

FLOOD HAZARD IDENTIFICATION AND MAPPING PROGRAM

(FHIMP)

NRCan – FHIMP Update and Program Impact

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Outline

- Introduction to FHIMP
- Program progress update
- Regional modelling
- Grants and contributions
- Flood mapping guidelines
- Other federal initiatives supported by FHIMP
 - Canada Flood Map Inventory
 - National Elevation Strategy
 - Canadian Hydrospatial Network
- Communications
- Next steps

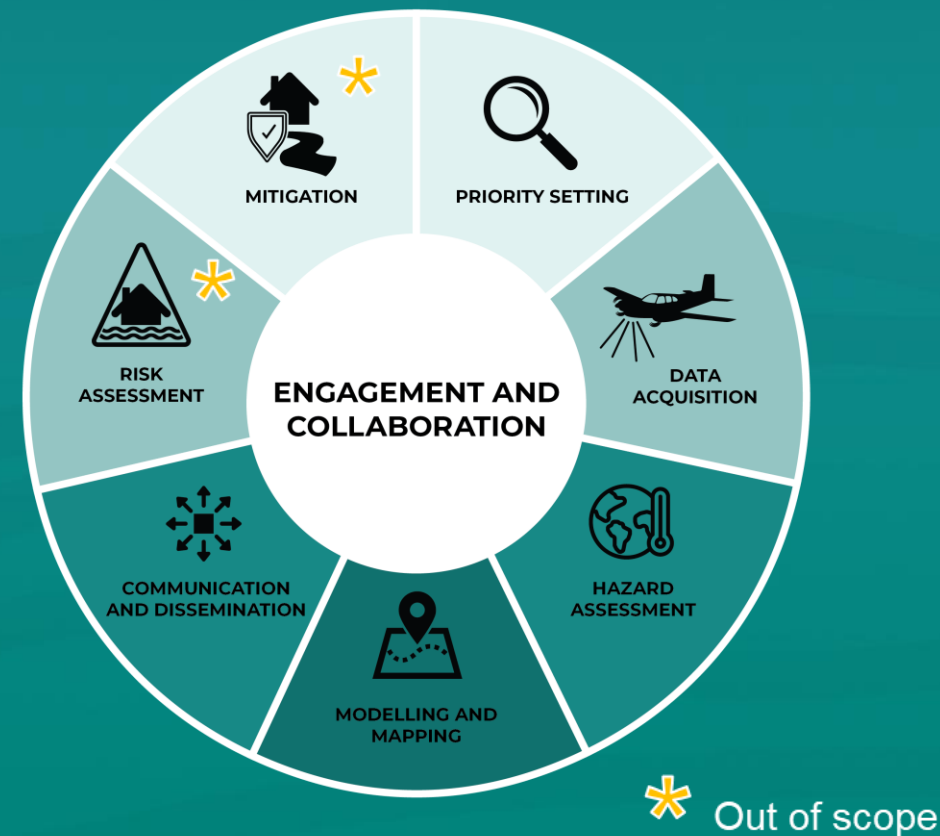
FHIMP: 2021-22 – 2027-28

Collaboration with provincial and territorial partners, Indigenous communities, and organizations:

- Complementary to Canada's **Emergency Management Strategy**
- Builds on shared expertise, including **support in Indigenous engagement** from CIRNAC and ISC
- **Continued cost-sharing: 50/50 share for provinces, 75/25 share for territories**
- **Contribution Funds:**
 - ECCC funding streams dedicated to **research**: i.e.
 - Incorporating climate change impacts into flood maps
 - NRCan funding stream directly for partners working in related regional flood modelling R&D, and traditional knowledge inclusion

