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AN ANALYSIS OF WATER RELATED INFRASTRUCTURE SPENDING IN GEORGIA

Georgia's state and local water resources and infrastructure have been the subject of much discussion in the media as well as the subject of a recent federal court ruling. This brief examines the effects of past Georgia state and local government infrastructure investments and conservation policies on water quality and quantity and explores the necessary infrastructure investment to maintain future water quality and quantity. This is one of several briefs that explore Georgia's infrastructure needs and the likely cost of necessary investments in the infrastructure.

This brief provides comprehensive estimates for future water related infrastructure costs in Georgia, as well as an overview of the current state of water related infrastructure in the state. We rely primarily on existing sources, particular for the Atlanta metropolitan area. We use these data to show how the costs of water infrastructure will likely be distributed in the different counties in the Atlanta metropolitan area. We also use these data to estimate the cost of stormwater management for the Atlanta metropolitan area, which has not been done to date. In addition, this brief estimates costs for other urban counties throughout the state for water supply and wastewater infrastructure. Finally, we offer a total estimate for water related infrastructure for the state for the years 2010-2030. We offer no policy prescriptions for how to deal with the high cost of future water related infrastructure. However, we do comment on events that may have an impact on future costs and issues not fully addressed by current sources.

The state has taken two major steps to develop plans to manage the state's water resources. The Metropolitan North Georgia Water Planning District (Metro Water District) was created by the Georgia General Assembly in 2001 in an effort to plan effectively for the Metropolitan Atlanta area future water needs. We rely on reports by the Metro Water District. In 2008, Georgia passed the Statewide Water Management Plan, comprehensive water planning legislation for the rest of the state.

The Metro Water District concluded that the Atlanta region would need to significantly upgrade its water infrastructure to accommodate future growth and evolving environmental standards. To meet this challenge state and local governments will have to spend considerable funds as well as engage in effective regional planning. These costs are not evenly distributed throughout the region. The costs of total

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repairs and improvements to water supply and wastewater treatment infrastructure are likely to be higher for older urban areas such as Fulton and DeKalb counties and the three other core counties of Clayton Cobb, and Gwinnett, than the other counties in Metro Water District. However, the per capita costs are estimated to be higher for the exurban counties in the Metro Water District.

The Metro Water District completed its plan and created its cost estimates prior to the 2009 federal court decision in the Tri-State Water Rights Litigation. This ruling requires that Georgia, Florida, and Alabama negotiate and agree to a legal water allocation from Lake Lanier within three years. If no settlement or allocation decision is reached, the court will enforce the last legal allocation from 1975. This decision and the resulting new water allocation will likely cause the Metro Water District plans to be modified.

Governor Perdue created the Water Contingency Planning Task Force (Task Force) to analyze the potential water shortfall in Georgia in light of the Water Rights Litigation, and to develop a contingency plan. The Task Force made several recommendations. First, the Task Force recommended that increasing conservation should be a high-priority regardless of the outcome of the Lake Lanier reauthorization efforts. Second, even if the reports most stringent conservation measures were to be mandatorily implemented by 2012, the Metro Water District area would still face a significant water supply shortfall if the 2012 Water Rights Litigation ruling were to take effect. The Task Force found no acceptable water supply alternative to the authorization of Lake Lanier for water supply for the Metro Water District area prior to 2012. Third, the earliest that a potential alternative solution to using Lake Lanier for water supply would be viable is 2015, however this option is very expensive.

In 2008, Georgia passed comprehensive water planning legislation for the rest of the state. This legislation is similar to that which created the Metro Water District and requires similar plans to be developed by regions. As of now, there are no state estimates as to the cost of implementing future water system infrastructure improvements in the rest of the state. It is not feasible for us to estimate the cost of water supply and wastewater infrastructure required in the future for rural counties in Georgia. However, future expenses for the other urban counties in Georgia outside the Metropolitan Atlanta area are not likely to be trivial. Using similar methods as used by the Metro Water District, we estimate the cost for those urban counties not in the Metropolitan Atlanta area for the necessary improvements to water treatment as well as water supply facilities.

