

Gwinnett's 2030 Water and Wastewater Master Plan

in a Nutshell



Plan Vision and Goals

For the first time, this Master Plan has been a joint effort between the Department of Planning and Development and the Department of Water Resources. This effort has resulted in a Master Plan that is fully aligned with the 2030 Unified Plan, creating a path for the future of water and wastewater infrastructure upgrades that is in unison with our current vision of growth, helping to keep Gwinnett County a preferred place to live, work, and play into the future.

In addition to building on the vision and goals outlined in the Unified Plan, this plan addresses new state and regional water policies, unresolved water rights disputes, and future system demands, identifying water and wastewater infrastructure that will need to be in place to support growth far past the 2030 planning period. The plan was carefully developed to incorporate the guiding principles and priorities set forth by The Master Plan Citizens Advisory Panel.

Water Supply Challenges

During the preparation of this Master Plan, a U.S. District Court judge erroneously ruled that Lake Lanier (Gwinnett's sole water source) was not authorized for water supply use. This ruling was later overturned by the U.S. 11th Circuit Court. The states of Alabama and Florida and the Southeastern Federal Power customers subsequently filed petitions for writs of certiorari to the United States Supreme Court. Each of those petitions was denied on June 25, 2012.

That same day, following a one-year analysis, the United States Army Corps of Engineers issued its legal opinion on their authority. They concluded that they have the legal authority to exercise their discretion to adjust operations to accommodate the full amount of water supply withdrawals and return flows that the State of Georgia requested in 2000, assuming those withdrawals and returns occur as projected.

The Corps is now preparing an updated Water Control Manual for its dams in the Apalachicola-Chattahoochee-Flint (ACF) Basin. The amount of supply that will be available in the future for Gwinnett and the contract terms will not be known until late 2013, when the Corps' update has been completed. Gwinnett County is engaged in this update through public participation channels.

Gwinnett County plans to continue withdrawing water from Lake Lanier and to maximize its return flows. In order to extend the life of the County's current water supply from Lake Lanier, thereby delaying the need for the full development of an additional water source, the County will continue implementing the legal strategy to secure a storage contract with full credit for return flows from the F. Wayne Hill Water Resources Center.

The County will, however, explore additional water supply alternatives outside of this Master Plan to help augment and diversify its water rights portfolio for the long-range future.

COMMUNITY PRIORITIES

The priorities that the Citizen Advisory Panel listed for the Water and Wastewater Master Plan are:

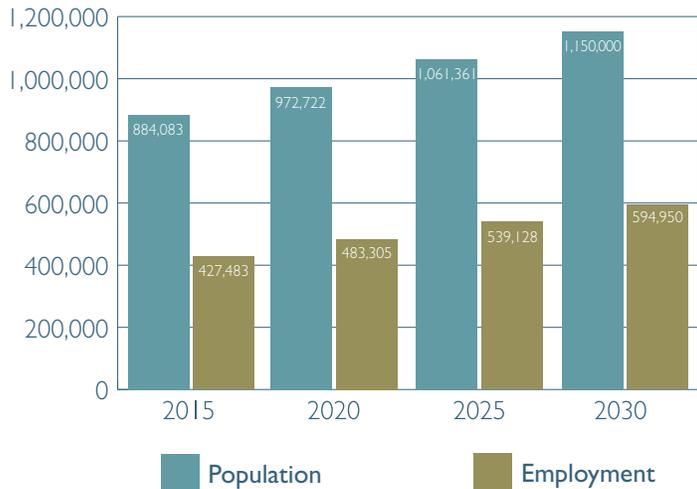
1. Protect public health, quality of life, and the environment and comply with existing regulations
2. Be regional leaders in good stewardship of water resources (*conservation, reuse, consumptive use, etc.*)
3. Plan for water and sewer capacity proactively to support economic development activities
4. Develop strong maintenance and rehabilitation programs to improve reliability and lower costs (including leak abatement)
5. Coordinate with stakeholders to support the County's objectives and the Unified Plan
6. Provide a high level of service at a responsible cost to customers (*with effective and efficient management*)
7. Employ responsible long-term planning and financing for major projects
8. Consider regional opportunities for leadership and coordination with the Metro Water District and the State



Trends and Forecasts

After more than 20 years of aggressive growth and expansion, Gwinnett County is experiencing a slower rate of growth and a shift in development priorities. During the previous period of rapid growth, the County worked feverishly to build the necessary infrastructure ahead of demand. When the pace of growth began to slow in 2007, the County began to adjust its plans and policies to adapt to the slower pace and a new set of challenges. The future water and wastewater needs (forecasts) formed the basis for this planning effort. The forecasts reflect the population and employment growth through the year 2030, according to the International Gateway growth scenario outlined in the Unified Plan.

