

PREPARING THE WATER SUPPLY AND WATER CONSERVATION MANAGEMENT PLAN FOR METRO NORTH GEORGIA: PROCESS AND RESULTS

David M. Ashley, RLA

AUTHOR: David M. Ashley, RLA, Vice President, Jordan, Jones & Goulding, Inc. 6801 Governors Lake Parkway, Norcross, Georgia 30071
REFERENCE: *Proceedings of the 2005 Georgia Water Resources Conference*, held April 25-27 at the University of Georgia. Kathryn J. Hatcher, editor, Institute of Ecology, The University of Georgia Athens

Abstract. Population, water supply needs, and wastewater flows are expected to nearly double during the next 30 years in the 16 counties of Metropolitan North Georgia. The additional population will place increasing pressure on water managers to assure adequate quantity and quality of the water resources flowing into and from this 16-county region. With a backdrop of more than 4 years of serious drought, State and local water managers recognized the importance of developing plans to appropriately manage future needs and share water resources among the District governments. State legislation was passed in 2001 to establish the Metropolitan North Georgia Water Planning District (District), and work began to develop the first set of integrated water resource plans.

The condensed two-year planning effort produced a comprehensive assessment of the existing and projected status of the region's water resources. This process enabled the local governments to work together to determine how best to meet future needs and to produce the plans for sustainability of water resources in the region. The District adopted three distinct but linked long-term plans for water supply, wastewater, and watershed management in September, 2003.

KEY PLANNING ISSUES

There were numerous important, interrelated issues facing the District in developing the plans: This paper presents a summary of the issues addressed in preparing the Water Supply and Water Conservation Management Plan, including the planning process, highlights of the plans, and lessons learned about the integrated planning process.

Drought and limited natural supplies

The District relies primarily on surface water from rivers and storage reservoirs as its main source of water supply. In fact, surface water provides over 99 percent of the water supply in the District. The 16-county District lies in the upstream headwaters of five major river basins

and, as such, is comprised of relatively small streams and rivers. This fact of geography, coupled with the recent drought from 1998 through 2002, has brought additional attention to managing water resources both in the District and throughout the State.

Burgeoning growth and declining water quality

The Atlanta region is one of the fastest-growing areas in the United States, having added 1-million new residents during the last decade. Projections prepared as part of the District plans estimated that population within the 16-county District will increase from 4 million in 2000, to nearly 8 million by 2030. Recent studies by the Georgia Environmental Protection Division (EPD) have indicated that many District streams are impaired, and may be reaching their limit in accepting wastewater discharges.

Few options for providing additional water supplies and wastewater discharges

The geography and geology of the region limit water resources in the District. Because of the crystalline rock underlying the District, groundwater, while locally important, is not a significant potential source of regional water supply. Small headwater streams predominate in the area, providing limited flow for water supply and wastewater discharge assimilation. In addition, the District's enabling legislation prohibited the consideration of interbasin transfers from outside the District for meeting future needs.

Political setting: reluctance to engage in regional cooperation

The founders of the District set forth the goal of developing regional plans that maximized efficiency through multi-jurisdictional collaboration. However, many local governments from throughout the 16-county District were initially only comfortable with maintaining the status quo and were hesitant to cooperate with areas outside their individual jurisdictions. Moreover, many jurisdictions had not considered how independent

activities cumulatively affect the water resources that are shared throughout the District.

PLANNING PROCESS

An open, step-by-step decision process was used to develop the plans. Beginning with a very wide range of possible solutions, the process enabled the District and its consultant team to move into successively more detailed alternatives, and to complete the plans within the compressed schedule mandated by law.

Process overview

A cornerstone of the decision process was a series of facilitated meetings with the Technical Coordinating Committee (TCC) and six Basin Advisory Councils (BACs). Local County and city utility staff served on the TCC to provide expert information, guidance, and feedback. As mentioned earlier, there was an initial atmosphere of resistance to the newly-created District and a prevailing attitude of suspicion among TCC members and their elected officials. Typically, the larger utilities thought that their hard-fought permitted water allocations might be frozen or reduced because of growth in outlying areas in the District. Smaller utilities and local governments in the outlying, less developed areas of the District were concerned that all of the available water resources in the District might be allocated by the time their service areas grew to the point of maturity.

Each BAC was comprised of a cross-section of stakeholders that represented one of the 5 river basins, plus an additional BAC that was established for the upstream portion of the Chattahoochee Basin surrounding Lake Lanier, the largest water supply source in the District. This broad cross-section of stakeholders included not only water professionals, but also economic development and environmental/conservation interests.

The process of developing the plans included meetings with the TCC and the BACs on a monthly basis from April of 2002 until the draft plans were presented to the District board in May of 2003. Additional meetings were conducted during the review process until the adoption of the plans by the District Board in September of 2003. At both BAC and TCC meetings computerized groupware was used to record comments and respond to questions, stakeholders were able to anonymously deliver their input on the issues at hand and to see how their peers likewise responded. The software allowed real-time polling of pre-selected questions, enabling stakeholders to see the results immediately. At every meeting, stakeholders were also given the opportunity to input their comments on any issue, at any time during the session. From the initial brainstorming of solutions to the public comment period for the final plans, comments and suggestions were considered, discussed, and

incorporated. The results were the slow but steady building of confidence in the District staff and its consultant team, a key factor in obtaining District Board approval of the plans.

