



Flooding in Alberta

Many urban communities in Alberta are located in river valley settings. During spring and summer, these areas are prone to flood damage when rivers overflow their banks.

In recent years, major floods occurred in Peace River (1997), Fort McMurray (1997), High River (1995), Lethbridge (1995), Medicine Hat (1995), Pincher Creek (1995), Ponoka (1990), Slave Lake (1988), Whitecourt (1986), and Edmonton (1986). Many of these floods caused significant damage.

After flood events, the governments of Alberta and Canada are frequently asked to compensate property owners for damages. In 1974 alone, flood disaster payments in Canada totaled well over \$100 million. However, governments can only cover a small portion of the total damages.

In addition to financial losses, there are losses impossible to calculate in dollars and cents. Whole communities and lives of individuals are disrupted during floods, and sometimes for long periods afterwards. Most importantly, the lives of people in a flood hazard area are in danger.

Until recently, the traditional solution to flooding problems in Alberta has been to construct dams, dikes and channel modifications in an attempt to divert floodwaters away from residences and commercial establishments. Unfortunately, structural measures are expensive to construct and maintain and they do not provide complete protection from flooding. They also may promote a false sense of security among floodplain residents and may even attract additional investment to flood prone areas which increases the potential for loss of life and property damage.

In recent years, there has been a shift in government emphasis from expensive structural solutions to flood damage, such as dams and dyking, to less expensive and more environmentally sustainable non-structural solutions.

The Canada-Alberta Flood Damage Reduction Program is an example of a non-structural approach to flood damage reduction. The program identifies urban areas subject to flood damages and by encouraging non-structural solutions such

as land use planning, zoning, flood proofing and flood preparedness, future flood damages will be reduced.

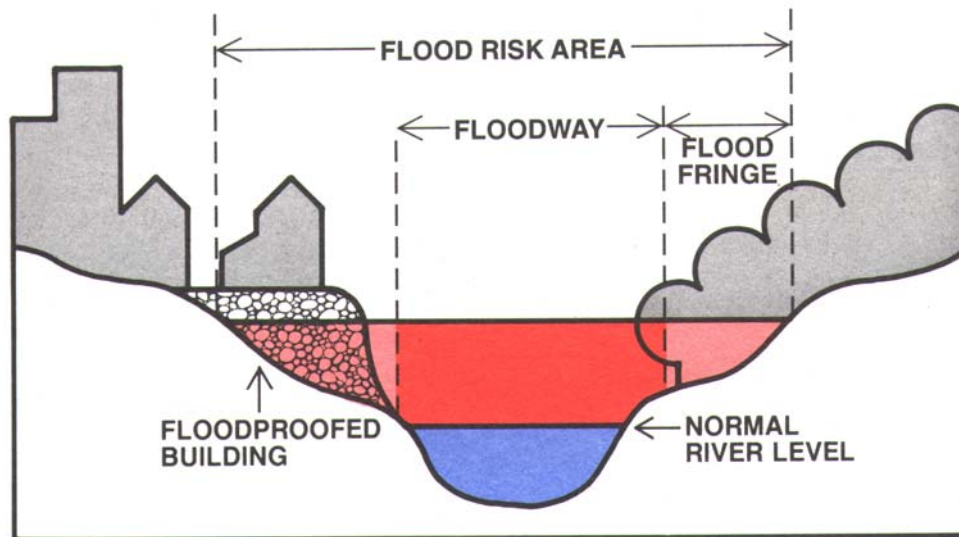
The Flood Damage Reduction Program

Canada and Alberta signed “An Agreement Respecting Flood Damage Reduction and Flood Risk Mapping in Alberta” in April 1989. This Agreement initiates the Canada-Alberta Flood Damage Reduction Program which is based on the premise that the best way to reduce the financial toll of flood damage is to discourage inappropriate development in the floodplain.

There are three main components to the program: (1) identify and map flood risk areas in urban areas across the province; (2) increase awareness of flood risk among the general public, industry and government agencies through a public information program; and (3) regulate new development in these flood risk areas using new federal and provincial policies.

The Flood Risk Area

Under the Flood Damage Reduction Program, maps are produced illustrating the flood risk area in each community included in the program. The flood risk area is defined as the area which would be inundated by the design flood. In Alberta, the design flood is a 1 in 100 year flood, or one which has a one percent chance of being equaled or exceeded in any year.



