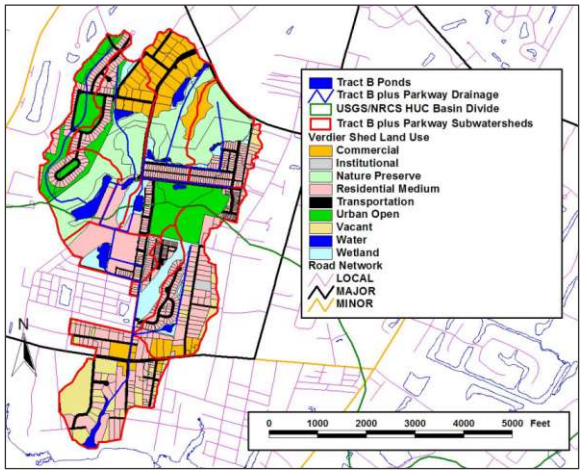
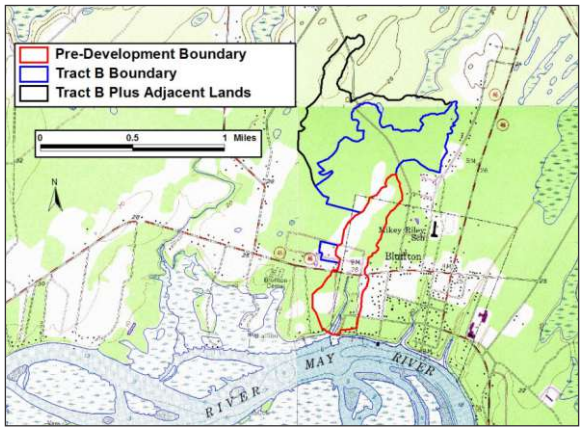
Verdier Cove Watershed Study

Town of Bluffton
Bluffton, South Carolina

Services Rendered

- Identified Watershed and Pollutant Loading Sources
- Developed a Hydrologic and Water Quality Computer Model
- Developed a Hydrologic Simulation Program - (FORTRAN (HSPF)
- Prepared a Regional Wetland Stormwater Storage and Best Management Practice (BMP) Treatment Plan





Project Summary

Subsequent to a 2008 hydrologic event that resulted in an observed tannin plume in Verdier Cove (a tributary to the May River near Bluffton, SC) the Town of Bluffton retained ATM to establish a method for estimating pollutant loads and the ramifications of increased development activities within the Verdier Cove watershed. The high tannin plume concentrations were suspected to be associated with runoff from the wetland areas within the watershed.

ATM identified the watershed and pollutant loading sources entering Verdier Cove as the result of impacts from developments within the watershed area. The model identified sources of pollutants, hydraulic flow patterns in the watershed, impacts from development in the watershed, and predictions of current and future pollutant loadings that could discharge into Verdier Cove.

ATM developed a hydrologic and water quality computer model simulation tool for the Verdier Cove watershed. ATM developed and applied a Hydrologic Simulation Program - FORTRAN (HSPF) model to simulate stormwater runoff and pollutant loadings from individual rainfall events in the Verdier Cove watershed of the May River basin. Using this model, simulations were performed for three different development scenarios: (1) pre-development conditions, (2) Bluffton Park Tract B development drainage, and (3) Tract B development including drainage from adjacent nature preserve lands. Simulation results were used to estimate development-related loading increases and to recommend specific stormwater BMPs as mitigation techniques.

ATM then prepared a regional wetland stormwater storage and BMP treatment plan in the B-11 tract of Bluffton Park, a large development in the Verdier Cove Watershed. Services included conducting surveys of the existing Tract B drainage network, developing an ICPR application of the Bluffton Park development and surrounding wetland areas, determining the hydraulic modifications required to mitigate stormwater runoff, and developing preliminary design considerations for the selected hydraulic modifications. Alternatives for restoring wetland hydroperiods and freshwater flow patterns to Verdier Cove/May River were developed including a proposed stormwater wetland/environmental park.

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