FHIMP projects align with the **Federal Flood Mapping Guidelines Series**

FEDERAL FLOOD MAPPING FRAMEWORK



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FHIMP Results

\$52M+



Cost-shared
investment outlined

200+



Flood mapping
related projects

800+



Communities across
Canada impacted



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FHIMP Results



Status of Projects		
PT	In Progress	Completed
AB	20	5
BC	10	6
MB	17	14
NB	1	0
NL	8	2
NS	15	7
NT	5	7
NU	7	0
ON	40	17
PE	4	5
QC	21	12
SK	26	23
YT	7	23
Total	181	121



Flood Mapping Update

Current investments spent so far:

PTs: \$28M
NRCan: \$31M
TOTAL: \$59M

Advancing FHIMP agreements **signed for all provinces/territories**

Amendments for FY 2024-2025 reallocation of funds:

- Signed for **NWT, Yukon, BC**
- In revision for **NL**



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Supporting Regional Flood Modelling in Canada

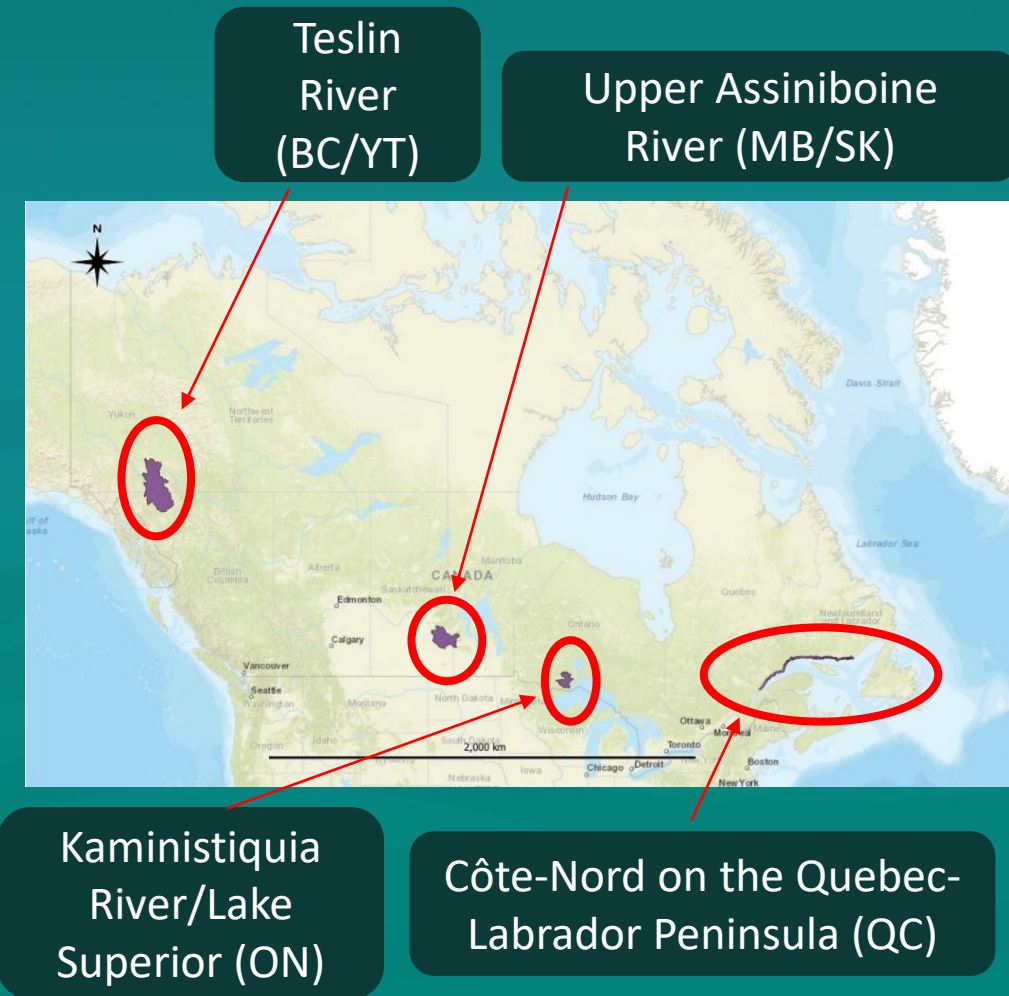
National Feasibility Study to support regional flood modelling implementation (KGS-DHI – 2023-25):

