

Flood Hazard Identification and Mapping Program (FHIMP)

Webinar for Conservation Authorities and Municipalities in Ontario

May 31st, 2022



Natural Resources
Canada

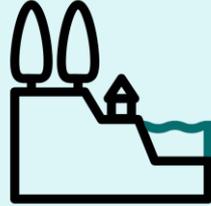
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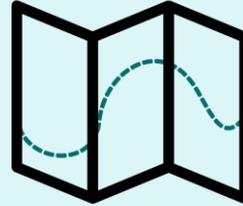
NRCan's Flood Mapping Mandate



Collaborating with the flood mapping community to advance flood hazard mapping in Canada



Providing **access to data** related to flood mapping: from historical flood maps to foundational data



Providing **real-time maps** of floods and river ice break-up with critical information for emergency response

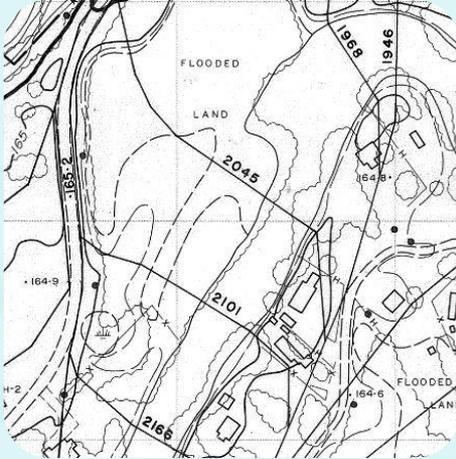


Researching and developing new tools, analytical methods, and applications related to flooding



History of Federal Flood Mapping

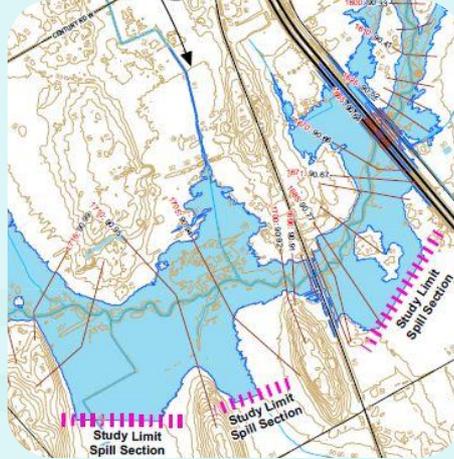
1976 - 1996



FDRP

Flood Damage
Reduction Program

2015 - 2022



NDMP

National Disaster
Mitigation Program

2021 - 2024



FHIMP

Flood Hazard Identification
and Mapping Program



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Federal Flood Mapping Guidelines

[Download them here!](#)

Document Name	Status
Federal Flood Mapping Framework v 2.0	Published
Federal Airborne LiDAR Data Acquisition Guideline v 3.0	Published
Bibliography of Best Practices and References for Flood Mitigation v 2.0	Published
Case Studies on Climate Change in Floodplain Mapping (volume 1)	Published
Federal Hydrologic and Hydraulic Procedures for Flood Hazard Delineation v 1.0	Published
Federal Geomatics Guidelines for Flood Mapping v 1.0	Published
Federal Flood Damage Estimation Guidelines for Buildings and Infrastructure v 1.0	Published
Federal Flood Hazard Identification and Priority Setting Guidelines v 1.0	In Progress
Federal Flood Risk Assessment Procedures v 1.0	In Progress
Federal Land Use Guide for Flood Risk Areas v 1.0	In Progress



National Flood Hazard Data Layer

- Store existing flood hazard information
- Funded under Canada's Emergency Management Strategy
- Environmental scan of current state of flood mapping in Canada
- National schema for flood hazard information (built in collaboration with provinces and territories)



NFHDL v1.2

583

Study Areas

1203

Flood Inundation Areas

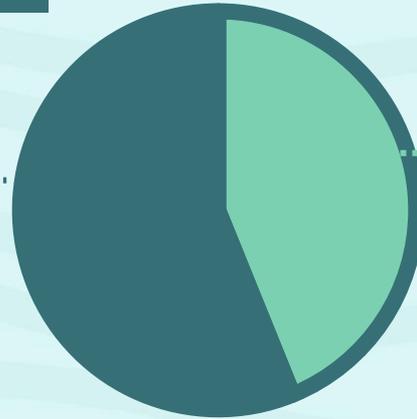
627

Hazard Areas



Budget 2021

\$145.5M
to increase resiliency to
natural hazards



\$63.8M
to map flood hazards
in high-risk areas

Protect homes and communities from the impacts of climate change by completing work with provinces and territories to develop flood maps for higher-risk areas, advancing work to complete flood mapping nation-wide, supporting the development of a portal to provide centralized access to information on flood risks.

