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Floodway Policy & Flood Hazard Mapping

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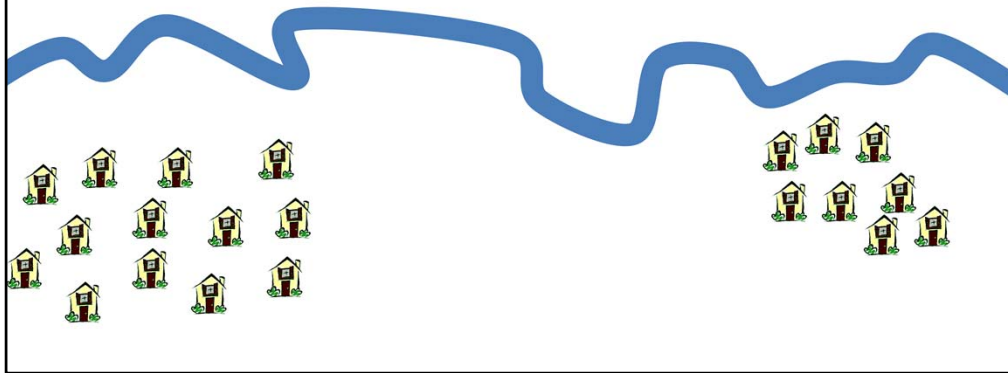
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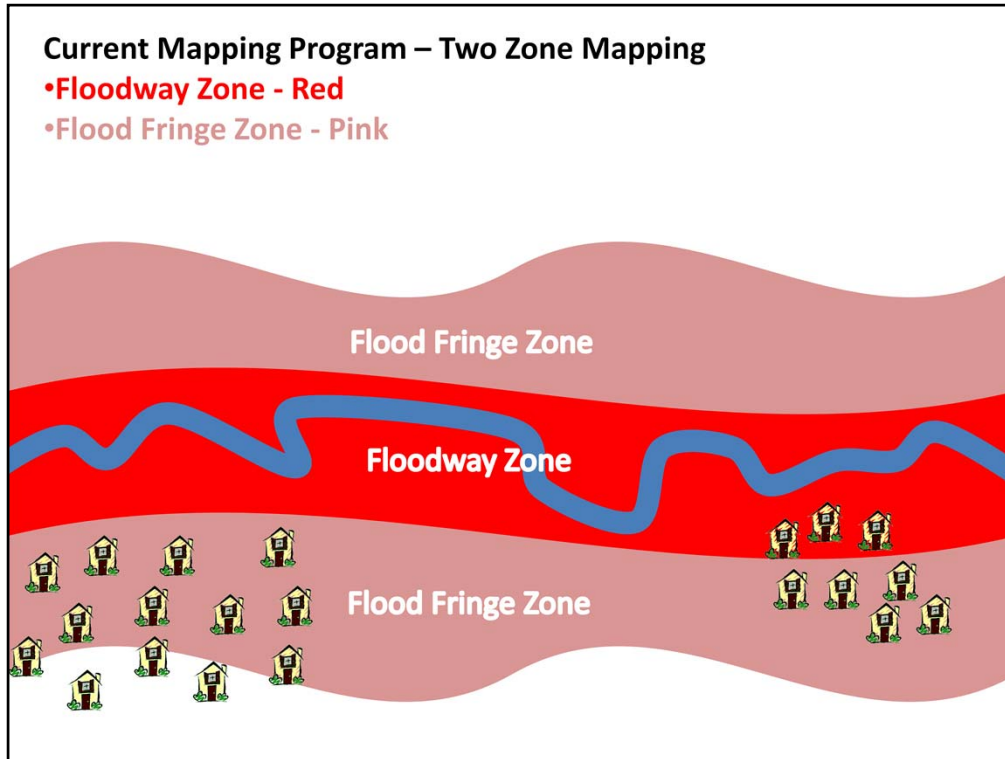
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Floodway Policy

- Albertans expect Floodway Policy (and associated regulations) that achieves the appropriate tension between:
 - Public Safety;
 - Property Rights;
 - Provincial Economic Efficiency; and
 - Risk Tolerance.
- This tension must ensure the proper apportionment of flood risk between the province, municipalities and the individual Albertan.
- Does the current mapping tool need to be adjusted to meet these emerging needs and expectations?

