

**Monroe Creek
Preliminary Data Analysis and Channel Design:
Highway 95 Alternate Route
Weiser, Idaho**



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Civil • Water Resources • Environmental

The staff of Anderson Consulting Engineers, Inc. (ACE), while previously associated with Lidstone & Anderson, Inc., conducted an evaluation of the hydrology, hydraulics and geomorphic conditions of Monroe Creek, located approximately one mile north of the Town of Weiser, Idaho. The purpose of the investigation was to provide channel relocation options to the Idaho Transportation Department for the Highway 95 Alternate Route and to select a preferred option@ for final design. The recommended alternative included the relocation of approximately 680 feet of the existing channel and incorporation of a concrete box culvert 130 feet long, 20 feet wide and 10 feet high.

A **hydrologic analysis** of Monroe Creek was conducted to confirm existing hydrologic studies, develop design flows for sediment transport and geomorphic analyses, and evaluate seasonal runoff characteristics which affect the stability of the relocated channel. Baseline hydrology data were generated using a combination of existing stream gage data and regional methodologies. Existing data, which included only a partial period of record, were compared to an adjacent watershed for which a long and consistent period of record existed.

A **hydraulic analysis** was completed to assess the existing hydraulic conditions within Monroe Creek. This provided a hydraulic basis for the sediment transport and geomorphic analyses and design conditions for the relocated channel. Hydraulic analyses were conducted using the U.S. Army Corps of Engineers HEC-2 computer model.

Geomorphic analyses were completed to evaluate the existing and post-project conditions, including evaluation of long term bank stability, buffer limits, threshold bank heights, potential for short term and long term channel changes and areas requiring bank protection.

Sediment transport analyses included the definition of a sediment budget for the existing Monroe Creek channel and the balancing of hydraulic and sediment concerns for the relocated channel option.