
**NORTH CAROLINA
STATE WATER INFRASTRUCTURE AUTHORITY**

November 1, 2014 Annual Report to:

- **Environmental Review Commission**
 - **Senate Appropriations Committee on
Natural and Economic Resources**
 - **House of Representatives
Appropriations Subcommittee on
Natural and Economic Resources**
 - **Fiscal Research Division**
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Prepared by
The North Carolina State Water Infrastructure Authority
November 1, 2014

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NORTH CAROLINA STATE WATER INFRASTRUCTURE AUTHORITY

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The nine-member State Water Infrastructure Authority (Authority) was created by the North Carolina General Assembly in 2013 to assess and make recommendations about the state's water and wastewater infrastructure needs and the funding programs available to the state's local governments. Session Law 2013-360 established the Authority and also the Division of Water Infrastructure (Division) within the North Carolina Department of Environment and Natural Resources, thereby consolidating the major water-related infrastructure funding programs within one division and one department. A list of the Authority members appointed in 2013-2014 is provided in Appendix A.

The purpose of this report is to provide the legislative bodies with an overview of the Authority's activities to date, to summarize concerns and issues discussed by the Authority regarding the state of North Carolina's water infrastructure and available funding, and to provide recommendations to address some of those issues.

State Water Infrastructure Authority Activities

The Authority began work in January 2014 and has made rapid progress toward meeting the many objectives defined in North Carolina General Statute 159G (NCGS 159G – the enabling legislation) as the Authority's powers and duties:

1. Review recommendations for grants and loans submitted to it by the Division of Water Infrastructure
 - Determine the rank of applications
 - Select the applications that are eligible to receive grants and loans
2. Establish priorities for making loans and grants, consistent with federal law
3. Review the criteria for making loans and grants and make recommendations, if any, for additional criteria or changes to the criteria
4. Develop guidelines for making loans and grants
5. Develop a master plan to meet the State's water infrastructure needs
6. Assess and make recommendations on the role of the State in the development and funding of wastewater, drinking water, and stormwater infrastructure
7. Analyze the adequacy of projected funding to meet projected needs over the next five years
8. Make recommendations on ways to maximize the use of current funding resources (federal, State, local) and ensure that funds are used in a coordinated manner
9. Review the application of management practices in wastewater, drinking water, and stormwater utilities and to determine the best practices
10. Assess the role of public-private partnerships in the future provision of utility service
11. Assess the application of the river basin approach to utility planning and management
12. Assess the need for a "troubled system" protocol

The twelve duties can be grouped into four primary areas. Each focus area is described below along with the Authority's activities in each area:

Focus Area 1 (Authority Duties 1 through 4) – Distribution of loan and grant funds. The first four objectives focus on the distribution of loan and grant funds from the five funding programs administered by the Division: the federal-state Clean Water State Revolving Fund (CWSRF loan program), the federal-state Drinking Water State Revolving Fund (DWSRF loan program), the federal Community Development Block Grant-Infrastructure (CDBG-I) grant program, the state Wastewater Reserve program (grants and loans) and the state Drinking Water Reserve program (grants and loans).

- **Authority activities:** The Authority learned about the eligibility requirements for each funding program, both for eligibility of applicants and for types of projects, and the project priority criteria used by the Division to score and rank projects for funding. The Authority set as its top priority maintaining the flow of loan and grant funds to applicants in order to initiate projects to protect public health and the environment. The Authority awarded a total of \$225.8 million in loan and grant funds for projects from the fall 2013 application round as well as the spring and summer 2014 application rounds (note that the requests totaled nearly \$720 million). In addition, the application process and priority criteria for all funding programs have been streamlined and unified to the extent possible at this time (additional efforts to be reviewed), given that each program has its own unique requirements.

Focus Area 2 (Authority Duties 5 through 8) – Define water infrastructure needs and funding. The goal of these objectives is to define the statewide water and wastewater infrastructure needs and examine funding sources and their adequacy to meet the identified needs.

