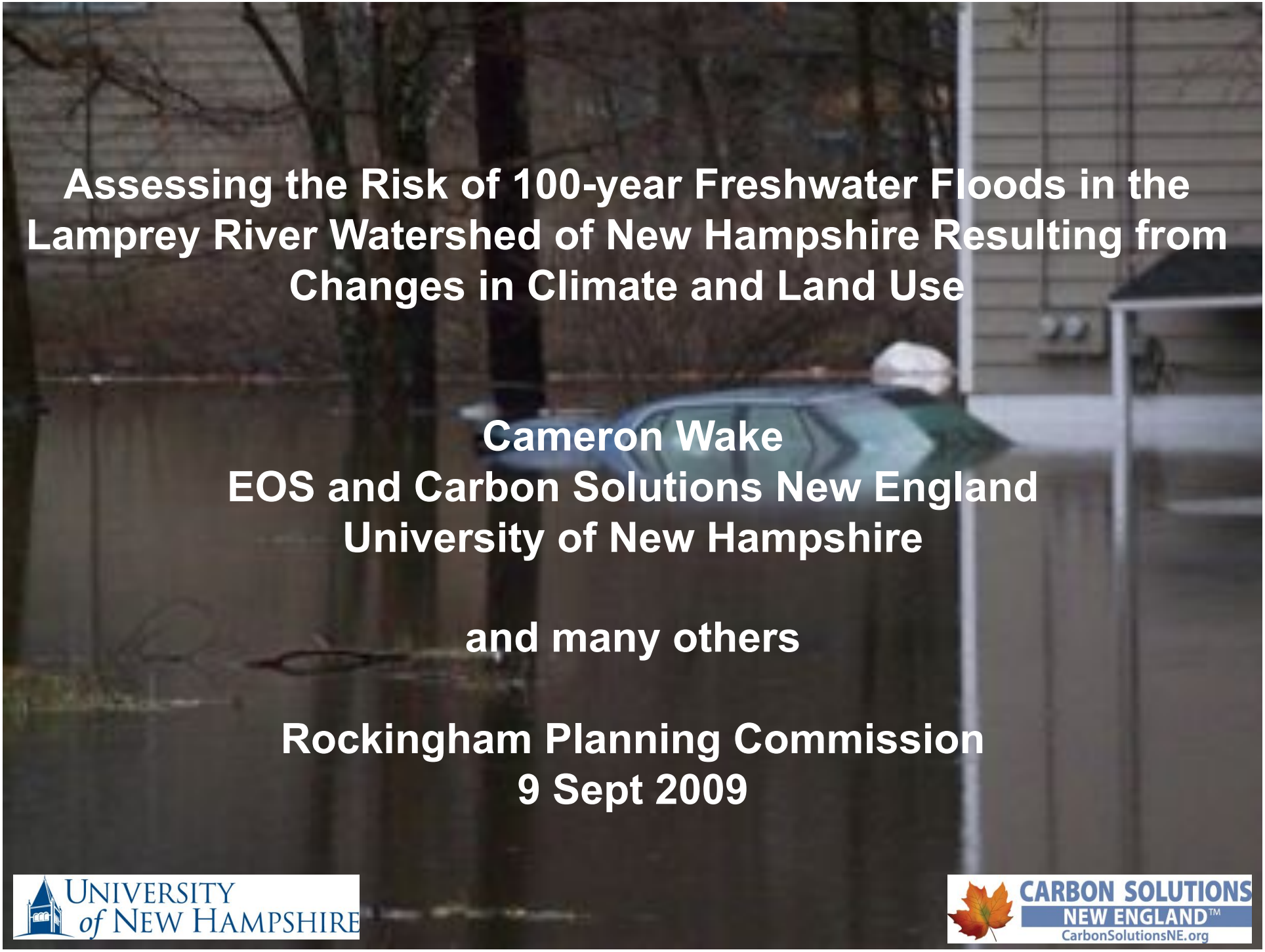

Assessing the Risk of 100-year Freshwater Floods in the Lamprey River Watershed of New Hampshire Resulting from Changes in Climate and Land Use

