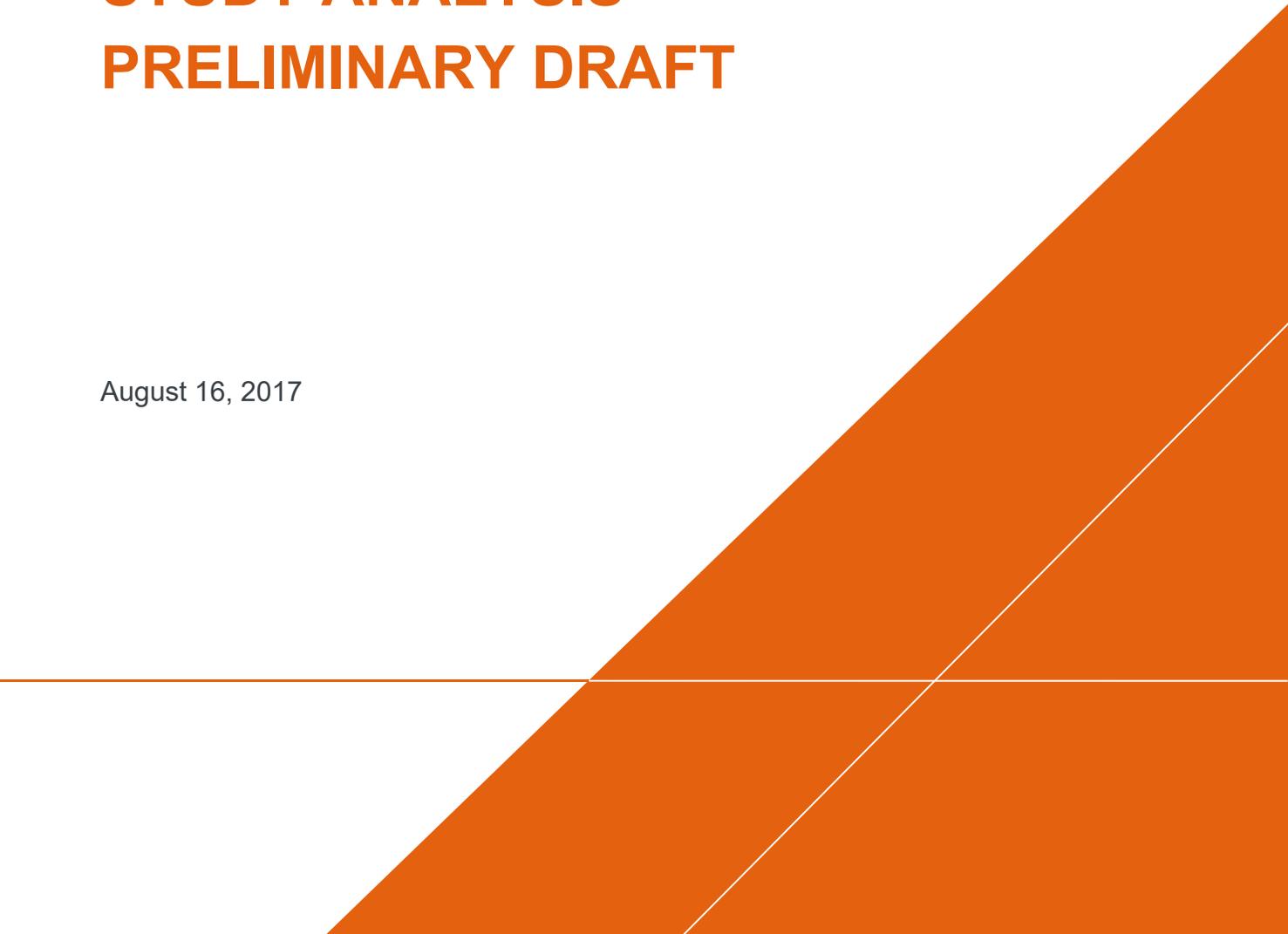


Inman-Campobello Water District, South Carolina,  
Broad River Water Authority, and  
Polk County, North Carolina

# **WATER SYSTEM REGIONALIZATION STUDY ANALYSIS PRELIMINARY DRAFT**

August 16, 2017



**WATER SYSTEM  
REGIONALIZATION  
STUDY ANALYSIS  
PRELIMINARY DRAFT**

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04613056.0005

Date:

August 16, 2017

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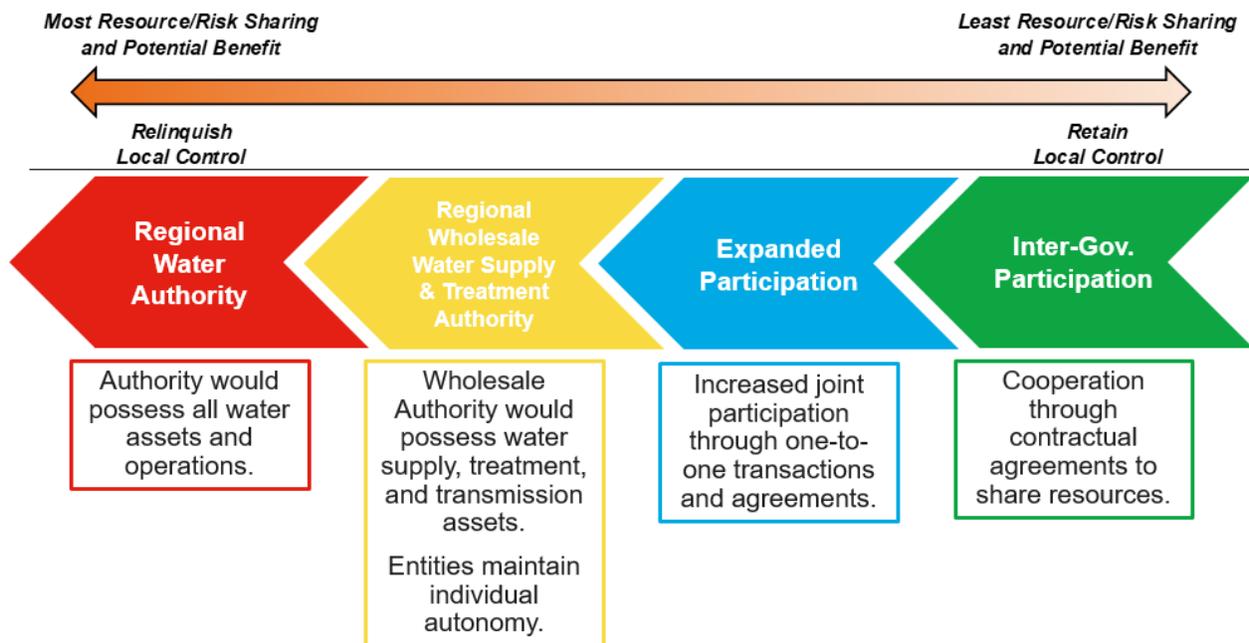
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# 1 INTRODUCTION

