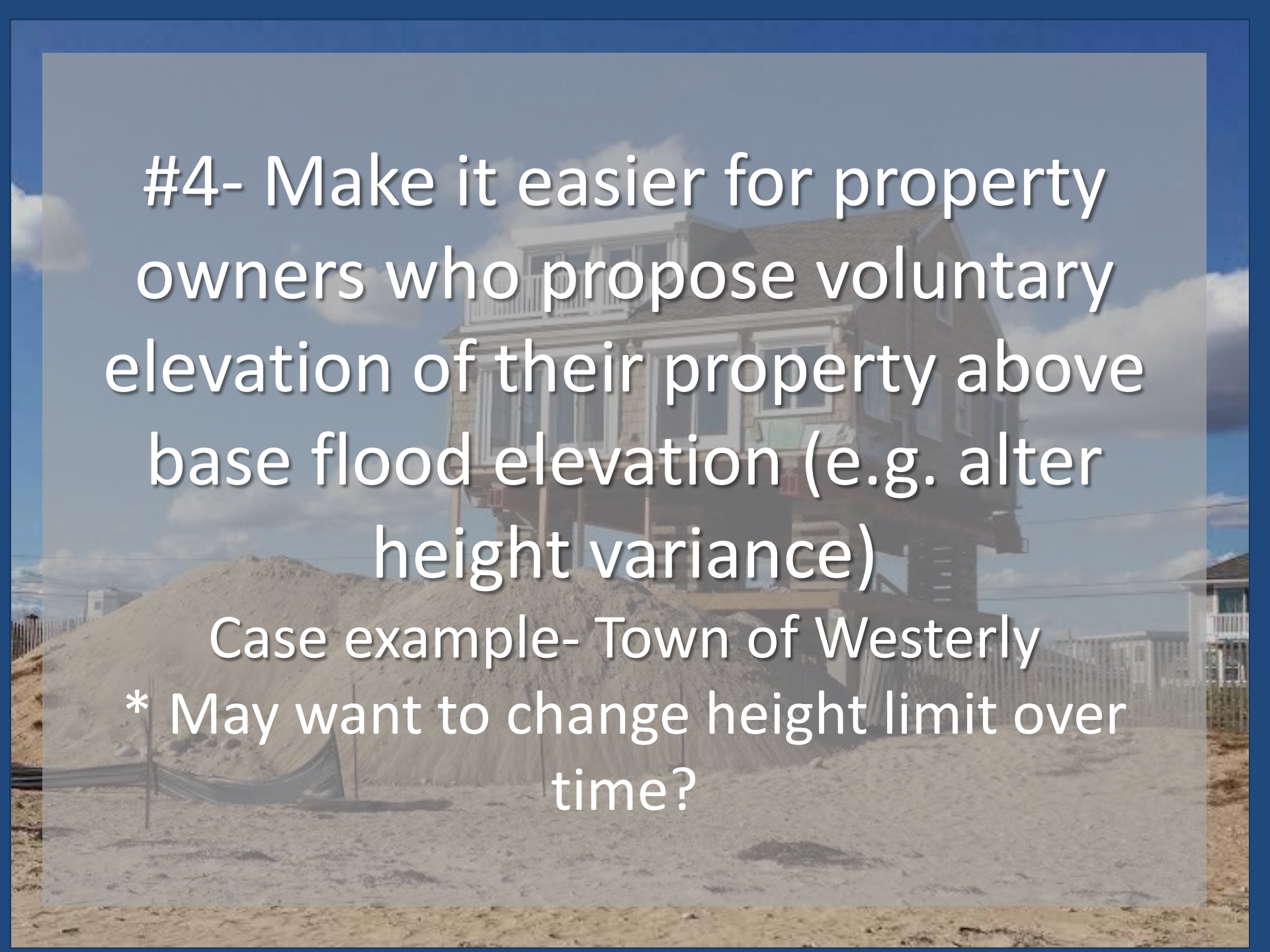
Submitted: _____

Waiver Requested: _____

3. All materials required in support of the Special Use Permit decision, revised to reflect that decision, including any conditions or stipulations imposed.

Submitted: _____

Waiver Requested: _____

A photograph of a two-story house built on stilts, elevated above a large pile of sand. The house has a brown roof and white trim. The sand pile is in the foreground, and the background shows a blue sky with some clouds and other houses in the distance.