- **Authority activities:** The Authority learned about several recent infrastructure master planning reports that may serve as background for developing an updated statewide needs assessment. The plans include the EPA's infrastructure needs survey reports for clean water and drinking water; the American Society of Civil Engineers 2013 Infrastructure Report Card; and the Water 2030 Initiative. In addition, the Authority received a presentation by the Environmental Finance Center at the UNC School of Government – "An Overview of Financial Management of NC's Drinking Water & Wastewater Utilities" which focused on utility debt, rates, and financial performance, which provided insight into the issues to be examined regarding the state's role in funding infrastructure and the adequacy of projected funding to meet projected needs.

Focus Area 3 (Authority Duties 9 through 11) – Assess emerging practices in utility planning and funding. These objectives concentrate on investigating methods of utility planning, management and funding that have not been traditionally utilized or applied extensively in North Carolina. Specific areas to be assessed include best management practices, alternative methods of infrastructure funding, and watershed planning approaches.

- **Authority activities:** The Authority received comprehensive presentations about infrastructure asset management and public-private partnerships for water and wastewater services in North Carolina and around the country in "Management Practices in Wastewater, Drinking Water, and Stormwater Utilities – An Overview" and "The Role of Public-Private Partnerships (PPP) in the Future Provision of Utility Service." The presentations provided introductions to these emerging techniques and will serve as a basis for statutory change suggestions and further Authority investigation.

Focus Area 4 (Authority Duty 12) – Assess need for "troubled systems" protocol. This objective focuses on the reasons that some utilities may struggle to remain viable and to determine the need for and types of activities to assist such systems.

- **Authority activities:** The Local Government Commission (LGC) presented to the Authority on the “LGC Oversight of Municipal Water and Sewer Enterprise Operations” to review some of the reasons that utilities may be viewed as “troubled” such as lack of audited financials, low fund or cash balances, over-expenditures, unbalanced budgets and internal control issues. The presentation by the Environmental Finance Center at the UNC School of Government described above addressed some of these issues as well. This information has helped the Authority understand the issues that such systems face and provided the foundation to consider the potential role of the state in assisting troubled systems. Further, the Authority recognizes that potential non-viability may result from a number of different circumstances that may be unique to each community and require approaches tailored to individual community’s needs.

Issues and Concerns Identified by the Authority

Through the Authority’s work in awarding project funding and learning about the other focus areas, a number of issues and concerns regarding water and wastewater infrastructure funding in North Carolina have been identified. The key issues are listed below and described individually:

1. A significant gap exists between infrastructure needs and available funding via either grants or loans
2. The state Reserve program funds may not all be reaching the most economically distressed communities
3. Incentives should be provided to encourage water and wastewater utilities to become more proactive in the management and financing of their systems
4. The Division’s application review priorities should be consistent with the Authority’s review priorities

1. The Significant Funding Gap

It is estimated that the water and wastewater infrastructure needs in North Carolina total over \$16 billion based on the EPA’s needs survey. The Authority’s development of the statewide water and wastewater infrastructure master plan will help update these numbers. In the meantime, it is clear that this magnitude of funding is not currently available through either federal or state infrastructure funding programs. As a result many communities, especially larger ones, seek financing through more costly private markets.

The amount of funding requested in the applications submitted to the Division for loan and grant funds during the fall 2013 and the spring/summer 2014 funding rounds far exceeded the amount of funds available. This trend occurred in each of the five funding programs. Figures 1 and 2 present the number of applications received and funded, and the dollar amounts requested and funded, respectively. Only a small percentage of the total requests were able to be funded across all programs.

The General Assembly provides all of the funding for the state Wastewater Reserve and state Drinking Water Reserve programs and targets the funds to projects in rural, economically distressed communities. The \$3.5 million in grant funding provided by the legislature for fiscal year 2013-2014 and the \$5 million provided for fiscal year 2014-2015 (and now a recurring \$5 million per year) is the first new money allocated to these programs in well over a decade.

