The Teton Creek Restoration Project Summary:

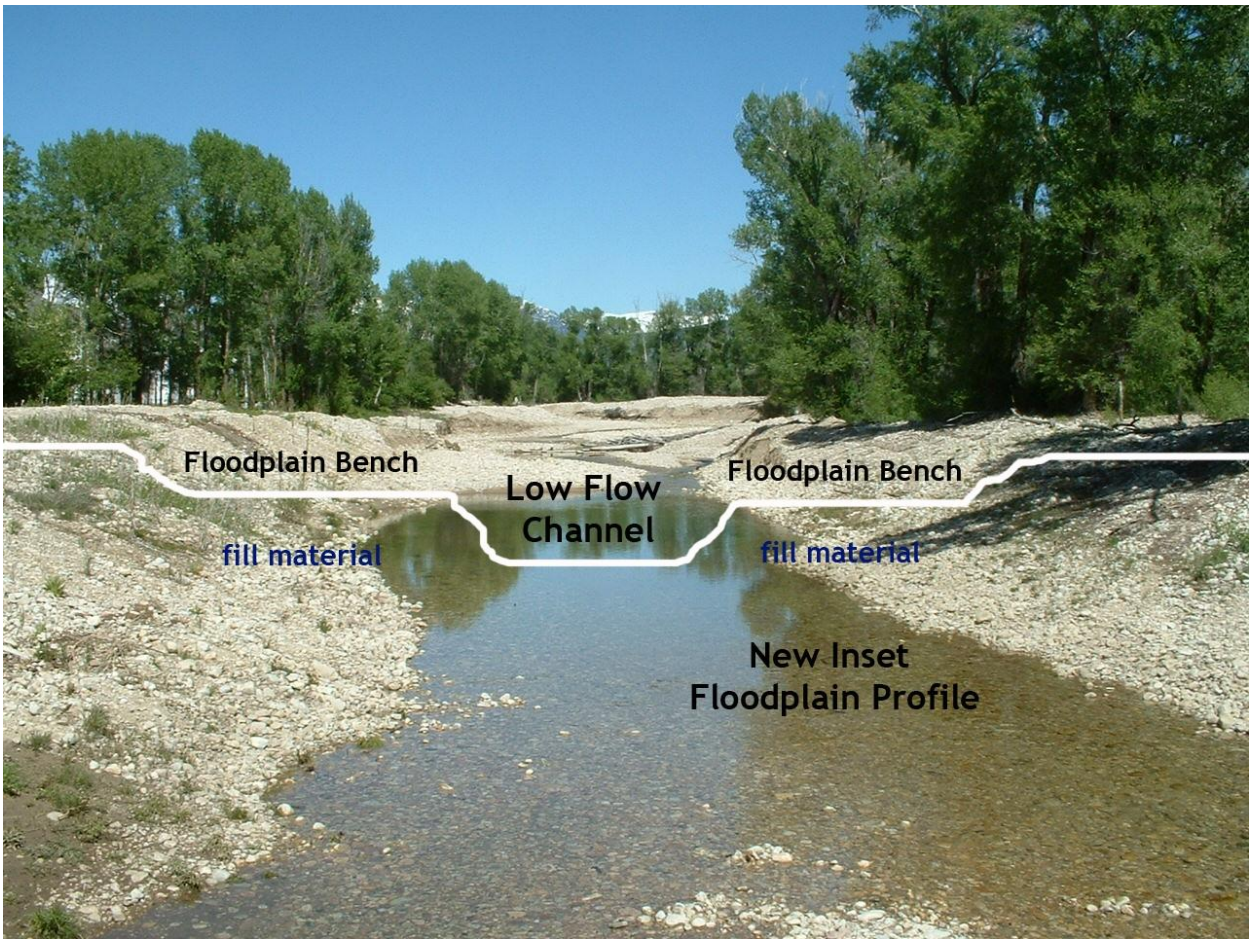
The Teton Creek Restoration Project area extends for approximately one mile upstream from the Cemetery Road Bridge and includes the Aspen Pointe, The Aspens and The Willows subdivisions. From 1983 to 2004, approximately 4,000 linear feet of the project area was illegally channelized by the developer, Lynn Moses to protect his subdivisions from flood events. Moses closed off side-channels and lowered the streambed 4-8 feet which completely destabilized the channel, increased the risk of flooding and caused substantial property loss. The lowering of the streambed caused stream banks and the upstream streambed to collapse, which subsequently started a headcut that has now migrated up stream approximately 2,000 linear feet. As the headcut has migrated, the streambed has down-cut up to eight feet subsequently causing the banks to fail, the channel to widen and riparian vegetation to be lost. The wide, deep channel lacks fish habitat, cannot effectively dissipate stream energy and doesn't allow floodwaters to access the floodplain which is critical for riparian vegetation health. It is estimated that 120,000 cubic yards of sediment has been displaced from the project area, much of which has been transported downstream causing severe bank erosion and channel destabilization and increasing downstream flooding risks for over 2.5 miles. It is estimated that the headcut is migrating up stream approximately 100 feet a year and yielding 500 cubic yards of sediment a year. The damage from the Moses' work and the persisting headcut has severely compromised fish habitat, water quality, riparian vegetation and the channel's ability to effectively dissipate flood energy.

