NH Coastal Flood Risk Summary
Part II: Guidance for Using Scientific Projections (2020)

Summary:

Part I (2019) of the NH Coastal Flood Risk (CFR) Summary provides the latest local projections for sea-level rise, coastal storms, groundwater rise, precipitation, and freshwater flooding. This report (originally published in 2014) is updated every five years.

Part II (2020) provides step-by-step guidance for how to incorporate those coastal flood risk projections into land use and development planning, regulations, and site-specific projects. The Guidance document is the focus of this information sheet.

Keywords:

- Risk tolerance
- Sea level rise
- Groundwater rise
- Storm surge
- Precipitation
- Case studies

Key Points:

The Guidance document walks the user through a seven-step process to select appropriate flood risk projections to use, based on the type of project and the tolerance for flood risk. Follow the seven steps (beginning on p. 6) and use the online mapping tool (see Step 3.2, p. 20) and worksheet (Section E) to help with decisions about project design, land use and development planning, and regulatory approaches.

The Guiding Principles (starting on p. 3) should be considered when working through the seven-step process. At the beginning of each step, the Guidance provides succinct "Science at a Glance" summaries of the coastal flood risk projections. It also describes a set of guiding principles to help the user best incorporate future coastal flood risk and enhance resilience to these impacts.

Suggested Uses:

Examples of how the Guidance can be used in different types of projects:

- PLANNING PROJECTS: Identify and prioritize action in vulnerable and non-vulnerable areas
- REGULATORY PROJECTS: Determine regulatory standards (e.g., setbacks, Design Flood Elevation, separation distances, etc.) or require use of the Guidance, in full or in part, by regulated parties
- SITE-SPECIFIC PROJECTS: Use the Guidance to inform project design and construction

The Guidance includes local case studies that highlight ways it can be applied, including culvert replacement (p. 20), advisory climate change risk areas (p. 27), climate-induced wetland expansion (p. 32), and permit applications (p. 37). These provide tangible, local examples of how communities have taken steps to address coastal flood risks.

Related Resource: NH Sea Level Rise Mapper https://tinyurl.com/slrmapper

Find this and other resources on Dover's Climate Resources Webpage

Example Tables

STEP 2 TABLE. FRAMEWORK FOR DETERMINING PROJECT TOLERANCE FOR FLOOD RISK.

		HIGH TOLERANCE FOR FLOOD RISK	MEDIUM TOLERANCE FOR FLOOD RISK	LOW TOLERANCE FOR FLOOD RISK	VERY LOW TOLERANCE FOR FLOOD RISK
DESCRIPTION		Decision makers have a High tolerance for flood risk to the project	Decision makers have a Medium tolerance for flood risk to the project	Decision makers have a Low tolerance for flood risk to the project	Decision makers have a Very Low tolerance for flood risk to the project
POSSIBLE PROJECT CHARACTERISTICS *Tolerance for flood risk will depend on the mix and importance of these project characteristics.*		Low value or cost	Medium value or cost	High value or cost	Very high value or cost
		Easy or likely to adapt	Moderately easy or somewhat likely to adapt	Difficult or unlikely to adapt	Very difficult or very unlikely to adapt
		Little to no implications for public function and/or safety	Moderate implications for public function and/or safety	Substantial implications for public function and/or safety	Critical implications for public function and/or safety
		Low sensitivity to inundation	Moderate sensitivity to inundation	High sensitivity to inundation	Very high sensitivity to inundation
PROJECT EXAMPLES	**PLANNING**	Updating a local master plan Developing a capital improvement plan			
	REGULATORY	Updating a floodplain zoning ordinance Updating a subdivision site plan regulation Updating state alteration of terrain rules			
	SITE-SPECIFIC	Designing a walking path; Siting a temporary or accessory structure; Upgrading a minor storage facility	Replacing a local culvert; Constructing a residential, commercial, or industrial building	Maintaining a school; Siting a community center or recreational facility; Upgrading a wastewater treatment plant	Renovating a hospital or police/fire station; Siting an emergency shelter or response center; Repairing a power station
CORRESPONDING ASCE 24-14[14,15] FLOOD DESIGN CLASS		1	2	3	4
RECOMMENDED COASTAL FLOOD RISK PROJECTIONS		Lower magnitude, Higher probability	←	→	Higher magnitude, Lower probability

STEP 3 TABLE A. RECOMMENDED DECADAL RSLR ESTIMATES (IN FEET ABOVE 2000 LEVELS) BASED ON RCP 4.5, PROJECT TIMEFRAME, AND TOLERANCE FOR FLOOD RISK.

TIMEFRAME	HIGH TOLERANCE FOR FLOOD RISK	MEDIUM TOLERANCE FOR FLOOD RISK	LOW TOLERANCE FOR FLOOD RISK	VERY LOW TOLERANCE FOR FLOOD RISK
	Plan for the following RSLR estimate (ft)* *compared to sea level in the year 2000*			
	Lower magnitude, Higher probability	←	→	Higher magnitude, Lower probability
2030	0.7	0.9	1.0	1.1
2040	1.0	1.2	1.5	1.6
2050	1.3	1.6	2.0	2.3

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Photo Credit: Perry Plummer, Former Fire Chief, City of Dover

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