Issue: Requests for funding will likely continue to outpace the availability of both loan and grant funds across all programs

Concern: The ability of local governments to provide adequate water and wastewater services as well as the ability to accommodate economic growth is crucial to the state’s economy

Figure 1. Number of Applications Received and Funded – Fall 2013 and Spring/Summer 2014 Application Rounds
 (Total number applications received: 328; total number applications funded: 95; see Appendix B for data)

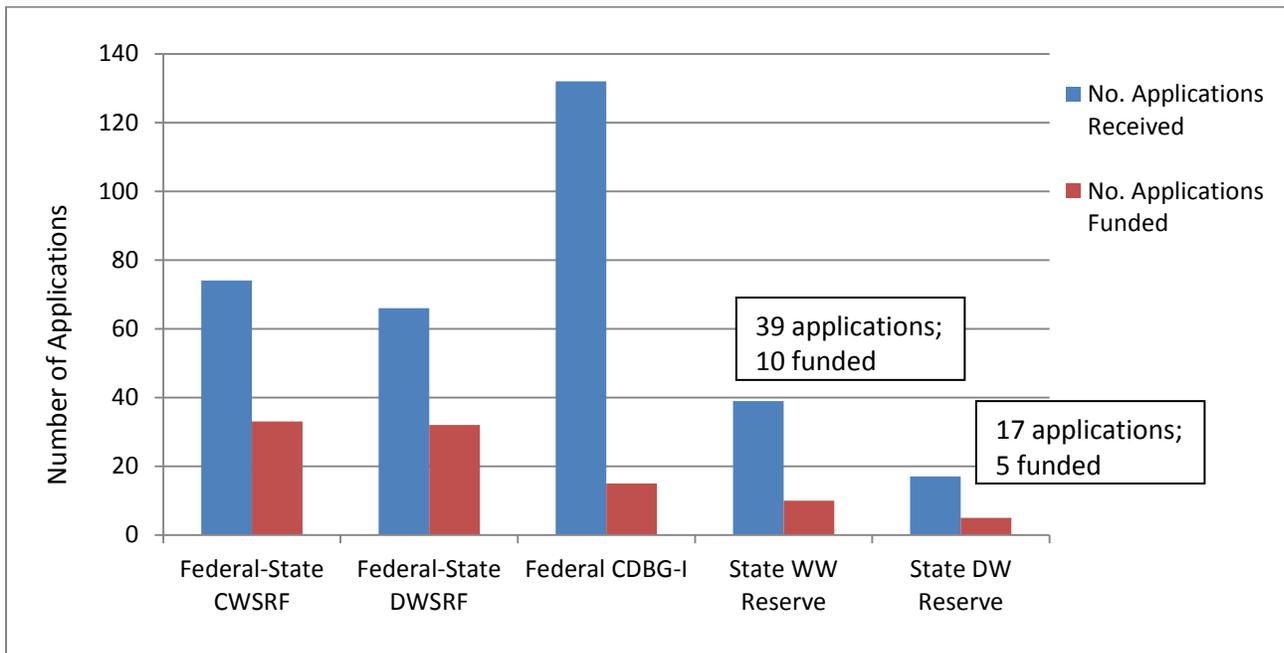
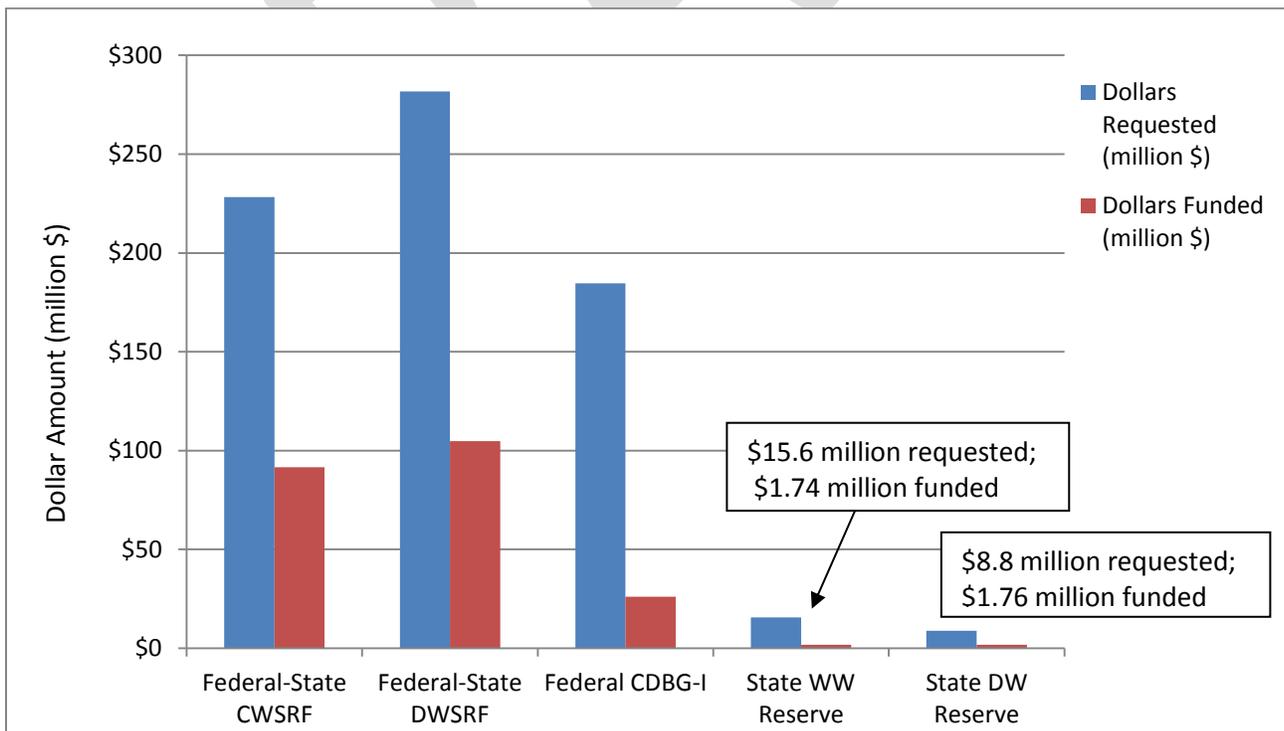


