

## **1.0 INTRODUCTION**

In support of the Georgia Comprehensive State-wide Water Management Plan (GA State Water Plan), the Surface Water Quality (or Assimilative Capacity) Resource Assessment was used to determine the capacity of Georgia's surface waters to absorb pollutants without unacceptable degradation of water quality. Assimilative Capacity is defined as the amount of contaminant load that can be discharged to a specific waterbody without exceeding water quality standards or criteria. In other words, the assimilative capacity is used to define the ability of a waterbody to naturally absorb and use a discharged substance without water quality becoming impaired or aquatic life being harmed. The assimilative capacity resource assessment included developing water quality models of selected streams, rivers, lakes and estuaries throughout the State of Georgia.

The current assimilative capacity results focus on dissolved oxygen, nutrients, specifically nitrogen and phosphorus, and chlorophyll-a. The water quality models were used to evaluate the impacts of current wastewater and industrial discharges and withdrawals, land use, and meteorological conditions on the waterbody. The water quality models that have been developed and used for the current assimilative capacity are presented in Figure 1-1. This includes stream, river, watershed, lake and estuary models.

This report presents the results from the various models developed for the Surface Water Quality Resource Assessment. Section 2 presents an overview of the models developed for the resource assessment. Section 3 and 4 present the detailed results of the dissolved oxygen and nutrient analysis, respectively. Appendix A presents a detailed description of the model methodology and modeling assumptions that were made. Appendix B and C present more results from the dissolved oxygen and nutrient analysis, respectively.

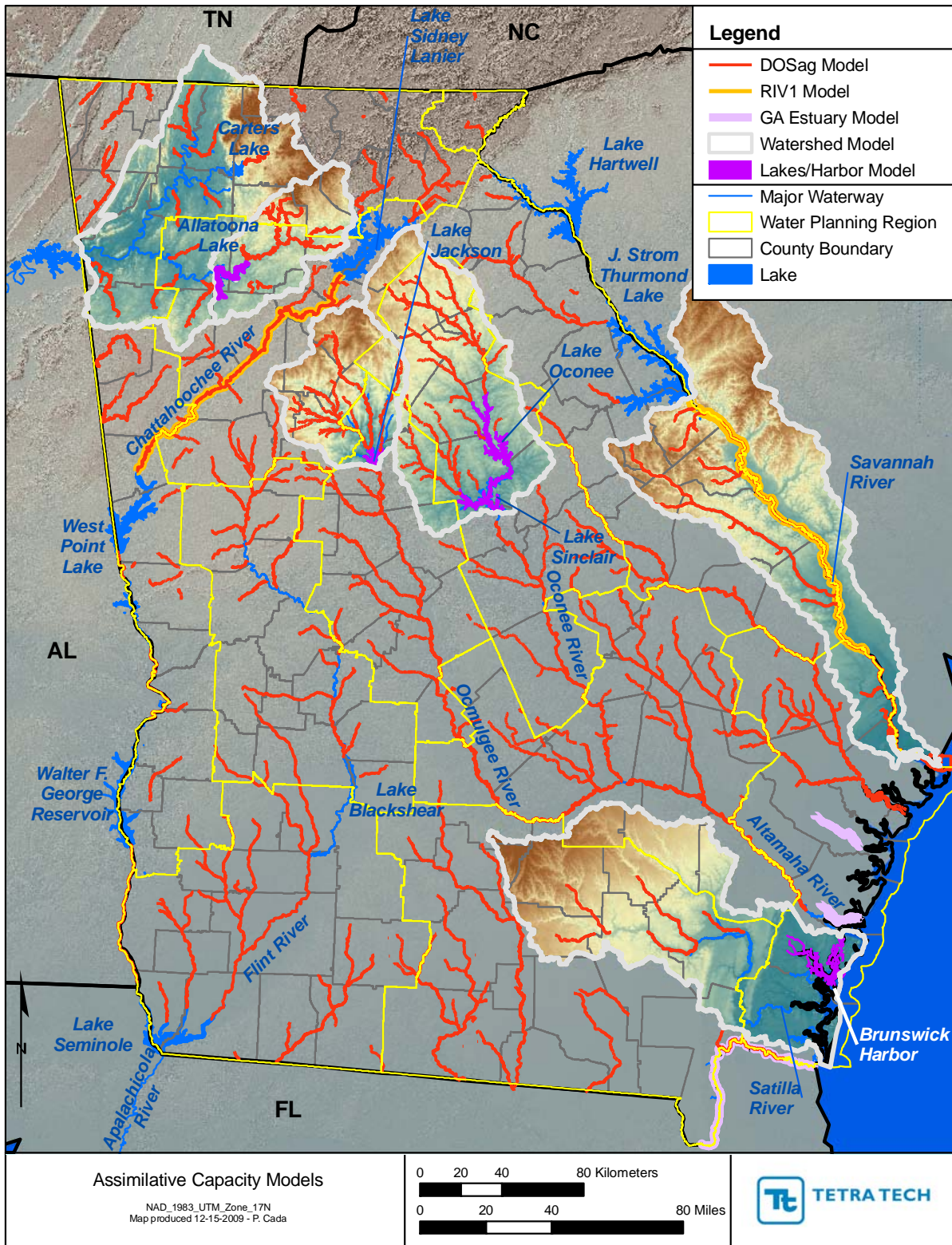


Figure 1-1 Available Assimilative Capacity Models