#4- Make it easier for property owners who propose voluntary elevation of their property above base flood elevation (e.g. alter height variance)

Case example- Town of Westerly

* May want to change height limit over time?

A photograph of a harbor with a large red crane and a concrete pier under construction. The text is overlaid on a semi-transparent blue box.

#5- Require projects in the Capital Improvement Program (CIP) and Transportation Improvement Program (TIP) be evaluated for exposure to storm surge, projected sea level rise, and erosion

6- Develop incentives for property owners within at risk areas to adapt voluntarily

Examples:

reduced permitting fee, tax credits,
assessed value doesn't increase
with increased freeboard

#7- Develop & adopt an emergency permitting process to expedite post-storm recovery

- Case example- Town of Westerly following Superstorm Sandy

J. Gray 10/30/12 Block Island, RI

#8- Planning for Storm and Sea Level Rise Impacts to Infrastructure

- Identify and prioritize state roads impacted for funding through **Transportation Improvement Program (TIP)**.
- For municipal roads & infrastructure :
 - **Redesign and maintain infrastructure over the long-term**
 - **Roadways – assess feasibility of alternate routes**
 - **Cost-benefit or tradeoff analysis**
 - **Special tax district** (similar to a fire district or sewer district)
 - Design infrastructure within flood zones to **withstand periodic flooding**

#9- Apply and/or advance in FEMA's Community Rating System

National Flood Insurance Program

Community Rating System

A Local Official's Guide to

Saving Lives

Preventing Property Damage

Reducing the Cost of Flood Insurance

FEMA 573



FEMA

An aerial photograph of a coastal area. In the foreground, there is a sandy beach with some people and a building. Behind the beach is a road and a parking lot. The middle ground features a large, irregularly shaped body of water, possibly a pond or a small bay, surrounded by green grass and trees. To the right of the water is a golf course with several buildings, including a clubhouse and a white tent. In the background, there is a large body of water with many sailboats and a residential area with houses on a hillside.

#10- Within at risk areas, increase open space and reduce density

- **Examples:**

- downzoning post-storm

- buyouts or purchase development rights

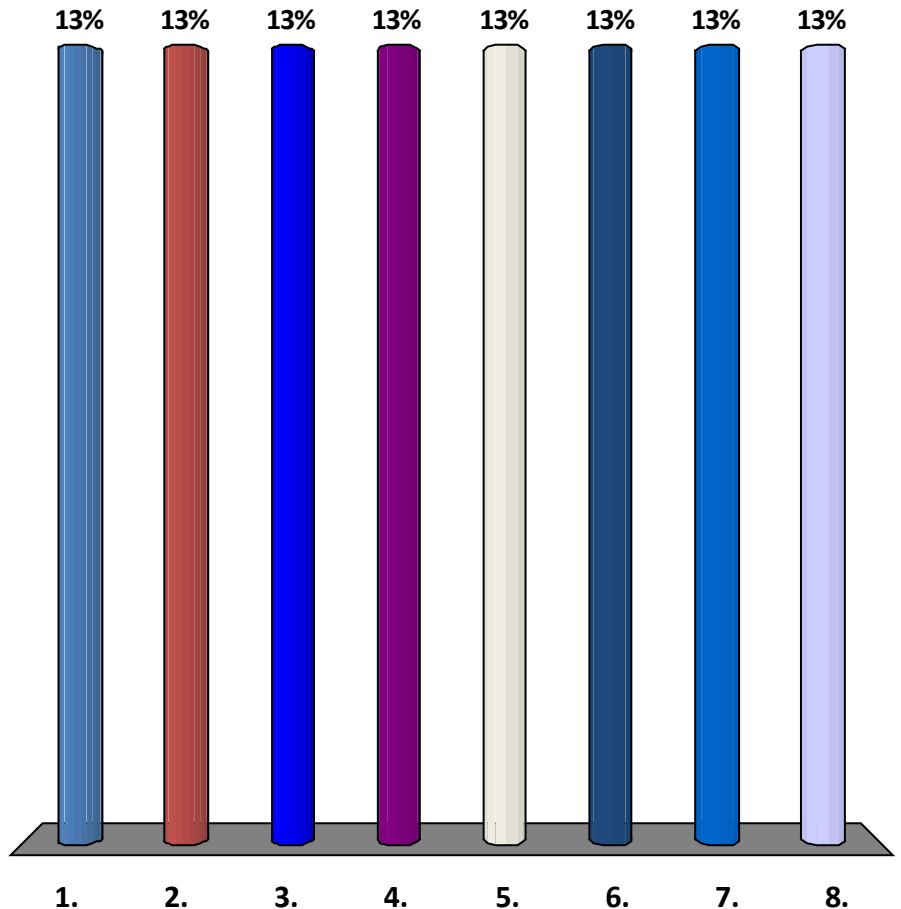
A photograph of a sunset over a rocky beach. The sun is low on the horizon, casting a bright orange glow across the sky and reflecting on the water. The foreground is filled with dark, wet rocks and a sandy beach. The text "Questions/Discussion" is overlaid in the center of the image in a white, sans-serif font.

