BUILD IT BACK BETTER THAN BEFORE

US 36 Bridge over Left Hand Creek in Boulder County, CO

UNIQUE & INNOVATIVE

- After a destructive flood, Muller developed unique natural channel improvements including non-grouted, low-height boulder cascade drop structures and bankfull channel design with floodplain benches.
- Precast, prestressed girders were chosen to accommodate the expedited schedule and long span requirement.

FUTURE VALUE TO ENGINEERING PROFESSION

- Muller helped FHWA Colorado create/implement the new Risk & Resiliency Analysis Tool used to justify emergency funding for resilient design features. Today, this tool & methodology is being incorporated into the newest version of FHWA's Emergency Response Manual and is being adopted by states as best practice for handling disasters.
- Adapted designs, timelines, and budget to meet resiliency guidelines and incorporated wildlife and environmental considerations.

SOCIAL, ECONOMIC, & SUSTAINABLE DEVELOPMENT CONSIDERATIONS

- Construction phased to keep highway open, eliminating a 15-mile detour.
- New safety measures were implemented to provide the bicycle community a safer route throughout the project.
- Designed the bridge for safe passage of large mammals, improving highway safety.

COMPLEXITY

- Partnered with upstream project to allow ample hydraulic conveyance.
- Long single-span bridge and shallow bedrock required special foundation design. Foundation used pre-drilling and socketing of steel piles, eliminating bridge joints and bearing devices, providing a better bridge at lower cost.

SUCCESSFUL FULFILLMENT OF CLIENT / OWNER NEEDS

- In addition to emergency bridge repair, Muller provided traffic control design, public involvement, and designed safe passage for bikes, mammals, and large debris. The project provides safety to the community for the next 100-year flood.
- Muller, with FHWA, provided documentation needed for extra funding via the new R&R Tool.
- End result: a protected community and successful fulfillment of the Governor's desire to "build it back better than before."