

# Deer Point Reservoir Comprehensive Hydrologic Analysis

## Department of Planning and Zoning Bay County, Florida

### Services Rendered

- Hydrologic Model Development
- Water Quality Target Recommendations
- Watershed Development Standards Recommendations

### Project Summary

In support of the Bay County hydrologic study, ATM developed a set of computer models that were used as planning tools for the protection of Deer Point Reservoir, a significant public water supply in the Florida panhandle. Through the application of these computer models, ATM also provided a set of recommended water quality targets and recommended development standards for the Deer Point Reservoir watershed.

In order to comprehensively characterize the watershed, three separate modeling tools were applied to estimate groundwater contributions, surface watershed runoff and loadings, and reservoir water quality responses. The respective models utilized were the USGS PART algorithm, the Watershed Management Model (WMM), and the USACE BATHTUB model. Each model was applied in a steady state manner, simulating average annual conditions for the 10th percentile, average, and 90th percentile hydrologic years. The models were calibrated using flow and water quality observations collected at various watershed locations by the Northwest Florida Water Management District (NFWFMD).

Future land use scenarios for the watershed were also conducted to estimate the effects of projected short-term and long-term build-out developments.

Ultimately, the comprehensive planning tool was used to establish Deer Point Reservoir watershed development standards, which reflect allowable densities of anthropogenically-influenced land use categories and are specifically designed to ensure adherence to the water quality targets for the reservoir.

