GLOBAL WATER FUTURES
SOLUTIONS TO WATER THREATS IN AN ERA OF GLOBAL CHANGE

A6. Floodplain & Risk Analysis
Great Lakes RB Perspectives

FloodNet NSERC

Working title: Probabilistic Flood Risk Analysis

Research Objectives

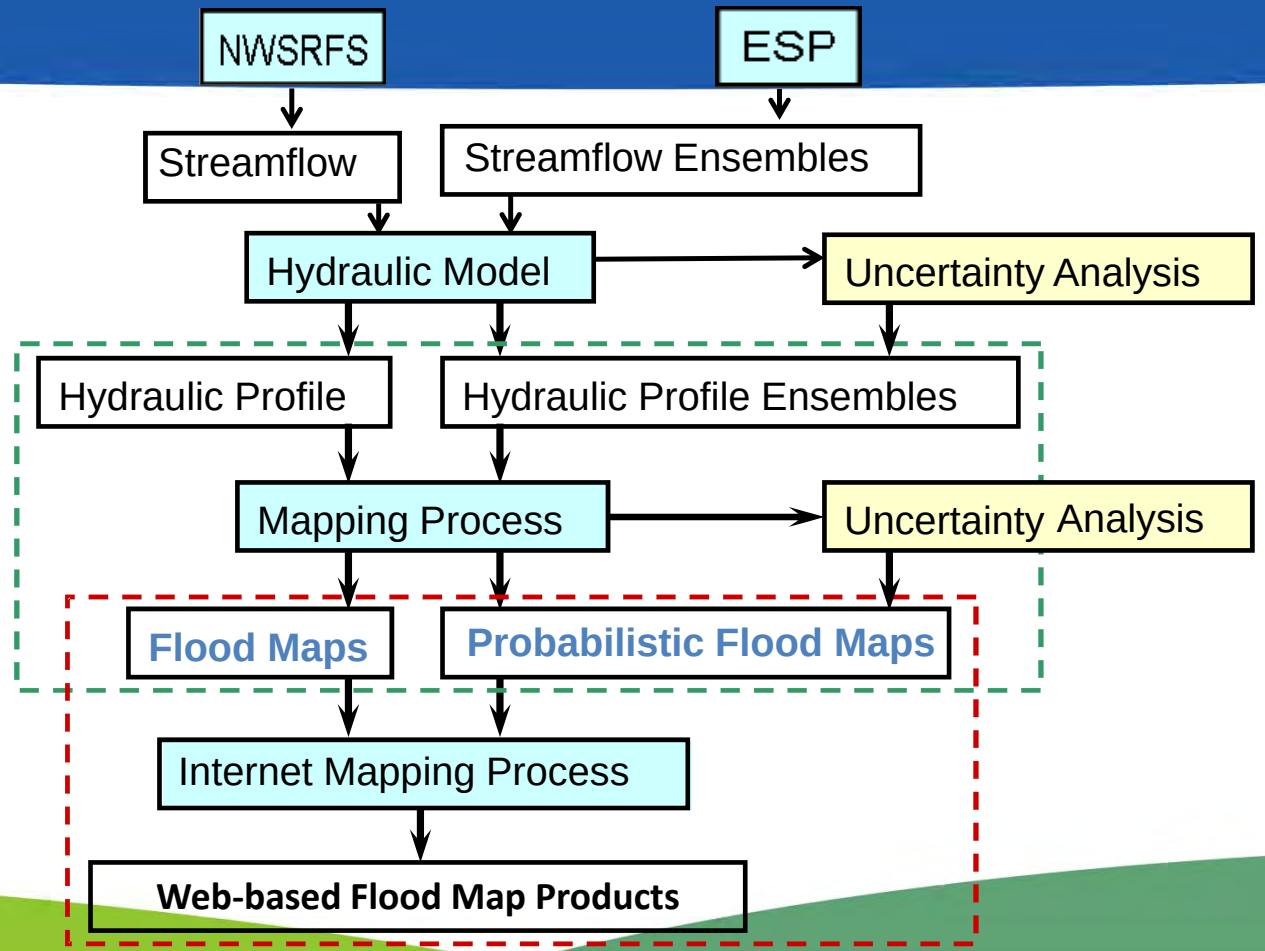
Methods & Deliverables

Timeline

A6: Research Objectives – Methods – Deliverables

Objectives	Improving floodplain mapping in flood prone areas in Ontario Great Lakes River Basins
Methods	Investigate multi-models and bivariate statistical (copula) methods; Compare deterministic and probabilistic approaches; Integrate models and statistical methods to develop flood risk mapping tools.
Deliverables	Watershed modeling tools for flood risk assessment

