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EFFECT OF HIGHWAY ALIGNMENT ON FLOODING -A CASE STUDY

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## **ABSTRACT**

*A heavy rainfall occurred in northwest Louisiana in May, 1989. The rainfall was particularly severe between May 17 and 18. As a result, an extensive area was flooded. Questions linking the presence of Interstate I-49 with the extent of flooding were raised. The Tapalcat Bayou watershed at a point east of the town of Allen was used for the analysis. The temporal rainfall distribution was defined and the effective rainfall (ER) hyetograph using the SCS-CN method was computed. The watershed was divided into small, uniform subareas. Unit hydrographs, based on Snyder's model, were defined for each subarea. By means of convolution of the unit hydrographs with the ER hyetograph, the runoff hydrograph was obtained. This hydrograph was routed through a pool-level reservoir to determine water levels. Scenarios with and without I-49 were considered. A sensitivity analysis was carried out to determine the influence of various parameters.*

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