Typical Alberta Community

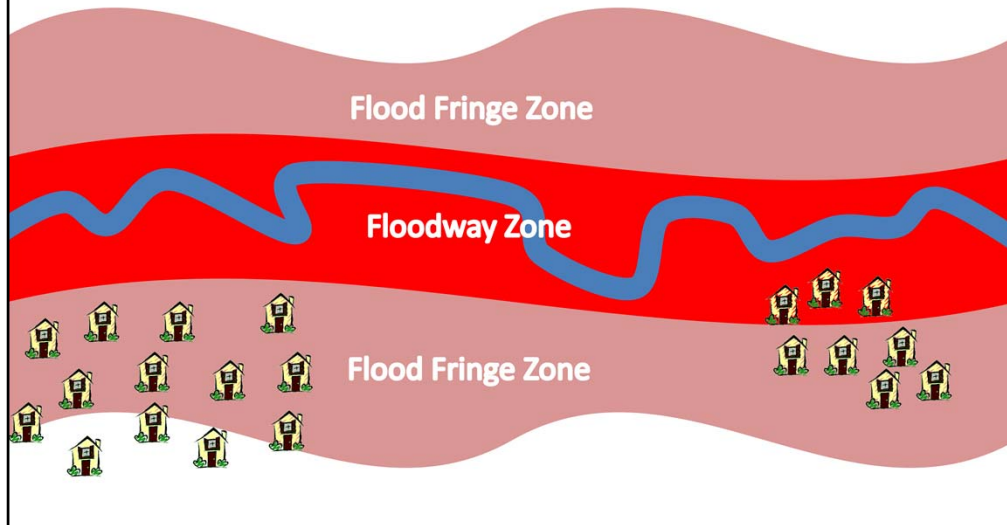




The Floodway zone is where the water is deeper and faster. Development in the Floodway zone is typically discouraged or not allowed. The Flood Fringe zone still has water in it during the design flood event, but it is generally speaking, shallower, slower moving and the water does not do as much damage.

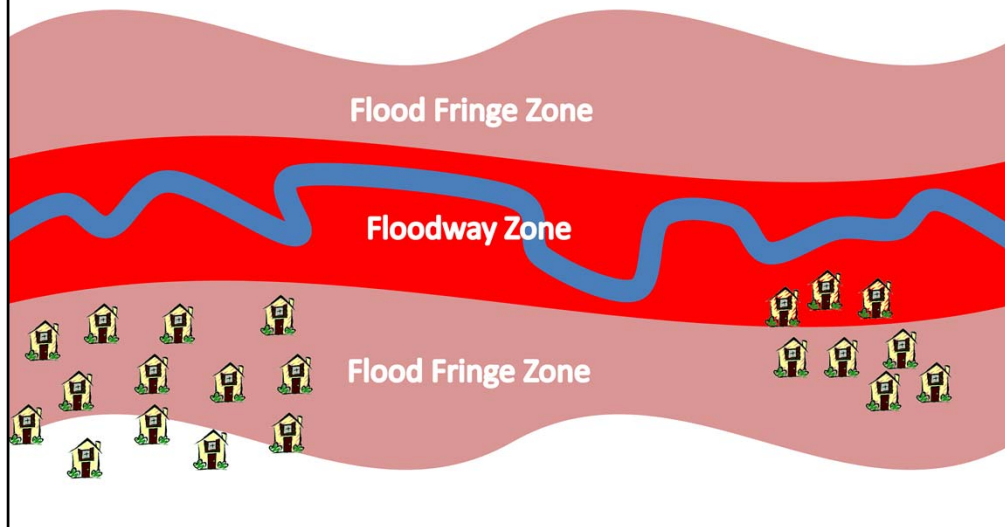
Current Mapping Program – Two Zone Mapping

- Map represents a future case where the flood fringe is completely filled in.
- Design flood levels (development levels) are calculated under the assumption that the floodway zone can convey the entire flood today and in the future.