Arcadis U.S. Inc. (Arcadis) is pleased to present this report summarizing our Water System Regionalization Study Analysis (Analysis) for Inman-Campobello Water District (ICWD), South Carolina; and Broad River Water Authority (BRWA), and Polk County, North Carolina (Polk County or PCNC). The purpose of this Analysis is to provide the entities with potential frameworks for regionalization, as well as evaluations of the financial feasibility of the regionalization options.

The figure below presents a spectrum of operating frameworks being considered as part of this study, with input from staff and entity Board members and Commissioners. The frameworks range from Inter-Governmental Participation, which is the current operating framework of the entities, to a Full Regional Water Authority. As a result of the workshop, it was determined that an additional evaluation of the Regional Water Authority and Regional Wholesale Water Supply & Treatment Authority were of interest.



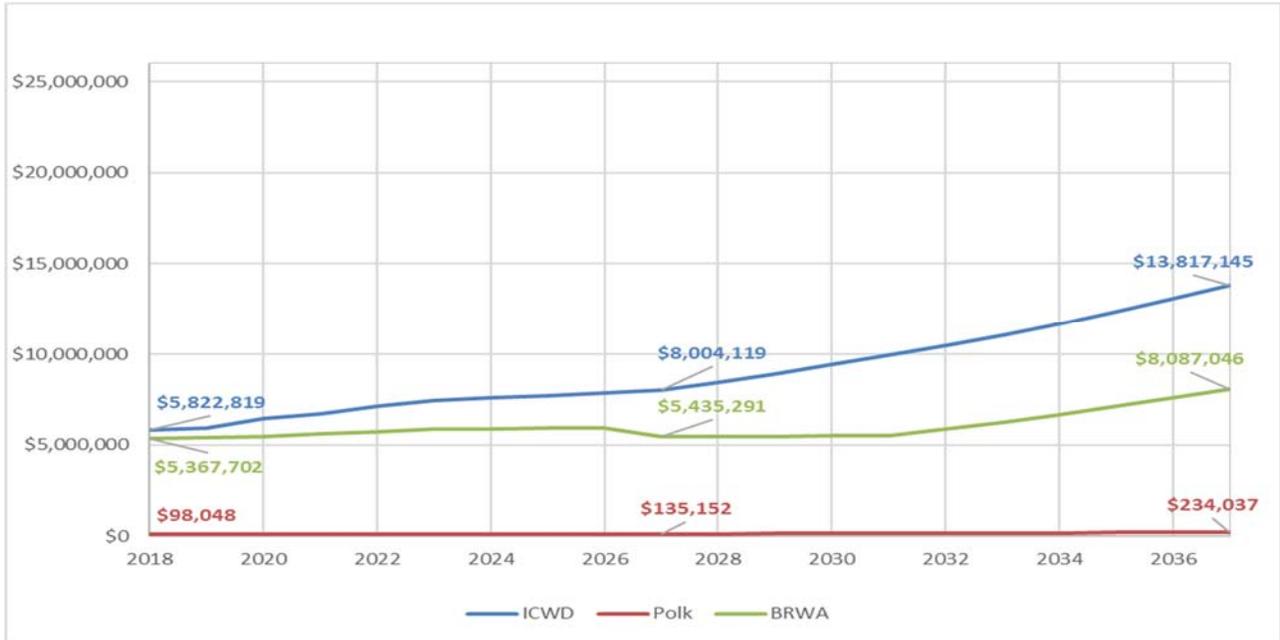
## 2 BASELINE ANALYSIS

The completed analysis focuses on each framework's forecasted revenue requirements; the total amount of revenue needed to properly operate the system. To provide a basis for comparison, a Baseline scenario was developed first. The Baseline scenario represents the current operating framework of the entities. The analysis associated with the Baseline scenario considers the entities continuing to operate within the existing framework; "as is". Significant assumptions used in this evaluation include the following:

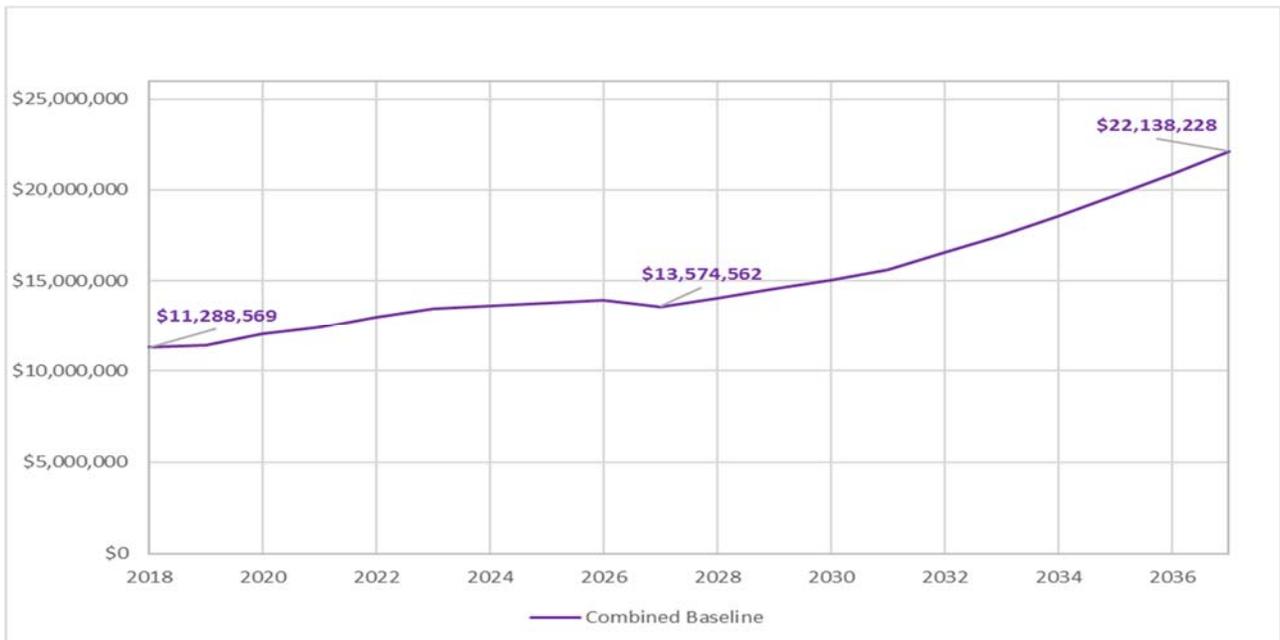
- Entitles continue operating "as is"
- Consider individual system forecasts:
  - Operating Expenses
  - Capital Needs
  - Planned Revenue (rate) increases
- New Debt Terms (5.5% for 20 years)
  - Debt Service Coverage of 1.50X is assumed for each entity
- BRWA wholesale water rate escalated at 3.0% annually (beyond contract rates)
- Lake Adger raw water value and maintenance costs (\$8,030,000 per Hartman Consulting valuation report with an additional \$3,500,000 for a raw water interconnect)
- Annual capital spending following provided CIP plans:
  - ICWD - \$150,000
  - BRWA - \$1,200,000
  - Assumed 4.0% annual escalation of CIP
- 20-year forecast period (consistent with debt terms)
- Growth Assumptions:
  - ICWD and Polk – 2.0% annually
  - BRWA – no growth (growth and declining usage offset)