Cameron Wake
EOS and Carbon Solutions New England
University of New Hampshire

and many others

Rockingham Planning Commission
9 Sept 2009

UNIVERSITY of NEW HAMPSHIRE

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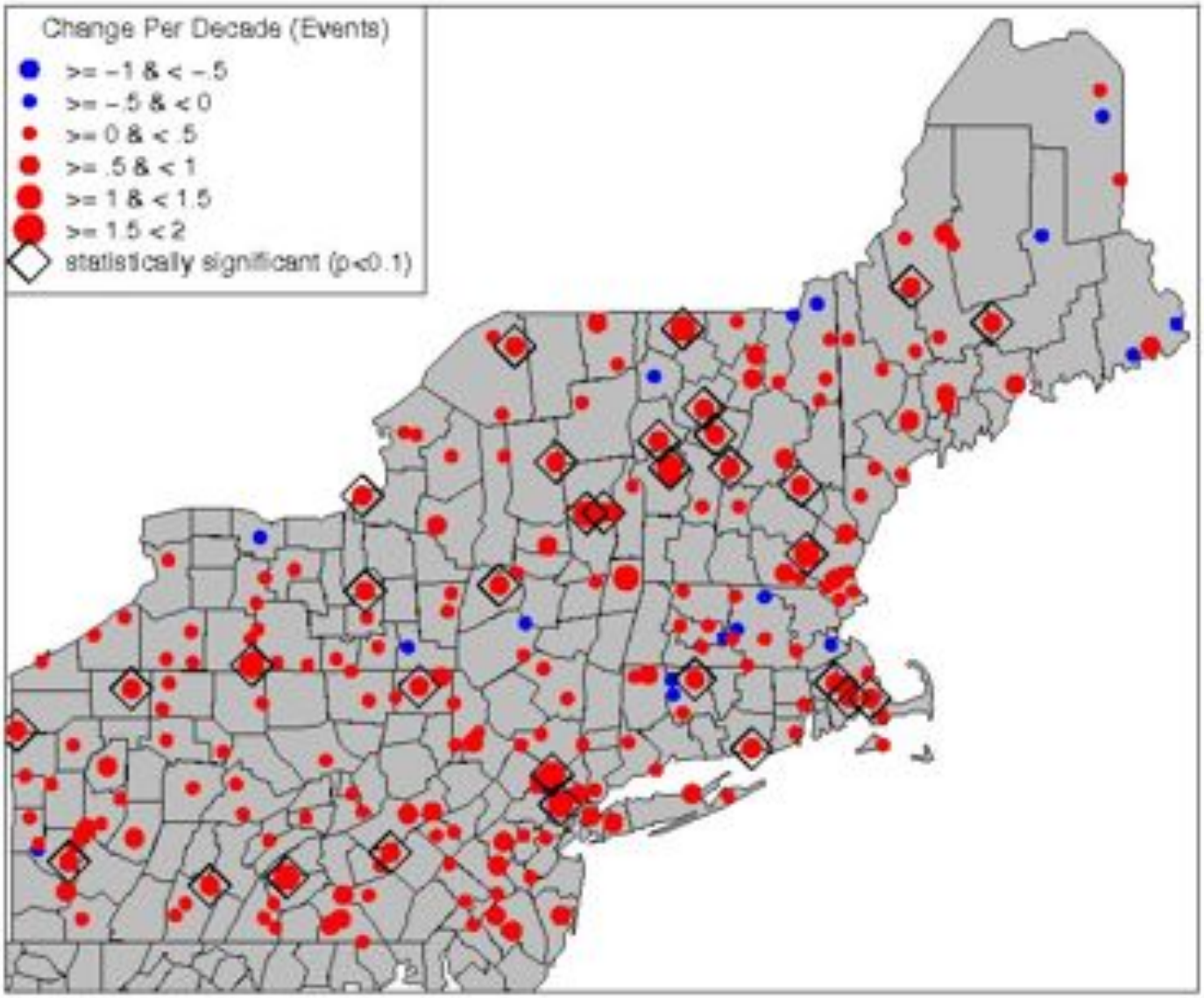
Mean Decadal Trends in 1” Precipitation Events 1948-2007



Spierre 2008

In recent years New Hampshire has experienced three major flood events in October 2005, May 2006 and April 2007, and precipitation and rainfall totals have been higher than normal in Concord and the Merrimack Valley.

