

A new approach to mapping floodways in Alberta

How does the new approach to mapping floodways affect me and my community?

The new approach to mapping floodways will apply to you and your community differently, depending if you are being mapped for the first time, or if you already have flood mapping and it is being updated.

Change 1: Existing floodways will not typically get larger when flood maps are updated.

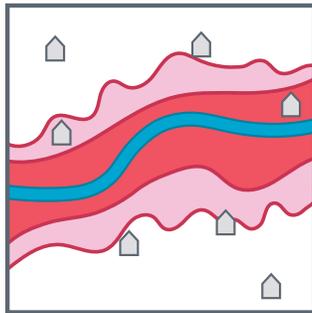
For communities that already have a flood hazard map, updated mapping produced using the new approach will probably not result in a new floodway that is larger than the previous floodway.

- This supports long-term regulatory certainty for you and your community by reducing the potential for more properties in already-developed areas to be in a floodway when flood maps are updated.

Your updated flood hazard maps will still include a flood fringe, but it will change and may get larger to reflect up-to-date information. Your flood fringe may also include new “high hazard flood fringe” areas to highlight parts of the flood fringe that have deeper or faster moving water than the rest of the flood fringe.

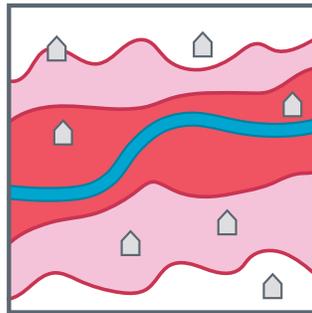
- This change is most significant for communities with flood maps that are being updated, because there may be large differences between existing floodways and areas of deeper or faster moving water that are identified using up-to-date information and analysis.
- High hazard flood fringe areas are part of the flood fringe and not part of the floodway.

Existing Map



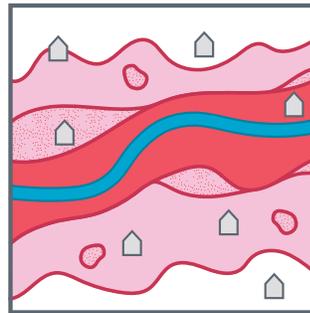
■ Floodway ■ Flood Fringe
1:100 Flood

Old Approach



Floodway and flood fringe can both get larger to reflect up-to-date risks

New Approach



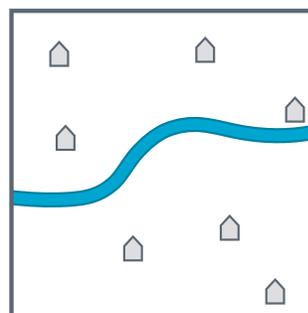
Floodway does not get larger, but we add the high hazard flood fringe to show areas with deeper and faster flow
■ High Hazard Flood Fringe

When could the existing floodway in my community get larger?

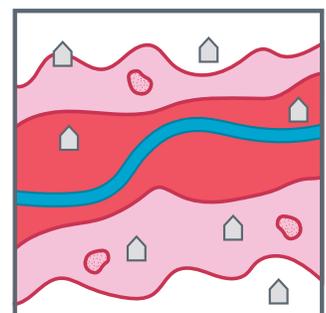
Under the new approach, your existing floodway will only change if there is a request from a municipality to make the floodway larger or if a modification is deemed necessary. An example would be if a main river channel shifts outside of a previously-defined floodway.

What if my community is getting mapped for the first time?

This change will also apply if your community is being mapped for the first time. Your new flood hazard map will include floodway and flood fringe zones, and may include high hazard flood fringe areas. Your floodway will typically represent the area of highest hazard during the 1:100 design flood when your map is produced, where flows are deepest, fastest, and most destructive.



■ River ■ House



■ Floodway ■ Flood Fringe
■ High Hazard Flood Fringe
1:100 Flood

Change 2: New flood maps will reflect the protection provided by dedicated flood berms and consider the impact of upstream dams dedicated to flood control.

Flood hazard maps produced using the new approach to mapping floodways will be more reflective of the expected levels of protection offered by dedicated flood mitigation infrastructure.

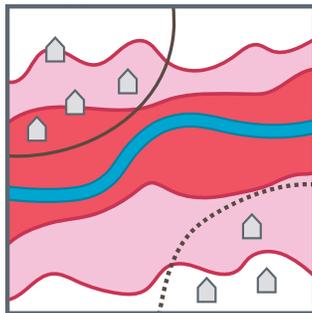
Current mapping standards assume that structures like flood berms and upstream dams either fail or do not work as designed. This means that areas that might be protected by flood berms are always mapped as flooded. It also means we map larger floods than would occur if an upstream dam reduces flows for those downstream.

- This change will apply to all communities getting a new flood map, including updates to existing maps.
- Areas behind dedicated flood berms will still be mapped as flooded if they are overtopped.
- Areas at risk of flooding behind dedicated flood berms that are not overtopped will be mapped as “protected flood fringe” to reflect the potential for flooding.
- Flood maps may consider the impact of upstream dams dedicated to flood control when the impact of the dams on flood flows is established to be dependable and significant.

What if my community has flood maps but they aren't being updated right now?

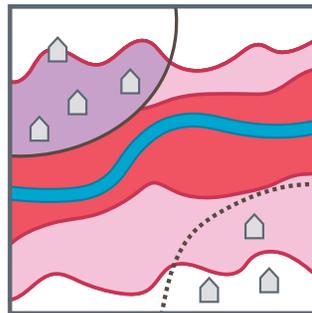
This change will only apply when your existing flood maps are updated. Until your maps are updated, the existing floodway and flood fringe will not change.

