Planning in Flood Hazard Areas

A guide for NWT Community Governments on the Community Plan Review Process

February | 2026

Government of
Northwest Territories

This page intentionally left blank

Foreword

This guide is one in a series of guides developed by the Department of Municipal and Community Affairs (MACA) to support the *NWT Community Planning Framework*. It is intended to provide guidance for community governments that are in the process of reviewing their community plans, and the professional Community Planners they retain to assist with this work.

Other guides in this series:

- Accessibility and Age-Friendly Design Considerations
- Archaeological Site Management and Protection
- Best Practices for Municipal Public Engagement
- Community Civic Addressing
- Climate Change and Land Use Planning
- Understanding the GNWT's Duty to Consult

Acknowledgements

MACA thanks the NWT Association of Communities for its support of the *NWT Community Planning Framework* and these associated guides.

MACA thanks staff in the Department of Environment and Climate Change and the Department of Finance, NWT Centre for Geomatics for their contributions to this guide, as well as the Government of Canada for the financial contributions under the Flood Hazard Identification and Mapping Program (FHIMP).

This page intentionally left blank

K’áhshó got’ı̨ne xədə k’é hederı ɔedı̨htl’é yerınıwę nı dé dúle.
Dene Kədə́

ʔerıhtł’ís Dëne Sų̨łıné yatı t’a huts’elkër xa beyáyatı theɔą ɔat’e, nuwe ts’ën yółtı.
Dëne Sų̨łıné

Edı gondı dehgáh got’ı̨e zhatıé k’ę́é edatł’éh enahddhę nıde naxets’é edahłí.
Dene Zhatıé

Jii gwandak izhii ginjìk vat’atr’ijąhch’uu zhit yinohthan jì’, diits’àt ginohkhìi.
Dinjii Zhu’ Ginjik

Uvanittuaq ilitchurisukupku Inuvialuktun, ququaqluta.
Inuvialuktun

ᑖᒃᑯᐊ ᑎᑎᖅᑲᐃᑦ ᐱᔪᒪᒍᕕᒋᑦ ᐃᓄᒃᑎᑐᓕᖅᓯᒪᓗᑎᒃ, ᐅᕙᑦᑎᓐᓄᑦ ᐅᖃᓚᔪᓐᓇᖅᑐᑎᑦ.
Inuktitut

Hapkua titiqqat pijumagupkit Inuinnaqtun, uvaptinnut hivajarlutit.
Inuinnaqtun

kīspin ki nitawihtīn ē nīhīyawihk ōma ācimōwin, tipwāsinān.
nēhiyawēwin

Tłı̨chǫ yatı k’ę̀è. Dı wegodı newǫ dè, gots’o gonede.
Tłı̨chǫ

Indigenous Languages
request_Indigenous_languages@gov.nt.ca

This page intentionally left blank

Table of Contents

Introduction 4

Purpose 5

Part A – Understanding Flood Mapping 6

- Advancements in Flood Mapping 6
- Types of Flood Maps and the Flood Hazard Area 7
- Annual Exceedance Probability 9

Part B – Community Planning and Flood Risk Management 10

- Planning Principles for Flood Resilient Communities: 11
- Community Governance and Flood Risk Management 11
- Integrating 200-Year Flood Hazard Maps 12
- Disaster Financial Assistance Arrangements 13
- Using Flood Hazard Maps in Community Plans 13
- Using Flood Hazard Maps in Zoning Bylaws 14
- Subdivision of Land in Flood Risk Areas 17
- Development and Building Decisions 18
- Emergency Planning and Land Use and Development Decisions 18
- Role of Qualified Professionals 19
- Plan Review, Monitoring and Continuous Improvement 20
- Communicating Flood Risk and Planning Decisions to Residents 21

Conclusion 22

Additional Information and Resources 22

Contacts 23

Introduction

Flooding is one of the most serious natural hazards facing Northwest Territories (NWT) communities. It can displace residents, damage property, threaten safety, and lead to long recovery periods.

Floods are generally categorized as riverine (fluvial), pluvial or coastal, based on where they occur and the processes that cause them. **While NWT communities may experience one or more of these types of flooding, riverine flooding is the most common.** For this reason, riverine flood hazard mapping is a priority for the Government of the Northwest Territories (GNWT) and the focus of this guide.

All NWT communities at highest risk of riverine flooding are in the Mackenzie River basin, Canada's largest river basin, which drains northward to the Beaufort Sea in the Arctic Ocean. In these communities, flood risk is highest during spring breakup (typically, late April to late May), primarily due to ice jamming on rivers, the most common cause of riverine flooding. Moving ice can block river flow and cause rapid water level rises. Open water flooding from heavy rainfall and snowmelt can also occur in some communities in spring and

Types of flooding in the NWT

Riverine (fluvial) flooding – Occurs when water flows outside of a river, stream, or creek channel and onto normally dry land. Causes may include ice jams, heavy rainfall and snowmelt.

Riverine flooding is either ***ice-affected*** or ***open water***:

Ice-affected flooding – Occurs when river ice changes the flow of water, causing water levels to rise. This is often, but not always, caused by an ice jam. The risk is highest during spring breakup.

Open water flooding – Occurs due to high streamflow not changed by river ice. It may be caused by heavy rain or snowmelt which could happen some distance away from the location of flooding.

Pluvial flooding – Occurs during periods of intense rainfall and/or snowmelt when more water accumulates in a short period than can be removed by drainage infrastructure or by infiltration into the ground.

Coastal flooding – Occurs when seawater temporarily inundates normally dry land along the coast. Causes may include storm surges, with the risk exacerbated by rising sea levels and changing sea-ice conditions.

Fort Simpson/Łíídlıı Kúé - Mackenzie River and the Liard River confluence.