Questions/Discussion

Keypad Polling Exercise

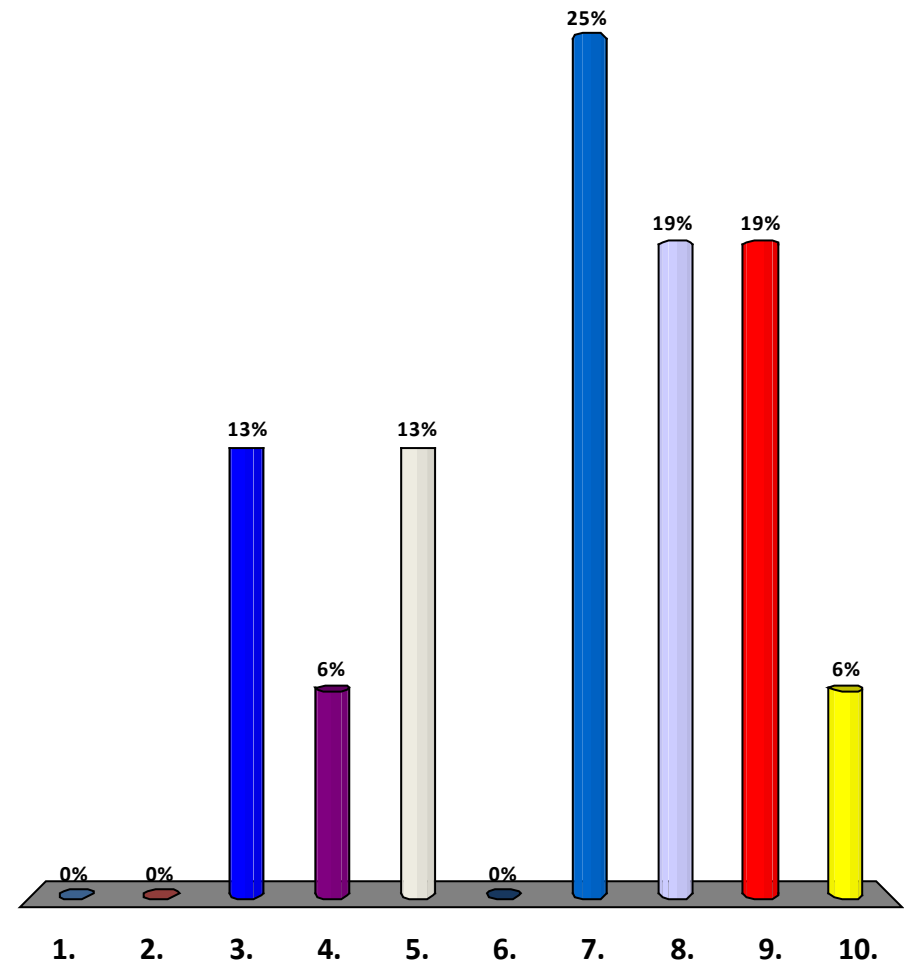
What is your role?