Current Mapping Program – Two Zone Mapping

- Mapped assuming all structural mitigation works are ineffective.
i.e. Mapped assuming no flow regulation, no berm protection.
- Current program provides no guidance on protocol for study updates.



The assumption that all structural mitigation works are ineffective is the most conservative case. It assumes that any upstream water management structures will be unable to appreciably reduce the peak flow and that local flood mitigation structures (e.g. berms) are over-topped or fail. Examples of structural mitigation works include dykes, dams and berms.

When a study is updated, it is reasonable to assume that the Floodway Zone and Flood Fringe Zone will change in size and that the boundaries of the zones will need to move. The current program does not provide guidance on what the impact of this change would be on regulations within these zone (i.e. a home that was in the Flood Fringe Zone in the previous study is now considered to be in the Floodway Zone of the updated study – How should this be dealt with?).

Floodway Policy Strategies

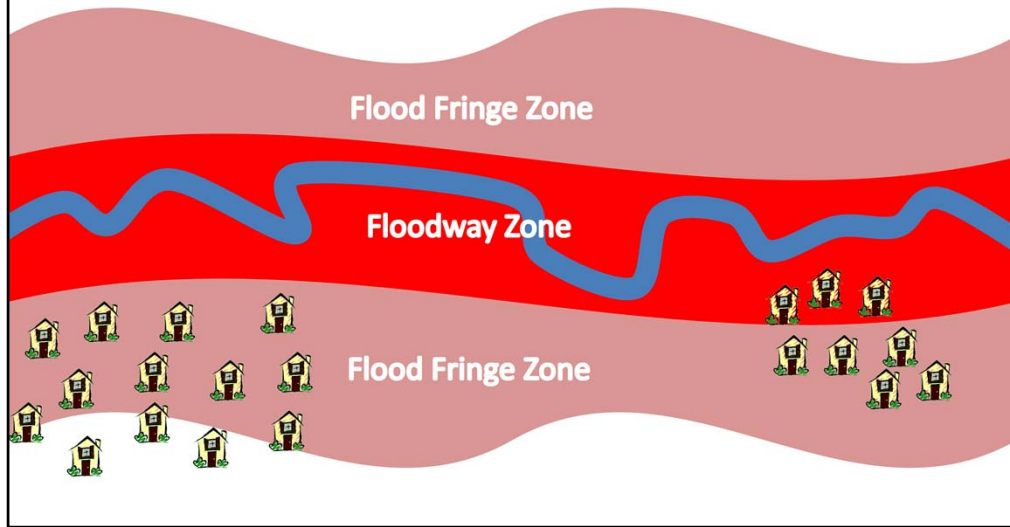
GoA Flood Management

- What is the provincial vision for flood resiliency in Alberta? What should Alberta's flood prone communities look like in 20, 50, and 100 years? **Natural or engineered.**
- Do we have the right over-arching strategies for long term success? What is more important, structural or non-structural solutions? **Avoiding flood-water or altering flood-water.**
- What is the role and responsibility of the province in flood management? **The affected landowner, the municipality and the federal government also bear some responsibility.**
- What level of flood risk is the province willing to accept? **In the past the acceptable risk threshold has been the 1:100 year flood.**
- Do we have the right resources and organizational setup to achieve? How do we modify current programs and policies to meet provincial flood management strategies?