Purpose

This guide is intended to be used by community governments, elected officials, senior administration officers, planners, engineers and other qualified professionals as a framework for applying the guidance in practice when integrating flood hazard mapping into community planning and land management decisions. This guide may also be of interest to a broader audience, including residents wanting a better understanding of flood hazard maps and their relationship to flood risk in NWT communities.

In the NWT, community governments have the primary responsibility for planning and regulating the use and development of land within community boundaries and their built environments.[1] This includes reducing community exposure to flood damage and supporting long-term flood resilience.

Tulita/Tuli ́t'a – Great Bear River and Great Bear Rock

The guide does not replace the authority of community governments or the judgement of qualified professionals. Instead, it provides non-prescriptive and practical direction to help ensure flood risk is considered early, consistently, and appropriately.

The guide is separated into two parts:

Part A – Understanding Flood Mapping
Part B – Community Planning and Flood Risk Management.

This guide is also intended to be used to:

- Support the review, preparation, and amendment of **community plans** and **land use plans**
- Inform the development, interpretation, and administration of **zoning bylaws**
- Guide the review of **development permit applications**, **subdivision proposals**, **and land applications**

[1] To learn background information about this important responsibility, please refer to the *NWT Community Planning Framework: Where We Live, Why We Plan*.

Part A – Understanding Flood Mapping

Advancements in Flood Mapping

From 1979 to 1988, the Government of Canada implemented the federal Flood Damage Reduction Program (FDRP), under which flood hazard maps were developed for several NWT communities. Following the conclusion of that program, most flood-prone communities have relied on these FDRP maps to inform community plans and zoning bylaws.

Fort Liard/Echaot'ı̨e Kų́e – Liard River

Current, accessible, high-quality flood mapping helps governments, communities, and individuals understand flood hazards and implement effective planning and mitigation strategies. Recognizing the need for better information to reduce flood risk and avoid devastating losses, the Government of Canada launched the federal Flood Hazard Identification and Mapping Program (FHIMP) in 2021. Through FHIMP, the federal government is investing in the modernization of flood mapping across Canada, in partnership with provincial and territorial governments, with a focus on higher-risk areas.

For communities in the NWT at highest risk of riverine flooding, this work is led by GNWT's Department of Environment and Climate Change (ECC) – Water Monitoring and Stewardship Division, and the Department of Finance – NWT Centre for Geomatics, with financial and technical support from Natural Resources Canada and Environment and Climate Change Canada through FHIMP.

New flood maps are practical tools for community land use planning, flood mitigation, emergency preparedness, and public awareness. They provide reliable information on flood hazards based on current data, community input, engineering studies, robust computer modelling, and consideration of climate change, helping decision-makers and communities reduce flood impacts while protecting lives and properties. As of February 2026, new flood maps for several communities have been developed, and the remaining are progressing or being scoped for completion by March 2028.

Types of Flood Maps and the Flood Hazard Area

Flood maps identify the areas covered by water during real or potential flood events. There are two types of flood maps being developed in the NWT – flood hazard maps and flood inundation maps. Completed flood maps and more detailed information about flood mapping can be found on ECC's website.

Flood inundation maps show where the water went during a past flood. Most flood inundation maps in the NWT show the highest flood on record. They are generally developed using high-water marks, satellite imagery, aerial photos, community observations, or engineering studies of how water moves. **Flood inundation maps are typically used for community emergency planning and response**.

Flood hazard maps show the area that would be covered by water during a flood with a specific chance of happening in any given year. The specific chance is called the annual exceedance probability (AEP). These maps are usually created through detailed engineering studies and may rely on some of the same information used to make flood inundation maps. Flood hazard maps are commonly used for **community land use planning** and **flood mitigation planning**.

The NWT communities at highest risk of riverine flooding are:

- Aklavik
- Fort Good Hope
- Fort Liard
- Fort McPherson
- Fort Simpson
- Hay River and Kátł'odeeche First Nation
- Jean Marie River
- Nahanni Butte
- Tulita