The figures below present the individual and consolidated forecasts of revenue requirements for each of the entities; the Baseline analysis.

**Fig 1: Individual System Revenue Requirements (Baseline for Comparison)**



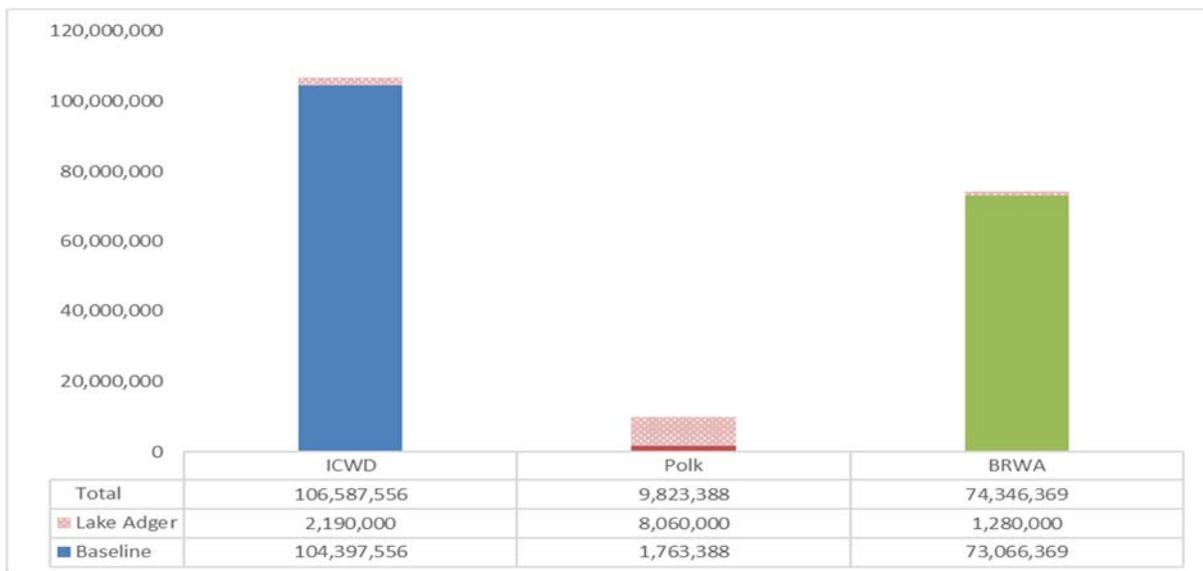
**Fig 2: Combined System Revenue Requirements (Baseline for Comparison)**



In order provide a basis for comparison, the forecasted Baseline revenue requirements are consolidated using a present value analysis; the present value of future revenue requirements. Present value analysis provides a basis of comparison, representing future requirements in current dollars summarized into a single comparable value. However, the Baseline revenue requirements do not include costs associated with Lake Adger. The value of raw water and needed reservoir improvements are an important consideration of this study. Therefore, including these costs in regional options, but not representing the costs in the Baseline, would not be a comparable analysis.

To capture the cost associated with Lake Adger raw water supply, a significant variable in the Regional and Wholesale Authority analyses, these costs are included within the Baseline present values. Costs associated with “interconnecting” Lake Adger water supply to BRWA are allocated to each entity in recognition that this project and associated cost would be borne by all. Costs associated with raw water value and needed Lake Adger improvements are assigned to PCNC within the Baseline analysis, since these costs are a liability of PCNC. The present value of the revenue requirements for each entity is summarized below.

**Fig 3: Present Value of Baseline Revenue Requirements**



### 3 REGIONAL AUTHORITY ANALYSIS

Developing a Regional Water Authority is one of the frameworks evaluated as part of this study. Within the spectrum of operating frameworks, the Regional Water Authority has the greatest potential for overall cost savings through economies of scale. Within this framework, the Regional Water Authority would essentially absorb the ICWD, BRWA and PCNC water systems. Significant assumptions used in this evaluation include the following:

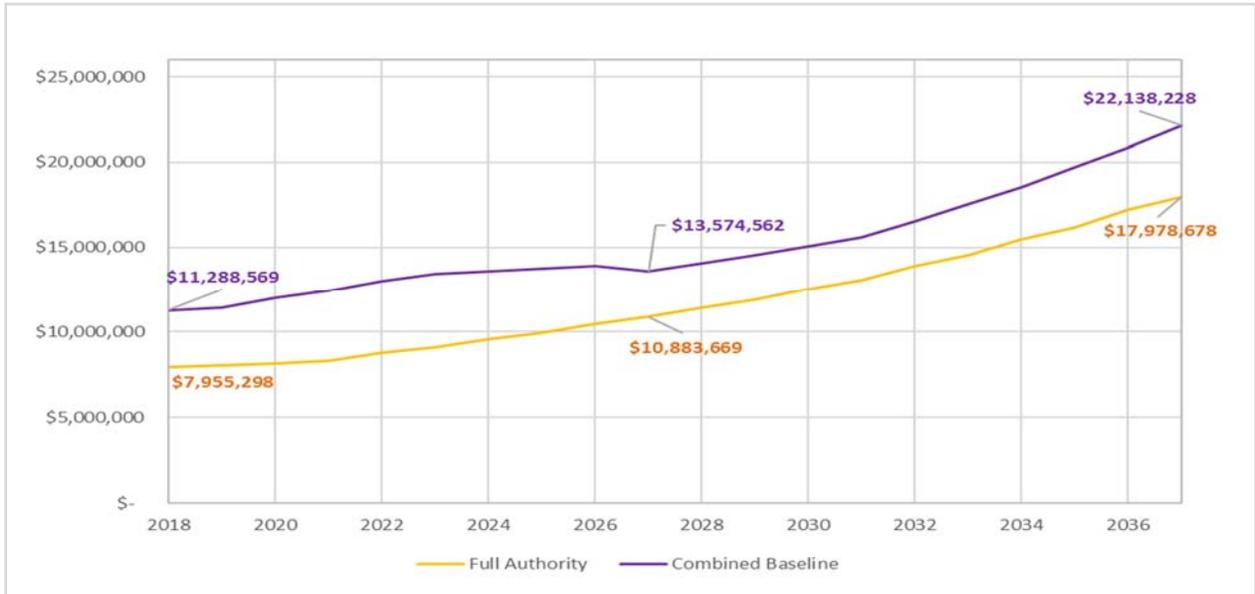
- Each entity’s system operating expenses are “transferred” to the Regional Authority
  - Operating expenses are adjusted to 75% in recognition of “economies of scale”
  - Existing system water sales and purchases between ICWD and BRWA are excluded
- Each entity’s Capital Programs are absorbed by the Regional Authority
- Other Capital Needs associated with Lake Adger raw water supply include:

Lake Adger Water Supply (From Hartman Consulting Report):	
Lk Adger Water Supply Value	\$5,150,000
Dam Safety	\$1,140,000
Spillway Restoration	\$180,000
Dredging & Environment	\$1,560,000
BRWA RW Interconnect	\$3,500,000
<b>Total</b>	<b>\$11,530,000</b>

- The Regional Authority would consolidate existing debt of the entities
- New Debt Terms; 4.0% for 20 years
- 1.33% annual growth rate
- 1.20X debt coverage ratio requirement

The forecasted Regional Authority revenue requirements, incorporating the assumptions above, and the consolidated Baseline revenue requirements are presented in the figure below. As can be seen, forecasted Regional revenue requirements are less than the consolidated Baseline total, indicating a savings resulting from the Regional Authority.

**Fig 4: Regional Authority - Revenue Requirements Compared to Baseline**

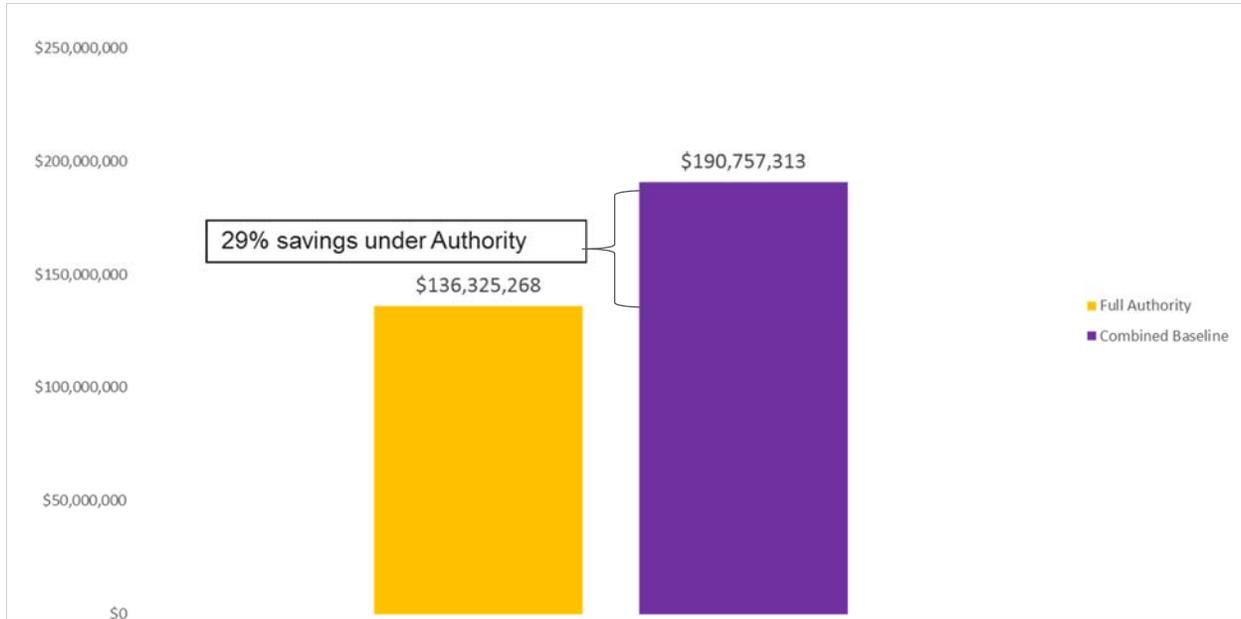


The forecasted Regional Authority savings results from several factors. First, while it is assumed the Regional Authority would assume the capital needs of each of the entities, there is duplication in the capital programs. BRWA is planning to invest in the expansion of their water treatment plant (WTP) to continue serving the needs of the regional entities. ICWD is also planning to develop their own WTP to, at least, maintain the site permit should they require a future water supply. While these investments are warranted in the Baseline framework, this duplication of investment is eliminated in the Regional Wholesale alternative, which assumes the BRWA WTP would be expanded and there would not be a need for the ICWD facility.

Second, a Regional Authority will achieve greater economies of scale that will result in stronger purchasing power. To represent greater purchasing power, several assumptions are incorporated into the analysis that result in overall savings. These assumptions include 1) lower borrowing costs, 2) lower required debt service coverage (rating agencies view larger entities as more stable), and 3) lower annual operating & maintenance costs. These considerations and assumptions are the drivers for the Regional Authority savings.

To determine the magnitude of this savings, the figure below reflects the present value of revenue requirements for the Regional Authority and Baseline analysis. The results indicate an overall 29% savings over the 20-year forecast period.