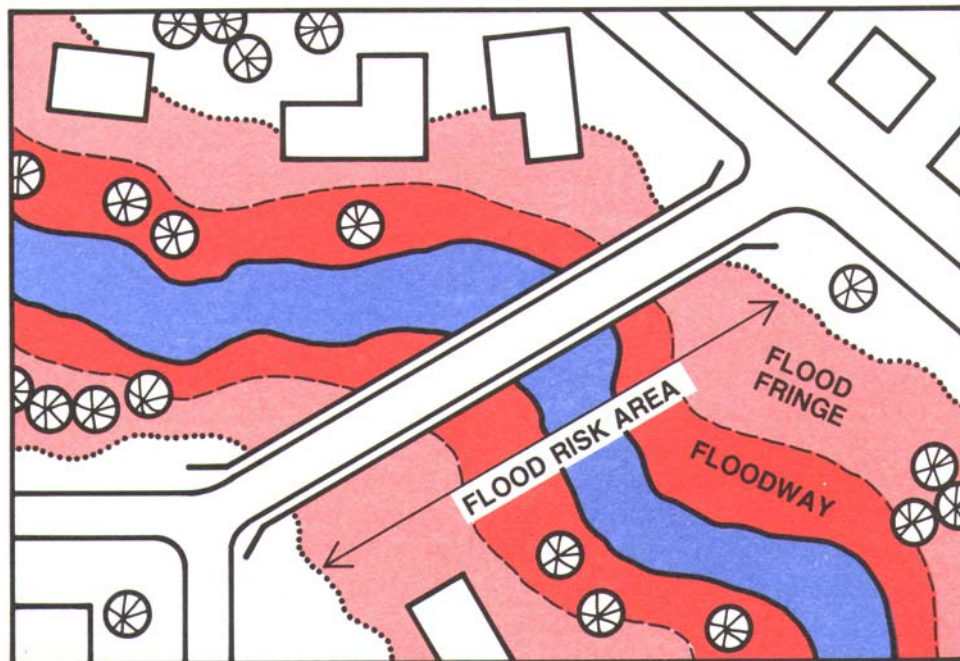
Where local conditions permit, a distinction is made between the floodway and the flood fringe areas of the flood risk zone. The floodway has the greatest risk. Floodway waters are the deepest, fastest, and most destructive and new development in these areas is discouraged. In a flood fringe area, water is

shallower and moves more slowly. Development in the flood fringe may be permitted provided that it is adequately floodproofed. In certain cases, the flood risk area may also include an ice hazard zone, which identifies those areas subject to damage from ice movement.

Designation and Government Policy

As flood risk maps are completed, the provincial minister responsible for the program will designate the flood risk area as a zone within which certain government policies will apply. Where a one-zone flood risk area has been designated, the following policies will be in effect:

1. No new federal or provincial government buildings or structures that are vulnerable to flood damage will be placed in a flood risk area;
2. Financial assistance from federal and provincial government sources, will no longer be available for new buildings or structures placed in a flood risk area and subject to flood damage;
3. Any buildings or structures vulnerable to flood damage placed in a flood risk area after designation will not be eligible for flood disaster assistance; and
4. The federal and provincial governments will encourage local municipalities to adopt land use restrictions to prohibit further development in flood risk areas.



Where a two-zone flood risk area (which includes a floodway and flood fringe) has been designated, the above policies will apply to the floodway only.

Development will be allowed within the flood fringe, provided it is adequately protected from flood damage. Also, any additions or enlargements made to existing buildings in a flood fringe after designation will require flood proofing to be eligible for future disaster assistance.

Any existing development already in place at the time of designation will continue to be eligible for government flood disaster assistance. Normal maintenance and repair of existing structures will continue as before.

Floodproofing

Floodproofing techniques are measures taken to permanently protect individual buildings or other developments from flood damage. An effective floodproofing measure is to use elevated pads or fill to raise buildings above the design flood level. Floodproofing also includes certain safeguards, such as locating electrical panels and shut-off valves for gas and water lines above the design flood level, and restricting the use of rooms below the flood level.

Land Use After Designation

Designation is the formal recognition of flood risk areas by senior governments. Through public awareness and in cooperation with local governments, senior governments will encourage adequate floodproofing of new development in flood fringe areas. Examples of recommended land uses in floodways would include parks, recreational facilities and wetlands which are compatible with the flood risk.