- Environmental Scan - Complete
- Technical Guidance and Recommendations - V2 under revision
- Research and Action Plan – Fall 2024
- Case Studies (4) – Winter 2025 (followed by potential revisions to technical guidance)

Additional O&M projects planned including:

- **Fastflood** and **Blackbird** hydraulic model case studies
- Additional pilot projects to expand feasibility studies

Advancing FHIMP: Continued investments in **cost-shared flood mapping studies in Canada** with provinces and territories (\$60M: 2024-2028)



Grants & Contributions: 2 Streams

Indigenous Traditional Knowledge Stream (\$1M)

Focus: facilitate exchange of knowledge between Indigenous and scientific flood mapping practices.

- **Explore methodologies** for ITK based flood mapping projects, while **managing its privacy**, as needed
- **Develop tools and language** to facilitate Indigenous participation in flood mapping processes
- Ensure that the unique perspectives and knowledge of Indigenous Peoples be reflected in the **Federal Flood Mapping Guidelines Series**
- **3 projects** selected and underway (1 additional project pending approval and announcement)

Regional Modelling Stream (\$4.7M)

Focus: development and improvement of regional flood modelling approaches.

- **Improved** modeling methods and techniques at **regional-scale**
- Leveraging **remote sensing and AI** for flood hazard modelling
- **9 projects** selected and underway
- Project summaries and collaborators available upon request



Funding Total: \$5.7M over 2024-2028

Guidelines Update

Federal Flood Mapping Guideline Series	Status
Federal Flood Hazard Identification and Priority Setting Guidelines v 1.0	Final review
Coastal Flood Hazard Assessment for Risk-Based Analysis on Canada's Marine Coasts v 1.0	Final review
Federal Guidelines for Flood Risk Assessment Procedures v 1.0	Final development
Engagement guidelines for flood mapping and communication results	In development
Case Studies on Climate Change in Floodplain Mapping volume 2	In development
Federal Flood Mapping Standards	Status
Airborne LiDAR Data Acquisition	Publication April 2025
Geomatics for Flood Mapping	Publication April 2025
Federal Flood Mapping Technical Bulletins Series	Status
Geomorphic Considerations in Flood Mapping	In publication
Detecting Coastal Change for Flood Mapping (title may change)	Final development