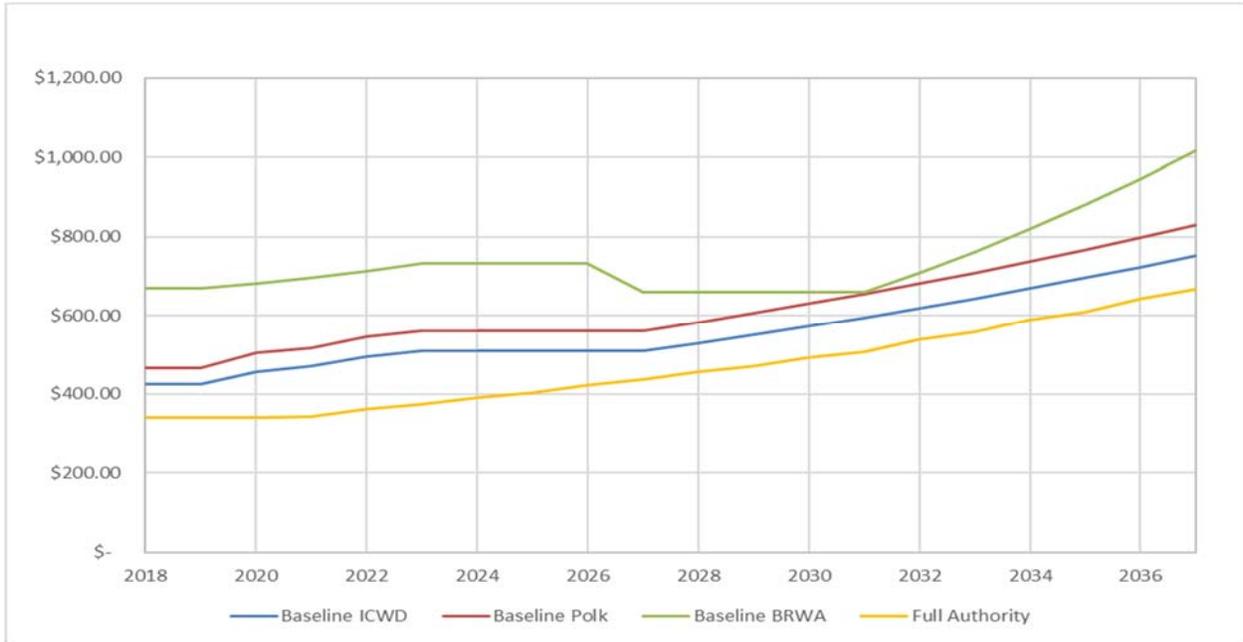
**Fig 5: Present Value of Revenue Requirements**



While the Regional Authority scenario results in the greatest forecasted savings, there may be additional legal requirements associated with establishing a Regional Authority. The formation of a “traditional” public entity would incorporate added challenges as the entities are located in different states. Legal authorization for a Regional Authority would need to consider the requirements for both North and South Carolina. Other legal frameworks to establish a Regional Authority could consist of an incorporated non-for-profit entity (example: Louisville Water), a holding company with North and South Carolina subsidiaries (example: Duke Energy structure), or a public charitable trust (example: Citizens Energy). The evaluation and establishment of these options would require additional legal review.

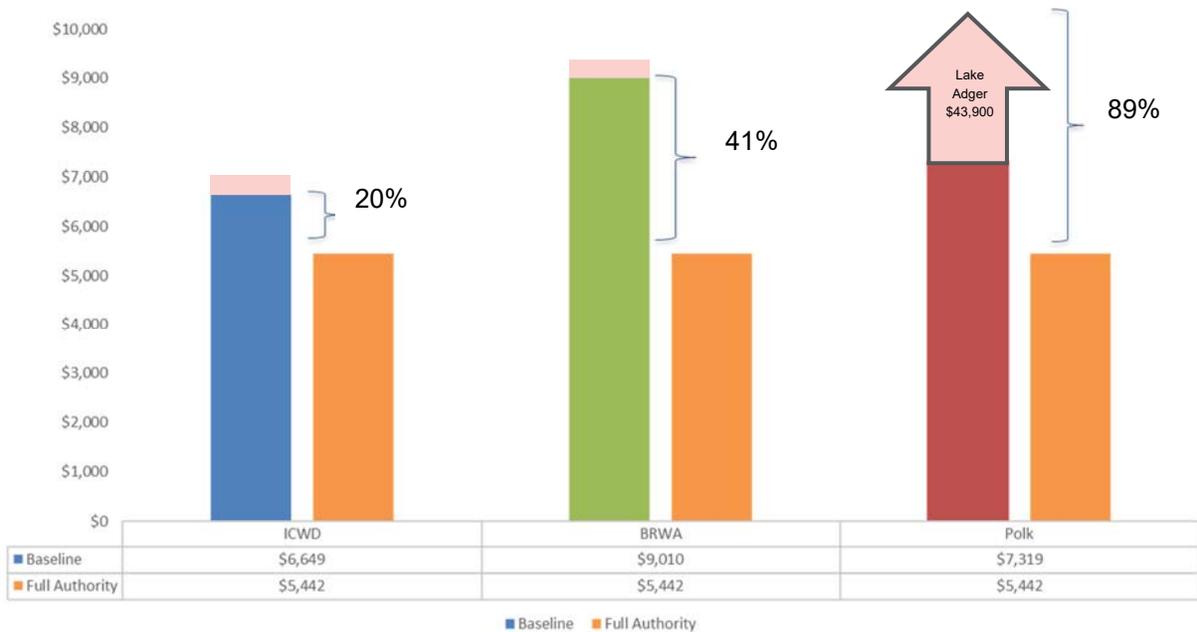
To provide a comparison of the Regional Authority to each entity, revenue requirements are presented on a cost per customer basis for each entity (Baseline) and for the Regional Authority. One of the challenges with the Regional Authority analysis is that the entities, and their associated forecasted revenue requirements, are consolidated, instead of analyzed on an individual basis as they are for the Baseline analysis. As such, comparing forecasted revenue requirements is limited to comparison with the consolidated Baseline. Therefore, in order to provide a basis for comparison for each entity, the analysis includes forecasted costs on a per customer basis. For the Regional Authority, the cost per customer is developed using the forecasted Regional Authority revenue requirements divided by the total customers of the authority (the combined total of the entities). Thus, under the Regional Authority, each entity’s cost per customer is the same. For the Baseline, each entity’s forecasted revenue requirement is divided by the entity’s forecasted number of customers.

