



BIG THOMPSON

Highway 287 Flood Mitigation Project

OVERVIEW

The Big Thompson River has a long history of damaging floods. The largest floods on record have been the most recent ones. The flood in August 1951 had an estimated discharge of 22,000 cubic feet per second (cfs), destroyed 1 mile of U.S. Highway 34 on the west side of Loveland, four people died, and many were left homeless. The 1976 flood, the worst natural disaster in Colorado history, had an estimated discharge of 31,200 cfs at the canyon mouth and took 139 lives. Most recently, the September 2013 flood, resulted in massive damage in the entire Big Thompson watershed, including the loss of two lives. U.S. Highway 287 was closed for over two weeks because the river was overtopping it south of the HWY 287 bridge and because the bridge had to be evaluated for structural damage.

One of the primary goals of floodplain management is to reduce flood risk over time through sufficient floodplain regulations, smart land use planning, designing resilient infrastructure, and mitigating high risk problems that were often created many decades before floodplain regulations.

The area centered by the Highway 287 bridge is one such high risk area. This particular Big Thompson River bridge is so significantly undersized that even a 10-year flood event (10% annual chance, 4,703 cfs) causes the highway to be overtopped and flooding to adjacent businesses. Flood events create an enormously wide floodplain from the undersized bridge, channel encroachment, and lack of a natural floodplain. Hundreds of structures are at extreme risk. The purpose of this project is to address these deficiencies while providing a restored beautiful river corridor.



LOCATION



The Highway 287 Flood Mitigation project is located on Hwy 287 just north of Hwy. 402 within Loveland, CO.

COST



The City has received a \$2.3 million FEMA funded grant for project design with remaining design costs funded by the City's Stormwater Utility. Total project cost, including design, permitting, and construction, is currently estimated at \$55 million. This estimate will be refined as design continues. Additional grant funding is necessary to fund this large of project. A funding plan is being developed to pursue multiple federal construction grants in order to make the project's construction financially feasible. Additional funding will come from the Stormwater Utility.

PROJECT OBJECTIVES



VISION



FLOOD HAZARD REDUCTION AND MITIGATION



RESILIENCE - THE RIVER AND INFRASTRUCTURE



ECOLOGICAL RESTORATION



RECREATION AND PUBLIC-NATURE INTERACTION



CORRIDOR MANAGEMENT

Resilience. Greatly reduce flood hazard risk in this reach of the Big Thompson River by removing as many properties as feasible from the 100-year floodplain and floodway; protect existing critical infrastructure; protect existing businesses; prevent a critical transportation corridor from overtopping in up to and including a future one percent annual chance, 100-year flood (the current bridge has under 10-year capacity); improve the river corridor's resilience to future floods; connect the river channel to a natural floodplain; reduce risk to the Loveland Fire Rescue Authority's Fire Training Grounds, etc.

Environmental. Implement nature-based solutions to create a viable and sustainable natural river corridor that improves river health, improves and diversifies the riparian corridor, improves water quality, improves the fishery, provides floodplain connectivity, and quality of life.

Economic. Mitigates future flood impacts and recovery costs for the community, including both public and private infrastructure; creates an aesthetic gateway as the southern entrance into Loveland on a primary highway corridor; provides safer multi-modal transportation opportunities in and near the river corridor; benefits low and moderate income neighborhoods, and provides opportunities for redevelopment of properties that get removed from the floodplain

Recreation. The area already contains the Big Thompson River corridor trail, but the trail needs to be extended east to St. Louis Avenue as well as having neighborhood connections and connections to existing sidewalks. Also desired is to restore the natural areas, interface with existing public parks, public safety (primarily safety around water), and provide safe recreational opportunities for water play (i.e, tubing and fishing).

PROJECT GOALS

- Replace the highway bridge and raise the profile of the highway as needed in order to prevent highway overtopping during a 100-year flood event;
- Reduce the number of structures/properties in the floodplain and floodway and reduce the flood risk to remaining structures;
- Improve and increase public safety;
- Reconnect the channel to active floodplain benches through river and floodplain restoration;
- Restore ecological functions of the river and riparian corridor up and downstream of the bridge.
- Improve opportunities for future property and business redevelopment;
- Create a natural open space corridor;
- Improve opportunities for public interaction with the river;
- Protect key functions of the existing parks;
- Create a signature southern entrance into Loveland from U.S. Highway 287 within the river corridor;
- With the flood mitigation driven highway improvements, also improve multi-modal and safer roadway functions;
- Mitigate and find affordable solutions to every business access point;
- Create more resilient infrastructure that can better withstand, recover, and adapt to future floods;



NATURE BASED SOLUTIONS

The project will incorporate numerous nature-based solutions that meet the project goals while improving river health in a cost effective manner. The project reach received a river health assessment grade of D+ in 2021, which indicates it is in very poor condition. Decades of urbanization have removed most natural functions. Therefore, this project presents a great opportunity to implement nature-based solutions to restore and enhance the natural corridor, including considerations for water quality, wetlands, riparian vegetation, ecological health, river hydraulics, sediment transport and stream stability, and the fishery. Additional benefits will include a better public-nature interaction and opportunities for safer water recreation like slow water tubing.