

Hydrologic Adequacy of Kenneys Run Detention Dams Golden, Colorado

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Civil • Water Resources • Environmental

This project involved the evaluation of three previously constructed detention ponds/dams located in series. Anderson Consulting Engineers, Inc. (ACE) performed preliminary hydrologic and hydraulic analyses to ensure adherence and compliance with Colorado State Engineers Office (SEO) as well as local (UDFCD) drainage criteria prior to the rehabilitation of the dams.

Jurisdictional determinations, breach evaluations, and Hazard Class analyses were performed for each of the three dams. Inundation limits were plotted for approximately 2 miles through a heavily urbanized area. Probable Maximum Precipitation (PMP) was developed utilizing procedures in Hydrometeorological Report 55 and the Probable Maximum Flood (PMF) was determined utilizing the United States Army Corps of Engineers (USACE) HEC-1 model. The USACE's HEC-RAS hydraulic model was used to evaluate the adequacy of the existing emergency spillways on all three dams. Various modifications to the emergency spillways were proposed to bring the facilities into compliance with the SEO regulations. Alternative evaluations were performed in order to select the most cost effective solutions. ACE provided coordination with the SEO and the UDFCD during the evaluation of alternative for bringing the dams into compliance.