**Fig 6: Regional Authority – Cost per Customer Comparison**



The present value of the cost per customer is also calculated and again shows the Regional Authority scenario results in savings for each entity. For the Baseline cost per customer, Lake Adger costs are included with the forecasted revenue requirements of each entity. As previously discussed, for the Baseline to be comparable, costs associated with Lake Adger must be included. The majority of these costs are included with PCNC, as the County currently holds this liability. This is further illustrated in Figure 7.

**Fig 7: Present Value of Cost per Customer including Lake Adger Costs**



## 4 WHOLESALE AUTHORITY ANALYSIS

The development of a Regional Wholesale Water Supply and Treatment Authority was also evaluated as part of this study. A Regional Wholesale Water Supply and Treatment Authority would assume responsibility for the regional treatment and water supply needs with the three entities being customers of the Wholesale Authority. ICWD, BRWA, and PCNC would maintain autonomy of their individual retail water systems, but would rely on the Wholesale Authority for their treated water supply needs. Within this framework, the Wholesale Authority would absorb, likely through acquisition, all of the treatment and transmission assets of the ICWD, BRWA and PCNC water systems. One of the major benefits of this scenario is that each system will maintain their retail distribution utilities. Significant assumptions used in this evaluation include the following:

- BRWA Water Treatment operating expenses “transferred” to Wholesale Authority
  - Operating expenses are adjusted to 85% in recognition of economies of scale
- Water Treatment Capital Projects “transferred” to Wholesale Authority
- Other Capital Needs:

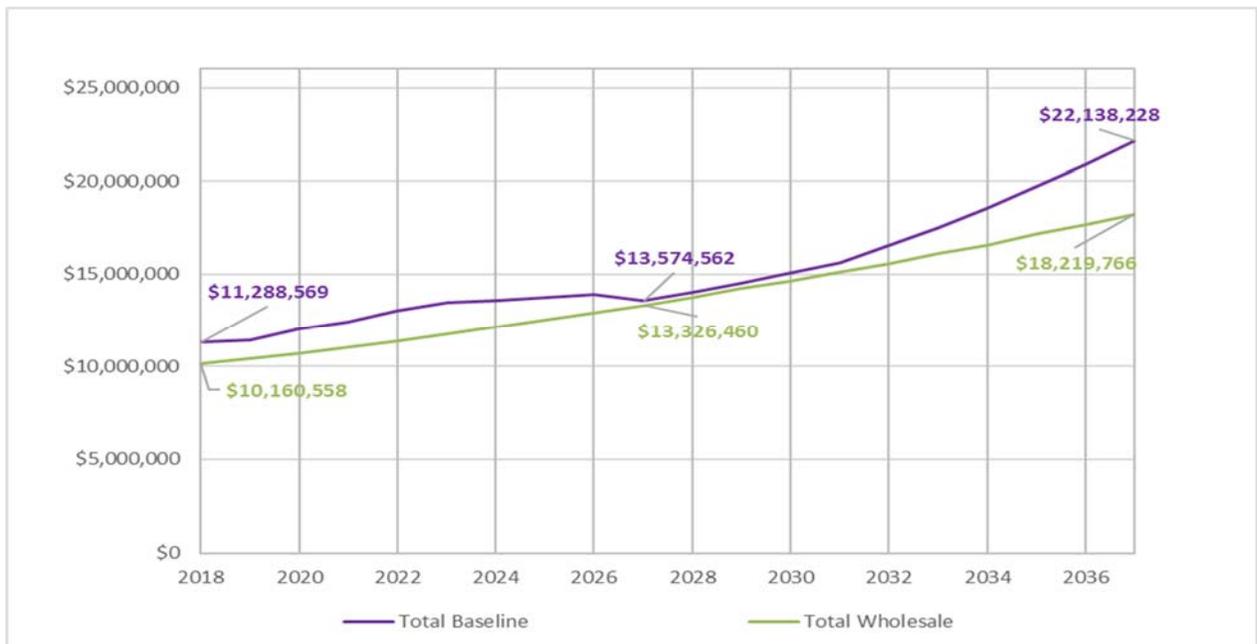
Lake Adger Water Supply:	
Lk Adger Water Supply Value	\$11,530,000
ICWD WTP/Transmission Purchase	\$9,540,000
BRWA WTP/Transmission Purchase	\$12,240,000
Working Capital	\$500,000
<b>Total</b>	<b>\$33,810,000</b>

- New Debt Terms (4.5% and 20 years)
- 1.33% Annual Growth
- 1.20 debt coverage ratio requirement

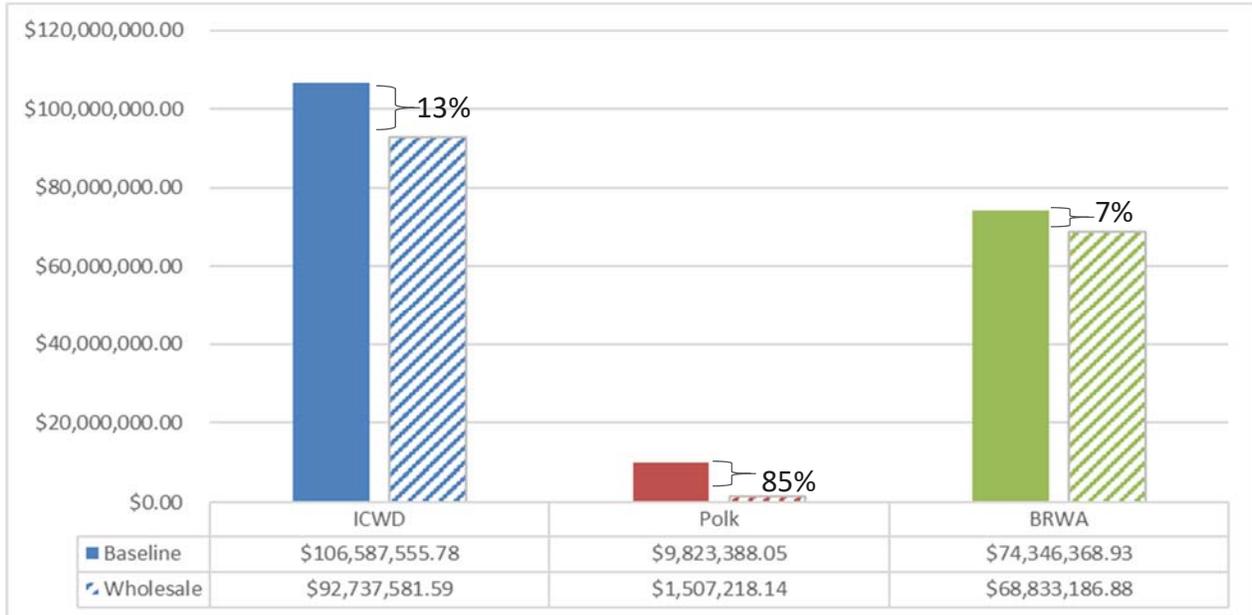
The value, and thus the implied purchase price of the BRWA and ICWD assets, are key assumptions of the analysis. The process of regionalization generally includes a formal valuation of assets; however, at the time of this analysis, only a valuation for Lake Adger raw water had been completed. To estimate values of the WTP and transmission assets of BRWD and ICWD, for the purpose of this analysis, the entities net book values are used. For ICWD, assets associated with water treatment and transmission include “Fingerville Land (175 acres)” (asset number not available), “Water Line Extension 08/09” (asset number 2490), “Polk Line/Water Source CAP Lease” (asset number 2492). For BRWA, a detailed fixed asset listing is not available; however, Building and Improvements Capital Assets reported in the 2016 Financial Statements are assumed to largely consist of the water treatment plant. In addition, BRWA provided their Insured Statement of Values which includes insured water treatment plant values total \$23,655,490, similar to the reported un-depreciated Buildings and Improvements Capital Assets; \$22,130,087.