Canada Flood Map Inventory Update

28

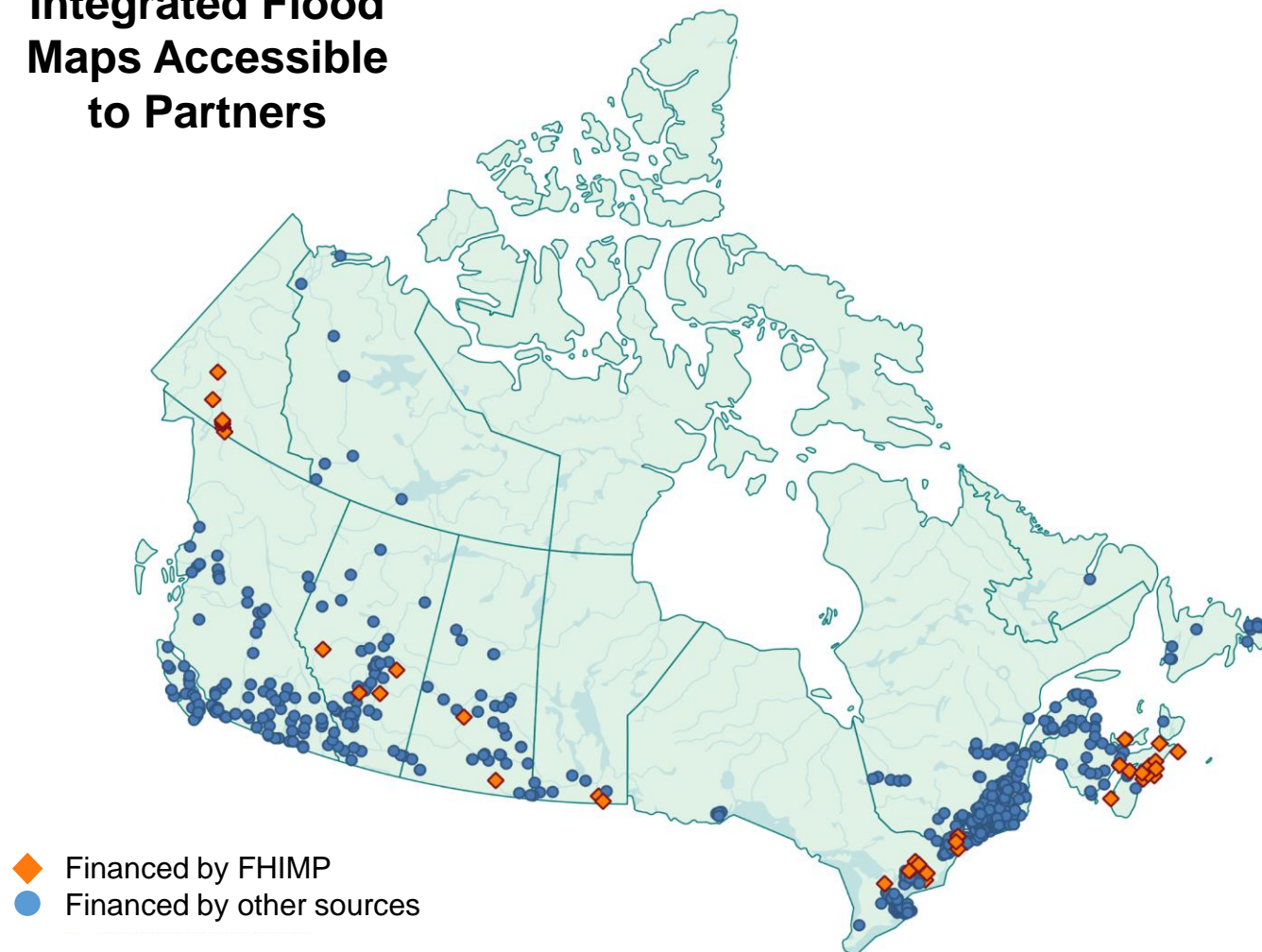
FHIMP studies integrated
into the database

16

FHIMP studies awaiting
integration

** Marked as completed, but some are missing
compliance forms and/or GIS data*

Integrated Flood
Maps Accessible
to Partners

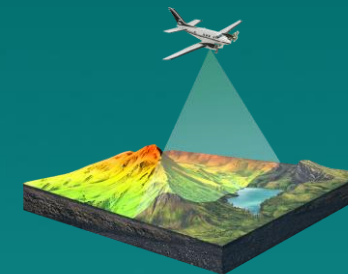


Lidar data acquisitions funded in part by the Flood Hazard Identification and Mapping Program (FHIMP)

