

EDUCATION

- ◆ University of Minnesota, Minneapolis, MN
MS in Civil Engineering, 2001
- ◆ University of Minnesota, Minneapolis, MN
BS with distinction in Geological Engineering, 1998



PROFESSIONAL LICENSES and SOCIETIES

- ◆ Registered Civil Engineer, Minnesota, 43326
- ◆ Registered Civil Engineer, California, 65013
- ◆ Member, Society of American Military Engineers
- ◆ Member, American Society of Civil Engineers
- ◆ Diplomate, American Academy of Water Resources Engineers (AAWRE; ASCE)

EXPERIENCE

2008 – Present MBK Engineers, Sacramento, CA
Supervising Engineer

Perform same duties as previous within flood and water supply hydrology, hydraulics, and operations. Oversee flood hydrology, hydraulics, and operations projects and personnel.

2004 – 2007 **Consulting Engineer**, Minneapolis, MN

Practice water resources engineering as applied to flooding, environmental applications, water supply, dams and reservoirs, hydrology, hydraulics, and information technology.

2001 – 2004 MBK Engineers, Sacramento, CA
Senior Engineer

Flood Hydrology, Hydraulics, and Operations

Perform hydraulic and hydrologic analyses in support of flood control studies, litigation, and environmental assessments. Develop reservoir simulation models for evaluation of historical and hypothetical flood events. Formulate and test alternative flood control strategies to make better use of existing flood control systems and evaluate flood control criteria changes. Work as technical liaison between stakeholders and federal, state, and local agencies on hydrologic and hydraulic issues.

Water Supply Hydrology and Operations

Build computer simulation models of reservoirs and water supply distribution systems on multiple space and time scales to determine water supply yields, impacts, and third-party effects due to new or changed regulations, alternative operational strategies, and physical changes to the distribution systems.

Develop operations and studies for CALSIM II simulation model of the Sacramento-San Joaquin River system.

CONTINUING EDUCATION, SEMINARS, AND WORKSHOPS

- ◆ FLO-2D: Two Dimensional Flood Routing Model Workshop, Floodplain Management Association, 2010
- ◆ Leadership Training Workshop, Society of American Military Engineers, 2006.
- ◆ Climate Change and California Water Resources Briefing, Water Education Foundation, 2003.
- ◆ Central Valley Tour, Water Education Foundation, 2003.
- ◆ Flood Fight Methods, California Department of Water Resources, 2002.

SELECTED PUBLICATIONS, CONFERENCE PRESENTATIONS & PROCEEDINGS

- ◆ Modeling the Floodplain Resulting from the Removal of a Levee: Bridging a One-Dimensional Riverine and a Two-Dimensional Flood Routing Model with GIS, California Floodplain Management Association 2009 Annual Conference, San Jose, CA, September 8-11, 2009.
- ◆ A Case Study: FEMA Levee Certification Risk Based 90% CNP TOL Requirement, California Floodplain Management Association 2009 Annual Conference, San Jose, CA, September 8-11, 2009. (J. Countryman and B. Tustison).
- ◆ Reining in Log-Pearson Type III Flow-Frequency Estimates: Applying a Reasonable Bound through the Skew Parameter. Proc., World Environmental and Water Resources Congress 2009: Great Rivers: Protecting the quality of life and bio-diversity, while supporting development and growth critically important for a sustainable future, ASCE, Reston, VA. 2009. (B. Tustison and J. Countryman).
- ◆ How to Extrapolate Flood-Frequency Curves – With No Regrets! 2008 California Extreme Precipitation Symposium, Davis, CA, June 20, 2008. (J. Countryman and B. Tustison).
- ◆ Estimating Extreme Floods - Statistics is not the Answer, United States Society for Irrigation and Drainage Professionals, Spring 2008 Newsletter, Issue No. 99, 2008.
- ◆ Flood Frequency Confidence Bounds: Art, Science, or Guess! Proc., World Environmental and Water Resources Congress 2008: Sustainability from the Mountains to the Sea, ASCE, Reston, VA. 2008. (B. Tustison and J. Countryman).
- ◆ Forecast-Based Flood Operation: A 21st Century Approach to an Age-Old Problem, California Floodplain Management Association 2005 Annual Conference, Sacramento, CA, September 7-9, 2005. (B. Tustison and J. Countryman).
- ◆ Struggling to Protect Development in a Floodplain, A Case Study of South Yuba County, CA, California Floodplain Management Association 2004 Annual Conference, Monterey, CA, September 8-9, 2004. (R. Reinhardt and B. Tustison).

- ◆ Forecast-Based Operations of the Yuba and Feather River System, California Cooperative Snow Surveys Program: 49th Meeting of Cooperators, Folsom, CA, November 20-21, 2003.
- ◆ Forecast-Based Operation of the Yuba and Feather River System, 2002 California Weather Symposium, Rocklin, CA, June 21, 2002.

