

# FY 2010 RESEARCH PROBLEM STATEMENT

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## TITLE ([more info](#))

GHE-10-29 Flood Frequency Relations at Stream Crossings in Eastern Oregon

## PROBLEM (Description of need) ([more info](#))

Flood frequency relations are used to determine the design flow at stream crossings. In regions of sparse hydrologic data, flood frequency analysis proves problematic. This is especially true when considering ungauged watersheds. An updated regional approach is needed for the region of Oregon east of the Cascade mountain range.

## PROPOSED RESEARCH, DEVELOPMENT OR TECHNOLOGY TRANSFER ACTIVITY ([more info](#))

It has been more than 20 years (1983) since the USGS has updated flood frequency relations in Eastern Oregon. In 2004 the Oregon Water Resources Department (OWRD) has performed an extensive study of flood frequency analysis for eastern Oregon. Regression techniques were used to create flood frequency formulas for homogeneous regions. A technical review by the USGS review is now needed to the study to ensure academic integrity of this study and acceptance by FEMA as a sound method.

## BENEFITS ([more info](#))

The completed study will provide more accurate estimations of design floods for ungauged stations. This will result in fiduciary benefits by minimizing the occurrences of failures of stream structures such as bridges and culverts, and by minimizing the occurrences of over-design for those same structures.

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