As of January 2025

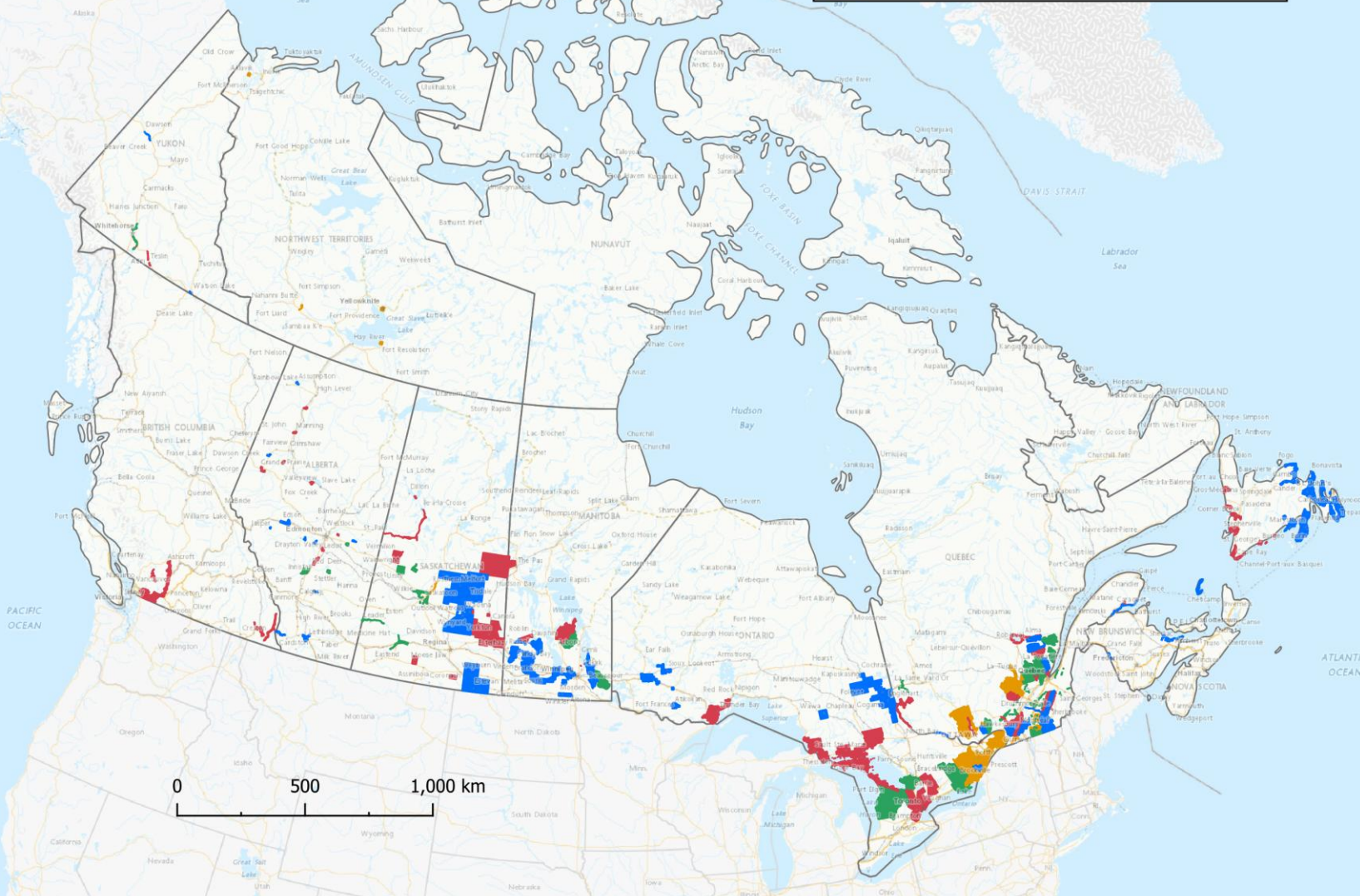
Acquisition year / Total coverage per year

■	2021-22 / 30,320 km ² of topo or topo-bathy lidar data
■	2022-23 / 43,816 km ² of topo or topo-bathy lidar data
■	2023-24 / 80,777 km ² of topo or topo-bathy lidar data
■	2024-25 / 100,229 km ² of topo or topo-bathy lidar data



Highlights

- Over **253,000 km²** of topographic lidar and **2,208 linear km** of topo-bathymetric lidar have been acquired **between 2021 and 2024**.
- Acquisitions are focused on **areas at risk of flooding** with no existing or current lidar data.
- The areas are **defined in partnership with the provinces and territories** for the purpose of flood mapping.
- All these projects are progressively being added to **NRCan's high-resolution elevation products**.



