

2011 AWARDS FOR ENGINEERING EXCELLENCE

Award of Excellence

Managing Prince George's Rising Flood Waters



Consultant

Northwest Hydraulic Consultants

Owner/Client

City of Prince George

Category

Soft Engineering

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The City of Prince George is partly located on the floodplain of the Fraser and Nechako Rivers and is subject to an unusual flooding situation. On Fraser River, floods occur in the spring, caused by melting snow. On Nechako River, floods occur during the fall or winter and are caused by ice freeze-up. In the winter of 2007-08, the City experienced severe ice-related flooding which highlighted the vulnerability of flood prone areas along the river. Just six months earlier, flooding occurred along the Fraser.

When people develop and settle floodplain areas, protection from flooding becomes a necessity. The traditional engineering approach to flood protection focuses on physical, technical, and economic challenges, but has not always adequately addressed social, cultural, and ecological constraints.

The City selected Northwest Hydraulic Consultants to lead a flood hazard and solutions study to better understand the complex river and ice behavior and develop a plan for flood protection. The study was unique in many aspects, using a multidisciplinary approach to flood management that incorporates all the constraints and maximizes the net benefits while reducing the vulnerability and risks due to flooding. On a technical level, the study made use of sophisticated numerical modeling tools, GIS and an innovative statistical approach for estimating ice-related flood levels. Impacts of climate change and the Mountain Pine Beetle devastation on river flows were considered.

Consultations, presentations and meetings with the community and all levels of government were key to developing, evaluating and recommending a flood protection plan to the City.