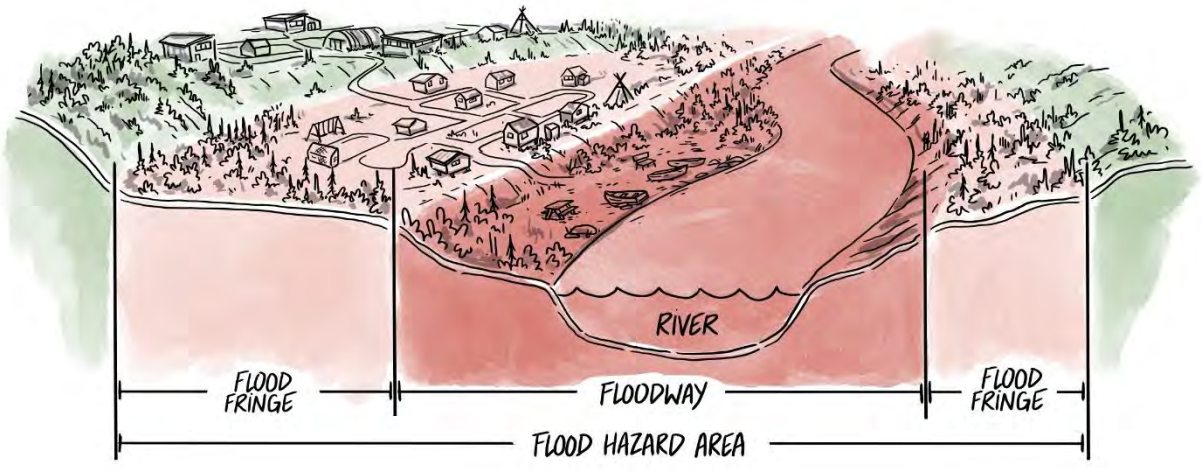


Figure 1 *– Bird's-eye view of a flood hazard map.*

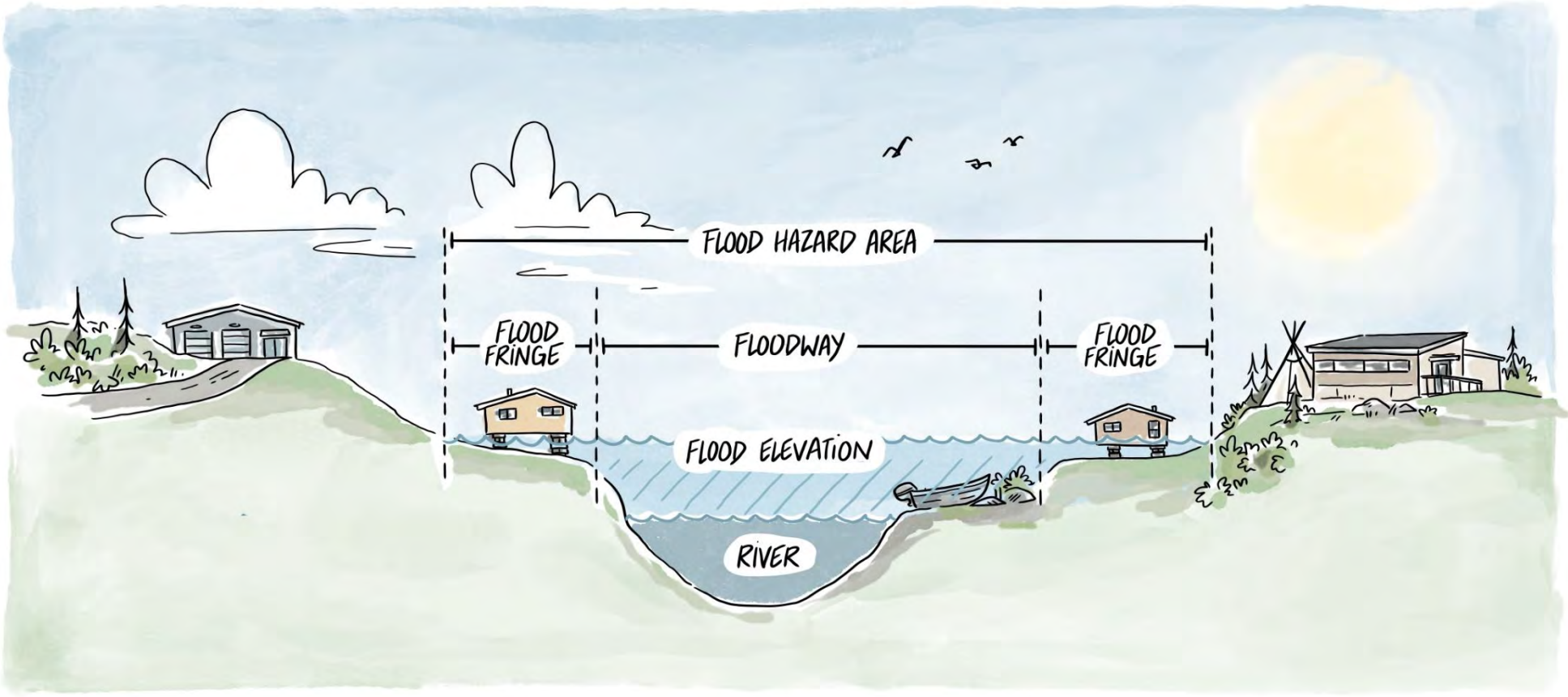


Figure 2 *– View of a flood hazard map.*

Flood Hazard Area

The flood hazard area is the entire area at risk of flooding shown on a flood hazard map. This area is usually divided into two parts – the floodway and the flood fringe. The definitions differ depending on whether the flood is ice-affected or open water.

Floodway – includes the river and any parts of the flooded area where the water is predicted to be deepest, fastest and most destructive, or where moving ice is expected to be present during ice-affected floods. This is the area where flood waters and/or ice pose the greatest risk to people, property and infrastructure.

Flood fringe – includes parts of the flooded area where water is predicted to be shallower, slower and less destructive, and where moving ice is not expected during ice-affected floods. Flood impacts in this area are generally less severe than within the floodway.

Annual Exceedance Probability

The annual exceedance probability (AEP) is the chance that a flood of a certain size will happen in any given year. For example, a flood with a 1% chance of occurring in any given year is called a 1% AEP flood, which is the same as a 100-year flood. This does not mean that a flood that size happens only once every 100 years – it could occur more or less often. A 1% AEP (or 100-year flood) is more likely to occur in any given year than a 0.5% AEP (or 200-year flood). A 200-year flood has the potential to be more damaging than a 100-year flood.

In the NWT flood hazard maps are being developed for the following:

- **100-year flood (1% AEP)**: a flood with a 1% chance of occurring or being exceeded in any given year.

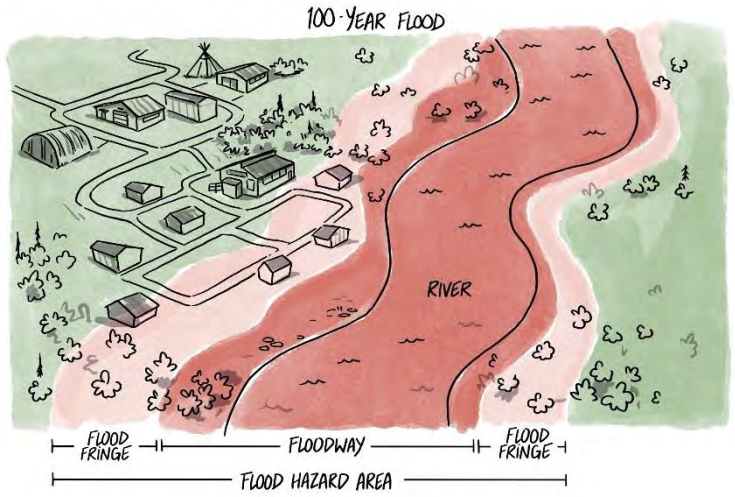


Figure 3.1 *– Example of a 100-year flood hazard map*

- **200-year flood (0.5% AEP)**: a flood with a 0.5% chance of occurring or being exceeded in any given year.