Comprehensive Flood Management Study Commission
September 2008

Assessing the Risk of 100-year Freshwater Floods in the Lamprey River Watershed of New Hampshire Resulting from Changes in Climate and Land Use

Two year project funded by the Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET)

Interdisciplinary Team:

Cameron Wake, Institute for the Study of Earth, Oceans and Space, UNH
Steve Miller, Great Bay National Estuarine Research Reserve
Kathy Mills, Great Bay National Estuarine Research Reserve
Robert Roseen, UNH Stormwater Center
Fay Rubin, Institute for the Study of Earth, Oceans and Space, UNH
Michael Simpson, Antioch University New England
Cliff Sinnott, Rockingham Planning Commission
Lisa Townson and Julia Peterson, UNH Cooperative Extension

Assessing the Risk of 100-year Freshwater Floods in the Lamprey River Watershed of New Hampshire Resulting from Changes in Climate and Land Use

Project Objectives:

- Assess flood risk associated with combined land use and climate change scenarios in the Lamprey River watershed.
- Produce maps at the municipal scale of the 100-year flood risk boundaries and river discharge at specific locations.
- Demonstrate the use of associated products to support land use decision-making in coastal communities.
- Serve as a model for other watersheds across New England.

Assessing the Risk of 100-year Freshwater Floods in the Lamprey River Watershed of New Hampshire Resulting from Changes in Climate and Land Use

Process:

Technical Analysis

- -2 climate change combined with 4 land use scenarios
- -watershed model to calculate discharge
- -map level of 100 year floods at specific locations

Collaboration - project is end-user driven

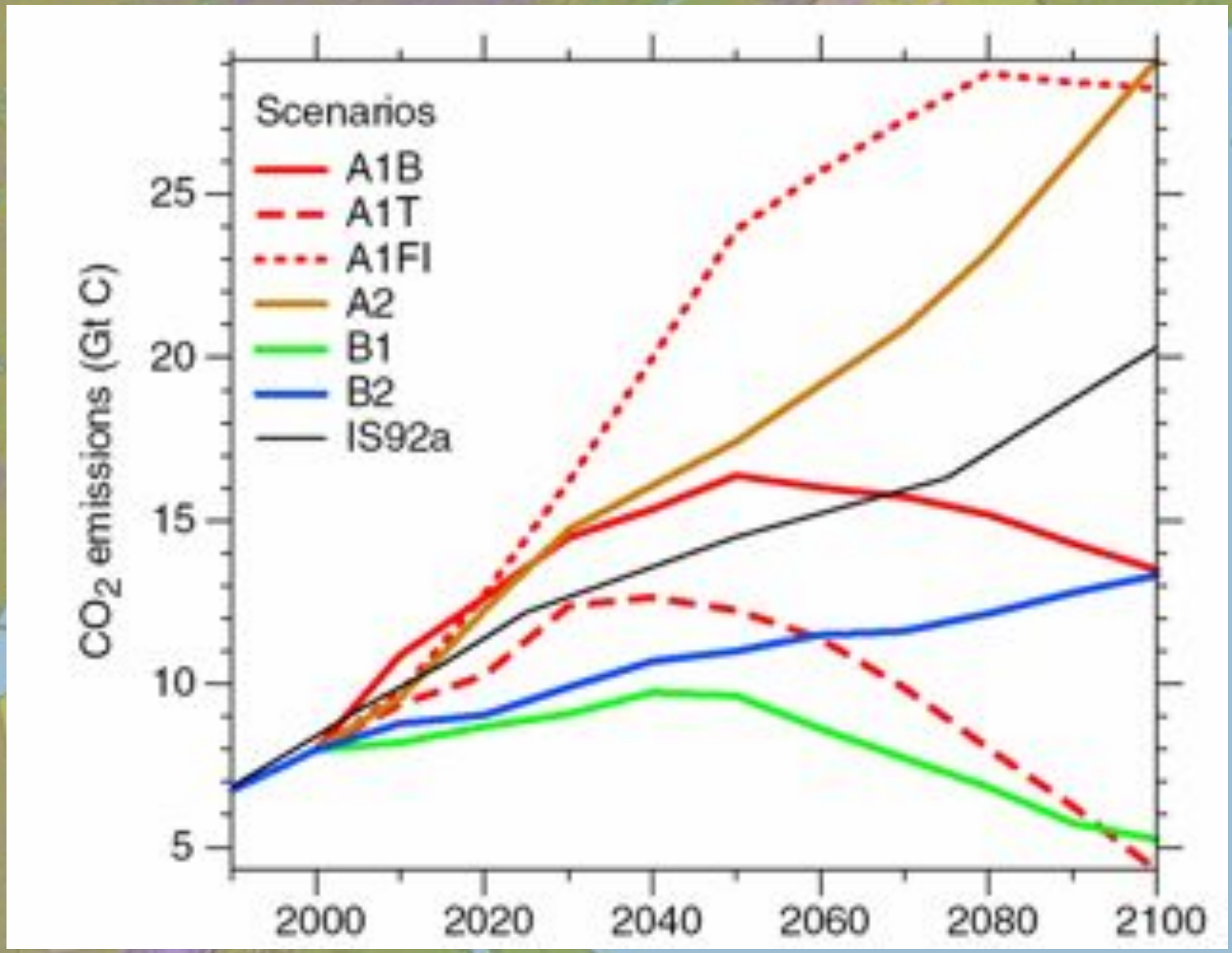
- -advisory board (12 members); meets every 6 months
- -focus groups, workshops (fall 2010, spring 2011)

