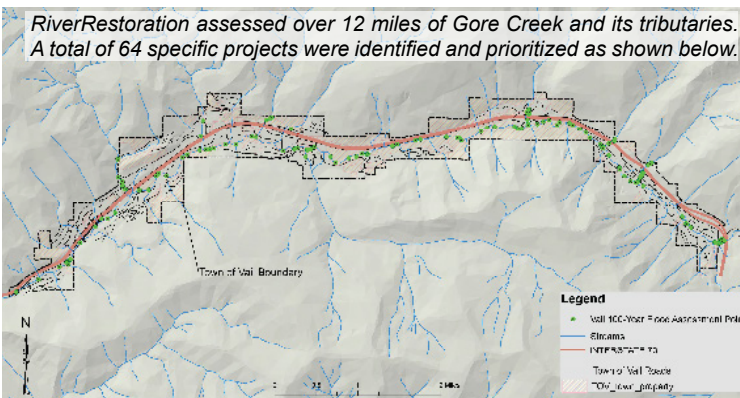




TOWN OF VAIL FLOOD DAMAGE REPAIR PLAN



Reactionary emergency flood damage repair has done significant harm to many rivers, RiverRestoration's approach is to maximize the long term function and sustainability in all projects. A significant flood event occurred within the Town of Vail in June of 2010. RiverRestoration estimated that flows, greater than the 100-year event occurred on the main channel and exceeded the 500-year event on a number of tributaries. This flooding significantly damaged property, infrastructure and the channel. Town of Vail requested a damage assessment and a prioritized restoration plan. The Town is highly sensitive to the environment and aesthetics and requested a restoration plan that could enhance the natural function of the channel while stabilizing the urban infrastructure.

RiverRestoration categorized and prioritized 64 projects for damage repair with cost opinions and sustainable designs. Four top priority projects were designed and guided through construction within 6 months. Four additional projects were implemented a year later and eight additional projects are in the final phases of design. Improved flood conveyance, bank stability and infrastructure protection has been achieved at each project. These designs have accommodated habitat, morphology, and recreation while being aesthetically pleasing. The riverfront property values are a close second to the slopeside valuations as the Gold Medal fishing and world class kayaking are creating year round recreation demand in this mountain resort town.

Sixty feet of flood erosion at this river bank threatened collapse of 150 foot tall conifer trees and the capture of historic channels pictured here. RiverRestoration stabilized the eroding bank with a combination of stone terracing and dense riparian vegetation. The main channel was trained with a number of rock barbs. The toe of the banks supporting the conifers was stabilized with stone toe protection and significant revegetation of the understory. The project fronts the Stephen's Park dog park and is now the best place to cool off in Vail.



Stephen's Park bank stabilization and access

Location: Gore Creek | Vail, Colorado
Project Duration: Ongoing Multiple Project Implementation
Project Budget: \$112K Project Development | \$584K Construction
Client: Town of Vail, Colorado
Contact: Tom Kassmel | Town Engineer | 970-479-2235 | TKassmel@vailgov.com
Contractor: Colorado River Works | Ted Seipel | 970-471-0233 | ted.seipelco@mac.com



Bio-stabilization of a live crib bank with native riparian species designed by RiverRestoration was built to stabilize an actively eroding bank and provide safe access to a previously hazardous yet popular overlook of Gore Creek.



This photo was taken just after 100-year flood waters receded showing the RiverRestoration designed bank and whitewater feature in solid working condition



Flood erosion of a river bank completely scoured the Christopher Sewell pedestrian bridge abutment and the bridge was structurally unsound. The bank was rebuilt and trained in place and the abutment was stabilized in place to save the bridge and defer the more significant costs of replacing the bridge.



The south bank of Gore Creek near the Number 7 tee box after 100-year flooding threatened collapse of the adjacent bike path. The bank was rebuilt to provide ample buffer between the path and top of the bank. Live willow staking and ample riparian restoration were installed to help stabilize the bank.



100-year flooding caused 50 lateral feet of channel migration and the collapse of Aspen Court bridge. RiverRestoration realigned the river and stabilized the bank with a combination of stone toe protection and a live crib bank. The live crib design allowed for the mass of channel deposits to be cost effectively disposed onsite into the rebuilt bank. The floodway conveyance was restored with this project. Dense riparian vegetation was planted in the face of the crib as well on the overbank. The channel was designed for the continued transport of cobble materials and to accommodate potential future channel migration.



RiverRestoration worked with Terry Stone on a bike path realignment and crossing replacement over Middle Creek behind the Vail Public Library. The project also included an improved overlook and adjacent bio-stabilization (shown on previous page). This picture depicts the widened and improved trail and new bridge over Middle Creek. Significant channel stabilization was integral to the bridge design, but that stabilization blends in with the natural character of Middle Creek.