ACCOMPLISHMENTS

- ◆ American Society of Military Engineers Minneapolis-St. Paul Post Young Engineer of the Year (2009)
- ◆ University of Minnesota Department of Civil Engineering Longyear Scholarship (1997-98)
- ◆ University of Minnesota Presidential Scholarship (1994-96)

PROJECT EXPERIENCE

Flood Control - Reservoir Operations

- ◆ Develop report entitled “New Bullard Bar Flood Operational Protocols” for Yuba-Feather Forecast-Coordinated Operations (F-CO) for Yuba County Water Agency (YCWA)
- ◆ Develop report entitled “Forecast Coordinated Operations (F-CO) for the San Joaquin River System - Summary of Flood Operations: Preliminary F-CO Opportunity Assessment” for CA-DWR
- ◆ Develop reservoir operations model, study, and report for Shasta Dam as part of Shasta Dam Enlargement Feasibility Study to assess combined flood control and water supply benefits of re-operation under enlargement scenarios for CA-DWR
- ◆ Prepare Friant Dam (San Joaquin River) reservoir operations and flow-frequency study and report for FEMA-LOMR application
- ◆ Perform analysis and develop report analyzing benefits of re-operating Friant and New Don Pedro Dams for combined flood control/water supply benefits
- ◆ Perform analysis addressing flood control impacts of removing Hetch Hetchy Dam on Tuolumne River for City of San Francisco
- ◆ Prepare American River at Folsom Dam flow-frequency study and report for submission to U.S. Army Corps of Engineers, Sacramento District
- ◆ Develop reservoir operations model and flood control evaluation studies for Yuba-Feather Supplemental Flood Control Project
- ◆ Review hydrology and reservoir operations for American River FEMA study and Lower Feather River FEMA study
- ◆ Perform software testing of new HEC-ResSim (reservoir operations model) features for Yuba-Feather F-CO program
- ◆ Provide ongoing support for emergency flood operations (SAFCA, YCWA)

Hydrology and Hydraulics

- ◆ Perform technical review of Natomas Levee Improvement Program hydraulic analyses for project design, risk and uncertainty analysis, and parameter sensitivity testing
- ◆ Develop revised Yuba County base flood elevations and City of Wheatland floodplain mapping for FEMA application
- ◆ Develop hydraulic impact analysis of West Sacramento Levee Improvement Project for Programmatic Environmental Impact Statement (WSAFCA)
- ◆ Develop sea level rise hydraulic impact analysis of West Sacramento Levee Improvement project design (WSAFCA)
- ◆ Develop Mayhew Drain hydraulic model and report for FEMA-LOMR east levee certification for the Sacramento Area Flood Control Association (SAFCA)
- ◆ Develop report entitled “Assessment of the Flow capacity of the Yuba and Feather River System” for YCWA
- ◆ Develop historical forecasts and operational hydrology and participate in the planning for a simulated flood exercise on the Yuba and Feather River system
- ◆ Develop City of West Sacramento Slow Rise Flood Plan
- ◆ Conduct and review hydrologic and hydraulic analyses within the Sacramento River Basin in support of the Sacramento Area Flood Control Agency
- ◆ Oversee and perform technical studies and develop hydraulic impact report for Reclamation District No. 784 levee improvement measures
- ◆ Develop Bear River hydraulic model and hydrology and hydraulics reports for FEMA-LOMR for Reclamation District No. 2103
- ◆ Develop Cache Creek hydraulic model and perform flood control evaluations for City of Woodland
- ◆ Develop hydraulic model of the Yuba River and report for environmental impact assessment
- ◆ Perform evaluation of Sulphur Creek and Napa River flood control alternatives
- ◆ Develop flood depth and time-inundation analysis and mapping for levee breach scenarios in South Yuba County
- ◆ Develop two-dimensional model of Pajaro River floodplain and study in support of litigation and damage assessment from March 1995 flood
- ◆ Perform hydraulic analysis in support of litigation for January 1997 Levee break on Feather River
- ◆ Conduct hydraulic impact analyses for several wetland restoration projects in the Yolo Bypass
- ◆ Perform flood control evaluations for Lower Sacramento River Regional Project for SAFCA
- ◆ Review and refine Sacramento County Arcade Creek hydrologic model to support removal of floodplain stakeholders from FEMA 100-year floodplain

Water Supply Hydrology and Operations

- ◆ **Develop software for analysis of State Water Resources Control Board 30-day Storage Rule Application**
- ◆ **Develop real-time water data management system to facilitate data review and transfer and monitor water rights compliance for South Sutter Water District**
- ◆ **Serve as technical liaison and/or representative on water supply concerns and perform hydraulic and hydrologic analyses and review for Klamath Project Water Users**
- ◆ **Evaluate long-term water supply impacts for Klamath Project Water Bank**
- ◆ **Develop water supply operations model and conduct economic impact analysis of Upper Pit River system in support of water rights dispute and FERC project relicensing**
- ◆ **Analyze long-term Bear River hydrologic effects of irrigation canal expansion**
- ◆ **Perform long-term hydrologic analyses of potential reservoir sites for Upper San Joaquin Storage Investigation**
- ◆ **Develop CALSIM II model for Millerton Lake (Friant Dam) operation**
- ◆ **Develop CALSIM II model changes for revised Sacramento River basin hydrology**
- ◆ **Evaluate and assist in the development CALSIM II Daily Timestep Model for use in the In-Delta Storage modeling studies**
- ◆ **Participate in CALSIM II Benchmark Studies development**