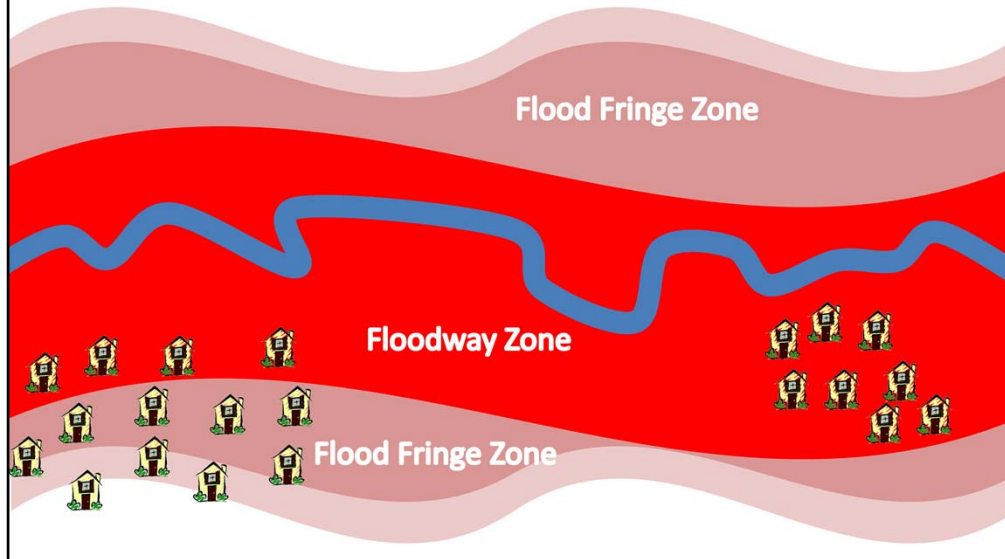
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Alberta's approach to flood mitigation (Respecting our Rivers) outlines Seven key elements that guide our approach to mitigation. Part of this is understanding that we will never be able to completely eliminate the flood risk faced by some communities, but we can take steps to manage it. Part of this is accepting that sometimes it's more practical to keep people away from water, rather than trying to keep water away from people.

Current Mapping Program – 2 Zone Mapping



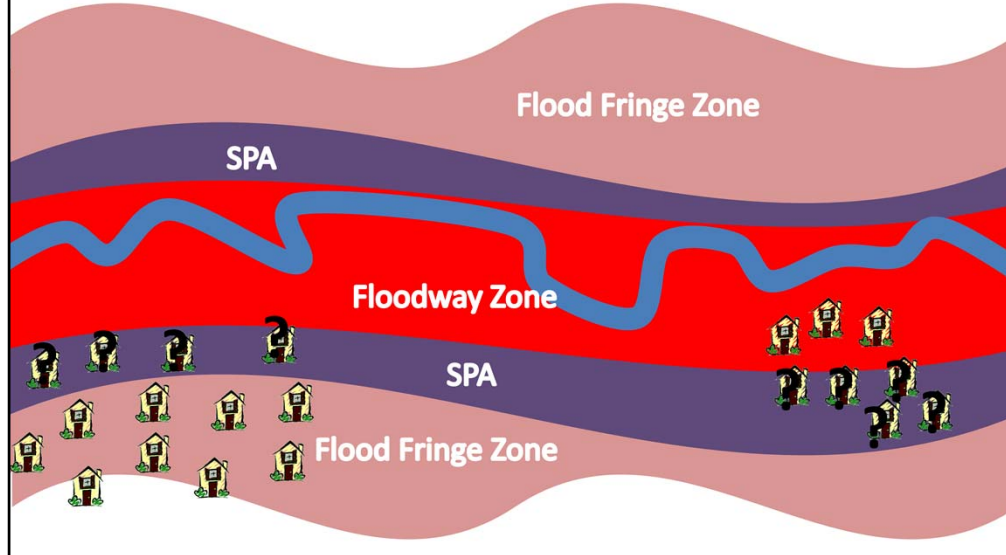
- What if the GoA “design flood” standard changes?
 - Sask -1:500, BC – 1:200, Gov’t of Can – 1:350 (draft)
- What if the area is re-studied?



