Benjamin T. Tustison, P.E.

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EDUCATION

- University of Minnesota, Minneapolis, MN

  M.S. in Civil Engineering (Water Resources), 2001

- University of Minnesota, Minneapolis, MN

  B.S. 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

EXPERIENCE

2004 – Present Tustison Engineering, Minneapolis, MN
President

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 using HEC-1, HEC-2, HEC-FFA, HEC-RAS, HEC-UNET, and FLO-2D software 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.

1999 - 2001 St. Anthony Falls Laboratory, Minneapolis, MN
Research Assistant

Developed techniques and new paradigms for the evaluation and verification of quantitative precipitation forecasts (QPFs). Prepared and reviewed professional journal submissions. Presented research results at seminars and international conferences.

CONTINUING EDUCATION, SEMINARS, AND WORKSHOPS

- 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.

PUBLICATIONS, CONFERENCE PRESENTATIONS AND PROCEEDINGS

- 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).
- Thinking Outside the Box Culvert: Using Emerging Technology to Enhance Flood Protection, Minnesota Association of Flood Plain Managers 2004 Annual Conference, Rochester, MN, November 3-5, 2004.
- 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.
- Tustison, B., D. Harris, and E. Foufoula-Georgiou, 2003. Scale-recursive estimation for multi-sensor QPF verification: A preliminary assessment. *Journal of Geophysical Research*, 108(D8), 8,377-8,390.
- Forecast-Based Operation of the Yuba and Feather River System, 2002 California Weather Symposium, Rocklin, CA, June 21, 2002.
- Tustison, B., D. Harris and E. Foufoula-Georgiou, 2001. Scale issues in verification of precipitation forecasts. *Journal of Geophysical Research*, 106(D11), 11,775-11,784.
- Multiscale Techniques for Verification of Quantitative Precipitation Forecasts, M.S. Thesis, University of Minnesota, Minneapolis, June 2001.
- Multiscale Recursive, Estimation for the Verification of Quantitative Precipitation Forecasts, AGU Fall Meeting, San Francisco, CA, December 15-19, 2000 (B. Tustison, E. Foufoula-Georgiou, D. Harris).
- Multiscale Filtering for QPF Validation, USWRP Symposium, Boulder, CO, March 27-28, 2000 (E. Foufoula-Georgiou, B. Tustison, D. Harris, K. Droegemeier).
- Scale Issues in QPF Validation, AGU Fall Meeting, San Francisco, CA, December 11-15, 1999 (B. Tustison, D. Harris, E. Foufoula-Georgiou).

ACCOMPLISHMENTS

- Awarded University of Minnesota Presidential Scholarship (1994-96)
- Awarded University of Minnesota Department of Civil Engineering Longyear Scholarship (1997-98)

PROJECT EXPERIENCE

- Perform analysis and develop report for hydraulic design profile of Sacramento River near Natomas
- Oversee and perform technical studies and develop hydraulic impact report for Reclamation District No. 784 levee improvement measures to avoid being mapped into FEMA 100-Year floodplain

- Develop reservoir operations model, study, and report for Shasta Dam flood control operations as part of Shasta Dam Enlargement Feasibility Study
- Prepare San Joaquin River at Friant Dam flow-frequency study and report for submission to FEMA as part of LOMR package
- 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, flood control evaluation studies, and reports for Yuba-Feather Supplemental Flood Control Project
- Develop hydraulic model (HEC-RAS) of the Yuba River and report for environmental impact assessment
- Develop two-dimensional model (FLO-2D) of Pajaro River floodplain and study in support of litigation and damage assessment from March 1995 flood
- Perform hydraulic modeling (HEC-UNET) in support of litigation for January 1997 Levee break on Feather River
- Conduct hydraulic impact analysis (HEC-UNET) for wetland restoration in the Yolo Bypass
- Convert and calibrate Cache Creek hydraulic model (HEC-UNET / HEC-RAS) for performing flood control evaluations for City of Woodland
- Conduct hydraulic analyses within the Sacramento River Basin in support of SAFCA flood control projects
- Perform flood control evaluations on behalf of SAFCA for Lower Sacramento River Regional Project
- Review and refine Sacramento County Arcade Creek hydrologic model (HEC-1) to support removal of floodplain stakeholders from FEMA 100-year floodplain
- Review hydrology and reservoir operations for American River FEMA Study and Lower Feather River FEMA study
- Perform evaluation of Sulphur Creek and Napa River flood control alternatives (HEC-RAS)
- 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
- Develop tool for real-time tracking of water rights for South Sutter Water District
- 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
- Assist in review of existing and development of new methodology for State Water Resources Control Board water availability analysis in ungaged basins
- Assist in development of water supply model of San Joaquin River system for Friant Water Users / NRDC litigation

- Assist in CALSIM II model development for update of San Joaquin River system hydrology
- Assist in real-time hydrology monitoring for implementation of Vernalis Adaptive Management Plan