Figure 2. Dollar Amount Requested in Applications and Funded (millions of dollars) – Fall 2013 and Spring/Summer 2014 Application Rounds
 (Total amount requested: \$719.1 million; total amount funded: \$225.8 million; see Appendix B for data)



2. Ensure that State Reserve Program Funds are Targeted to the Most Economically Distressed Communities

The legislature requires that the funds from the state Wastewater Reserve and state Drinking Water Reserve programs be targeted to projects in rural, economically distressed communities (SL 2013-360). Through the Authority's review of applications for these funds, concerns have been identified that perhaps these funds may not all be reaching the most economically distressed communities. The key issue appears to be the way in which "rural, economically distressed communities" are defined in the legislation. Currently and in the past, "economic distress" has been quantified in only two ways:

- The economic tier of the county in which the applicant is located, and
- The percentage of median household income spent on water and/or sewer service.

The state Reserve programs provide for four specific types of grants that can be awarded as listed below. The high unit cost (HUC) grants are provided for the construction of critical infrastructure projects. The technical assistance grants (TAG) are designated for only two purposes, both of which involve a study or analysis related to non-compliance.

- Wastewater High Unit Cost Grants (WWHUC)
- Wastewater Technical Assistance Grants (WWTAG)
- Drinking Water High Unit Cost Grants (DWHUC)
- Drinking Water Technical Assistance Grants (DWTAG)

Under the current statutes, an applicant is eligible for a HUC grant only if the applicant's residential annual average combined water and sewer bill exceeds 1.5% of the median household income (MHI) of the community. If only water or only sewer service is provided, then the annual average water or sewer bill must exceed 0.75% of the MHI. The water and sewer rates are set by the applicant and the MHI values are established by the American Community Survey (ACS) which has replaced census data on income.

