



## Key Messages and “Soundbites”

FloodNet is a large entity with various facets, making it sometimes difficult to describe the Network and what it proposes to accomplish. This is particularly true for our partners who were less actively involved in the development of the proposal and research plans. The FloodNet website and Summary Booklet are helpful and detailed resources in this respect. For those less familiar with the material, the following points and ‘soundbites’ will be helpful for general communications about FloodNet. All communications should centre around the idea that:

**“Due to the research of FloodNet, a future Canada will be better prepared to deal with the reality of floods because ...”**

### Why is FloodNet needed?

- The costs of the 2011 Assiniboine River Flood in Manitoba was \$1.2 Billion; In Alberta the 2013 Bow and Elbow River Floods cost an estimated \$6 Billion. With increased population and urban development, flood costs will continue to rise.
- Climate change will alter flood regimes and infrastructure design must account for the reality of a changing environment.
- Accurate and timely flood warnings could save millions per year in reduced damages, prevent loss of life and limit environmental and social damages.
- Socio-economic and environmental factors related to flooding are rarely considered in emergency planning, preparation and mitigation measures.

### What is FloodNet?

- FloodNet is a vehicle to prepare Canada to better manage the reality of floods.
- FloodNet is a collaborative and multi-disciplinary research network that includes academic experts, government scientists, water resource managers and decision makers.
- FloodNet is an effort to develop knowledge and tools to reduce the devastating impacts of floods in Canada.
- FloodNet is a national effort to holistically address issues related to flooding.

### Who is participating in FloodNet?

- 21 Researchers from 12 Canadian Universities
- Scientists and engineers from over 30 government agencies and industry
  - These include representatives from federal, provincial and municipal governments; hydro-power companies; consulting companies; the construction

industry; the insurance industry and international institutions.

### **Why is such a large network needed to deal with flooding?**

- Issues related to flooding are complex and require holistic approaches. This involves many experts.
- The partnership between academics and end-users is critical to ensure the relevance of FloodNet research.
- FloodNet projects were designed to link together and enhance one another. This would not be possible with smaller independent projects.

### **What are FloodNet's objectives?**

- 1) Advance knowledge on flood regimes (Past and Future) and provide guidelines for infrastructure design
- 2) Advance knowledge on flood forecasting systems and enhance flood forecasting in Canada
- 3) Assess the impacts of floods on people, society and the environment

### **What will be the outcomes of FloodNet?**

- Earlier lead times and more accurate flood forecasts will reduce the economic and environmental costs of flooding and hasten the recovery following a flood.
- Flood damages will be reduced through improved understanding of future flood regimes used to inform infrastructure design.
- Informed land use planning will minimize the negative consequences of floods by considering the interactions of climate change, socio-economic and environmental effects of floods.
- Reliable information is critical for informed decision making, particularly during disaster situations. FloodNet research will improve the quality of information available which will in turn result in better informed disaster management.
- During natural disasters, normal avenues of communication become ineffective. FloodNet will develop protocols that take advantage of the prevalence of short range communication devices to deliver timely information using peer-to-peer (P2P) approaches.
- The management of water resources, including reservoir operations, will be improved through reduction and estimation of uncertainty in forecast models.

## **What research topics will FloodNet cover?**

All FloodNet research falls into one of four themes:

### ***Theme 1: Flood Regimes in Canada: Learning from the Past and Preparing for the Future***

This theme will address how often floods of a particular size can be expected to occur, particularly given the reality of climate change. This information is useful for designing flood protection infrastructure, flood mitigation systems and for land-use planning.

### ***Theme 2: Quantifying and Reducing Predictive Uncertainty of Floods***

Research in this theme focuses on increasing the quality of flood forecasts by giving decision makers an understanding of how likely a particular outcome will be. This theme will also focus on improving forecasts by increasing the confidence (reducing uncertainty) in a particular forecast.

### ***Theme 3: Development of Canadian Adaptive Flood Forecasting and Early Warning System (CAFFEWS)***

CAFFEWS will be an advanced flood forecasting system capable of producing more accurate flood forecasts at longer lead times than current systems. This theme will also develop technology to transmit data and communicate with the public in the event of power failures and communication infrastructure loss.

### ***Theme 4: Risk Analysis, Physical, Socio-Economic and Environmental Impacts of Floods***

Research in Theme 4 will provide a holistic understanding of flood impacts by considering environmental and socio-economic aspects of flooding. This information will be invaluable for mitigating the negative consequences of floods on society, the economy and the environment.

## **What will be the deliverables of FloodNet?**

- 1) Manual, guidelines and statistical toolbox for flood frequency analysis required for engineering design.
- 2) Frameworks for multi-reservoir optimization and increasing the reliability of flood forecasts.
- 3) The Canadian Adaptive Flood Forecasting and Early Warning System (CAFFEWS) with embedded communication technology.
- 4) Holistic flood vulnerability indicators to aid in planning.

## **How can an individual or organization participate in FloodNet?**

- FloodNet is looking for outstanding candidates interested in pursuing a Master's or Ph.D. If you are interested, contact a Project/Theme leader directly or [floodnet@mcmaster.ca](mailto:floodnet@mcmaster.ca) to be put in touch.
- FloodNet is always open to new partners. Details can be found on the website ([www.nsercfloodnet.ca](http://www.nsercfloodnet.ca)) or you can contact [floodnet@mcmaster.ca](mailto:floodnet@mcmaster.ca).