Evaluation - formative and summative

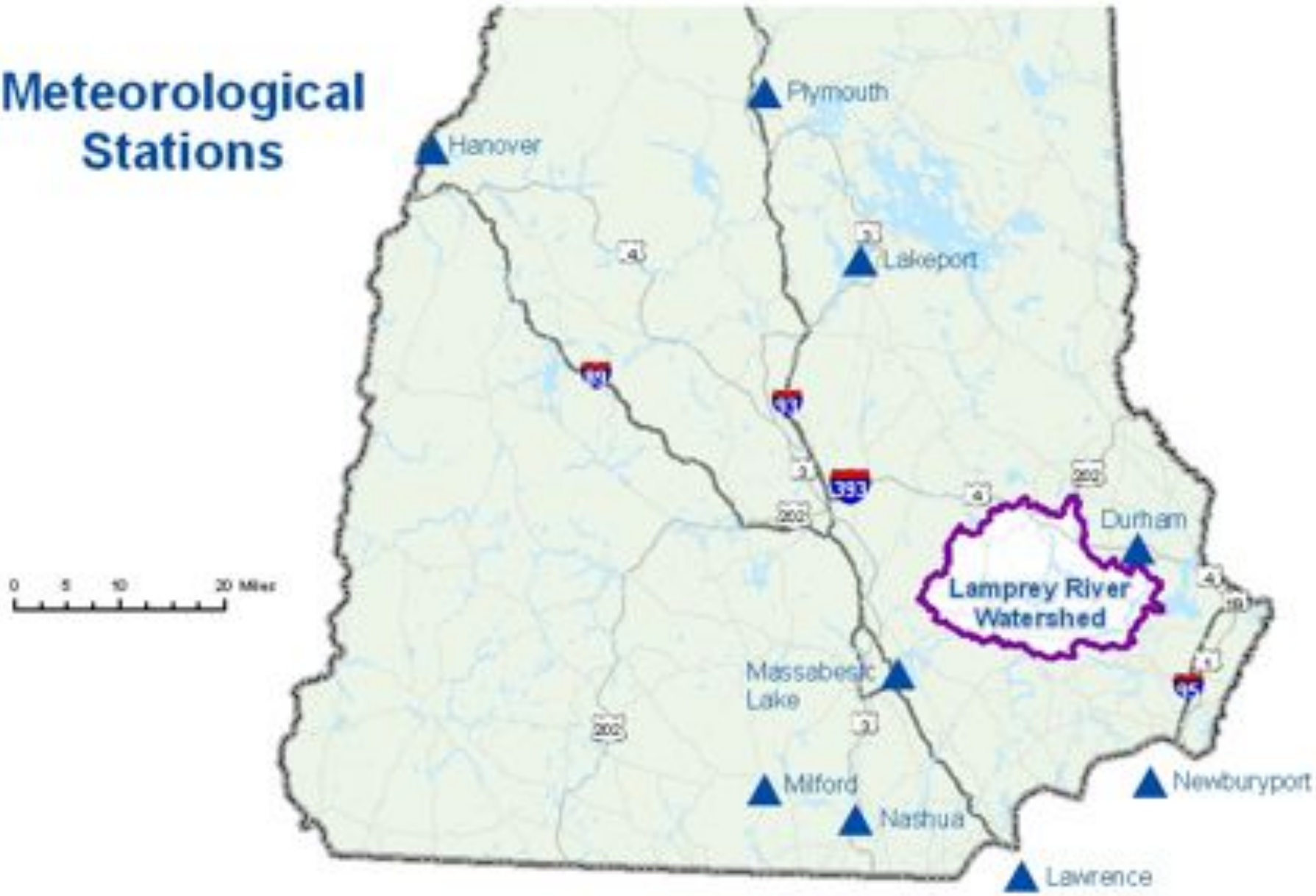
Dissemination

- -GRANIT website, printed maps, professional meetings, etc.

