

Executive Summary

For decades, the Southside Diversion Dam on the Arkansas River in Pueblo, Colorado, was known less as water infrastructure than as a hazard. The 12-foot low-head dam created an inescapable recirculating hydraulic that claimed multiple lives over the years, including a father and son who drowned there on Father's Day 2020. Because the dam remained essential to Pueblo Water's water supply operations, the utility could not simply remove or lower it, the more straightforward fix used on many comparable low-head dam safety projects.

Pueblo Water retained Recreation Engineering and Planning Inc. (REP) in 2022 to solve that problem without giving up the dam's diversion function. REP's solution modified the dam into a two-channel whitewater park: a north "boater bypass" channel with five smaller drop structures suited to beginners and intermediate paddlers, and a south channel built around a large engineered spillway for advanced paddlers. Seven total drop structures, built from grouted natural boulders and concrete, eliminate the dam's dangerous hydraulic while remaining navigable for boaters, tubers, and swimmers of every skill level. Every drop incorporates a segregated boulder-lined fish passage, restoring upstream migration through a Blue Ribbon trout fishery that the original dam had blocked for decades. The design carries that same care onto the banks: ADA-accessible riverside trails and frequent, gently graded river-access points run the length of the park, and native planting pockets and riparian vegetation were woven throughout to restore habitat and soften the site's engineered edges.

REP managed the project's full permitting scope, including a Section 404 individual permit from the U.S. Army Corps of Engineers, a Colorado Stream Quantification Tool assessment, and consultation with Colorado Parks and Wildlife. REP and SGI Water Consulting validated the design with computational and physical scale-model hydraulic testing before construction, and REP maintained a substantial on-site inspection presence throughout to ensure the built structures matched that modeled performance.

Construction, led by contractor Holcim-WCR, required extensive dewatering and sheet-pile cofferdam work to build within the live river channel — complicated further by 2024's unusually high water year, the primary driver of a construction cost increase from a budgeted \$9,123,781 to an actual \$10,013,234. Pueblo Water was an exceptional, hands-on partner throughout, meeting that and every other obstacle alongside REP with poise and enthusiasm. The project reached formal completion June 6, 2025, with a ribbon-cutting held March 22, 2025 and a larger public celebration on May 24, 2025.

The result is a free, all-abilities public amenity that has eliminated a known drowning hazard, opened eight miles of the Arkansas River to continuous navigation from Pueblo Dam to Runyon Lake, and become a genuine driver of civic pride and downtown economic activity. Because the park charges no admission and was designed for every skill level, it also serves as a meaningful public resource for a city where roughly half of residents are Hispanic or Latino and nearly one in five live below the poverty line. Waterworks Park converts an infrastructure liability into one of the region's most valued public spaces.