The forecasted Wholesale Authority revenue requirements, incorporating the assumptions above, and the consolidated Baseline revenue requirements, are presented in Figure 8 below. As can be seen, forecasted Regional revenue requirements are less than the consolidated Baseline total, indicating a savings resulting from the development of a Wholesale Authority. To show the magnitude of this savings, Figure 9 presents the present value of the revenue requirements for the Wholesale Authority and the Baseline analysis for each entity. While the results indicate a net savings for each entity, there are significant variances in the savings amounts, with PCNC receiving the greatest proportional savings, due to the cost avoidance associated with Lake Adger.

**Fig 8: Wholesale Authority – Revenue Requirements of Baseline Compared to Wholesale**



**Fig 9: Present Value of Revenue Requirements – Baseline to Wholesale Comparison**



In order to achieve a proportionate balance in savings resulting from a Wholesale Authority, we considered two changes to the analysis. The savings to PCNC, shown in Figure 9, is a direct result of the \$8,030,000 cost associated with Lake Adger being absorbed by the Wholesale Authority (and thus all entities). Reducing the amount of the cost allocated to the Wholesale Authority results in PCNC keeping the majority of the Lake Adger liability and thus increasing their Wholesale present value cost. This reduction is provided in the table below:

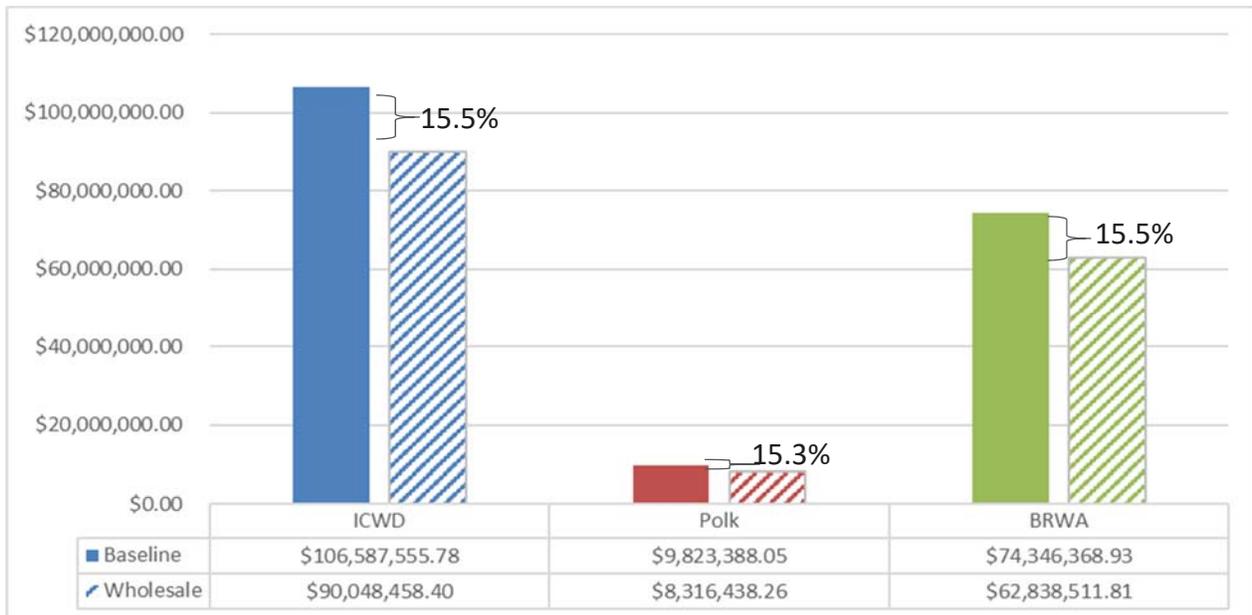
Lake Adger Water Supply:	
Lake Adger Water Supply Value	\$5,150,000
Dam Safety	\$1,140,000
Spillway Restoration	\$180,000
Dredging & Environment	\$1,560,000
<b>Total</b>	<b>\$8,030,000</b>
Wholesale Authority Portion	15.6%
<b>Wholesale Authority Cost</b>	<b>\$1,250,000</b>

The issue of how much of the Lake Adger costs the Authority would choose to assume from Polk County is negotiable. What we are attempting to do in this analysis is provide an example of how the entities could structure a regional option such that joint savings can be “smoothed” and shared equally. The Authority can always choose to fund more of the Lake Adger costs as a business decision.

Within the Wholesale Authority analysis, there is a difference in present value cost between ICWD and BRWA. To balance the savings, a 10-year Wholesale Water Purchase Cost Difference is incorporated. The cost difference is essentially a differential in Wholesale Water costs (for only 10-years) that would be needed to achieve the same savings for each entity. The results of the surcharge, combined with the reduction in Lake Adger costs assumed by the Wholesale Authority, are shown in the figure below.