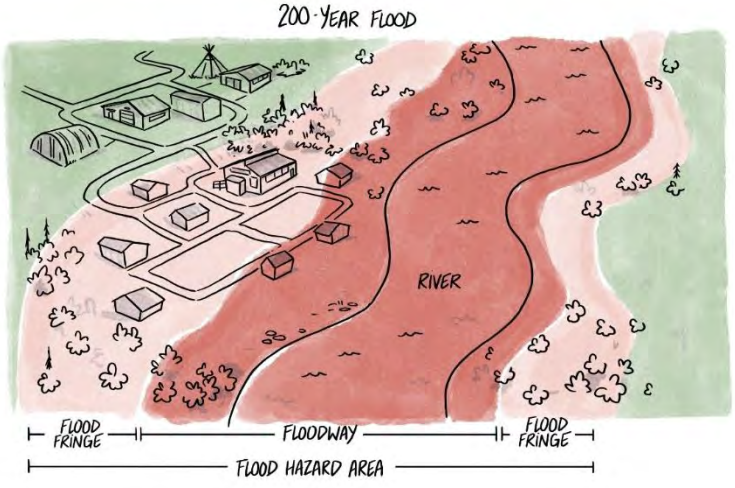


Fig *fig*

Figure 3.2 *– Example of a 200-year flood hazard map, for same area shown in figure 3.1 above.*

Part B – Community Planning and Flood Risk Management

Flooding is a natural hazard that can pose serious risks to public safety, housing, public infrastructure, and long-term community sustainability. Changing hydrology, ice behaviour, permafrost conditions, and climate variability increase the importance of managing flood risks through informed community land use planning and development decisions.

Because community planning is done in the public interest, it is a priority to manage development in flood hazard areas to improve the safety of residents and to limit social and economic costs of flood damage. Protection of the public interest is not purely about restricting or regulating development. Community land use planning seeks to achieve a balance among social (human welfare, culture), environmental (quality of air, water, and land), and economic (economic development, resource use, and property rights) priorities.

Community planning should strive to prioritize public safety and protect people, property and essential services by identifying and managing areas at risk of flooding to prevent loss of life, property damage, and disruption to critical services. The community planning process plays a strategic role in flood risk management by providing an established framework for community governments.

Flood ready communities are safer, recover faster from an event, and are more likely to qualify for future disaster recovery and mitigation programs. It is less costly and disruptive, in the long term, to use flood hazard maps proactively to avoid or minimize flood damage, than to fix post-flood damage in areas where flooding occurs.