Canadian Hydrospatial Network

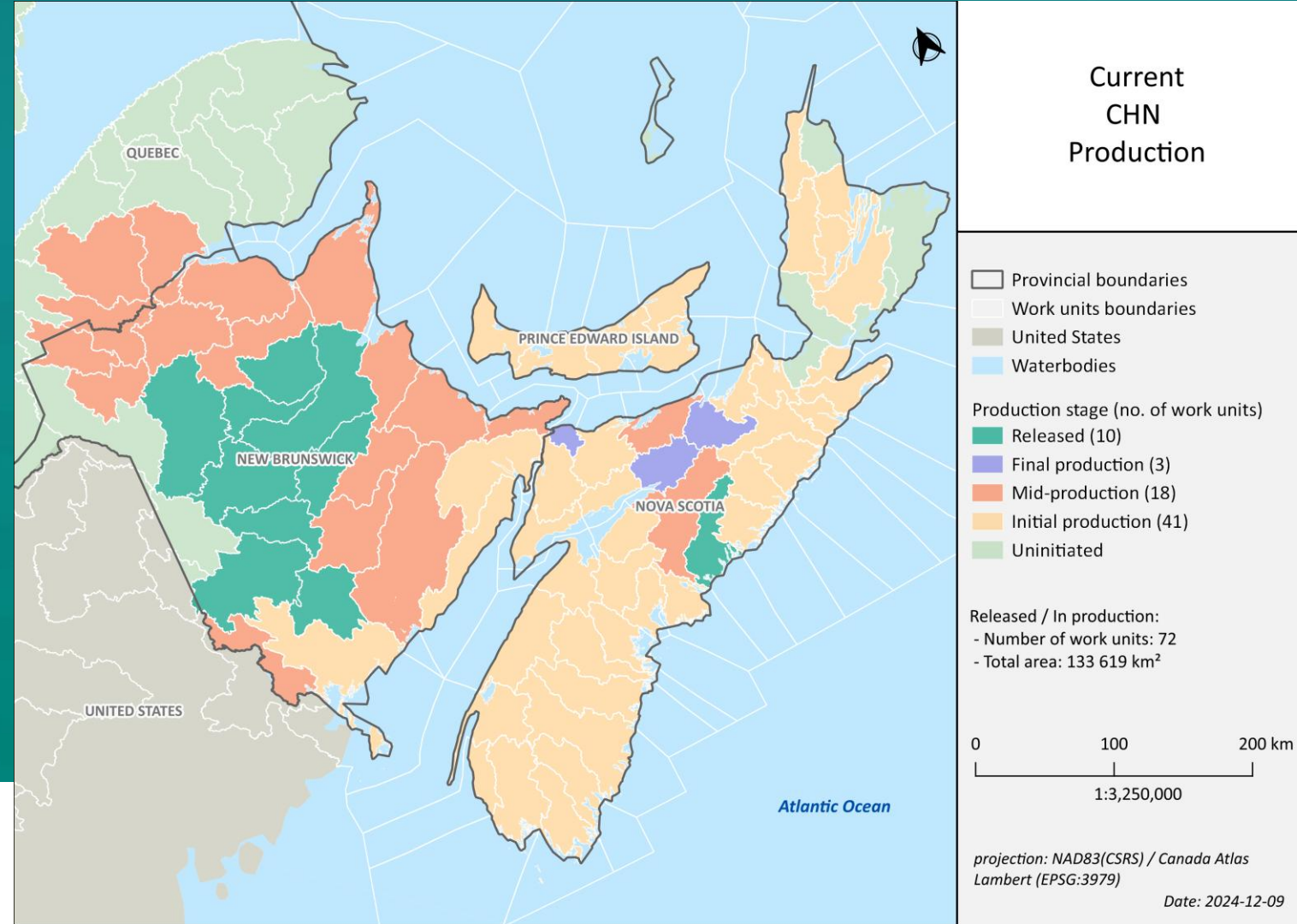


Replacing the National Hydro Network (NHN)