In this example the Flood Hazard Area increases in size (due to an increase in the ‘design flood’ standard or the study simply being updated or both). This would necessitate a change in the boundaries of the Floodway and Flood Fringe zones.

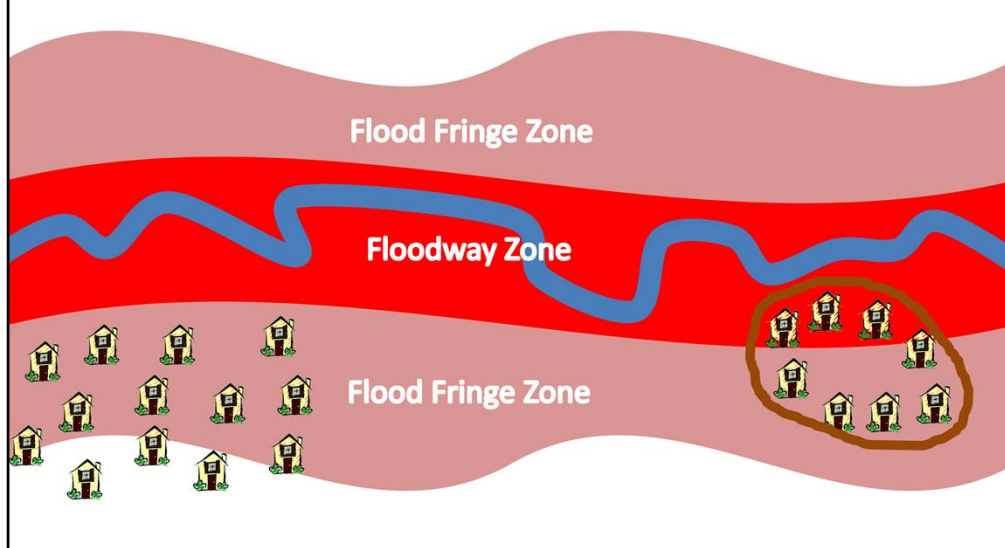
Please note that the 1:350 referred to in this slide is not being actively pursued, to our knowledge, at this time. Currently, it is simply a point of discussion.

- How should landowners in the purple area be treated?
- Multiple requests for study updates including Calgary, High River, Drumheller, etc.



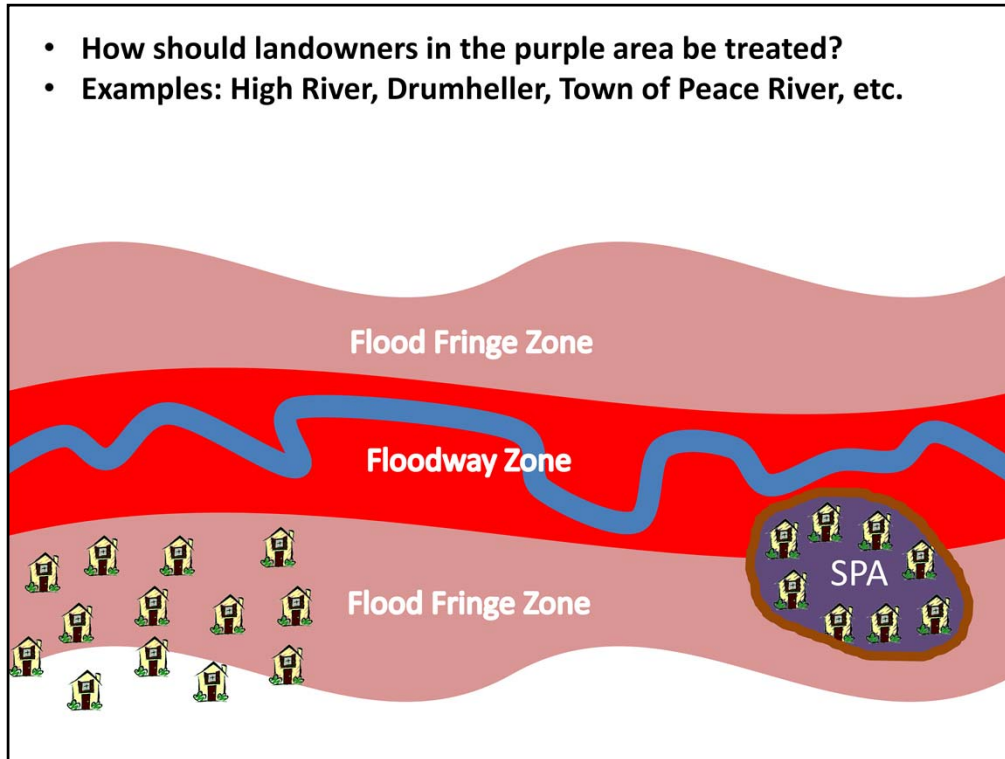
Because of this change in zone boundaries, we need to determine how to handle that change from a policy perspective that achieves a reasonable apportionment of risk between the province, the local authority and the individual Albertan. A possible way of defining the change in boundaries is through a third zone (referred to as an 'SPA or 'Special Policy Area' here). It must be noted that the criteria for determining an SPA would need to be developed. In concept, at this time the SPA would only be used for existing development and not as a way to allow new development in flood prone areas.