In the 2013 Budget Bill, the legislature further narrowed the eligibility for the \$3.5 million and the \$5 million to applicants located in Tier 1 and Tier 2 counties only, in an effort to direct funding to the rural, most economically distressed communities.

The Authority has two primary concerns about establishing economic distress based on only these factors.

County Economic Tiers

First, the economic tier of a county may not accurately reflect the economic conditions within individual communities in a county. The NC Department of Commerce annually ranks the state's 100 counties based on economic well-being and assigns each a Tier designation. The 40 most distressed counties are designated as Tier 1, the next 40 as Tier 2 and the 20 least distressed as Tier 3.

If eligibility were based solely on county tier (if limited to Tier 1 and 2 counties only), it can be seen that the needs of an individual community within an overall "least distressed" county could be overlooked and the community would be ineligible for grant funding when in fact that specific community may be rural and highly economically distressed. In addition, while a county's tier may improve due to overall

Issue: economic distress is quantified in only two ways

- Economic tier of the county
- Percentage of MHI spent on water/sewer

Concern: These factors may not accurately represent the economic conditions within individual communities

economic indicators in the county as a whole, an individual community could remain highly distressed; this is particularly possible for small, rural communities within counties that are located adjacent to growing urban centers.

(NOTE – TABLES 3 AND 4 WILL BE REPLACED WITH GRAPHICS)

Table 3 provides examples of several Tier 3 counties (least distressed) and local governments within those counties that have high economic distress indicators. For example, Johnston County is designated as Tier 3 (least distressed) but communities within the county (Benson and Kenly) have low-to-moderate income (LMI) percentages well below the state and county LMI percentages, high percentages of MHI spent on water/sewer, and high poverty rates. The local governments shown below do not qualify for state Reserve grant funds because they are located in a Tier 3 county, despite having high economic distress indicators.

Table 3. Examples of Tier 3 Counties (least distressed) and Towns within those Counties that have High Economic Distress Indicators: The Towns would not Qualify for State Reserve Grants due to County Tier

Entity	Percentage of Low-to-Moderate Income (LMI) Residents	Median Household Income (MHI) and % Spent on Water/Sewer	Poverty Rate (%)
State of North Carolina	--	\$46,450	16.8 %
Johnston County	Tier 3 with LMI of 48.8 %	\$54,885 (1.63%)	21.4%
○ Town of Benson	79.5 %	\$35,700 (1.88 %)	45.4 %
○ Town of Kenly	72.9 %	\$28,022 (3.67 %)	41.6 %
Moore County	Tier 3 with LMI of 40.9 %	\$53,023 (1.26%)	31.7 %
○ Town of Robbins	72 %	\$37,073 (2.63 %)	28.2 %
Lincoln County	Tier 3 with LMI of 36.8 %	\$44,233 (1.73%)	23.3 %
○ City of Lincolnton	52.9 %	\$33,839 (2.33%)	26 %

Percentage of MHI Spent on Water/Sewer

Second, the percentage of median household income spent on water and/or sewer service may not accurately reflect economic conditions within a community. Table 4 provides examples of Tier 1 counties (most distressed) and local governments within those counties that would not qualify for grant funds because the residential annual average combined water and sewer bill does not exceed 1.5% of the MHI of the community.

For example, Scotland County is the most distressed county in North Carolina based on tier designations. The Town of Laurinburg has high economic distress indicators for LMI percentages, MHI, and poverty rates. However, the percentage of MHI spent on water/sewer is low (less than 1.5%). Despite Laurinburg’s high economic distress indicators and its location in the most distressed county in the state, it does not qualify for state Reserve grant funds. Similar results are presented for the City of Rockingham.

