



HIGH RIVER

Investing in flood defense infrastructure

By Leila Darwish

THE SCIENCE

Floods are the most frequent natural hazard in Canada. In 2013, following a heavy rainfall, flooding in parts of southern Alberta resulted in excess of 5 billion dollars in damage, Canada's most costly flood. One of the hardest hit communities was the Town of High River. On June 20, 2013, the Highwood River reached a record-breaking flow rate of 1,820 cubic meters per second, overflowing its banks and flooding the town. The flood forced the evacuation of 13,400 people and damaged 6,300 structures, including 5,400 homes. Though flood mitigation infrastructure can't stop a flood from happening, it can reduce the flood risk for specific areas and limit the impact of future floods.

THE TRIGGER

The extensive damage from the flood of 2013 triggered the Town of High River to pursue flood mitigation measures along the Highwood River to protect the town from future extreme flood events. Due to the damage caused by earlier flooding events, High River had previously researched possible mitigation strategies that could be implemented to reduce flood risk. Armed with plans and information, the Town was able to move quickly to access significant funding for mitigation projects and flood protection infrastructure in the aftermath of the 2013 floods.

THE APPROACH

To date, over \$200 million has been invested in flood mitigation and protection for the community. This includes: the construction of permanent and interim dikes, returning two neighbourhoods to an undeveloped state to allow more room for the Highwood River to flow, the installation of backup emergency notification systems, and continued training for Town of High River staff. Over 8.5 kilometres of permanent dikes have been constructed along the Highwood River. These have been built to protect against the river flows experienced during the 2013 flood, plus one additional vertical metre of free board protection. Additionally, Canadian Pacific rail bridge was removed to eliminate a troublesome chokepoint on the Highwood River and the Municipal District of Foothills raised 498 Avenue to protect a key access route and act as a berm.

The Town is working with the Alberta provincial government to demolish and renaturalize the districts of Beachwood and Wallaceville, two of its most flood-prone and hardest hit neighbourhoods. Though they faced initial opposition, the mayor and council pushed ahead, as the renaturalization of the area allowed engineers to widen the river channel, eliminating another critical chokepoint in the Highwood River and providing a greater degree of flood protection for the entire town. Taking a "room for the river" approach, the Town sought to improve the flow of the Highwood River. The Town worked with the Alberta Government to purchase 150 properties in the neighbourhoods, moving residents out of the floodway.

16 Town of High River

17 Flood Mitigation Program

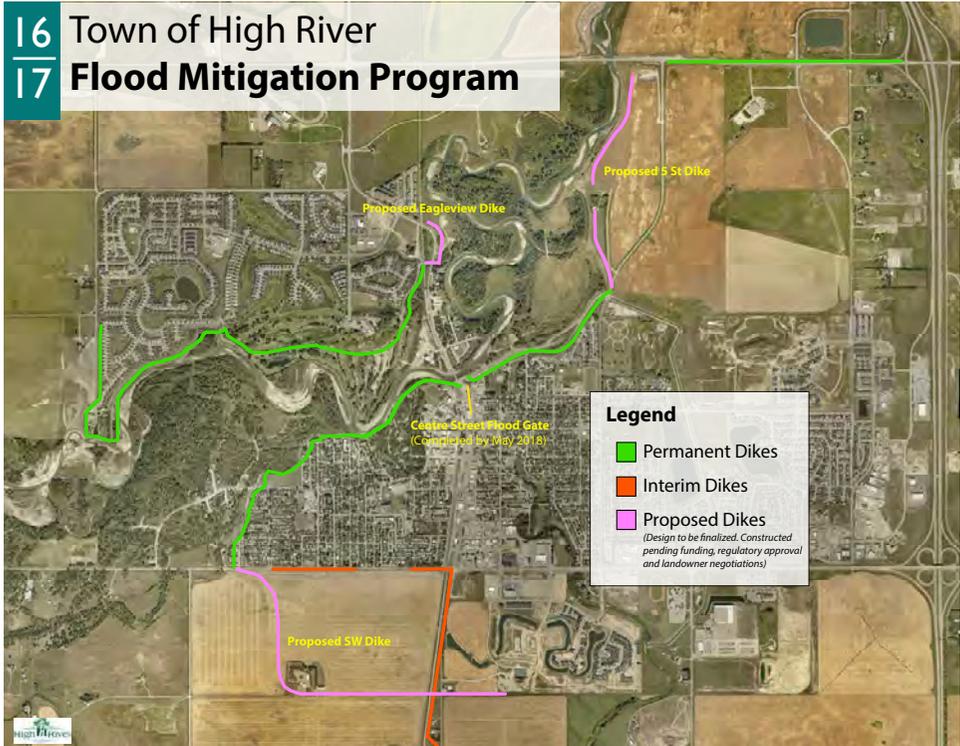


Figure 4: Town of High River Flood Mitigation Program
(Source: Town of High River)

THE OUTCOME

As a result of the push to install new flood mitigation infrastructure and buyouts, 85 percent of the community had flood protection by the first-year anniversary of the flood. Additional projects have since continued to increase the flood protection and resilience of the town. New funding will allow construction to continue on two more berms and a bridge to help shelter High River if the Highwood River should again spill its banks.

Flood management remains a key priority for the Town of High River. The Town has also been acknowledged for its approach of building back better, receiving an award from the Canadian Institute of Planners and the Alberta Professional Planning Institute at the annual Building Resilience Conference in Calgary in June 2017.

A WORD FROM HIGH RIVER

Craig Snodgrass, the mayor of High River, emphasized the importance of having plans ready in advance to access mitigation funding. "I would tell any community to get ahead of the game – invest in the design work and plans now. With climate change, the chances of this happening to any community is greater and greater. For funding proposals, having the information in front of you and being able to hit the ground running from day one is a huge advantage when you are hit by a disaster."

Mayor Snodgrass also highlighted the importance of political will. "The 2013 flood was in June, and we had our municipal election that October. People who wouldn't normally step into municipal politics did. We were all in the same mindset because of the state of High River. We were focused on getting the town back on its feet and protecting it from this ever happening again. I know we had to make some hard decisions, but it's paying off now. You can put in all the money you want, but if you don't have the political will to do the right thing, you are done."

When it came to the 2013 flood, Mayor Snodgrass focused on the opportunities it provided for High River. "We went through hell in 2013. We had a 'build it back better' mentality and now we are the most well protected community in Canada for flood risk. We made room for the river to flow through our community safely. There are areas that can be protected, there are areas that can't. You need to make those decisions. The biggest opportunity the flood gave us was our downtown rebuild. Our downtown economy had been struggling for 40 years and this was the opportunity to reface the downtown and do business in a different way. That is one of the places where we have succeeded. High River is now a much better place to live because of the flood. That was our goal 4 years ago, we wanted to look back in 5 years and say we are better because of the flood, not worse. When disasters like this happens, you need to look at the opportunity presented to make your home better, your business better, your whole community better."