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Coastal Hazards Adaptation Team (CHAT) Work Session #18

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Tuesday, July 21, 2020

2 PM – 4 PM

VIRTUAL MEETING

GoToMeeting (Remotely)

<https://global.gotomeeting.com/join/248423645>

<https://www.gotomeet.me/KirstenHoward/chat-work-sessions>  
[or by dial-in @ \(669\) 224-3412](https://www.gotomeet.me/KirstenHoward/chat-work-sessions)

### NOTES

**Participants:** Jay Diener, Rayann Dionne, Jason Bachand, Debra Bourbeau, Tom Bassett (@3:25 PM), Jennifer Hale, and Barbara Kravitz (by phone)

**Absent:** Stephen LaBranche, Mark Olson, Bob Ladd, Bryan Provencal, June Black, Steve Belgiorno, James Waddell, Norma Collins?

Guests: Ann Carnaby, Planning Board; Tom Ballestero, UNH; Roy Schiff, Milone & MacBroom; Jessica Louisos, Milone & MacBroom

**Staff:** Kirsten Howard, and Natalie Morison, NHDES, Liz Durfee

Ms. Durfee began the meeting at 2:00 PM and introduced the guest speakers Jessica Clark Louisos, Roy Schiff and Dr. Thomas P. Ballestero, P.E., Associate Professor and Director of the Stormwater Center, University of New Hampshire

#### 1. Remote meeting logistics

Ms. Durfee asked everyone how the remote virtual meeting format was working out. Ms. Kravitz phoned in.

#### 2. Introductions

The members introduced themselves and indicated whether they were affiliated with the Town, a group or were residents. Natalie Morison indicated she is the Coastal Resilience Specialist at NHDES Coastal Program, Jay Diener indicated he is a representative of SHEA, Jason Bachand indicated he is the Town Planner for the Town of Hampton, Rayann Dionne indicated she is the Conservation Coordinator for the Town of Hampton, Kirsten Howard indicated she is with NHDES Coastal Program, Deb Bourbeau and Tom Bassett indicated they are Hampton residents. Jennifer Hale, PE, Deputy Director of Hampton Public Works. Barbara Kravitz is a representative of the Rockingham Planning Commission and Hampton Beach Area Commission.

#### 3. Flood Mitigation Strategy; Shoreland Management

a. Guest Speaker: Dr. Thomas P. Ballestero, P.E., Associate Professor and Director of the Stormwater Center, University of New Hampshire

Dr. Ballestero is the Associate Professor of Civil Engineering at UNH, a member of the Environmental Resource Group, Water Resource Engineering and Hydrology, involved with Coastal Habitat Restoration Team, CHaRT, and is the UNH Stormwater Center Director and Principal Investigator.

Ms. Durfee introduced Dr. Ballestero and thanked him for joining us. Dr. Ballestero will discuss flood mitigation strategies relative to shoreland management.

Dr. Ballestero noted his presentation, *Living on the Coast, What is Coming and What are Your Options* was presented two years ago in Hampton and the slides have been updated since.

Causes include rainfall, stormwater, waves, groundwater and high tides. Why? – Sea Level Rise which has been increasing for over a century.

How to React? Using the NOAA Tide Gauge, above Mean High Water. Lower tides are becoming higher and higher tides are becoming higher. Media days tracked from 2000-2019 predict double or triple in 2030 and 5-15 times in 2050.

Adaptation strategies such as retreat, accommodate, protect and move, known as Keeping Water Out, Living with Water and Getting out of Water's Way.

Living shorelines include dunes and salt marshes which are the land between you and the wave. Tide plus surge equals waves.

A rougher surface equals more attenuation. Friction reduces waves. Vegetation lowers wave heights and provides habitat. You can create marshes and dunes where they were lost or restore them. 95% have been lost.

### Keeping Water Out

Vertical edges point and attract erosion so you need to protect the sill.

### Living Shorelands

Dunes provide protection. Dunes are natural banks and can be vegetated. Salt marshes are coastal wetlands that are flooded and drained by salt water brought in by the tides. They are marshy because the soil may be composed of deep mud and peat

One slide in the presentation showed the use of a living shoreline and another a fixed seawall. The sea wall failed.

Structures below theoretical mean water line are in the jurisdiction of the state.

Dr. Ballestero reviewed FEMA guidance *Homeowners Guide to Retrofitting*.

A levee or berm is a compacted earthen structure. Walls are an engineered structure. Tide gates are a throttle for incoming water.