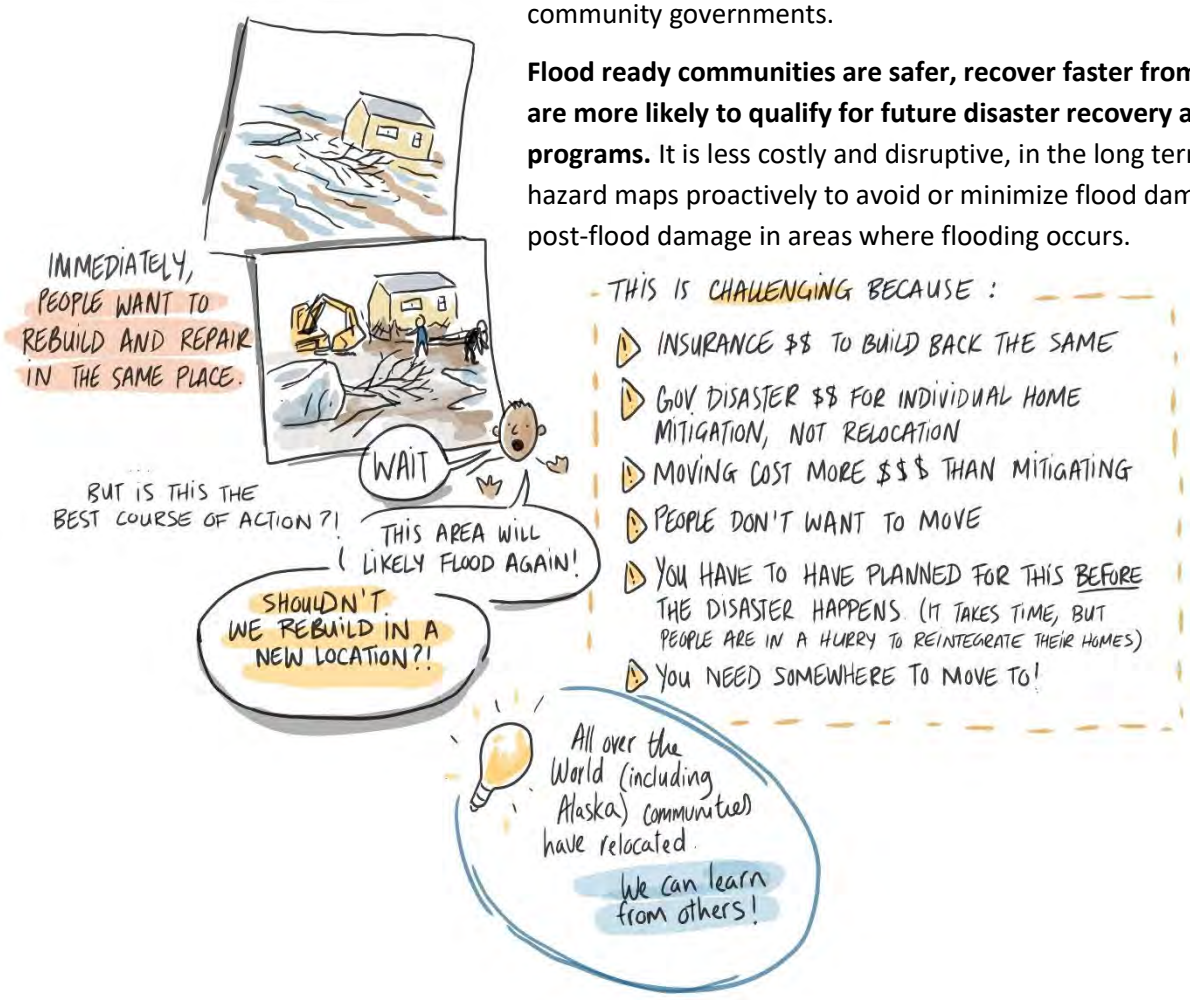


Figure 4 *– An illustration depicting the challenges of planning in flood hazard areas.*

Planning Principles for Flood Resilient Communities:

The following are three key planning principles that communities can use to become more flood resilient. By embedding these principles into all planning decisions, flood-risk communities can reduce long-term risk, support safer development, and strengthen resilience now and into the future.

Principle 1 – Plan with Flood Risk in Mind
Flood risk should be considered early and consistently in community planning. Flood hazard maps help identify where riverine flooding may occur and inform safer land use choices before development happens.

Principle 2 – Use Risk-Based Decision Making
Not all development carries the same level of flood risk or consequences. Planning tools should apply stronger controls to higher-risk and more vulnerable land uses and development, while allowing flexibility for lower risk uses where impacts can be managed.

Principle 3 – Build Resilience Over Time
Flood resilience is about long-term safety. Effective flood risk management should protect public safety and property while allowing communities to function and adapt over time. Raising public awareness about flood risk and mitigation helps residents understand the need for development controls, as well as make informed decisions to protect their properties through insurance and flood proofing. Council should promote flood readiness and use community plan reviews to adapt as flood risk information and conditions change.

Community Governance and Flood Risk Management

Flood hazard maps can help strengthen community governance by providing evidence-based information, supporting consistent, transparent and defensible decisions. They also help council and the public understand the implications of development in flood-prone areas. Flood hazard maps inform decisions made by community governments as development authorities for community planning.

Community planning is governed under the territorial *Community Planning and Development Act* (CPDA) which establishes the purpose and authority for community planning.

NWT community governments are responsible for land use planning within municipal or community boundaries, with the goal of planning and maintaining safe, viable communities through the regulation of land use and development.

Most community governments in the NWT are incorporated as municipalities under territorial legislation, However, in some communities (referred to as designated authority communities), municipal-like services are provided by federally legislated Indigenous Band Councils under agreement with the Department of MACA.

To learn more about community government types and the legislative context, please visit the Community Land Use Planning and Development website.

Integrating 200-Year Flood Hazard Maps

Flood hazard mapping in Canada is transitioning toward the use of a 200-year flood (0.5% AEP) for community land use and development decision-making and for guiding disaster-assistance funding eligibility. This also reflects increasing flood risk associated with climate change, evolving hydrologic conditions, and recent flood experience. This shift has important implications for community planning and flood risk management in the Northwest Territories.

Planning decisions based on the selected flood directly influence long-term risk exposure. Planning to a lower standard, such as a 100-year flood (1% AEP), carries a higher likelihood that a flood will meet or exceed the mapped flood during the life of a building or infrastructure asset. Using a higher standard provides a greater margin of safety and supports more resilient land use and development outcomes.

While 100-year flood maps may be easier to apply in the short term and involve lower upfront costs, they may allow development in areas that remain vulnerable to future flooding. In contrast, the application of 200-year flood hazard maps generally requires more conservative planning and, in some cases, higher initial mitigation costs, but they reduce future flood damage and support safer, more resilient communities over time.

Considerations for Council and Community Administrators:

- ✓ Community plans must include policies for managing lands subject to natural hazards, such as flooding.
- ✓ Maps that form part of a community plan bylaw are legally part of the plan bylaw.
- ✓ Community plans must be reviewed every eight years. A council may consider reviewing their community plans early if they deem necessary.
- ✓ Because flood hazard maps and risk zones are recognized under the CPDA, they can have a bearing on municipal liability, and eligibility for disaster assistance. This underscores the need for due diligence when undergoing a community plan review or approving development permits.
- ✓ Ensure the most current flood mapping information and data available are used when making decisions.
- ✓ When available, the GNWT encourages community governments incorporate 200-year (0.5% AEP) flood hazard maps into their community plans and land use plans.
- ✓ Community experience and Indigenous traditional knowledge provide important insights for community planning and avoiding flood risk. These perspectives should be included when making decisions.

Disaster Financial Assistance Arrangements

The use of 200-year flood hazard maps is also aligned with evolving federal policy. Under revised Disaster Financial Assistance Arrangements (DFAA) guidelines by Public Safety Canada, eligibility for federal disaster assistance is linked to whether assets are located within high-risk areas (floodway or flood fringe) as defined by 200-year flood hazard maps. Planning and development decisions that do not consider this standard may affect future eligibility for disaster recovery funding.

Using Flood Hazard Maps in Community Plans

Community plans and land use plans are the primary tools for establishing a community's long-term land use vision. Through a combination of text and maps, they set the policy direction for the future growth of a community. **Community plan and land use plan policies should**:

- Clearly distinguish between new development and existing non-conforming development, applying the strongest restrictions to new construction.

New Development Guidance:

- Prohibit **new construction** in the floodway, to the greatest extent possible.
- Avoid new development in flood hazard areas where reasonable alternative locations exist.
- Direct new development away from the floodway and toward safe lands or lower-risk flood fringe areas.
- Direct growth and critical infrastructure to safer locations to ensure essential services remain functional during floods.
- Limit the types of construction permitted in flood hazard areas and require appropriate mitigation measures, such as flood-proofing and minimum building elevation.