Built on the successes of the NHN, the CHN provides:

- More **opportunities for analysis**—the CHN includes catchments, added attributes for modelling, and allows for full network traversing
- Better **accuracy, resolution and elevation alignment**, where possible (i.e. leveraging HRDEM and GeoAI products)

Creation of the network design, methods, tools, and data **collaboratively with partners**



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Communications Update

Outreach

• 2024 – 2025 Event Participation:

- 2024 CWRA National Conference
- 2024 CWRA Webinars:
 - Indigenous Engagement
 - Elevation, Terrain and Super Resolution
 - The New Canadian Hydrosatial Network
- 2024 CWRA Ontario Branch Flooding Workshop
- 2024 Industry Engagement Day
- NRCan GeoWeek
- 2025 LiDAR CANEX Commercial Expo
- 2025 International LiDAR Mapping Forum

Western Flood Mapping Conference

February 19-20, 2025

• 2025 – 2026 Event Participation:

- 2025 CWRA Ontario Branch Flooding Workshop
- 10th International Conference on Flood Management
- 2025 Canadian Society for Civil Engineering Annual Conference
- 2025 International Cartographic Conference
- 2025 ASFPM Conference



AGENDA		WESTERN FLOOD MAPPING CONFERENCE	
8:30 AM	Registration		
9:00 AM	Welcome and Opening Remarks		
9:15 AM	Keynote Presentation: Dr. Anna Warwick Seers, Okanagan Basin Water Board		
10:00 AM	Break		
		MAIN ROOM	ROOM 2
10:00 AM - 12:15 PM	Advances in Flood Hazards Mapping Methodologies Novel approaches to flood mapping including AI and regional modeling	Update PM Workshop	
12:15 PM	Lunch		
1:15 PM - 2:45 PM	Ice Jams & Debris Flows Different approaches and applications to flood mapping with consideration given to ice jams and different terrain scenarios	Engage Carroll and on-res	
2:45 PM	Break		
3:05 PM - 4:15 PM	Research & Guidance on Climate Change Lessons learned from considering climate change in floodplain mapping and case studies	Use of	
4:15 PM - 5:00 PM	Panel Discussion Identifying key take-aways from the conference and open floor for questions and discussion		



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+ others TBC:

- 2025 Committee on River Ice Processes and the Environment Workshop

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Communications Update

Social Media



Web

- Jan 2024 – Jan 2025: **47,826 page views** for Flood Mapping Section webpages (EN and FR)
- 5x updated FHIMP webpages – addition of **G&C flood mapping projects**
- Geo.ca webpages **maintained** (geared towards a technical audience)

Products

- 8x external publications and 6x updated factsheets
- **Communications Toolbox** (to be published on the FHIMP Guidelines webpage)
- **National Flood Mapping Glossary** developed in collaboration with FHIMP partners (in progress, currently under review)

Next Steps



Continue activities advancing flood hazard mapping in Canada

- Collaboration with provinces, territories and local partners for **cost-shared flood mapping projects**
- Communication, engagement and results dissemination
- Efforts to **advance nation-wide flood mapping coverage**, combining different tiers of modeling and mapping

Support flood mapping research and development

- ECCC contribution funding research in **hydrologic, hydraulic and climate considerations** for floodplain mapping
- NRCan contribution funding research in **regional flood modelling** and **Indigenous Traditional knowledge**

Additional activities and public release

- Foundational data and products
 - Canada Flood Map Inventory
 - National Elevation Strategy
 - Federal Flood Mapping Guideline Series
- Data dissemination environment and research