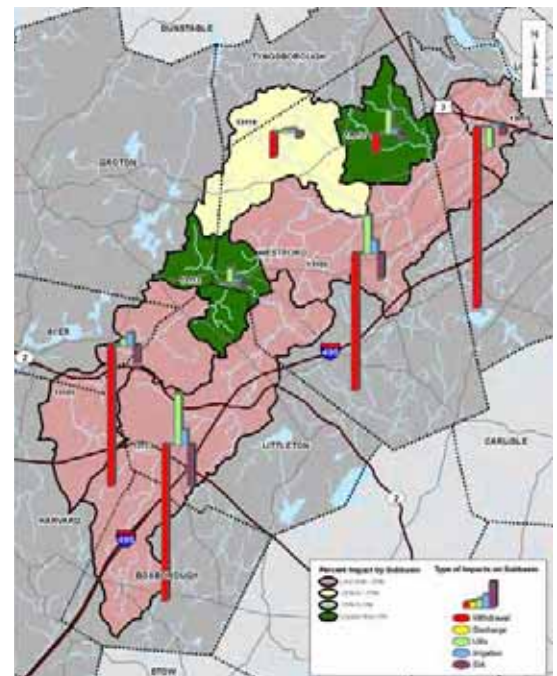
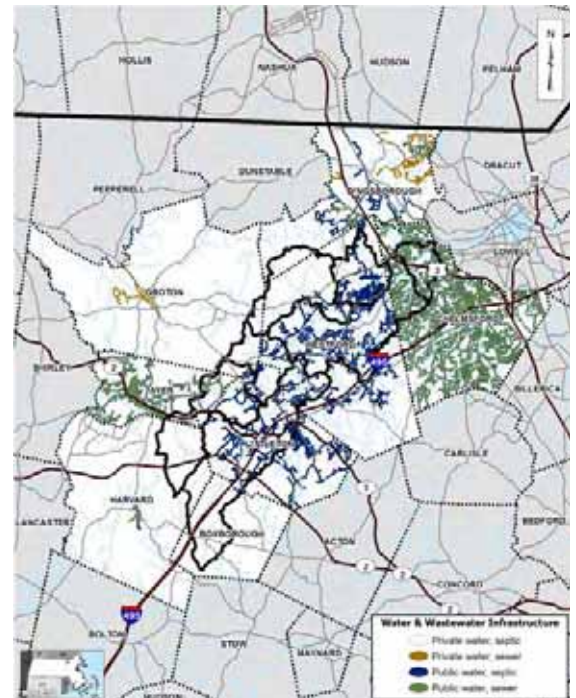


Massachusetts Executive Office of Environmental Affairs Massachusetts Statewide Water Budgets & Report Development Project State of Massachusetts

ESS Group, Inc. and the Charles River Watershed Association collaborated with federal, state, and town agencies in developing an automated tool to assess water budgets for all basins and communities in Massachusetts. The purpose of the project was to evaluate potential human impacts on stream flow. The water budget model accounted for regulated human-derived water inputs and outputs as well as irrigation losses and total recharge loss from impervious area. The budget analyzed the data at the sub-basin level (HUC-14) on a monthly basis. Results were calculated on a seasonal basis (Summer/Winter).

One of the primary goals of the project was to make the model flexible and easily customizable. As new data becomes available or changes are needed, the model needed to be able to adapt and change its own parameters. By utilizing VBA in the ArcGIS environment, the model was able to perform the sub-basin analysis, created maps showing impact, and summarized the results by table with only a click of a few buttons.

ESS developed generic report templates for the towns and watersheds of Massachusetts. After the analysis and water budgets model compiled its results, the automation process inserted the results into the report template based on the town or watershed. The final goal of the project was to be 350 town and 74 watershed customized reports.



Relevant GIS Services:

- Database Design
- Programming / Program Automation
- GIS Development & Analysis
- Hydrologic Analysis
- Report / Template Development