*-- Minister of Natural Resources
Mandate Letter, December
2021*



FHIMP: Objectives

Natural Resources Canada

- ✓ Development and implementation of the flood hazard mapping program component with provinces and territories
- ✓ Engage with jurisdictions to identify priority projects
- ✓ Cost-share flood mapping activities (50-50 with provinces, 75-25 with territories)

Environment and Climate Change Canada

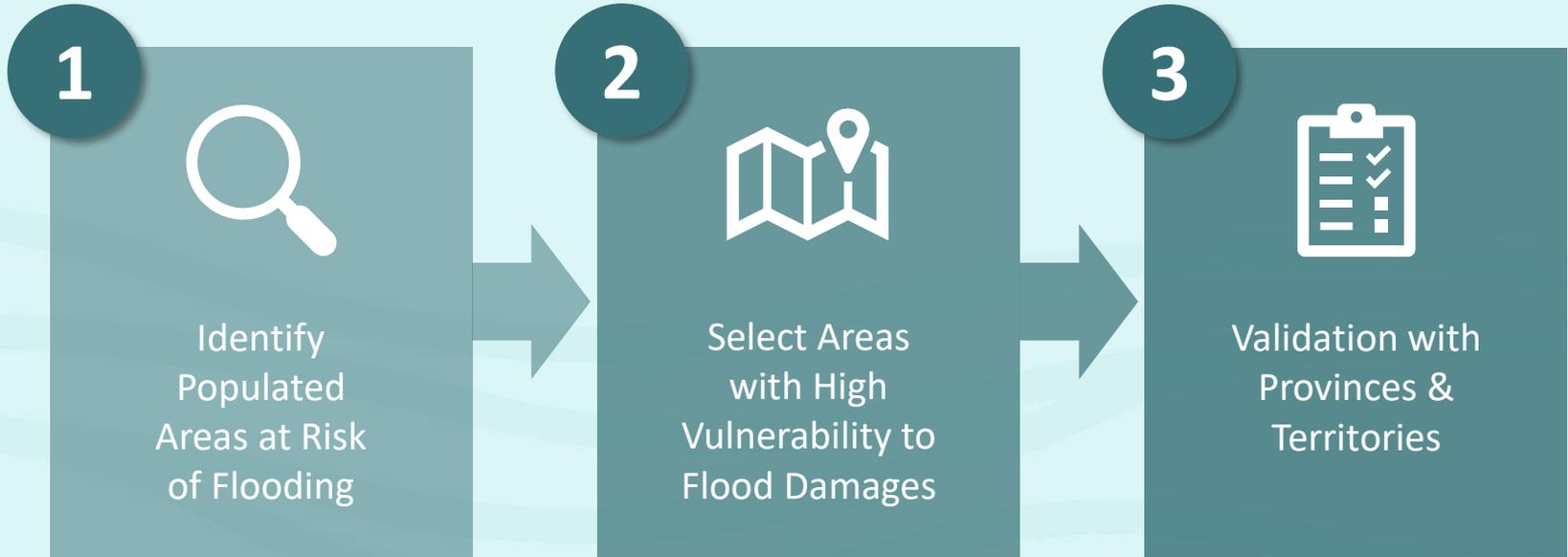
- ✓ Atmospheric and water data, modelling, water resources engineering, and science and climate change knowledge
- ✓ Engage academia, provide expertise, inform flood mapping engineering methods
- ✓ Further develop and advising on design principles of flood science
- ✓ Integrate the impacts of climate change in flood maps.

