

## **Arista H. Shippy, E.I., M.S.**

*Water Resources Engineer, DiNatale Water Consultants*

### **Experience**

Water Resource Engineer,  
DiNatale Water Consultants, Inc.  
2011-present

Graduate Student Researcher,  
Bureau of Reclamation,  
2010-2011

### **Certifications**

Engineer Intern:  
Colorado

### **Education**

M.S. Civil Engineering  
University of Colorado  
2011

B.S. Environmental Science  
University of Oregon  
2006

### **Relevant Project Experience**

Mrs. Shippy has 9 years of experience in water resources engineering and project management. At DiNatale Water, Mrs. Shippy works on reservoir and water supply system operations, water rights engineering analysis, water resources planning and engineering, surface water modeling and project management.

Mrs. Shippy has utilized various modeling platforms including RiverWare, the State of Colorado's Decision Support System models StateMod and StateCU, IDS-AWAS, and advanced Excel spreadsheet models.

Mrs. Shippy received her Civil Engineering Master's degree through the Hydrology, Water Resources, and Environmental Fluid Mechanics program at the University of Colorado. Mrs. Shippy worked with the Bureau of Reclamation at the Center for Advanced Decision Support for Water and Environment Systems (CADSWES) and researched changing demands within the Colorado River Basin. She is the Treasurer for the Engineer's Without Borders Rocky Mountain Professional Chapter.

**East Cherry Creek Valley Water and Sanitation District Conjunctive Use Alluvial Aquifer Recharge and Recovery Program.** DiNatale Water Consultants is assisting the East Cherry Creek Water and Sanitation District in the south Metro Denver area to develop a permanent renewable water supply through the development and implementation of an innovative alluvial aquifer recharge and augmentation program. Mrs. Shippy is leading the water supply planning and operations modeling effort and helps to coordinate monthly accounting and current ditch, well, and reservoir operations along the South Platte and Cache la Poudre rivers. Mrs. Shippy has helped with the evaluation of water rights and potential infrastructure operations that will be needed at full buildout.

**United Water and Sanitation District, Water Supply, Water Quality, Infrastructure and Operations Planning.** 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. The District's goals are to facilitate the acquisition, diversion, storage, carriage delivery, treatment, transmission, distribution and provision of water to those who use the system. Mrs. Shippy has helped with the quantification of water rights owned by water providers within the United Water District. She is also assisting the District on water supply planning and operations and has helped with the development of modeling tools to analyze and optimize alternative project configurations. Mrs. Shippy develops and submits monthly accounting for reservoir operations and substitute water supply plans. She also assists with the coordination of current ditch, well, and reservoir operations along the South Platte and Cache la Poudre rivers.

**Water Rights Evaluations.** Mrs. Shippy evaluated water rights and water operations for developers and ranchers in the South Platte and White river basins. After investigating historical diversion records, irrigated acreage, and water resources, Mrs. Shippy performed historical consumptive use analysis for irrigated lands and recommended actions to ensure maximum legal use of water rights and plans of augmentation to ensure compliance with all decrees. Mrs. Shippy has served as an expert engineer as an objector in several recent court cases in the South Platte River Basin. She has been qualified as an expert witness and testified on behalf of the United Water and Sanitation District in objection to a conditional water right being sought by a sand and gravel company due to a lack of demonstrated need in Case No. 13CW3168.

**Rio Grande Basin Implementation Plan.** In May 2013, Governor Hickenlooper issued an Executive Order directing the Colorado Water Conservation Board (CWCB) to commence work on the Colorado Water Plan by utilizing the Interbasin Compact Committee (IBCC) and the Basin Roundtables (BRT). The CWCB provided financial support to each of the Basin Roundtables to develop its own Basin Implementation Plan (the Plan) through a bottom up approach. DiNatale Water Consultants served as the Basin Planning Team lead for the Rio Grande Basin Implementation Plan and worked with the Rio Grande Basin Round Table (RGBRT), Steering Committee, and Subcommittees to develop goals and measurable outcomes, and to identify needs, opportunities and constraints in the basin. The Rio Grande Basin Plan focuses on projects and methods recommended by the RGBRT to address the consumptive and non-consumptive needs. The Plan is intended to help the basin proactively meet water needs, through completion of currently planned projects, re-prioritized projects, and development of new projects, operational agreements, flow protections, or other methods as needed. The Basin Plan also utilizes existing information developed for the Rio Grande Decision Support System (RGDSS) Groundwater modeling, the ongoing Rio Grande Cooperative and Radar Projects and other information that is available and relevant to the process. Additionally, more detailed surface water and stream-flow modeling analyses was conducted that will build on these efforts. Mrs. Shippy worked closely with the Steering Committee and subcommittees to incorporate their goals and measurable outcomes into the Plan. Mrs. Shippy aided the Environmental and Recreation Subcommittee in their development of the Basin's water environmental and recreational needs evaluation. She did substantial research and drafted information for the Plan regarding constraints and opportunities within the Basin, including dust on snow, beetle kill, soil health, and alternative cropping. Mrs. Shippy also developed a project sheet to be used for all current and proposed projects and filled in data for many of the projects that are included in the Plan as well as summarized project information such as goals and basin needs met and total funding required on an annual basis for each project and for all projects combined.

**Rio Grande Cooperative Project.** The San Luis Valley Irrigation District (Irrigation District) and Colorado Parks and Wildlife (CPW), with the financial assistance of the Colorado Water Conservation Board (CWCB) is developing the Rio Grande Cooperative Project. The CWCB is providing grants and loans that will be used to fund the rehabilitation of Rio Grande and Beaver Park Reservoirs. DiNatale Water Consultants is serving as the project manager on the Rio Grande Cooperative Project, a collaborative effort between the Irrigation District and CPW to develop operational scenarios designed to optimize the operations of Rio Grande and Beaver Park Reservoirs to enhance yields for the Irrigation District, CPW and other water users and provide for environmental and recreational enhancements. Mrs. Shippy developed a water rights and operations model of the mainstem Rio Grande River in Colorado to analyze the impacts of alternative scenarios of coordinated operations for municipal and industrial uses, augmentation, environmental and recreation purposes, Rio Grande River Compact compliance, and overall river administration. The model includes augmentation

accounts in Rio Grande Reservoir for the San Luis Valley Water Conservation District, the Town of Monte Vista and Colorado Parks and Wildlife. Based on model results, optimal storage account volumes in Rio Grande Reservoir for CPW and other water users were determined and proposed operational scenarios will be developed to maximize the beneficial use of stakeholders' water rights and provide for multiple benefits.

**Farmers Reservoir Irrigation Company Alternative Agricultural Transfer Methods Project.** DiNatale Water Consultants is leading a team of consultants and Colorado State University researchers on the analysis of alternative transfer methods. The project includes interviews of agricultural and municipal and industrial users, water market experiments, analysis of the water court transfer challenges and development of an operations model to retime deliveries using alluvial recharge. Specifically, Mrs. Shippy analyzed survey results from municipal and industrial water providers and collaborated in writing and editing the final project report.

## **Professional Activities**

American Water Resources Association

Colorado Water Congress, State Affairs Committee, alternate

Engineers Without Borders, Rocky Mountain Professional Chapter, Treasurer