The channelized reach of Teton Creek currently threatens to cause millions of dollars in damages to public and private property, infrastructure, utilities, as well as further impairment to water quality and important fish and wildlife habitat. Friends of the Teton River (FTR) has spearheaded a regionally and nationally-recognized $2.5 million dollar effort to restore the creek, and has garnered a broad base of community, state and federal support. As of February 2010, FTR had raised $1,022,000 in federal and private funds. Funding paid for restoration design plans and 25% completion of the stream reconstruction. Once completed, the project will reconstruct 1.2 miles of altered stream channel, to mitigate flooding risk to public and private property and infrastructure, improve water quality, and reestablish a functional aquatic and riparian ecosystem.

The project started in 2006 when FTR formed the Teton Creek Subwatershed Committee (TCSC) comprising of landowners, developers and local, regional and federal government agencies. The intent of FTR and the TCSC has been to develop a holistic approach to improve conditions on Teton Creek based on collaboration and community participation. In November of 2006, at the recommendation of the TCSC, FTR hosted a restoration workshop which was attended by landowners, developers, stream restoration specialists, engineering firms and local, state and federal agencies. The attendees of the workshop determined that the highest priority project on Teton Creek was to stabilize the section channelized by Moses including the associated headcut.

From 2006 to 2010, FTR began applying funding resources to develop design criteria, analyze four alternatives, chose an alternative and develop the final project design. Information derived from assessment work, stakeholder participation and hydraulic modeling results was used to develop a design through an iterative process. It was determined that reconstructing the channel to create an inset floodplain would be necessary to ensure that project goals were met. The inset floodplain will be constructed along the entire 5,600 foot length of the project and include floodplain benches and a bankfull channel. The inset floodplain will be constructed to meet the following criteria: convey and contain the 100-year flood event; provide sediment and energy continuity; provide stabile streambed and streambanks; and to provide fish and wildlife habitat. To provide streambed stability, hardened riffles will be placed intermittently across the low flow channel and one cross vane will be placed at the site of the new Cemetery Road Bridge. Pools will be constructed between the hardened riffles to provide fish habitat and streambed variability. Pools will vary in size and location and will consist of lateral and mid channel scour pools. The floodplain benches will be designed to provide roughness necessary to slow velocities, capture sediment and propagate native vegetation. Streambanks along the bankfull channel and along the inset floodplain edges will be stabilized using several bio-engineering techniques. For streambanks and associated floodplain edges located along the outside of stream bends adjacent to infrastructure, rip-rap with soil lift systems will be used. All other streambanks and floodplain edges will be stabilized using a combination of rootwads, logs, brush mattresses, fascines, clump plantings and willow and tree revetments. Native vegetation including willows, cottonwood and native grass will be planted on stream banks, floodplain benches and along floodplain edges to provide fish and wildlife habitat and roughness. Plants and root stock generated from clearing and grubbing will be systematically replanted as grading is completed. Vegetation will be irrigated in the project reach until plants have reached a self-sustaining level.

Project before restoration



Project with inset floodplain design

Restored side channel