

ICNet Members' New England Research & Project Survey



Research/Project Focus	The Risk of 100-year Freshwater Floods in the Lamprey River Watershed
Research/Project Description	This project will develop and refine a methodology for assessing flood risk associated with land use and climate change scenarios, implement the methodology for the Lamprey River watershed of Great Bay, NH, and demonstrate the use of associated products to support land use decision-making in coastal communities. The core analyses and outputs for this project will include maps at the watershed and municipality scale of the 100-year flood risk boundaries and river discharge at specific locations under selected scenarios.
Primary Category*	Hydrology
Geographic Location	Lamprey River Watershed, southeastern NH
Funding	NOAA CICEET
Contact	Cameron Wake, UNH: Cameron.Wake@unh.edu
Infrastructure sectors effected, subject area	Buildings, roads, bridges, LID
For modeled climate or sea level rise projections, AOGCM or other sources used	SRES Emission Scenarios A1fi, B1; output from 4 GCMs (CCSM3, PCM, GFDL Cm2.1, HADCM3) Models show range of climate sensitivity, continuous daily output available for both emission scenarios, well-established models extensively described in peer-reviewed literature
Other Information, data,	HEC-RAS and HEC-HMS watershed models; historical land use and meteorological data; GCM

models, used	simulations; projected build-out rates
Time periods analyzed	1960 – 2100
Status /Date submitted to ICNet	Research completed. Submitted Oct, 2013
Brief key findings to date	The 100-year floodplain and associated peak flood water discharge, and flood water surface elevations have increased significantly between the production of the effective Flood Insurance Rate Maps (FIRMs; based on discharge data from 1935-1987) to current (2005) conditions, and will continue to increase in the future under the build-out scenarios developed as part of this research. Low impact development zoning was shown to have its greatest mitigation value in terms of resiliency in high impervious cover areas. Furthermore, the findings demonstrate the utility of scenario analyses as a powerful means to convey to the public the ramifications of different land use decisions
Key publications/reports?	Manuscript in Progress
Other information (e.g., web links to technical reports).	http://100yearfloods.org

*** Categories: Roads, bridges, and culverts; Pavement and/or soils; Hydrology (study of data/floods); Environmental/water resources (stormwater, drinking water); Transportation assets (network); Climate model output**