Existing and Non-conforming Development Guidance:

- Support flood-resilient redevelopment or relocation where development already exists in flood hazard areas.
- Protect and maintain open space areas that help absorb flood waters and reduce erosion.

Managing Non-conforming Buildings and Uses:

- Recognize that a **non-conforming building** is a legally built structure that does not meet current standards because regulations changed after it was constructed.
- Manage existing and non-conforming uses and buildings in flood hazard areas by:
  - discouraging expansions or alterations that would increase flood risk;

New construction –means the erection, placement, or creation of a building, structure, or addition that did not previously exist on a parcel of land. Including any construction that occurs after a flood event.

Non-conforming building – is a building that, under a previous zoning bylaw conformed with its regulations, but now no longer conforms to the new zoning bylaw.

Non-conforming use – is a use that, under a previous zoning bylaw, conformed with its use classes, but now no longer conforms to the new zoning bylaw.

- allowing repairs, maintenance, or redevelopment that reduce flood vulnerability over time; and
- encouraging incremental improvements, such as elevation or flood-proofing, where practicable.

Using Flood Hazard Maps in Zoning Bylaws

Zoning bylaws are the primary tool for applying community plan policies at the site level. For communities that use land use plans instead of zoning bylaws, similar regulatory provisions should be included to address flood risk. **Zoning bylaw provisions should include:**

Building Elevation Requirements

- The community's **flood elevation level, freeboard distance**, and subsequent **flood construction level** for all new buildings in flood hazard areas.
- **Freeboard distance** can vary based on local conditions, community preference, or updated flood hazard mapping. Typical freeboard recommendations include:
  - **0.3 m** for minor or low-risk development
  - **0.5 m** for most residential and standard buildings
  - **0.9 m** or more for critical infrastructure or vulnerable areas.

Flood elevation level – The estimated highest expected water level for a specified mapped flood (e.g. 200-year flood or 0.5% AEP).

Freeboard – The *recommended* minimum vertical distance between the flood elevation level and the bottom of a structure**.** Freeboard is often specified as 0.3 to 0.9 meters above the flood elevation level, but it can vary based on specific circumstances and community policy and regulations.

Flood construction level (FCL) – The recommended height (elevation) at which the foundation of a building should be built, to mitigate against future flood damage. The recommended FCL for a community is determined by adding the freeboard requirement to the flood elevation level.

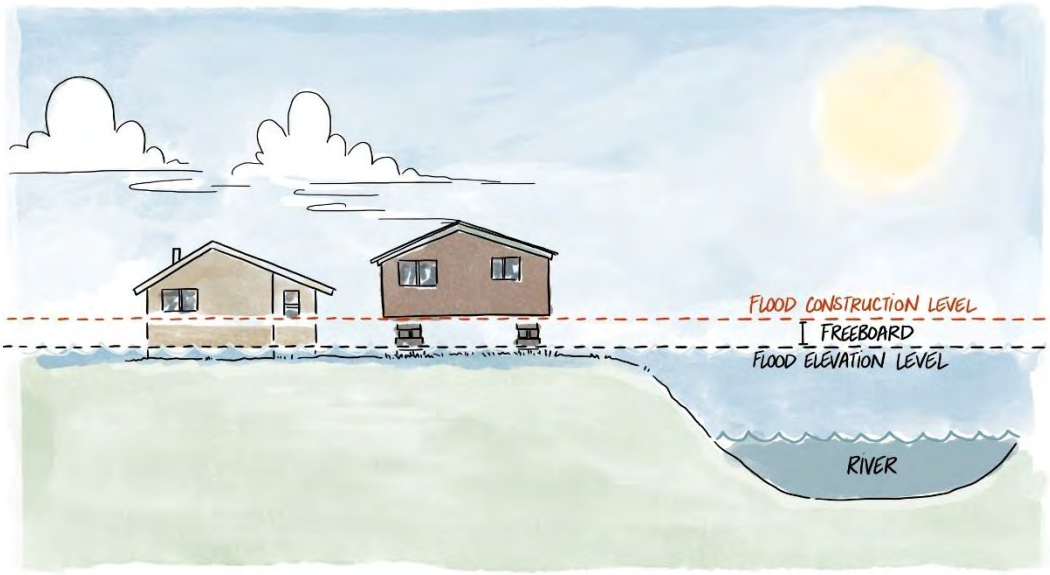
Flood elevation level + freeboard = flood construction level.

Figure 5 *– An illustration explaining the relationship between the flood construction elevation, freeboard elevation, and base flood elevation.*

Flood Proofing Regulations

- For new construction within flood hazard areas, flood proofing requirements should be introduced. Flood proofing generally falls into two categories:
    - **Dry flood proofing** – techniques that keep water out of a structure, for example, sealing walls, installing flood shields, and elevating buildings (as discussed above).
    - **Wet flood Proofing** – techniques that allow water to enter in a controlled way while minimizing damage, for example, using flood resilient materials, or elevating mechanical and electrical systems to be above the flood construction level.

