

## **Matt Bliss, P.E., M.S.**

*Water Resources Engineer, DiNatale Water Consultants*

### **Experience**

Water Resource Engineer,  
DiNatale Water Consultants, Inc.  
2013-present

Water Resources Engineer  
Hydros Consulting, Inc.  
2010-2013

Water Resources Analyst  
CDM, 2005 - 2010

Graduate Student Researcher  
University of Colorado  
2004-2005

### **Registrations**

Professional Engineer:  
Colorado, Wyoming, and Texas

### **Education**

M.S. Civil Engineering  
University of Colorado (Boulder)  
2005

B.S. Mathematics  
Colorado State University (Fort Collins)  
2000

### **Relevant Project Experience**

Mr. Bliss is an engineer and project manager with 10 years of professional experience in water resources planning and engineering, groundwater and surface water simulation and modeling, reservoir operations, water rights engineering analysis, and engineering information systems. He has particular expertise in the development and use of hydrologic and groundwater modeling along with decision support systems to address a wide range of water resource management problems.

Mr. Bliss has been involved in numerous projects that address water supply involving groundwater, surface water, and their interaction. His work has involved water supply planning, augmentation plans, water rights engineering analyses, groundwater modeling and analysis, basin-wide hydrologic modeling, storage and operational alternative development and testing, water allocation modeling, environmental flow modeling and evaluation, data collection and aquifer sustainability assessment, and individual well permit compliance modeling. Mr. Bliss has utilized several different modeling platforms including the State of Colorado's Decision Support System models StateMod and StateCU MODFLOW, MODSIM, RiverWare, IDS-AWAS, and self-developed Excel spreadsheet models and post-processing tools.

Mr. Bliss utilizes the experience he gained as a high school math teacher to engage and inform model users and stakeholders who have a wide range of technical expertise. He often employs interactive graphs and charts custom designed to convey the important meaning of the results most clearly to the intended audience.

**United Water and Sanitation District, Water Supply Planning, Modeling and Operations.** DiNatale Water Consultants is assisting the United Water and Sanitation District in planning and implementation of water supply projects to meet the needs of various Colorado water providers. Mr. Bliss is assisting the District specifically with modeling of the overall system, including groundwater modeling, surface water modeling, the interaction of groundwater and surface water, reservoir location and sizing and daily operations. Mr. Bliss also serves as the District's engineer in water rights cases and analyzes new water rights applications by others and provides engineering for the District's water rights claims. The water rights analysis often involves evaluation of stream depletions and accretions due to groundwater pumping and recharge activities.

**Water Rights Evaluation** – Evaluated proposed decrees and engineering for a variety of water rights cases in the South Platte River Basin. Mr. Bliss has served

as an expert engineer for the applicant and as an objector in several recent court cases and has provided engineering services as part of case settlement negotiations. Mr. Bliss has been qualified as an expert witness and testified on behalf of the East Cherry Creek Water and Sanitation District and the Arapahoe County Water and Wastewater Authority in support of their change of use of shares under the Farmers Independent Ditch in Case No. 12CW73. Mr. Bliss also performed groundwater modeling of the Beebe Draw aquifer as part of settlement negotiations between multiple groundwater users in the Beebe Draw. The modeling helped assess the impact of different recharge locations and pumping rates on each entities production wells and the overall water balance within the aquifer.

**South Platte Decision Support System (SPDSS)** – DiNatale Water is currently involved in developing a water allocation model using the State of Colorado’s model, StateMod, for the St. Vrain River basin in Colorado. In an earlier phase of the SPDSS, Mr. Bliss compiled, analyzed, reviewed, screened and mapped aquifer properties, aquifer configuration and aquifer water level data for the South Platte alluvial aquifer and Denver Basin bedrock aquifers resulting in the most comprehensive and accessible GIS data source for water resources professionals. Results of these analyses were used to develop inputs for the SPDSS regional alluvial groundwater MODFLOW model and are often used by water rights applicants in the South Platte Basin. Mr. Bliss co-authored several technical memoranda presenting data and methods.

**Upper Mountain Counties Aquifer Sustainability Assessment** – Mr. Bliss was the project manager for an aquifer assessment of a mountainous portion of Colorado covering four counties. The project resulted in a refined estimate of aquifer use, recharge and sustainability for use by county planners. Mr. Bliss developed GIS-based geodatabase to assess demands and recharge on throughout the study area.