1. Planner
2. Department of Public Works
3. Town Engineer/Building Dept
4. Elected Official
5. Appointed Official
6. Commission or Board Member
7. Concerned Citizen
8. Other



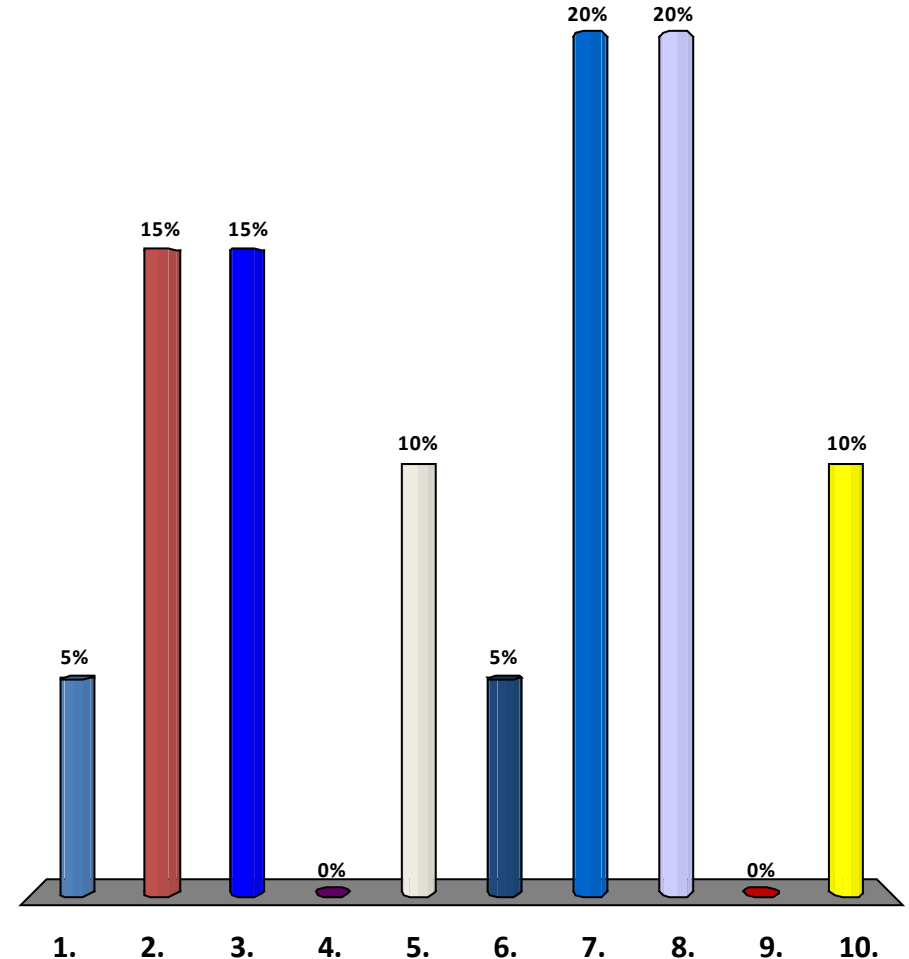
What are the top 3 strategies most likely to be implemented in your town?

1. Identify Areas at Risk
2. Develop a database of at risk property/infrastructure
3. Integrate into municipal permitting
4. Zoning changes for height variances
5. Require CIP & TIP evaluate for SLR impacts
6. Develop incentives for voluntary adaptation
7. Emergency Permitting Process
8. Planning process for impacts to transportation infrastructure
9. Apply & advance in CRS
10. Increase open space/reduce density in at risk areas