- What if a dyke/diversion/dam ensures protection to the design flood? (Implies regulatory accountability for the viability, effectiveness and maintenance of the structure is established.)



Should the mapping provide acknowledgement of the risk reduction provided by structural mitigation? If so, how and to what end? This is less conservative, however it would acknowledge the mitigation that is put in place.

- How should landowners in the purple area be treated?
- Examples: High River, Drumheller, Town of Peace River, etc.



A possible way to acknowledge the positive impacts of structural mitigation on the mapping would be through a third zone (referred to as an 'SPA or 'Special Policy Area' here). It must be noted that the criteria for determining an SPA would need to be developed. In concept, at this time the SPA would only be used for existing development and not as a way to allow new development in flood prone areas.

Floodway Policy

Policy and Program Change Options

1. Cross-Ministry Working Group will develop a strategy for FHIP Activities and Inform Broader Flood Management Work in the GoA
2. Possible creation of Special Policy Areas for managing floodway development

Special Policy Areas could be created

- if the **design flood definition** across the GoA is altered from the current 100-year level, resulting in a map with different floodway and flood fringe zones

OR

- if a **re-calculation of the design flood** using the current design flood definition but newer technical data, results in a map with different floodway and flood fringe zones.

OR

- if **structural flood mitigation infrastructure** alters either the natural flow amount or location of flood water during the design flood, resulting in floodwater not located in some areas during the design flood.

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Floodway Policy

Policy and Program Change Options

1. Cross-Ministry Standing Committee will develop a strategy for FHIP Activities and Inform Broader Flood Management Work in the GoA
2. Possible creation of Special Policy Areas for managing floodway development

Special Policy Areas could be created for

- **New or Re-studies using a different GoA Risk Level Standard**
- **Re-Studies Using More Recent Data**
- **New or Re-Studies with Dykes/Diversions/Dams**

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Floodway Policy Strategies

GoA Flood Management

- The options are currently being discussed at the cross ministry working group (CMWG).
- These options integrate with the granted floodway exemptions.
- This would create a third zone which would need policy developed for it.
 - This will be an agenda item for the CMWG.
- Once a decision on these mapping issues is made it will take approximately 1 year to create a new map.
 - Valuable data has been collected since 2013 and continues to be collected.
- This concept impacts but does not address the issues surrounding Compensation and Property Rights.
 - Floodway Relocation Program,
 - Undeveloped Lots;
 - Existing home owners, etc.
- All of these issues have significant impact on the work of the Resilience and Mitigation Branch.

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Further discussion on the current mapping tool, whether it needs to be adjusted and if so how it should be adjusted, needs to occur. This is a live policy discussion should take place with all stakeholders.



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QUESTIONS?

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