Existing Probabilistic Flood Mapping Tools



FLDVIEW

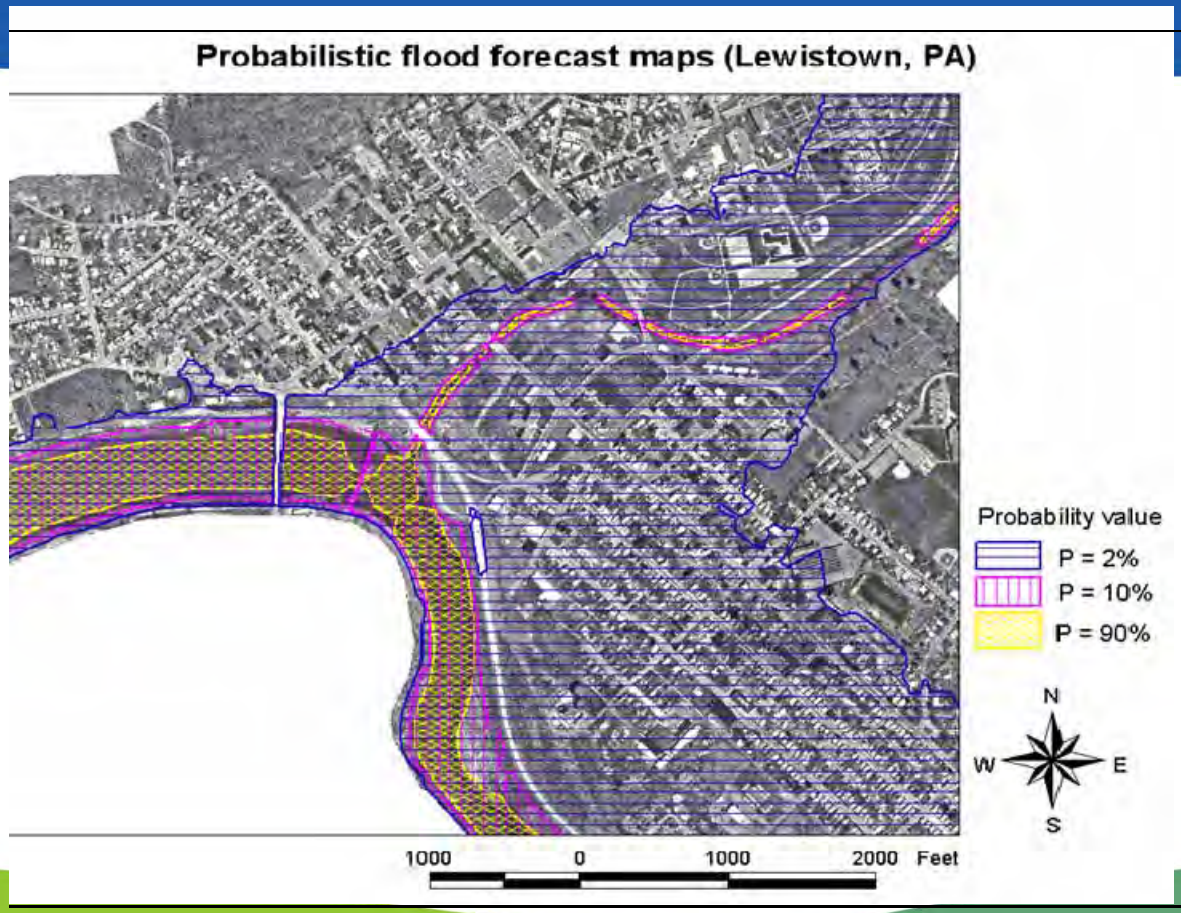
FLDIMS

ArcIMS

From:
Dr. Julie Demargne
NOAA/NWS

FloodNet
NSERC

Existing Probabilistic Flood Mapping Tools…



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Potential Contributions

Multi-model approach

Hydrologic models: MESH; HEC-HMS; WRF-Hydro…
Hydraulic Models: HEC-RAS; MIKEFLOOD;…

Bivariate copulas analysis to account for uncertainty

(e.g. flood hydrographs, boundary conditions)

Develop a more flexible tool

Use of synthetic design flood events
Historical flood events
Predicted/future flood events

Resources & Timeline

Resources: 1PHD and ½ PDF (core support)

Plan: 1 year PDF and ½ PDF (core support)

Timeline:
Nov. 2017 - Oct. 2018 : Tool development
Oct. 2018 – Aug. 2020 : Applications and testing

THANKS

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