

WATERSHED ASSESSMENT AND PROTECTION PLAN GUIDANCE: Phase II Watershed Assessments



Georgia Department of Natural Resources
Environmental Protection Division
Watershed Protection Branch

The Watershed Assessment is primarily aimed at determining the current conditions of the watershed and addressing the direct and indirect effects of growth and development. EPD has to concur with the Watershed Assessment before the Watershed Protection Plan can be approved.

Any planned or ongoing environmental assessments should be noted. Coordination of all such efforts is strongly encouraged. For example, EPD or the local government(s) may be conducting assessments for the Safe Drinking Water Act Source Water Assessment Program (SWAP). In addition, local governments are required by the Georgia Planning Act of 1989 to prepare Comprehensive Plans and update them on a regular basis. These plans are submitted to the Georgia Department of Community Affairs and must address Environmental Planning Criteria requirements. The plans can provide valuable information on current and projected future conditions and activities in the watershed, and should be reviewed as part of the Watershed Assessment procedure.

I. Introduction

A. Explain why the Watershed Assessment is being done. Purpose and objectives include:

- i. Evaluate current water quality conditions in the service area and determine whether the waters meet their designated uses.
- ii. Determine the probable cause of any current impairment by identifying major point and non-point pollutant sources within the service area watershed.
- iii. Predict the effects future growth will have on current water quality conditions.
- iv. Support the development of watershed management strategies to restore and protect the health of the service area watershed and maintain the water quality standards for their designated uses.

II. Watershed Characterization

Some information can be obtained from the US EPA "Surf your Watershed" internet site (<http://www.epa.gov/surf>), which provides information on many water quality indices and links to numerous existing databases with useful information. In addition, information may be obtained from the Georgia Department of Community Affairs' internet site (<http://www.dca.state.ga.us>) under "planning & codes" and "Georgia Plan Builder."

A. Provide a narrative description of the watershed, including:

- i. Service area, current and proposed (10-25 years)
- ii. Land use, current and proposed (10-25 years)
- iii. Delineate watersheds to be assessed
- iv. Environmentally sensitive areas, including but not limited to wetlands, water supplies, groundwater recharge areas, endangered or protected species, and recreational assets such as lakes
- v. Water intakes, including their absence
- vi. 303(d) listed stream segments within the delineated watersheds, including their absence

B. Provide general information about the watershed, including:

- i. Climate
- ii. Ecoregion
- iii. Geology, including soils types
- iv. Topography
- v. Hydrology

- vi. Population densities, current and projected (10-25 years)
- C. Provide the following source identifications for the watershed, including their absence:
 - i. NPDES permitted discharges, including municipal and industrial wastewater facilities, private institutional developments (PIDs) (schools, hospitals, etc.), and areas/facilities covered by municipal (MS4 Stormwater Permits) and industrial stormwater permits. Note that a listing of Phase I & II stormwater permittees may be found at the EPD internet site (<http://www.dnr.state.ga.us/dnr/environ>) under "Technical Guidance," "Watershed Protection Branch," and "Stormwater."
 - ii. Landfills
 - iii. RCRA sites
 - iv. Hazardous waste sites and/or facilities
 - v. Waste treatment systems greater than 10,000 gallons per day which are under the control of the Department of Human Resources
 - vi. Land application systems (LAS)
 - vii. Stormwater management structures under political jurisdiction, such as detention or retention basins
 - viii. Areas covered by land disturbing permits. This includes NPDES Stormwater Construction Permits and Land Disturbing Activity permits. It is important to get the latest available information, because these areas are frequently changing, especially in areas where growth is expected.
 - ix. Areas served by septic tanks
 - x. Confined Animal Feeding Operations (CAFOs)
 - xi. Commercial forestry harvesting sites
 - xii. Other significant facilities that may impact water quality, including their absence

III. Water Quality Assessment

- A. Historical data search and analysis
 - i. Flow data
 - ii. Water quality data
 - iii. Biomonitoring and habitat data
 - iv. Discharge monitoring reports (DMRs) from permitted facilities
 - v. Storm Water Management Plans for MS4 permitted areas
 - vi. Rainfall data
 - vii. Estimated runoff coefficients (ratio of runoff to rainfall) for each land use
- B. Current data assessment, with reference to the Watershed Monitoring Plan where appropriate
 - i. Briefly describe the monitoring conducted to collect the current data
 - ii. Determine whether the water quality standards (biological and chemical) are being met during critical conditions
 - iii. Identify and evaluate the potential sources of any water quality violations
 - iv. Provide monitoring data in an electronic format, such as Excel.
- C. Assessment of 303(d) Listed Stream Segment(s)

For each listed segment provide the following information:

 - i. Provide the name, location, length, and water use classification of the listed segment, and the criterion violated. Information may be provided in table format.

- ii. Summarize the current Total Maximum Daily Load (TMDL), including listed parameter, water quality standard, TMDL, WLA, LA, and needed reduction, if available. Information may be provided in table format.
 - iii. Provide the current status and summarize the TMDL Implementation Plans, if available. Information may be provided in table format.
 - iv. Summarize available historical and current data for the listed segment
 - v. Conduct a visual survey of the listed segment watershed
 - vi. Assess all available data
 - vii. Evaluate each listed segment watershed to identify and rank potential pollutant sources and include the estimated extent of contribution. The estimated extent of contribution can be expressed as the area of the watershed affected, the stream miles affected, or the number of activities contributing to the problem. Information may be provided in table format.
- D. Future growth - What will the effects of growth (changing pervious areas and land use) have on the water quality? Provide a narrative description of how growth is expected to effect the following:
- i. Flow – include increased flows due to impervious surfaces, and the effects of water withdrawals and wastewater discharges
 - ii. Sediment
 - iii. Nutrients
 - iv. Fecal coliform
 - v. DO
 - vi. Temperature
- E. Water quality modeling (if deemed necessary)
- i. Describe the purpose of using modeling predictions (i.e., sediments, toxicity, DO, etc.)
 - ii. State the reasons for model selection
 - iii. Present the input data, model calibrations, and predictive model runs
 - iv. Provide interpretations of the model results for review.
 - v. A copy of the model, model inputs, and model outputs may be requested for review

IV. Maps

The following items should be shown on clear and legible maps. It is recommended that watershed information be compiled in a Geographic Information System (GIS) format.

- i. Service area (present and future)
- ii. Political boundary
- iii. Watershed boundary (HUC 12 level)
- iv. Streams and tributaries (at least RF3 level)
- v. Sampling sites (number and locations)
- vi. Location of the proposed discharges and other discharge points
- vii. Potential pollutant sources (i.e., landfills, RCRA sites, CSOs, surface mining sites, NOI sites, LASs, CAFOs and hazardous waste sites)
- viii. Environmentally sensitive areas (i.e., wetland, lakes, or water intakes)
- ix. 303(d) listed stream segments
- x. USGS gaging sites (if available)
- xi. Major road intersections
- xii. Topography
- xiii. Land uses (present and future)
- xiv. Storm water utility districts
- xv. Areas covered by NPDES storm water permits