### Barrier Systems

#### Dry Floodproofing

When employing systems for keeping water out you may need drainage to get the resulting water out. Flooding can remain trapped in the interior area around home. Groundwater can be affected by the resulting rise on either side. Codes need to be met. There are Flood Plain Management Ordinances

You need a way to keep the pump running when you lose electricity. People run the pumps during the event rather than waiting for the waters to recede. Waves can have fist-size rocks moving with them. Debris and sediment are left behind and need to be cleaned up after the flooding is pumped out. If you put in your own system, you need to test it periodically. Topography can be an issue.

Dr. Ballestero gave examples of walls put in by private homeowners in Plum Island and Revere. In South America, walls are also placed around properties for security. Building a wall can impact your view or your neighbor's view. Permanent barriers need discussion as some parts of the community are within the wall while others are outside of it, such as East Boston.

Gates may need a pumping system. Gates operate when water gets to a certain point and close, then reopen. Dr. Ballestero noted communities need to assess how far they are willing to go with strategies before they retreat. Actions today can have a lifespan of 30 years.

Dr. Ballestero indicated a good question to ask is are they reducing your ability to react in the future?

### Living with Water

Dr. Ballestero noted residents should have a plan and an evacuation kit. Items that can float should be tied down during a storm. Propane tanks are a major issue, often float off and are never found. Utilities below ground level could be relocated higher.

Residents need a back-up plan. Use of a boat or plans to get to the roof. Homeowners will need flood insurance.

Driveway flooding is becoming a much more frequent market for flood-proofing to protect cars.

When your septic system is flooded, don't flush the toilet.

Wet floodproofing – living with water and having structures elevated protects from property damage.

Stormwater Management can include infiltration, creating rain gardens, or using permeable pavers.

Permeable pavers should not see runoff unless built wrong or poorly maintained. High groundwater can make them less effective. When under drains back up, they won't work.

### Getting Out of Water's Way

Consider parking areas where cars can be moved during an event.

Rearranging land-use such as areas that are frequently flooded.

Moving a structure is not a cheap solution and may affect someone's view.

If selling the home, flood insurance can be transferred. Buyout programs such as Blue Acres often require neighborhood-wide participation.

#### b. Discussion

Mr. Diener asked about the function limitations of permeable pavers and whether there is some value or whether they are not worthwhile when not fully functional? Dr. Ballestero noted when there is a 95/5% function it can be beneficial and still provide a service. The pavers were never designed for water to come back through them. Concrete and asphalt would probably hold up during those situations.

Mr. Diener asked if there were any research on that? Dr. Ballestero will send an email and get the design plans.

Ms. Howard asked about feasibility analysis. Dr. Ballestero noted the options are whittled down by their constraints, then the options are reduced, and the design costs evaluated,

Ms. Howard offered to send peer-reviewed journal articles.

#### 4. Approve meeting notes from June 2020 - Tabled

#### 5. Brief Flood Updates

##### a. DWP modeling results update – Roy Schiff, PhD, PE and Jessica Clark Louisos, Milone & MacBroom

Jessica Clark Louisos is a Water Resource Engineer at Milone & MacBroom, Inc. She specializes in hydraulic and hydrologic studies for dam removal and repair, flood control and river and habitat restoration, including modeling, analysis, mapping, and field assessment.

Jen Hale cautioned the data retrieval update is preliminary findings and is not to be disseminated outside of the meeting until formally presented by the project team.

b. Nathalie Morrison indicated the Planning Board is working with the engineering firm concerning the Coastal and Vision portions of the Master Plan update. The firm plans a final outreach and questionnaire to municipal staff. The finishing touches will be made to prepare the public survey, posters. Town signs will be inviting people to text their response to the prompts on the poster. An

input session is planned for early August. A focus group with CHAT consulting would be welcomed. The firm is drafting a stakeholder list and asks that CHAT members send additions of key stakeholders and active community champions and others to engage in the Master Plan update process.

c. Mr. Bachand indicated things are going well with the Steering Committee. There will be a second meeting workshop in August, virtually.

6. Summary of previously discussed strategies, actions, needs and potential next steps – Tabled.

7. August homework

Ms. Durfee indicated the Team has gotten a taste of the modeling and Master Plan Focus Group. Ms. Durfee recommended members review the 2019 CHAT Progress Report and Topics CHAT has discussed which she will send in a follow-up email.

Ms. Durfee asked each Team member to brainstorm their top five recommendations. Ms. Durfee noted those recommendations don't need to be limited to what was discussed so far and could be an issue or strategy to explore further. If you have more than five recommendations, you can add more.

Ms. Durfee indicated the Team will then put together presentations for each of their respective boards.

Ms. Durfee asked members to look at the list of key stakeholders the Master Plan Committee developed and send any additional stakeholders and contact information to Nathalie.

9. Next Meeting: August 18, 2020, format TBD

10. The meeting ended at 4:01 PM.

Respectfully submitted,

Nancy J. Hoijer  
Recording Secretary