

## **WATER DEMAND AND SUPPLY IN FLORIDA: PAST, CURRENT, AND FUTURE TRENDS**

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Sea-level rise, population growth, and changing land-use patterns will place additional pressure on Florida's already constrained groundwater and surface water supplies in the coming decades. Significant investments in water supply and water demand management are needed to ensure sufficient water availability for human and natural systems. Section 403.928(1)(b) of the Florida Statutes requires estimating the expenditures needed to meet the future water demand and avoid the adverse effects of competition for water supplies. This study considers the 2020-2040 planning period and forecasts (1) future water demands and supplies; and (2) the total expenditures necessary to meet the future water demand. Panel data and regression analysis techniques are used to analyze data from the U.S. Geological Survey, Florida's Water Management Districts, and the Florida Department of Environmental Protection. We show that the total water use is projected to increase by 981 million gallons per day (+15%) by 2040, driven primarily by urbanization. Cumulative expenditures for the additional water supplies are estimated at \$852 million. However, the expenditures could be reduced to \$129 million when the water conservation potential is considered. This study highlights the need for developing effective funding strategies on local, regional, and state levels to finance additional water supply infrastructure. We also show that consistent water demand and supply data available on a regional level can enhance the forecast development across a full range of spatial and temporal scales.

**PRESENTER BIO:** Dr. Dat Tran is an environmental economist. Before joining the Florida Legislative Office of Economic and Demographic Research, he was a postdoctoral scholar at the School of Public Policy, University of California, Riverside. He has extensive experience with the economics of land use and water management.