

# **Brian Macpherson, M.S., EIT**

*Water Resources Engineer, DiNatale Water Consultants*

## **Experience**

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

Graduate Student Researcher,  
University of Colorado,  
2012-2013

## **Certifications**

Engineer in Training

## **Education**

M.S. Civil Engineering  
University of Colorado  
2013

B.S. Environmental Engineering  
Cornell University  
2010

## **Current Activities**

Mr. Macpherson joined DiNatale Water Consultants in 2013. He has experience with RiverWare, StateMod, MODFLOW, ArcGIS, and has 3 years of experience in the environmental engineering industry. He will be working to support many projects including the Rio Grande Basin Implementation Plan and Northern Water Supply Project.

Mr. Macpherson received his BS degree in Environmental Engineering from Cornell University and his MS in Civil Engineering (Hydrology, Water Resources, and Environmental Fluid Mechanics) at the University of Colorado. He worked with Los Alamos National Laboratory to develop a standalone ice sheet model to assess the mechanical and thermodynamic impact of new meltwater inputs on the Greenland Ice Sheet. He also developed a new ice sheet thermodynamics module for the National Center for Atmospheric Research's Community Ice Sheet Model.

**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. Mr. Macpherson is assisting in the water supply planning and operations modeling effort. Mr. Macpherson also submits monthly accounting to the State Engineer's Office and coordinates ditch, well, and reservoir operations along the South Platte River.

**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. Mr. Macpherson is assisting the District on water supply planning and operations and has developed a RiverWare model to analyze and optimize alternative project configurations. This model will serve as an operations model as the project progresses. Mr. Macpherson also submits monthly accounting to the State Engineer's Office and coordinates ditch, well, and reservoir operations along the South Platte River.

**South Platte Decision Support System (SPDSS)** – Mr. Macpherson is assisting in the development of StateMOD Plan and Operational files of St. Vrain Creek as part of the SPDSS model. This includes analysis of changed water rights, operational policy, and historical conditions on St. Vrain Creek and its tributaries.

**Rio Grande Basin Implementation Plan.** DiNatale Water Consultants is coordinating the Rio Grande Basin Roundtable and authoring the Rio Grande Basin Water Plan as part of the Colorado Water Conservation Board's (CWCB's) State Water Plan. As part of the plan, Mr. Macpherson is assisting in the development of a RiverWare planning model of the Rio Grande and Conejos River systems in Colorado. This model will be used to assess the current state of operations in the Rio Grande basin, plan for changes in hydrology due to climate change, forest fire, beetle kill, and dust on snow, and evaluate potential projects that will maximize Colorado's use of flow under the Rio Grande Interstate Compact. The model simulates diversions under the prior appropriate system, decreed in-stream flow rights, reservoir storage and releases using rule-based logic, administrative conditions on the river, and consumption and return flows by agricultural users.

**Prosper Development.** Mr. Macpherson has assisted with the development of several feasibility-level studies and cost estimates of a raw and treated water system for the Prosper development. The project focused on a renewable South Platte River supply from various alluvial or surface water sources as well as water rights and augmentation strategies to ensure a firm supply. The study also looked at potential water quality issues and treatment processes associated with the supplies.