Last updated: May 27, 2026

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DOUGLAS B. BLATCHFORD, PE, PH, CFM

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EDUCATION

- Master of Geographic Information Systems
- Master of Science, Geoscience
- Bachelor of Science, Civil Engineering
- Bachelor of Science, Geology
- Certificate: Remote Sensing
- Certificate: Geospatial Intel

CREDENTIALS

PROFESSIONAL ENGINEER

- Arizona
- California
- Colorado
- Nevada
- New Mexico
- Texas
- Utah

CERTIFICATIONS

- Professional Hydrologist (PH)
- Environmental Manager (NV)(CEM)
- Floodplain Manager (CFM)
- FAA sUAS Pilot
- Competent Communicator

QUALIFICATIONS

- Dam Safety
- Design and Construction
- Energy
- Expert Witness
- Geographic Information Systems
- Groundwater
- Remote Sensing
- River Systems
- Surface Water

NATIONALITY

- USA

PROFILE

KEY EXPERIENCE

Over 45 years of experience in water resource engineering and management. Skilled in government and business, including, managing schedules, budgets, technical expertise, and project delivery. Adept at combining business-driven objectives with water resource technology, creating strategic and tactical direction. Extensive experience in Public Speaking.

- **Southwest Hydrology & Hydraulics, LLC (~7/06-present).** Expert witness work in Texas, California, Nevada, and Arizona strictly limited to flooding, floodplain management, drainage, hydrology, hydraulic structures, grading, erosion, permitting, and other water resource related subjects. USACE guidelines on the Truckee River in northern Nevada, including submittal to the Federal Emergency Management Agency (FEMA) for revision of flood maps along the Truckee. Hydrologic and hydraulic analysis in support of permitting land development in southern Nevada, Arizona.

- **Reclamation Hydrologic Engineer** (**~7/05 to ~8/18)** Updated the San Diego River System Groundwater Model for both Mission Valley and the Santee El Monte area. Recreated the subsurface of the San Diego River System through GIS methodologies beneath Qualcomm Stadium, tracking the fate of contaminants in the subsurface. Spearheaded a 12-mile reach of the Mojave River to perform a 2D surface flow model to simulate flow conveyance in the Mojave River north of Victorville California using latest version of HEC-RAS and Terrain Mapper. Technical support to Rio Grande Operations including *Texas v New Mexico and Colorado* in the Supreme Court, providing data management support to Reclamation's Albuquerque Area Office, the USGS New Mexico, Nevada, and California Water Science Centers. Spearheaded water re-use related research titled *Evaluation of approaches to determine mixing and assimilation of reuse effluent,* through a Science and Technology Grant, with research performed by UNLV. Spearheaded climate change research titled *Assessing recent declines in Upper Rio Grande River runoff efficiency from a paleoclimate perspective*, through a Science and Technology Grant with the University Corporation of Atmospheric Research. I also wrote SPCC Plans for Hoover, Parker, and Davis Dams.

  Created, spearheaded, and launched Reclamation's Lower Colorado Regional Modeling and Design Center through interoffice collaboration, offering surface water and groundwater modeling throughout the western USA. Senior Engineer for Dam Safety Office in Denver, Colorado, including Spring Creek Debris Dam in Northern California, and Starvation Reservoir Dam in northern Utah, Ririe Dam in Idaho, and Wasco Dam outside Portland. Ran HEC-RAS unsteady flow model of Drop 2 reservoir and All-American Canal.

Competed for and won Reclamation's key position of River Operations Manager on the Colorado River. Directed release patterns from Parker and Davis Dams, set Hoover Dam energy targets, chaired the Colorado River Management Work Group, managed water supply and deliveries on the Colorado River from Lake Powell to the International Border with Mexico, and monitored inflow forecasts for over 12% of the continental USA watershed. This involved monitoring changes in climate and weather patterns in the northern Pacific Ocean such as atmospheric rivers, El Nino/La Nina oscillations, drought, extreme weather invents, and other climate and weather-related phenomena. Interfaced and met with Colorado River stakeholders, including the Metropolitan Water District of Southern California (MWD), the Central Arizona Project (CAP), the Southern Nevada Water Authority (SNWA), Imperial Irrigation District (IID), and Western Area Power Administration (WAPA). Managed 17 employees and $4 million budget, including Blythe Hydrographic Office and Parker telecom office.