Defining Zoning Building and Uses for Flood Hazard Areas



- Zoning should support a **risk-based decision making model** by applying different levels of restriction and mitigation. Zoning provisions may distinguish between building and use

categories such as:

- **Minor or low risk development** – includes buildings, structures and activities that have limited exposure to flood damage, low potential risk to public safety, and minimal consequences if flooded. Examples include:
  - Accessory buildings and structures such as sheds, garages, storage buildings
  - Fences, signs, decks, docks, boardwalks, and similar structures
  - Seasonal or temporary structures not intended for habitation
  - Minor site works such as grading, landscaping, trails, or parking areas
  - Minor or low risk development **does not** include buildings intended for permanent or seasonal living, public assembly, or the storage of hazardous materials. These uses may be permitted in flood hazard areas where flood impacts are limited and appropriate safeguards are applied.
- **Residential and standard development** – includes buildings, structures and activities that are regularly occupied, intended for long-term use, or represent moderate risk to occupants and property if flooded. Examples include:
  - Single-detached, semi-detached, and multi-unit residential buildings
  - Commercial, institutional, and community buildings not classified as critical infrastructure
  - Offices, retail buildings, warehouses, and light industrial buildings
  - Because these buildings are occupied and may be costly to repair or replace, zoning and development permitting provisions should require building elevation, freeboard, and flood-proofing measures to reduce flood damage and protect occupant safety.
- **Critical infrastructure and vulnerable uses** – includes buildings, facilities and land uses that are essential to community health, safety, emergency response, and continuity of services, or that serve people who may have difficulty evacuating during a flood event. Examples include:
  - Hospitals, health centres, long-term care facilities, and assisted-living residences
  - Schools, childcare facilities, and emergency shelters
  - Emergency response facilities such as fire halls, RCMP detachments, correctional facilities and emergency operations centres
  - Water treatment plants, wastewater facilities, power generation and distribution facilities, fuel storage, and telecommunications infrastructure
  - Facilities storing hazardous materials or substances that could pose environmental or public health risks if flooded

Flooding of these uses can cause serious impacts. Zoning should keep critical infrastructure and vulnerable uses out of flood-hazard areas wherever possible. If they cannot be avoided, higher protection standards, added freeboard, and site-specific professional assessments should be required.

Subdivision of Land in Flood Risk Areas

Subdivision of land means dividing one parcel into two or more lots that can be developed or sold separately. Decisions on the subdivision of land are important because they shape future development patterns and exposure to natural hazards such as flooding. Subdivision is regulated under the

Hay River/Kátł'odeeche – This Lift Station (currently under construction in the photo) has been wet-proofed and dry-proofed to withstand floods. All mechanical equipment is located on the second floor of the structure, and flood resistant materials are used throughout. (Photo courtesy of Glenn Smith)

Community Planning and Development Act (CPDA) and approvals are issued by the GNWT Department of Environment and Climate Change (ECC) Land Management and Administration Division. While the GNWT approves subdivision applications, community governments play a critical role by providing planning comments that identify flood risk, policy consistency, and local conditions.

When subdivision is proposed in or near a flood hazard area, good practice is to:

- Avoid creating new **flood-prone lots** where possible.
- Ensure each lot includes **a safe building area** (this minimizes economic loss, and ensures proper

egress for flooding events).
- Design access to **support emergency response during flood events.**
- Consider **infrastructure placement** and long-term maintenance.

Flood hazard maps support this review by helping ensure subdivision decisions do not create new flood risk and contribute to safer, more resilient community development over time. For more information on flood maps, visit the department of ECC's website.

Development and Building Decisions

Flood hazard maps support consistent review of development proposals.

When reviewing development permit applications, community governments should:

- Consider **minor and low-risk development** providing that potential flood impacts are limited, and basic safeguards form part of the permit application.
- Ensure that development permit applications for **residential and standard buildings** elevate new or retrofitted buildings to the flood construction level by meeting the specified freeboard requirement and include flood-proofing measures.

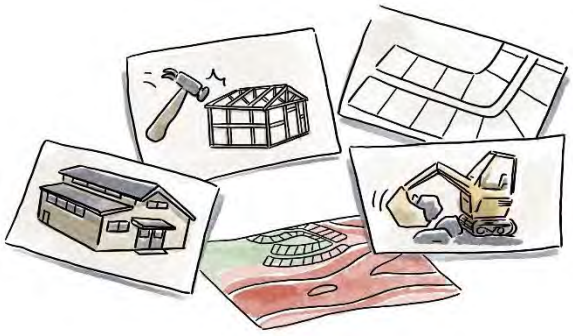


Figure 6 – *An illustration depicting how flood hazard maps can be used in development and building decisions.*

- Ensure that development permit applications for **critical infrastructure and vulnerable uses** avoid flood hazard areas where possible. Where unavoidable, higher freeboard and site-specific assessments should be required.
- Ensure that applications to alter or expand **non-conforming buildings and land uses** do not increase flood risk and include proposals to improve flood resilience where practicable.
- Require professional certification that a proposed development in a **flood hazard area** is safely designed for flood conditions.

Emergency Planning and Land Use and Development Decisions

Emergency planning and land use and development decisions are closely linked. How land is planned, subdivided, and developed can directly affect a community's ability to safely evacuate neighbourhoods, maintain access for emergency responders, and manage flood events when they happen. **When making land use and development decisions in flood hazard areas, community governments should**:

- Consider **safe evacuation routes** and **multiple points of egress** during flood events, including **considerations for ice-affected flooding**.
- Consider evacuation routes that **pass through flood hazard areas** and make sure there is a plan if those routes are flooded.
- Consider **the distance and time required to evacuate residents**, particularly for vulnerable

populations.

- Consider factors for **higher-density** or **vulnerable uses** (such as senior's housing, childcare facilities, or community facilities) in flood hazard areas.
- Consider whether **emergency vehicles can safely access development sites** during flood conditions.
- Consider whether **roads, bridges, or culverts** in the community are at **risk of flooding or erosion**.
- Whether **critical infrastructure** is located within a **flood hazard area**, and whether **infrastructure failure during a flood** would complicate evacuation or emergency response.
- Consider how **new development** can **increase demand** for your community government's emergency services during flood events.

Role of Qual

Community gov
flood informati
navigate compl
professional su
on the use of q
governments a
development p

Figure 7 *– An illustration depicting the considerations for emergency planning in flood hazard areas.*

Professional certification is required when technical flood-related issues must be assessed as part of a planning or development approval.