**Rio Grande Reservoir Rehabilitation** – Mr. Bliss managed a large reservoir enlargement and rehabilitation feasibility study that included geotechnical recommendations, preliminary design of spillway and outlet works and storage allocation model. Mr. Bliss developed a dynamic costing model and storage allocation model for a diverse set of public and private entities potentially interested in purchasing storage. Project required quick learning of basin water rights, interstate compact requirements and operations.

**Rio Grande Basin Implementation Plan** – In conjunction with a wide array of local stakeholders, DiNatale Water developed the Rio Grande Basin Implementation Plan. Mr. Bliss focused on the portion of the plan related to groundwater use in the basin, including the efforts to-date by major water users in the Basin to offset stream depletions caused by pumping and work

towards aquifer sustainability. In addition, Mr. Bliss was involved in summarizing information on the Rio Grande Compact, the hydrology and geology of the Basin, and oversaw the development of the basin planning model that includes over 500 water rights, multiple reservoirs and the Rio Grande Compact.

**Yampa and White River Agricultural Needs Assessment** – Managed basin-wide water needs study refining agricultural shortages previously developed by the State of Colorado using the surface water model, StateMod. Performed much of the technical work as the lead modeler, and trained junior staff on the StateMod hydrologic model and data-centered process. Utilized innovative techniques to modify the state model inputs and configuration to address the water user concerns. Analyzed the potential effects of climate change on water availability, return flows and streamflows resulting in planning level alternatives to mitigate agricultural shortages.

**Gunnison River Environmental Flow Evaluation** – Reviewed State of Colorado surface water model (StateMod) on the Gunnison River for implementation options to simulate the Black Canyon of the Gunnison National Park reserved water right, the Endangered Species Act compliance with target flows at the Whitewater Gage. Project included review of model documentation, inputs, outputs and modification to StateMod for testing alternatives to simulate the environmental flows within the water rights framework of the model.

**Halligan-Seaman and NISP EIS** – Reviewed, updated and executed a complex basin-wide modeling process that involved designing and implementing an interface between six inter-related models using MODSIM and Excel-based platforms. Developed alternatives and associated modeling needs for the EIS alternatives evaluation. Models varied from basin-wide water allocation model to detailed municipal system operations model. Reviewed and modified EIS applicant's hydrology and water allocation models on behalf of the US Army Corps of Engineers resulting in technically defensible modeling process for use in three large water supply projects in northern Colorado. The Poudre River basin is one of the most heavily administered rivers in Colorado and modeling required rapid learning of the basin water rights, exchanges and understanding the impacts of increasing urbanization. Worked closely with participant modelers and decision makers; made presentations and recommendations that resulted in a more complete understanding of the hydrologic system and basin operations for use in the permitting process. Wrote several reports associated with the NEPA EIS documents.

**Town of Erie Non-potable Water Master Plan Update** – Mr. Bliss updated the Town of Erie, Colorado's non-potable water master plan to address significant changes in land use, annexations, development and potable and non-potable

water demands. The updated plan considered multiple pending developments within this rapidly growing town in the Denver metropolitan area. The updated plan builds on a previous plan, including updates to the list of water rights, terms of recent annexation agreements and data from actual non-potable water usage, to the extent available, and new mapping of projected non-potable demands and also includes a non-potable irrigation planting guide. The update calls for a combination of expansion and optimization of existing raw water sources and pipeline sizing, routing, and operational recommendations for the reclaimed wastewater system. The Town is currently constructing the system in order to deliver non-potable water throughout the Town for outdoor irrigation use, thereby maximizing its water resources, reducing potable water treatment capital and operations and maintenance expenditures, and promoting conservation.

**Oklahoma Water Resources Board, Artificial Aquifer Recharge.** Mr. Bliss was the project manager for a study to evaluate the potential for water supply augmentation through implementation of artificial aquifer recharge projects in Oklahoma. Site selection criteria based on physical location, local water supply and demand, geologic conditions, water quality and residence time were used to recommend the best locations for a demonstration project. Screening began with over 50 potential sites, screened through fatal flaw analyses to a secondary level of resulted in a detailed analysis three recommended sites for potential demonstration projects. The project required involvement and participation from multiple agencies and interested professionals, and was performed in cooperation with the Chickasaw Nation through the American Water Institute (AWI).