

Objective: provide straightforward and consistent guidance, including maps, data resources and criteria, to municipal planners on flood inundation scenarios associated with changing conditions including sea level rise (SLR), coastal storm surge, rain fall and riverine floodplains. (Action Items 1.3.4, 2.3.1).

Coordinating agencies: CRMC, DEM, Health, RIEMA, Statewide Planning and Governor's Office. Joined by David Vallee of NOAA/NWS (Taunton), and Malcolm Spaulding of URI.

Challenges:

- Science, mapping and forecasting methodology are improving, but due to lack of coordination (not knowing of, or using each other's data, insights, timing of projects, resources) there have been mixed results in end products
- Flood hazard planning has been based on historical storm data, whereas recent observations show clear trends of increasing frequency and intensity of storms and associated precipitation
- Improved high resolution dynamic inundation modeling and mapping products are available for coastal areas, but not for inland communities
- FEMA flood maps are regulatory and have to be used, but FEMA coastal flood maps for RI are disputed and are not updated as in other regions of the country
- A dynamic modeling project is underway that will generate new FEMA flood maps for RI coastal areas; however, on current schedule, maps will be available by next summer for Washington County only, and for rest of state at undetermined later date (depending on funding)
- Currently available coastal mapping only shows future SLR "bath tub" scenarios, not storm surge on top of it;
- Statewide Planning was on tight schedule to finalize its guidance document for mandatory updates by cities and towns of their Local Comprehensive Plans, including chapters on Natural Hazards and Climate Change; coordination of content with CRMC, DEM and RIEMA was incomplete, but schedule could not be changed.

Opportunities:

- Use storm guidance group for quick coordination with key agencies and programs to ensure that Statewide Planning's document includes most recent and best available data, maps and guidance, *without affecting its overall schedule* (i.e. before the end of its internal review process)
- Use data developed by TetraTech for Health's SafeWater RI vulnerability assessment (previously unknown to several participants, evaluated and vetted by participants on expedited schedule); so as to provide mapping of inland riverine floodplain inundation scenarios, as well
- Use knowledge and research of David Vallee (NOAA/NWS) and Lenny Giuliano (DEM) about RI-specific climate trends in recent decades (temperature and precipitation) and effects on

hydrology, e.g., capacity of soils to absorb/retain water, rivers and storm water systems to handle flow, varying with watershed characteristics (see separate handout)

- Use new analysis method to produce maps combining SLR and storm surge before end of this year for all RI coastal communities so it can be included in municipal guidance (thanks to CRMC and URI).
- Use high resolution dynamic storm inundation and wave modeling to generate new FEMA maps for Washington County coastal areas

Outcomes:

- Clarity about which maps, or map layers, to use:
 - **Regulatory:** FEMA - statewide; inundation from 1% and 0.2% flood events - available now
 - **Non-Regulatory/Planning:**
 - Health/Tetrattech - statewide; inundation from 1% flood event under climate change conditions (increased precipitation and effect on 1% floodplain) projected for the years 2022, 2052 and 2084); also projects 3' and 5' SLR – expected to be available within 2 weeks
 - Statewide Planning - coastal , SLR at 1', 3' and 5', without storm surge– available now
 - Army Corps – coastal, flooding projected for worst case scenarios of Category 1-4 hurricanes – available now
 - CRMC/URI – coastal, SLR at 1', 2' and 5' + storm surge from 25, 50 and 100 year events – expected to be available by end of October
- Guidance issued by Statewide Planning but supported and carried forward by all 4 agencies, including narrative guidance/instructions to accompany data and maps (how to use, how not to use, limitations, etc.)
- Agreement on need for training, overlap with/between planned outreach and training programs; coordination of such efforts short term, and initiative to develop a coordinated climate resilience training program long term.
- Agreement to support (and help secure funding for) broader (statewide) modeling and mapping of SLR + storm surge, riverine and/or rainfall flooding. Perhaps joint application for grant funding?