Throughout the flood hazard management process, community governments will

require the services of registered professional Community Planners and Professional Engineers. Applicants proposing development in flood hazard areas are also required to retain qualified professionals to support the preparation of complete and compliant applications. Depending on the nature and complexity of a proposal, additional expertise or other technical specialists may be required.

The advice and certification provided by qualified professionals support due diligence, reduce risk for applicants and community governments, and help ensure development decisions are made in the public interest.

Community governments rely on professional certification provided by qualified professionals retained by applicants to confirm that proposed development:

- Meets or exceeds required flood construction level and minimum building elevation standards
- Applies freeboard correctly and in accordance with community policies or zoning provisions
- Incorporates appropriate flood-proofing measures for the level of risk
- Will not increase flood risk to occupants, neighbouring properties, or public infrastructure.

Professional certification provides confidence that flood-resilience requirements have been properly addressed and supports consistent, transparent, and defensible decision-making for applicants and community and territorial governments.

Plan Review, Monitoring and Continuous Improvement

The NWT Community Planning Framework promotes a continuous planning cycle of review, administration, and implementation. Flood risk is not static; conditions, climate patterns, and development change over time. For this reason, flood hazard mapping and flood risk management should be considered at each stage of the planning cycle, not just when plans are first prepared.

Community Plan reviews provide a key opportunity to update flood

Who is responsible for what during the planning cycle?

Community Council – sets policy direction through plans and bylaws

Community Administration – applies flood policies, conditions to permits and approvals

GNWT (ECC) – approves subdivisions and land applications for public lands

GNWT (MACA) – approves community plan bylaws

Applicants – submit development permits to community governments, demonstrate compliance through acquiring a certified professional

hazard information, assess how well existing land use policies and zoning provisions are working, and make adjustments where needed. Reviewing how flood risk is being managed ensures that plans, bylaws and day-to day development decisions remain aligned and effective. Administration and implementation are critical to monitoring how well flood risk policies work in practice. Through administration such as bylaw amendments, development permits, subdivision and land application reviews, community governments are applying the flood hazard mapping and flood risk policies to meet real development proposals. Implementation occurs when decisions are carried out through development, infrastructure planning, investment and construction, and through other mitigation activities (like emergency planning, mentioned above).

Importantly, all information during the planning cycle should be tracked so that it can be used during the community plan review process again to update flood hazard information, learn from experience, and respond to any new flood events. This supports adaptive, accountable planning that better protects people, property and public investment.

Communicating Flood Risk and Planning Decisions to Residents

Clear and timely communication is important when flood hazard maps are introduced or used to support planning and development decisions. Flood risk information can raise concerns about safety, insurance, property values, and future development. Community governments should communicate flood risk clearly, respectfully, and transparently to help residents understand why planning decisions are being made and to build trust in the planning process. **The key messages to communicate around flood risk and planning decisions include:**

- Communicate when **new flood hazard maps become available** and explain how they relate to a community plan, land use plan or zoning bylaw review.
- Communicate when a major development or infrastructure project is **proposed in a flood hazard area.**
- When discussing flood risk, community governments should explain **that a flood hazard map shows the chance, or probability, of a specific flood occurring, not the certainty of it occurring**.
- Being located in a flood hazard area does not mean flooding will occur every year, and flood hazard mapping does not create new flood risk – **it improves understanding of where flooding may occur based on the best available information**.
- **New development** is generally subject to stronger requirements. **Non-conforming buildings and uses** are managed to reduce risk over time without forcing immediate change.

- By recognizing flood risk in planning decisions, the community government **supports eligibility for disaster assistance and informed decisions with insurance providers**.

Early, open communication helps avoid confusion and supports informed participation. Communicating flood risk is not about causing alarm, it is about sharing information clearly and supporting safer, more resilient communities over time.

Conclusion

Flood hazard maps are tools for strengthening community planning, governance, and decision-making in the Northwest Territories. When integrated into community plans, land use plans, zoning bylaws, subdivision, land application review, and development decisions, they support public safety, reduce long-term social and financial costs, and improve community resilience to flooding.

This guide reinforces that effective flood risk management begins with planning. Community planning provides a structured, transparent, and defensible framework for identifying flood-prone areas, guiding development to safer locations, and applying appropriate mitigation where development already exists. The transition to the use of 200-year flood hazard maps reflects evolving flood risks and supports more adaptive, climate-resilient planning while aligning with federal disaster assistance eligibility.

Flood risk management is not about stopping development. It is about making informed choices, recognizing where stronger controls are necessary, where flexibility is appropriate, and how communities can build resilience over time. By embedding flood hazard maps and related information into everyday planning and land management decisions, community governments can protect residents, infrastructure, and public investment while supporting long term community sustainability. This will ensure safer, more resilient NWT communities now and in the future.

Additional Information and Resources

The following resources provide additional information on flood preparedness and flood mapping:

- Be Ready for Floods
- Emergency Management Organization Portal - Floods
- Water Monitoring and Stewardship – Flood Mapping

- Guidelines for the Disaster Financial Assistance Arrangements
- Get Flood Ready, Government of Canada
- FloodSmart Canada – Helping Canadians Prepare for Floods
- Facts about floods in Canada
- Federal Land Use Guide for Flood Risk Areas, Natural Resources Canada
- Flood mapping, Natural Resources Canada

Fort Good Hope/K'asho Got'ine - Mackenzie River (photo courtesy of William McNeely)

Contacts

For additional information or help with questions on the *NWT Community Planning Framework* or its associated guides, please contact the Regional Superintendent with Department of Municipal and Community Affairs:

North Slave	1-(867)-767-9167
South Slave	1 (867) 587- 6602

Deh Cho	1-(867)-695-7220
Sahtu	1-(867)-597-7105
Inuvik	1-(867)-678-8045

For questions on flood hazard mapping, please contact the GNWT ECC Water Monitoring and Stewardship Division at nwtwaters@gov.nt.ca and 1-867-767-9234.