Education

- Master of Geographic Information Systems, the Pennsylvania State University (2011-2014).
    - Capstone developed a web-based tool for visualizing uncertain river forecasts for the Gila-Salt-Verde System, Arizona, using Google Fusion Tables
- Master of Science, Geoscience (1994-1999). University of Nevada, Las Vegas/DRI
    - MS Thesis: Hydrogeology of the Penoyer Valley Region, Central Nevada
- Bachelor of Science, Civil Engineering (1975-1980). University of California, Davis
- Bachelor of Science, Geology (1975-1980). University of California, Davis

Continuing Education

- University of California, Davis ext, partial completion of Site Assessment and Remediation Certificate
- University of California, Los Angeles ext, partial completion of Construction Management Certificate
- Other training: see comprehensive list of training located at *https://www.swh20.net/about*

CORE COMPETENCIES

Design and Construction

- Linear flood control facilities
- Detention basins
- Dams
- Weirs
- Canals
- Sanitary sewer systems
- Water distribution systems
- Water wells
- Foundation analysis and design
- Geology
- Geotechnical
- Public Works
- Land Development
- Project Management

Watershed Management

- Flood Insurance Studies
- Floodplain Determinations
- Letters of Map Revisions
- Hydrology Studies
- Hydrography
- Erosion Control
- Forecasting
- Operations
- Storm water permitting
- Point discharge permitting
- Transportation hydrology and bridge scour
- Watershed restoration

Modeling

- Visual MODFLOW
- Groundwater Vistas
- HEC-RAS
- HEC-Geo-RAS
- HEC-HMS
- HEC-GeoHMS
- MIKE 11
- MIKE 21
- RiverWare
- Flo-2D
- ArcGIS
- WSPG
- FloMaster
- Excel

Environmental

- Phase I Determinations
- Phase II Environmental Response
- Spill Prevention, Control, and Countermeasure Plans (SPCC)
- National Environmental Policy Act (NEPA)
- Fate of contaminants in the subsurface

Licenses

- Licensed Professional Engineer, Arizona, CE 29210 - exp 12/31/2027
- Licensed Professional Engineer, California, C40534 - exp 3/31/2027
- Licensed Professional Engineer, Colorado, PE.0050564 - exp 10/31/2027
- Licensed Professional Engineer, New Mexico, C15468 - exp 12/31/2026
- Licensed Professional Engineer, Nevada, CE 10783 -exp 12/31/ 2026
- Licensed Professional Engineer, Texas, 136846, exp 12/31/2026
- Licensed Professional Engineer, Utah, 9498342-2202 - exp 3/31/ 2027
- Licensed FAA Pilot small Unmanned Aerial Systems (sUAS) Certifications

- American Institute of Hydrology - Professional Hydrologist - PH-09-H-1915-AIH exp 12/31/2029
- Association of State Floodplain Managers - Certified Floodplain Manager - US-09-04239 exp 7-31-2027
- Certificate, Remote Sensing, Pennsylvania State University (2018)
- Certificate, Geospatial Intelligence, Pennsylvania State University (2018)

Memberships

- American Institute of Hydrology
- Association of State Floodplain Managers
- Colorado River Water Users Association
- Floodplain Management Association

Past Memberships

- American Public Works Association
- American Society of Civil Engineers
- American Water Resource Association
- Arizona Hydrologic Society
- Association of Engineering Geologists
- Association of State Dam Safety Officials
- National Groundwater Association
- Nevada Water Resources Association
- Society of American Military Engineers
- Toastmasters
- Western Coalition of Arid States

Publications

- Terrence J. Fulp, Nan M. Yoder, and Douglas Blatchford, The Colorado River, New Operational Guidelines for Lake Powell and Lake Mead, The Water Report, 2006.
- Hydrogeology of the Penoyer Valley Region, Central Nevada, UNLV, 1999
- Douglas Blatchford, Modeling the DROP 2 Reservoir using HEC-RAS, Abstracts, Floodplain Management Conference, 2009

Papers

- A 2-D Hydraulic Model Prototype of an Offset, Ephemeral Stream along the San Andreas Fault, San Luis Obispo County, California
- Parsing an XML file using Python: an Example using the National Digital Forecast Database
- Design of a Real Time Mobile GIS Device for Mapping Alluvial Fans
- A Comparison of Different Kriging Techniques using Nexrad MPE: the Virgin River Basin and southwestern Utah, USA
- Project Plan: City of Philadelphia Pole and Pole Attachment, GeoDatabase Design Project
- The Global Positioning System: Forecasting the next big shake in southern California
- GPS: Supporting the Visualization of Underground Utilities through Augmented Reality

Presentations

- Hydrology & Hydraulics of the Northern Las Vegas Wash (APWA, Mesquite, NV Spring 1999)
- Preliminary Assessment of the Importance of Mountain Block Faults to Groundwater Flow in the Carbonate Rock Aquifers of the Southern Great Basin (NGWA, Nashville, Oct 1999)
- Guidelines for Determining Flood Hazards on Alluvial Fans (FMA, Newport Beach, Sept 2003)
- Winnick Drain Revisited: Flamingo Wash at the Imperial Palace (APWA, Lake Tahoe, Nov 2003)
- Numerous other presentations on behalf of Reclamation related to Colorado River operations.

See comprehensive list of Publications, Papers, and Presentations located at: *https://dblatchford.wordpress.com/*