

ABBOTSFORD

Long-term Flood Mitigation Options

BACKGROUND

Current System

The flood protection system in Sumas Prairie is designed to protect against flood risks from the Fraser River freshet (in Spring) and Nooksack River overflow (in Fall). This system includes Sumas River/Vedder River dykes, Barrowtown Pump Station and flood boxes. The Barrowtown Pump Station operates all year to drain water from the Sumas Lake Bottom area via the Sumas Canal. The flood boxes allow water to be moved from the Sumas River into the Fraser River and must be closed when downstream rivers are high to prevent backflooding into Sumas River.

Currently, when the Nooksack River water overflows its banks, the water floods adjacent land and moves towards flood boxes in the Sumas River, at Barrowtown in Abbotsford. If these flood boxes are closed, water is held back and can flood properties as demonstrated by the latest atmospheric events. Depending on the volume, water may overtop the Sumas River Dyke and flow into the former Lake Bottom area of Sumas Prairie. The total rainfall during the November extreme weather event in 2021 is estimated to be approximately a one in 100-year event. Due to increased weather events and impacts from climate change, more flood events could occur if improvements are not made. The flood mitigation options explore how to store and spread the volume of water to different areas of the floodplain.

These concepts are an important initial step in the City of Abbotsford's response to managing the impact of future floods to properties and reducing the risk of repeating the devastation experienced this past year.

Consideration for Increasing Protection

APPLIES ONLY TO OPTIONS 3 AND 4

- Include options that raise the elevation of all primary dykes to guard against one in 200-year flooding, with seismic performance and climate change allowance, to meet provincial standards.
- Appropriately protect critical infrastructure through floodway.
- Preserve and retain the agricultural capacity that was created by the 1920s diversion scheme.
- Prefer floodways along main river channels, with dykes set back and floodway land use appropriately managed.
- Maintain or improve existing level of flood protection for Sumas Lake Bottom area.
- Fish-friendly considerations - with fisheries enhancements and access improvements.
- Separately address storm water and local drainage issues (Marshall Creek, Saar Creek, Arnold Creek, Sumas Lake Bottom).
- Favour solutions that are "climate resilient" (i.e., will continue to provide benefit if climate change impacts are worse than anticipated).
- All farmlands in areas designated as "floodways" or "flood storage" would be made whole financially.

PROCESS FLOW: HOW WE GOT TO THESE OPTIONS

DECADES OF STUDY

CONSIDERATIONS

- Fiscal implications
- Provincial standards
- Feasibility
- Agricultural/property impacts
- Environmental concerns
- Jurisdiction
- Nooksack River International Task Force recommendations

REFINED OPTIONS

CONSIDERATIONS

- Consultation with First Nations leadership
- Feedback from community

1 2 3 4

PREFERRED SOLUTION SUBMITTED TO GOVERNMENT