Population and Employment Projections

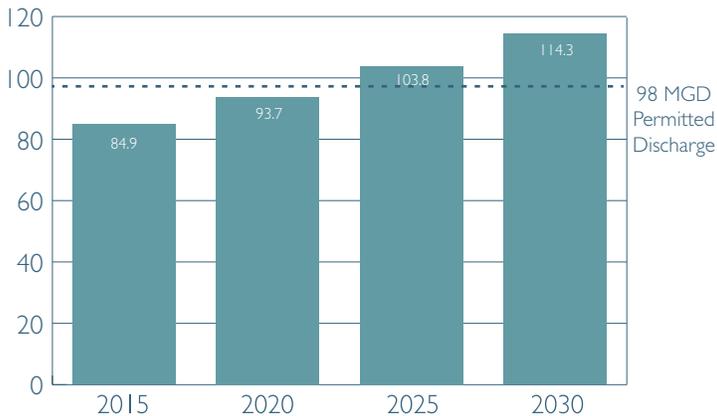


Water Demand and Wastewater Flow Forecasts



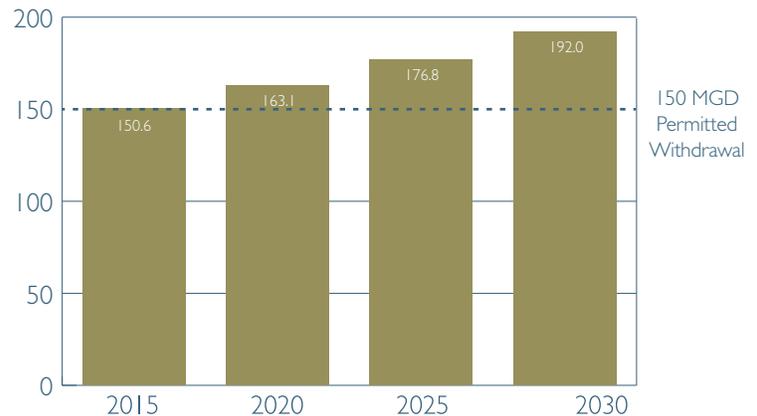
Wastewater Flow Forecasts vs. Permitted Discharge Quantity

maximum monthly flow, MGD



Water Withdrawals Needs vs. Permitted Water Withdrawal Capacity

monthly average, MGD



These forecasts consider:

- Beneficial reductions in water demands associated with the County's water conservation program
- Areas planned for higher density development in the future
- Areas that are intended for lower density developments that will primarily be served by septic systems versus centralized sewer
- Areas that are currently served by septic systems that will transition to centralized sewer as they redevelop
- Impact of non-revenue water on the demand for treated drinking water and the impact of infiltration into the collection system on the future wastewater flows

The forecasts were also developed on a smaller geographic scale in order to provide for detailed infrastructure planning.

Future Infrastructure

Existing infrastructure was assessed to determine its' ability to handle forecasted water and wastewater demands. Future regulations and aging infrastructure were also considered to help identify additional future financial investments. This assessment resulted in a series of recommended actions, most of which extend far into the future, many beyond the planning period of this plan. These are summarized as follows:

- **Raw Water Supply:** Additional permitted water withdrawal from Lake Lanier will be needed along with continued implementation of the adopted water conservation program. Beyond the 2030 timeframe, additional water supply sources, some of which were evaluated as part of this Master Plan will likely be needed. Given the time and expense associated with future water supply development, continued exploration of new sources is recommended (\$42M).
- **Water Treatment:** Additional water treatment at the Shoal Creek Filter Plant will be needed to meet future demands as well as to increase system reliability (\$56M).
- **Water Distribution:** Additional water transmission capacity will be needed to deliver water to meet increasing demands, primarily along the major transportation corridors proposed for higher density development. Aging infrastructure needs must continue to be addressed (\$280M).
- **Wastewater Collection:** Additional collection system capacity, mainly short reaches of collector sewers in areas planned for higher density development, will be needed. These projects also include future upgrades to pump stations to convey flows to the treatment facilities. Aging infrastructure needs must continue to be addressed (\$16M).
- **Wastewater Treatment:** Additional wastewater treatment capacity and permitted discharges will be needed, most likely at both the Crooked Creek Water Reclamation Facility and the F. Wayne Hill Water Resources Center. Expansions will consider rehabilitation needs, minimize interbasin transfers, and support the desire to return reclaimed water to Lake Lanier to support future withdrawals. Solids handling facility upgrades are needed at both the above facilities as well (\$600M).

Implementation

Given the uncertainty following the 2007 recession, it was recognized that projected 2030 demands may extend beyond the planning horizon used in the Unified Plan. Therefore, the recommendations in this Master Plan include a unique implementation methodology that will provide the needed flexibil-



F. Wayne Hill Water Resources Facility

ity for the design and construction of future infrastructure due to the potential variability in economic development trends.

The plan does not assign a schedule to the recommended projects and priorities, but instead identifies a process for timing future projects that considers actual system measurements and other influences (regulatory, development, financial) to determine the initiation point for each recommended project. The project timing will be adjusted in part based on the measured changes in demand, flow, and pressure in the water and wastewater systems. This approach is intended to work within the Department of Water Resources' existing capital improvement project planning framework and provide infrastructure "just in time" to meet future needs and keep Gwinnett a preferred place.

Additionally, the importance of continually monitoring pending legislation and regulations in all areas of responsibility cannot be overemphasized. Being aware of and anticipating new requirements will facilitate more efficient and effective planning of needed infrastructure.

Implementation of this Master Plan, while largely shouldered by the Department of Water Resources, is intended, similar to this planning process, to be a shared effort by both the Water Resources and Planning and Development departments. This communication and feedback loop will continually serve to improve future planning efforts.

Gwinnett's Planned Development Approach for the International Gateway Scenario of the 2030 Unified Plan