Table 4. Examples of Tier 1 Counties (most distressed) and Towns within those Counties that do not meet the High Unit Cost Threshold: The Towns would not Qualify for State Reserve Grants due to Water/Sewer Costs Less than 1.5% of MHI

Entity	Percentage of Low-to-Moderate Income (LMI) Residents	Median Household Income (MHI) and % Spent on Water/Sewer	Poverty Rate (%)
State of North Carolina	--	\$46,450	16.8 %
Scotland County (most distressed county based on tier rankings)	Tier 1 with LMI of 49.6 %	\$30,472 (county has no water/sewer systems)	29.2 %
○ City of Laurinburg	56.3 %	\$30,459 (1.44 %)	33.8 %
Richmond County	Tier 1 with LMI of 49 %	\$31,726 (rates not available)	29.3 %
○ City of Rockingham	56.1 %	\$27,371 (1.14 %)	28.2 %

The Authority’s recommendations are described in more detail below, but in brief, to ensure that grant funds are truly being awarded to the most economically distressed communities, the Authority believes that applicant eligibility should be defined differently. Other factors should be considered in order to define a community’s relative ability to afford to pay for its water and sewer infrastructure projects compared to other communities in North Carolina.

3. Broaden the Use of Grant Funds

Currently, the Technical Assistance Grants (TAG) are limited in scope to determining how to correct deficiencies in infrastructure that is not in compliance with/at risk of violating permit limits or State law. There is no provision for grant funds to assist an applicant with studies or analyses before it violates/is at risk of violating permits or laws. In addition, the amount of recurring grant funds is limited to \$5 million per year for the foreseeable future and at some future time it may be possible that grant funds are no longer allocated by the legislature.

The Authority is sensitive to the fact that grant funds are not provided for any type of proactive activities or analyses, and are not made available to utilities that are in compliance but perhaps are struggling to remain viable or with other issues. Given that grant funds may not exist in the future, the Authority also notes that grants are not available to assist an applicant – especially a “troubled system” – in becoming more self-sufficient and less reliant on grants.

Briefly, the Authority’s recommendations are to broaden the use of grant funds by providing incentives to encourage water and wastewater utilities to become more proactive in the management and financing of their systems. This recommendation also supports the development by the state of methods to assist “troubled systems.”

Issue: TAGs are only allowed to be used for studies/analyses to determine how to correct infrastructure deficiencies that have led to non-compliance or to risk of violating permit limits or state law

Concern: Grant funds are not available for any type of proactive activities including the development of methods to allow utilities (including “troubled systems”) to become more self-sufficient and avoid future or continued reliance on grant funds

4. Align the Division's Application Review Priorities with the Authority's Review Priorities

The General Assembly authorized the Authority to establish priorities and develop guidelines for making loans and grants, and to make recommendations for changes to the criteria, all consistent with federal law. Under the current legislation, however, the Division is required to assign points to state Reserve program applications based on 13 common criteria. The current legislation has created a discrepancy between how the Division must evaluate applications and the flexibility provided to the Authority to evaluate the same applications. This variation is quite confusing to applicants and may be viewed as adding complexity to the transparent decision-making process for which the Authority is striving.

Issue: The Division is required to use application review priorities that differ from those the Authority can use

Concern: The differing priorities are confusing to applicants and adds an element of complexity to the Authority's transparent decision-making process

The Authority recommends that the Division and the Authority utilize the same application review priorities. The details of this recommendation are provided below.

Recommendations

This section provides more details about the Authority's recommendations regarding the state Reserve programs, which were briefly summarized above.

Redefine Applicant Eligibility

Applicant eligibility for state Reserve funds is currently based only on the percentage of MHI that is spent on water and/or sewer service, and the economic tier of the county in which the applicant is located. The Authority recommends that applicant eligibility be based instead on the relative affordability of water infrastructure projects for that community compared to other communities in North Carolina. Affordability would be based on factors that may include water and/or sewer service rates, median household income, poverty rates, unemployment rates, or population of the served community. This approach would allow the basis of eligibility to be established utilizing the most recent and applicable economic information available when determining the affordability of water and wastewater infrastructure. The details of this approach would be developed by the Authority with assistance from the Division and would be presented annually to the public for review and comment. Under this recommendation, the terms "high-unit-cost project" and "high-unit-cost threshold" would no longer be utilized and would be removed from the legislation.