Water demand and wastewater flow projections

At the beginning of the planning studies it became apparent that the rapid growth experienced in the District in the 1990's would not be accurately reflected by the available population and water demand projections, which were based on the 1990 Census. The 2000 Census was just complete, but the results needed to prepare the population and employment projections (that would in turn be used for water demand projections and wastewater flow projections) would not be available in time to meet the legislatively mandated study schedule. The District asked Jordan, Jones & Goulding to prepare updated population and employment forecasts by adjusting the available data, and then develop water demand and wastewater flow projections through the year 2030 for the District.

The resulting projections produced mixed reactions from the TCC and BACs. Many local governments thought the projections were too low; others thought that the projections were unrealistically high. In the end, two sets of water demand and wastewater flow projections were developed, a moderate growth and a high growth scenario. The TCC felt very strongly that the high growth projections would require more conservative plans to be developed and therefore, the plans were developed to accommodate the high growth projections. High and low growth scenarios could then be accommodated.

While the TCC as a whole had little trouble committing to an overall growth scenario, there was a great deal of contention over their local projections. The District staff and its consultants met with many local utilities – sometimes several times - to discuss their individual projections and the methodologies used to develop them. This process continued over nearly the whole study, producing buy-in from most of the District utilities.

Water conservation

An issue strongly linked to water demand forecasting was the water conservation component of the plans. The consultant team included Maddaus Water Management, whose proprietary water demand and water conservation model (DSS Model) was used to develop water conservation targets for each of the 16 counties in the District. The model itself is data-intensive, and the amount and quality of water withdrawal and production data available from local utilities varied greatly. Difficulties in obtaining the data from some local governments slowed the study process and generally

made the planning effort more difficult. However, the detailed water production and conservation data that were used in the individual counties' models aided greatly in the ultimate defensibility of the water conservation targets.

The water conservation targets were developed in a stepwise fashion, with stakeholder input at numerous points. Initially, a list of 100 potential water conservation measures was developed. That list was culled to 25 for more detailed analysis, and then 10 measures were recommended for implementation. In general, TCC members were initially reluctant to embrace the recommended water conservation targets, believing them to be unattainable and potentially damaging to system revenues. Conversely, most of the environmental and conservation stakeholders thought the water conservation measures were much less than was attainable and should be much more aggressive. Use of the DSS model, and its basis in consumer experience from numerous other areas, brought some much-needed reason to the discussions. Overall, this was a highly educational process for the spectrum of stakeholders and allowed them to (sometimes reluctantly) approve the targets.

PROCESS RESULTS

The success of any plan is in its lasting acceptability, ultimately leading to its implementation. Despite many different agendas and concerns from a widely varying group of stakeholders, the District's plans proved to be reasonable and defensible. They were presented in draft to the District Board in May of 2003, and adopted in final form by a large majority of the Board membership in September of 2003.

As of this writing, both the Apalachicola-Chattahoochee-Flint and Alabama-Coosa-Tallapoosa draft interstate compacts, upon which the District Plans were based, have been allowed to expire without signature. Nevertheless, the decade-plus of study and scrutiny that went into developing the draft compacts provided a sound hydrologic basis for the District's plans. Whatever legal or political developments occur, the District Plans provide the region with path toward sustainable use and protection of the water resources in its 16-county area.

HIGHLIGHTS OF THE WATER SUPPLY AND WATER CONSERVATION MANAGEMENT PLAN

Water Supply demands will essentially equal available supplies in the District by the year 2030

Depending on the rate of growth and the amount of water conservation that occurs in the 16-county District, water supply sources will reach their limits at approximately the end of the planning period. Existing and currently planned sources will produce approximately 1200 MGD of water supply on an average annual basis. Few, if any, additional supplies are available to the District. All of this supply will be needed to support the nearly 8 million people expected to reside in the District by 2030.

Aggressive water conservation to reduce demands by 11 to 20 percent

Water conservation is not only essential to meeting projected District water needs; it is also a cost-effective way to extend the life of existing water sources. By the year 2030, the planned level of water conservation has the potential to reduce demands by approximately 136 MGD, or 11% beyond that required by existing legislation requiring low-flow plumbing fixtures. The total water conservation goal is nearly a 20% reduction in per capita water use from today's levels. This can be achieved through more efficient indoor and outdoor water use and reduction of water losses by utilities through system leakage.

Emphasis on returning wastewater to source waters for reuse

Management of water resources relies on the return of highly treated reclaimed water to the streams to support instream flows and water supply.

Utilities should plan for higher water supply costs

The costs for potable water supply will increase due to the need for higher levels of treatment, expanded water service areas within the District, higher levels of reliability and performance, replacement of older facilities with more technologically advanced plants, expanded water conservation programs, and increased public education efforts.

LITERATURE CITED

Metropolitan North Georgia Water Planning District Water Supply and Water Conservation Plan, Jordan, Jones & Goulding, 2003.