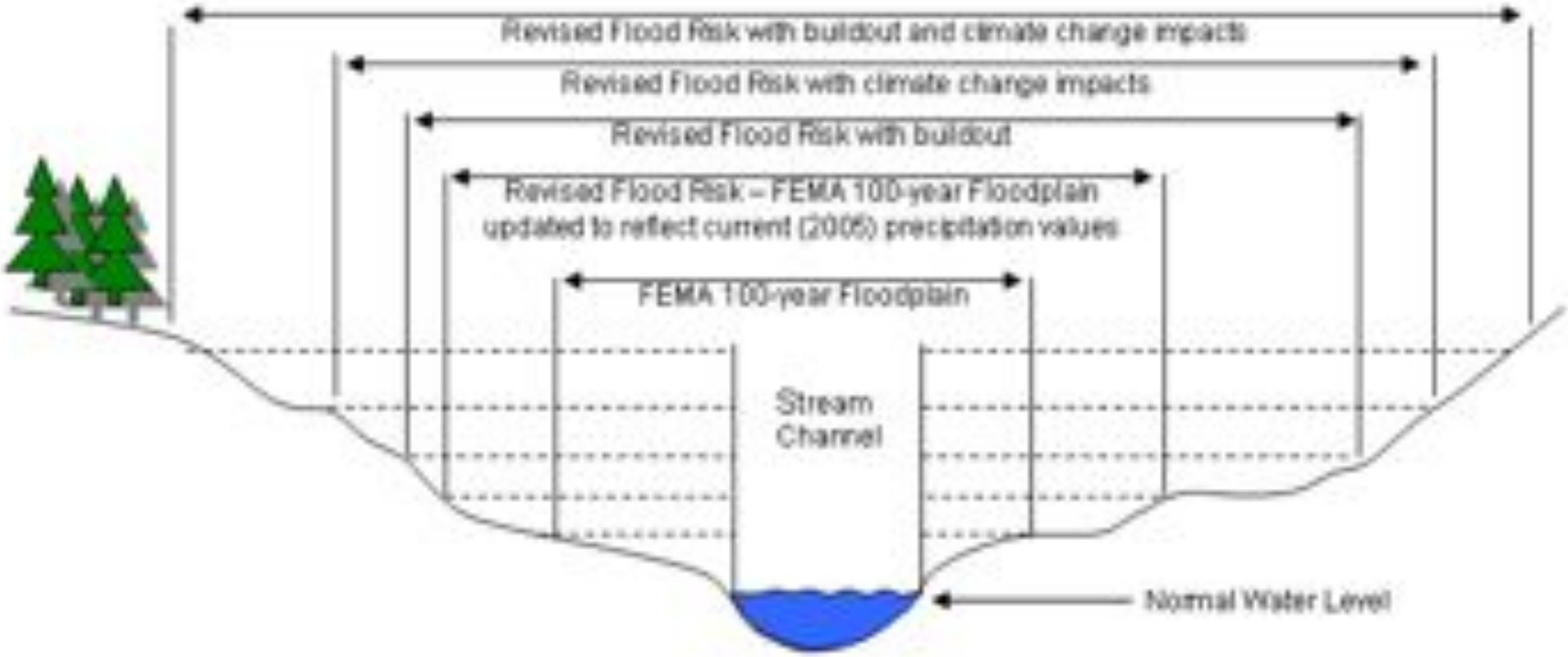
Projecting Future Climate Change for the Northeast: Greenhouse Gas Emission Scenarios



Meteorological Stations



Calculation the Risk of 100-year Floods Resulting from Changes in Climate and Land Use



Assessing the Risk of 100-year Freshwater Floods in the Lamprey River Watershed of New Hampshire Resulting from Changes in Climate and Land Use

Questions and Feedback:

cameron.wake@unh.edu

or talk to/e-mail Cliff

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