Public Safety

- ✓ Governance, policy and alignment with initiatives under Canada's Flood Risk Plan
- ✓ Ensure no overlap with National Disaster Mitigation Program
- ✓ Develop a Canada-Wide Flood Risk Portal



FHIMP: Prioritization



FHIMP: Allocation of Funds



ONTARIO
\$7.6M

CONTINGENCY
FUND
\$4.5M

?

Contingency fund to be shared between provinces and territories based on project readiness



FHIMP: Quick facts

- Each PT are assigned a nominal envelope **targeted towards highest risk areas** (\$7.6M for Ontario)
- Projects are **co-designed with PTs** on a **cost-shared** basis (50-50 with the provinces and 75-25 with the territories)
- Projects cannot be **financed by another federal program**
- Projects can **be multi-year**
- Data acquired and flood maps created must **meet or exceed requirements** defined in the *Federal Flood Mapping Guidelines Series*
- Flood maps created through the program must meet necessary requirements to be **used for regulatory purpose** in relevant jurisdictions
- Resulting maps and data must be **available to Canadians**



FHIMP: Eligible Activities



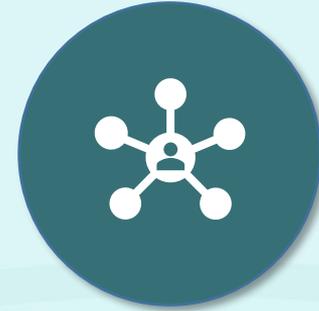
Data Acquisition

All forms of data or information required for flood hazard assessments



Flood Hazard Modelling and Mapping

All stages of an engineering flood hazard assessment



Dissemination of Flood Hazard Information

Making flood hazard maps available to the public



FHIMP: Eligible Activities



Data Acquisition

- ✓ Data is acquired for **hydrological and hydraulic modeling**
- ✓ Data is acquired in **high-priority areas**
- ✓ Data informs the development of **new flood hazard maps**

EXAMPLES

- LiDAR (terrestrial, bathymetric, and airborne)
- Land surveys (including survey of hydraulic structures, such as culverts, bridges, etc.)
- Survey of historical food extents
- Hydrometry (water levels, flow measurements, high water marks, ice thickness measurements, etc.)
- Stream bathymetry
- Rainfall data
- Cross sections



FHIMP: Eligible Activities



Flood Hazard Modelling and Mapping

- ✓ **Hydraulic** and **hydrological** modelling and analysis
- ✓ Can cover **fluvial**, **pluvial** and **coastal** flooding scenarios
- ✓ Must include **climate change consideration**
- ✓ At least **three AEP scenarios** are encouraged (including 0.5%)
- ✓ Must produce engineered **regulatory or suitable for regulatory maps**
- ✓ Must follow **federal flood mapping guidelines** and **industry best practices**



FHIMP: Eligible Activities



Dissemination of Flood Hazard Information

- ✓ Activities to **improve access** to flood hazard maps

EXAMPLES

- Web portals and maps
- Communication campaigns
- Training in flood map usage
- Publicity, videos, webinars, etc.
- Indigenous engagement
- Workshops and engagement sessions



FHIMP: Other Eligible Activities



The eligibility of these activities will be assessed on a case-by-case basis

Activity	Eligibility Condition
Hazard Assessment, Priority Setting and Scoping	Activities that increase a jurisdiction's understanding of their flood data needs, priority areas, the flood hazard mapping process, or status of their current data and map holdings.
Flood Risk Maps and Risk Assessments	A) High-priority flood hazard mapping has been completed within the province/territory, or B) Flood risk maps are the regulatory maps used within the jurisdiction.
Provincial or Regional Scale Flood Modelling	If used for prioritization or for regulatory purposes.
Research	Research that is directly applicable to the development of new flood hazard maps.



FHIMP: Non-Eligible Activities

- ✗ Jurisdictional policy and governance review
- ✗ Flood hazard regulations
- ✗ Land use planning
- ✗ Flood mitigation studies and designs
- ✗ Permanent hydrometric stations (although temporary gauges may be eligible for hydraulic and hydrological modelling)



REMINDER

Projects cannot be financed by another federal program



Thank you!

Please email questions to:

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