Old Approach



— Flood berm not overtopped
 Flood berm is overtopped
 We map behind all flood berms even if they would protect an area

New Approach



We still map areas as flooded if berms are overtopped
 We reflect the protection provided by flood berms
 ■ Protected Flood Fringe

Change 3: New flood maps will show areas at risk for more floods than just the 1:100 flood.

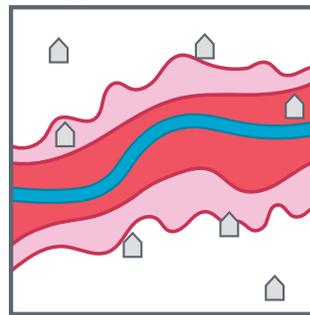
Flood hazard maps produced using the new approach to mapping floodways will enhance public safety by showing areas at risk during floods larger than 1:100 flood. Mapping the 1:200 and 1:500 floods will provide more information for communities to consider, if desired.

- This change applies to all communities getting a new flood map, including updates to existing maps.

What if my community has flood maps but they aren't being updated right now?

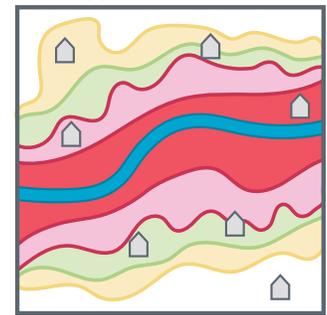
This change will only apply when your existing flood maps are updated.

Old Approach



Only map the 1:100 flood
 ■ Floodway ■ Flood Fringe
 — 1:100 Flood —

New Approach



Also map the extra areas at risk for larger floods
 ■ 1:200 Flood
 ■ 1:500 Flood

Why is the Province adopting a new approach to mapping floodways?

The Province is adopting a new approach to mapping floodways to better balance flood adaptation and resilience priorities and provide expanded flood hazard information to enhance public safety and inform land-use decisions.

The new approach will:

- Address concerns about potential changes to existing floodways when flood maps are updated.
- Enable public investment in flood mitigation infrastructure to be reflected in flood maps.
- Provide maps and information about a wider range of flood hazards than the current 1:100 flood.

The new approach to mapping floodways is being adopted in response to the concerns of Albertans and to provide flexibility in how communities across the province address flood hazards.

Definitions

Flood Map

A flood map is any map that identifies areas that may flood. Some flood maps are used to support emergency response planning and operations, and include maps for a range of different sized floods like the 1:100, 1:200, and 1:500 floods. Some flood maps are used to guide long-term development, including flood hazard maps that divide the 1:100 flood hazard area into zones for regulatory purposes.

Design Flood

The design flood standard in Alberta is the 1:100 flood, which is a flood that has a 1% chance of occurring in any given year. Different sized floods have different chances of occurring – for example, a 1:200 flood has a 0.5% chance of occurring in any given year and a 1:500 flood has a 0.2% chance of occurring in any given year – but only the 1:100 design flood is used to define the floodway and flood fringe zones on flood hazard maps.

Flood Mitigation Infrastructure

Flood mitigation infrastructure includes berms and dams with a dedicated flood mitigation purpose.

Flood Berm

A flood berm is an engineered barrier that keeps water from entering and flooding an area. Flood berms are typically designed to protect an area from flooding up to a specific flood water level, and they can be overtopped if flood water levels exceed the height of the berms. To be considered as a dedicated flood berm for flood mapping purposes, operational and maintenance responsibilities must be formally documented by provincial or municipal owners.

Upstream Dam

A dam is an engineered structure with the capacity to store water in a reservoir and thus regulate flows downstream. Not all upstream dams are considered dedicated flood mitigation infrastructure. Dam owners and operators must formally establish dedicated flood mitigation potential, in terms of dependable and significant peak flood flow reduction, for the impact of upstream dams to be considered as part of flood mapping for downstream communities.

Flood Hazard Map

A flood hazard map is a specific type of flood map that identifies the area flooded for the 1:100 design flood, and divides that flood hazard area into floodway and flood fringe zones. Flood hazard maps can also show additional flood hazard information, including the incremental areas at risk for more severe floods like the 1:200 and 1:500 floods.

Floodway

When a floodway is first defined on a flood hazard map, it typically represents the area of highest flood hazard where flows are deepest, fastest, and most destructive during the 1:100 design flood. When a flood hazard map is updated, the floodway will not get larger in most circumstances to maintain long-term regulatory certainty.

Flood Fringe

The flood fringe is the area outside of the floodway that is flooded or could be flooded during the 1:100 design flood. The flood fringe typically represents areas with shallower, slower, and less destructive flooding, but it may also include “high hazard flood fringe” areas. Areas at risk of flooding behind flood berms may also be mapped as “protected flood fringe” areas.

High Hazard Flood Fringe

The high hazard flood fringe identifies areas within the flood fringe with deeper or faster moving water than the rest of the flood fringe. High hazard flood fringe areas are likely to be most significant for flood maps that are being updated, but they may also be included in new flood maps.

Protected Flood Fringe

The protected flood fringe identifies areas that could be flooded if dedicated flood berms fail or do not work as designed during the 1:100 design flood, even if they are not overtopped. Protected flood fringe areas are part of the flood fringe and do not differentiate between areas with deeper and faster moving water and shallower or slower moving water.