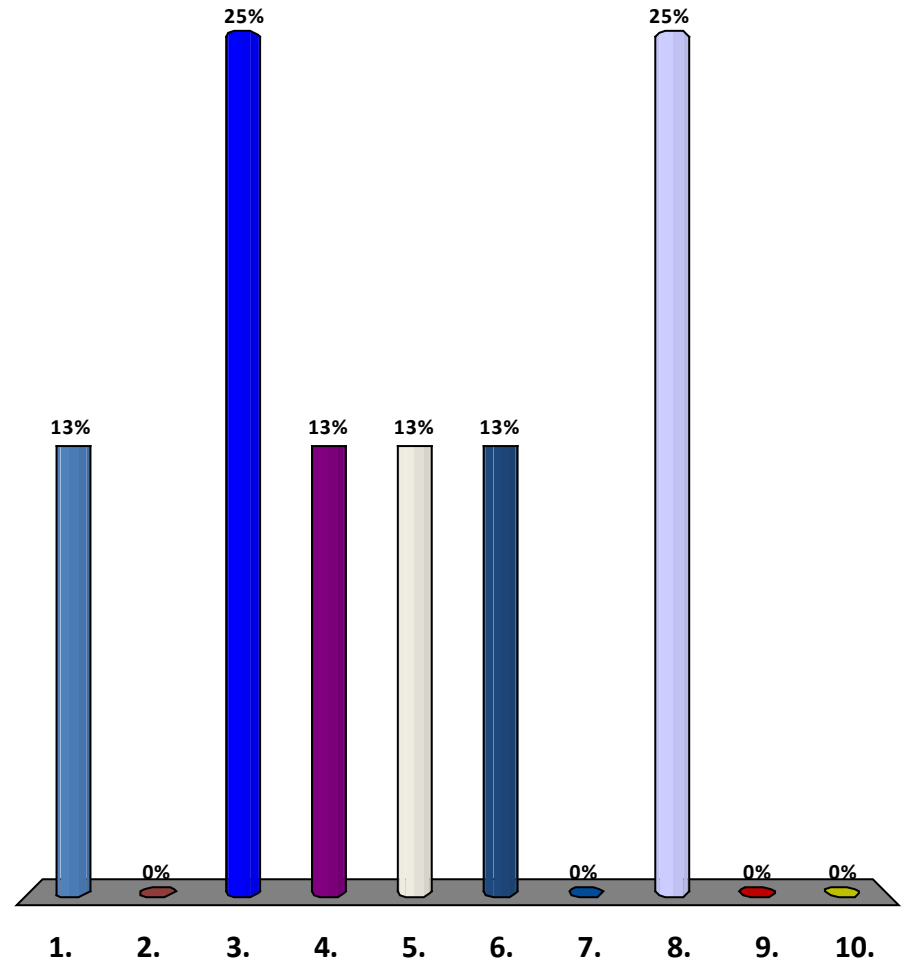
What are the top 3 strategies that would be most cost-effective for your town?

1. Identify Areas at Risk
2. Develop a database of at risk property/infrastructure
3. Integrate into municipal permitting
4. Zoning changes for height variances
5. Require CIP & TIP evaluate for SLR impacts
6. Develop incentives for voluntary adaptation
7. Emergency Permitting Process
8. Planning process for impacts to transportation infrastructure
9. Apply & advance in CRS
10. Increase open space/reduce density in at risk areas



What are the top 3 strategies that you would like more information about?

1. Identify Areas at Risk
2. Develop a database of at risk property/infrastructure
3. Integrate into municipal permitting
4. Zoning changes for height variances
5. Require CIP & TIP evaluate for SLR impacts
6. Develop incentives for voluntary adaptation
7. Emergency Permitting Process
8. Planning process for impacts to transportation infrastructure
9. Apply & advance in CRS
10. Increase open space/reduce density in at risk areas





Roadway & Infrastructure Discussion

Source: RIDOT Flickr Page, "Hurricane Sandy aftermath in Westerly"

#8- Planning for Storm and Sea Level Rise Impacts to Transportation Infrastructure

- Identify and prioritize state roads impacted & **recommend upgrade in Transportation Improvement Program (TIP).**
- For municipal roads :
 - Determine what would be **required to redesign and maintain this infrastructure over the long-term**
 - **Look for alternate routes**
 - **Conduct a cost-benefit or tradeoff analysis** to determine the long-term costs of maintaining or reconstructing road, against the tax revenues generated
 - Explore the feasibility of enacting a **special tax district** (similar to a fire district or sewer district) or impact fee assessed to the users of the roadway.
 - Minimize new or expansions to shore parallel roadways. Maintain roads that are perpendicular to the coast, and design the area of the road within flood zones to withstand periodic flooding

Return Period	Example RI Storm of this Size	Chance in any given year	Percent Chance of Occurring During a 30-year Mortgage	Percent Change of Occurring During a 100 Year Design Life (e.g. Municipal Infrastructure)
25 years	Superstorm Sandy Along the Southern RI Coast	4 in 100 (4%)	71%	98%
100 years	1938 Hurricane (Category 3)	1 in 100 (1%)	26%	63%

An aerial photograph of a coastal town. In the foreground, there is a sandy beach with a rocky shoreline. To the left, a large building with a red roof and a blue pool is visible. The middle ground features a harbor with several piers, a marina filled with white boats, and a large white ferry boat moving through the water. The background shows a dense residential area with various houses and buildings.

Wrap Up & Next Steps

- What are your challenges/barriers?
- What do you need help with?
- What are some actions that you can start working on in the short term? No regret actions?