

## **Current Issues in River Management: Examples from Calgary and Area**

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### **Summary**

Urban river management encompasses several components, including flood mitigation, drought management, and water quality control. In Alberta's semi-arid climate the latter two have historically been the major foci, but the 1-in-100 year flood events of 2013 on the Bow, Elbow, and Highwood Rivers brought flood mitigation to the forefront of municipal and provincial agendas.

Flood mitigation as a result of 2013's expensive disaster has occurred in three stages: immediate large-scale emergency construction, such as the diversion canal in High River and the reconstruction of the Cougar Creek aqueduct; on-going local-scale reinforcement or rebuilding of banks along vulnerable communities within municipalities, such as armouring the banks of the Bow near Sunnyside; and on-going assessment of further large and local -scale flood mitigation measures. We will look at the mitigation measures under assessment and outline the benefits and challenges associated with each. Among others, we will discuss the McLean and Cougar Creek dry dam proposals, the Springbank off-stream reservoir, and the Glenmore Dam by-pass tunnel.

Once a state-of-emergency has ended, flood mitigation measures cannot be considered in isolation from the other components of river management: drought management and water quality control. Rapid urban growth poses significant challenges to maintaining water quality. Looking at the Bow River tributary of Nose Creek, we will show how flood mitigation measures and water quality improvement measures often work hand in hand.