Wholesale Water Purchase Cost Difference	
Inman-Campobello Water District	100%
Broad River Water Authority	60%
Polk County North Carolina	120%

**Fig 10: Present Value of Revenue Requirements – Baseline to Wholesale Alternative 2**

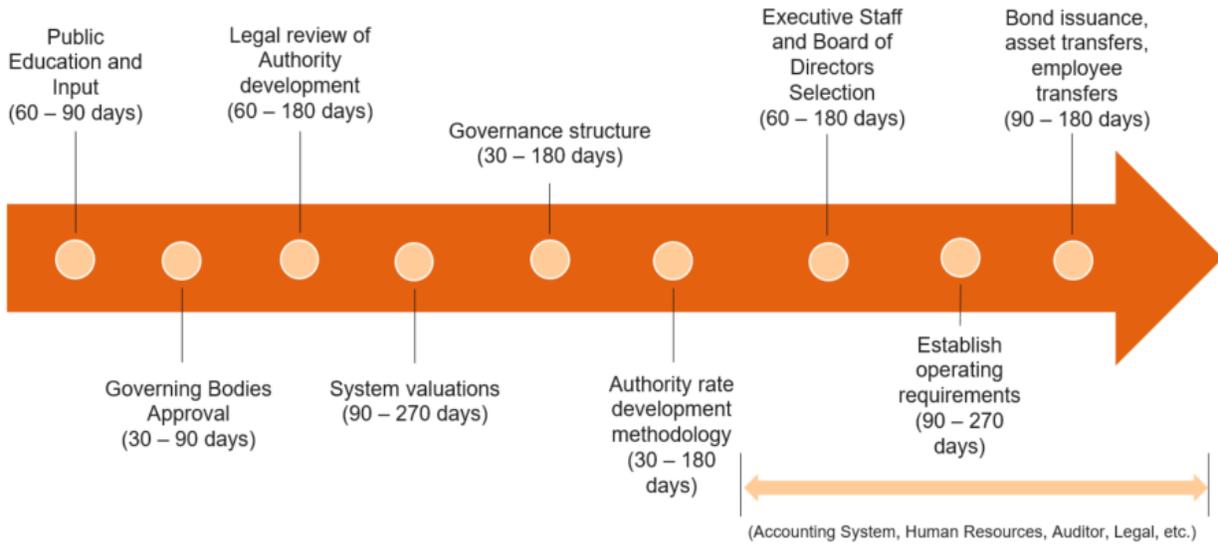


## 5 PLANNING SCHEDULE REVIEW

The Planning Schedule below represents the processes and general timeframes to achieve consolidation via either a Regional or Wholesale Authority. These processes include:

- **Public Education and Input:** Public education and input are key tasks as the entities move forward with a regional alternative. It is important for the entities to inform customers and the public of the benefits and plan to create a regional water authority.
- **Governing Bodies Approval:** Before moving forward with regionalization, each entity will need to obtain approval from their governing bodies. Support for a regional alternative is a critical step in the process.
- **Legal review of Authority Development:** The entities should obtain legal opinion and procedures on the establishment of a regional entity. Legal review should provide clarification of the legal procedures and potential challenges associated with the process.
- **System Valuation:** The analysis completed herein, specifically the Wholesale Authority analysis, is based on assumed values of the treatment and transmission assets. The values are based on the net book value of the assets, which represent a reasonable assumption of value. Never the less, system valuations should be completed as part of the regionalization process.
- **Governance Structure:** Agreement will need to be reached with regard to Governance. Potential governance questions would include; Will there be one or multiple appointees on the Authority representing each entity? Will the entities have equal voting power or shares based on purchased water or other factors?
- **Authority Rate Development Methodology:** A review of the Authority's Rate Development Methodology will need to be developed. The analysis completed herein assumes proportional distribution of the Wholesale Authority costs. However, many variables may impact that assumption
- **Executive Staff and Board of Directors Selection:** The Authority's Executive Team and Governing Body will need to be selected and established in order to begin the ground work activities of establishing the Authority.
- **Establish Operating Requirements:** The Authority Executive Team will need to establish operating functions such as Accounting and Finance, Human Resources, Legal, and Billing before the Authority could begin operations.
- **Bond issuance, Asset and employee transfer:** Bond Issuance, Asset and Employee Transfers will likely be completed in close succession, thereby finalizing the transference of responsibility and establishing the Authority.

**Fig 11: Proposed Planning Schedule**



The above figure includes likely time frames for completing each task. The regionalization process schedule can be accelerated through the completion of simultaneous tasks and through accelerating the timeframe for completing each task. However, there is a cost associated with acceleration, a quicker process generally is costlier than completing the process over a longer period of time.

## 6 CONCLUSIONS

The following presents a summary of conclusions reached from the financial feasibility evaluations of the of the regionalization options:

- Based on the evaluation completed for this engagement, both a Regional and Wholesale Authority will result in savings to all of the involved entities. The Regional Authority, which provides the most amount of consolidation, provides the greatest savings; however, there are forecasted savings for each entity under both options.
- There are several factors influencing the evaluation, including:
  - value of Lake Adger raw water and associated reservoir improvements,
  - value of ICWD and BRWA water treatment and transmission assets, and
  - operating efficiencies achieved through consolidation
- Based on our evaluations, the formation of a regional authority/entity is financially feasible and is forecasted to result in potable water costs savings for customers in the region.
- A legal review of the regionalization process is the recommended next step in the planning schedule. Based on our experience with the regionalization process, it is anticipated that formation of a Wholesale Water Supply & Treatment Authority would have fewer legal challenges to overcome.

*In preparation of this report and the conclusions contained herein, Arcadis has relied on these assumptions and information provided by the entities with respect to conditions which may exist or events which may occur in the future. Arcadis has not independently verified the accuracy of the information provided by the entities and accepts no responsibility for the completeness or accuracy of any documents or information upon which the report is based and which was provided to us by the entities or any other third party. While we believe such sources are reliable and the information obtained to be accurate and appropriate for the analysis undertaken and the conclusions reached herein, as is often the case, there may be differences between actual and projected results, some of the estimates used in this report will not be realized, and unanticipated events and circumstances may occur. Therefore, there are likely to be differences between the data and results projected in this report and actual results achieved, and those differences may be material.*

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