We also examine the impact of required improvements to stormwater infrastructure for state and local governments. The Environmental Protection Agency (EPA) has encouraged the statewide management of stormwater runoff and nonpoint source pollutants since the 1987 amendments to the Clean Water Act. Here again, Georgia state and local governments have been slow to adopt best practices.

Here is a summary of our cost estimates for both Metro Water District and the rest of urban Georgia. To make comparisons across districts and time easier, we present only figures for the period 2010-2030 in Table 1. It is our goal to present the magnitude of the estimated future infrastructure and operation and maintenance costs for water supply, wastewater treatment and stormwater infrastructure. Our estimates rely on our own assumptions and the estimates of others, thus they are subject to uncertainty. To try to capture some of that uncertainty, we take the estimated costs for the Metro Water District and give them a range of plus or minus 20 percent. Our other estimates of stormwater and the urban area outside of Atlanta already factor in a similar level of uncertainty. For the Metro Water District, the estimated cost for water supply and wastewater treatment infrastructure including operation and maintenance from 2010 to 2030 is $30.6 billion-$46.0 billion. Stormwater infrastructure costs and operation and maintenance are estimated to be $3.2 billion- $5.5 billion from 2010-2030. Thus, total cost of water related infrastructure and operation and maintenance is $33.8 billion-$51.5 billion for the Metro Water District.

These are very large numbers. To put some perspective on the magnitudes, it may be helpful to compare them to the projected cost of the Task Force's recommendation for the 2015 contingency plan. The Task Force recommended a potable reuse water option which would require the pumping of water from some point downstream from Atlanta back to Lake Lanier. Due to the extremely high costs of this project, the Task Force only recommends it out of necessity. The cost of completing such a project by 2015 was estimated to be $3 billion, if Georgia would start the project in 2011, it would cost roughly $750 million per year.

However, the annual cost of the Task Force's last resort project is less than half the annual cost of the estimated needed improvements to the Metro Water District water related infrastructure including operations and maintenance. The estimated annual cost to the Metro Water district for necessary water related infrastructure is $1.7 billion to $2.6 billion. (That is the total estimated costs $33.8 billion and $51.5 billion divided

TABLE 1. SUMMARY FOR 2010-2030

The Metro Water District	Low Cost Estimate*	High Cost Estimate*
Wastewater and Water Supply Capital Spending, Operation and Maintenance	$30.6	$46.0
Storm Water Capital Spending and Operation and Maintenance	$3.2	$5.5
Total Metro Water District	$33.8	$51.5
Urban Georgia outside the Metro Water District	$10.2	$14.8
Total State Water Infrastructure Spending: Capital, Operation and Maintenance	$44.0	$65.8

* in billions of 2008 dollars.
Source: Metropolitan North Georgia Water District (2003b,c), Metropolitan North Georgia Water District (2008c) and author's calculations

by 20 years.) For the urban areas in Georgia outside the Metro Water District, our estimates for water supply and wastewater treatment infrastructure and operation and maintenance are $10.2 billion to $14.8 billion, for the period 2010 to 2030.

By our estimates as well as those of the Metro Water District, the state of Georgia will incur $44.0 billion-$65.8 billion in water related infrastructure costs from 2010-2030. This is $2.2 billion-$3.3 billion annually for the next 20 years. These costs are likely to be borne primarily by local governments and water authorities and will vary in different parts of the state. Some local governments and water authorities will be able to use traditional bond financing to raise money for this necessary infrastructure. Others will have to look to Georgia Environmental Facility Authority and perhaps nontraditional infrastructure financing.

The largest share of the water related infrastructure spending in Georgia will be done in the Metro Water District. Given the In re Tri-State Water Rights Litigation decision and ongoing negotiations with Alabama and Florida, the allotment of water the Metro Water District can expect from Lake Lanier is uncertain. However, given the Task Force's recommendation that additional conservation measures be pursued regardless of the allotment, as well as Georgia's weakened bargaining position, it would seem that conservation will play a larger role in future Metro Water District plans.

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