

RP 337 – Modernization of Idaho StreamStats: Updates to Statewide Basin Characteristics and At-Site Peak Streamflow Statistics

○ Project Description:

The Idaho Transportation Department (ITD), in cooperation with US Geological Survey (USGS), is seeking to enhance the Idaho StreamStats application by incorporating updated basin characteristics, hydrography, and at-site peak streamflow statistics using current datasets, advanced geospatial technologies, and modern hydrologic analysis methods. StreamStats is an important tool, developed by USGS and used by transportation engineers, planners, and water resource professionals to estimate streamflow characteristics that support the design and maintenance of bridges, culverts, drainage infrastructure, and other transportation assets. This project will leverage high-resolution lidar-derived elevation data, updated land cover and climate datasets, improved hydrography, and current flood-frequency analysis methods to strengthen the accuracy, consistency, and reliability of hydrologic information available through StreamStats. Research activities will include updating basin characteristics, recalculating peak-flow statistics using recent streamflow records, integrating updated information into the StreamStats application, and publishing supporting datasets to promote transparency and future use. The resulting tools and workflows will provide ITD and its partners with enhanced hydrologic information to support infrastructure design, flood risk assessment, regulatory compliance, and long-term transportation planning.

○ The objectives of this project are:

1. To update statewide basin characteristics and hydrography datasets used within the Idaho StreamStats application using current geospatial data and analysis methods.
2. To incorporate recent streamflow records and updated flood-frequency methodologies to improve peak-flow estimates.
3. To integrate updated datasets and analysis results into the StreamStats application for improved access and usability.
4. To develop documented workflows and supporting datasets that enable transparency, reproducibility, and future updates.
5. To provide ITD and its partners with improved hydrologic information to support transportation infrastructure design, planning, and decision-making.

○ Estimated Completion Date: September 2028

○ Budget: \$288,000

○ Project Manager: Herb McDowell, Technical Engineer II, 208-334-8540, Herbert.McDowell@itd.idaho.gov

○ Project Sponsor: Mike Johnson, Division Administrator, 208-334-8487, Michael.Johnson@itd.idaho.gov

○ Principal Investigator: Taylor Dudunake, Hydrologist, U.S. Geological Survey, 208-387-1351, tdudunake@usgs.gov