Broaden the Use of Grant Funds

Currently, technical assistance grant funds may only be used for studies/analyses to determine how to correct infrastructure deficiencies that have led to non-compliance or to risk of violating permit limits or state law. The Authority recommends that the use of grant funds be broadened to provide incentives to encourage water and wastewater utilities to become more proactive in the management and financing of their systems and to lead to improved understanding of the infrastructure needs and financial requirements which could help reduce or eliminate their continued reliance on grant funds. While many types of studies and analyses could be useful to communities, two are recommended at this time:

- Provide grant funds to investigate the feasibility of voluntary merger/regionalization. Such an analysis could help utilities that may be non-compliant or non-viable or seeking to improve their operations efficiency/become a more competitive utility provider by defining a potential option of joining with another utility. It is recognized that non-viability could be attributed to a number of

factors including inadequate utility revenue or loss of qualified operators which could potentially be remedied by merging or regionalizing operations.

- Provide grant funds to identify and assess a utility's water and/or sewer infrastructure. The state's (and United States' as a whole) water infrastructure is approaching and sometimes exceeding its useful life. At the same time many utilities are facing lower revenues due to a loss of manufacturing customers and conservation. A utility may be unaware of the exact location, extent or condition of its infrastructure possibly due to inheriting the system from a private entity such as a manufacturing facility or due to the loss of staff who are knowledgeable of the infrastructure. Without this knowledge, a utility may not be fully aware of its monetary needs in order to operate and maintain its system and may rely on grants to 'fix' problems as they are identified – often by catastrophic failure – and for which the utility has not budgeted; this could lead to a potentially continuous cycle of relying upon grant funding to 'band aid' a system.

By providing a grant to inventory and assess its infrastructure, a utility would gain knowledge of its system, be able to develop costs for replacement/repairs/upgrades and continuous maintenance, evaluate its rate structure, and begin a capital improvement program (CIP) to make the best decisions regarding the replacement of critical infrastructure.

As utilities better understand their infrastructure and quantify their needs, the better the Authority will be able to address these needs during development of the master plan to meet the State's water infrastructure needs. In addition, the Division will also have better information on which to base input to the Clean Water State Revolving Fund and Drinking Water State Revolving Fund needs surveys, which could then result in higher federal allocations to these programs in North Carolina.

Align the Application Review Priorities

The Division is required to use application review priorities that differ from those the Authority can use. The Authority recommends that the 13 common criteria (defined in NCGS 159G-23) which must currently be applied by the Division be designated instead as priority considerations to be applied by the Division. Since the Authority has the flexibility to utilize these priority considerations, the evaluation by the Division and the Authority will be aligned and maintain decision-making transparency throughout the review process.

Next Steps

The Authority recommends that the legislature implement the recommendations contained in this report. The recommendations will enable the Authority to better carry out its assigned duties and to provide for the more coordinated use of the monetary resources entrusted to it by the General Assembly to improve public health and the environment for all North Carolinians.

Should the legislature wish to implement the recommendations, the Authority has provided suggested modifications to the text of North Carolina General Statute 159G for consideration. The suggestions are included in Appendix C of this report.

The Authority would be pleased to respond to questions or provide additional information as may be requested by the General Assembly.

In closing, the State Water Infrastructure Authority thanks the North Carolina General Assembly for its support throughout 2014 and looks forward to working to continue to streamline and unify the water and wastewater infrastructure funding available to the residents of North Carolina.

APPENDIX A

State Water Infrastructure Authority Members appointed in 2013-2014

The State Water Infrastructure Authority was created within the North Carolina Department of Environment and Natural Resources by Session Law 2013-360. The nine members of the Authority that were appointed in 2013-2014 are listed in Table A.1.

Table A.1. State Water Infrastructure Authority Members Appointed in 2013-2014

Cite § 159G-70.(b)	State Water Infrastructure Authority Members appointed in 2013-2014		
	Name	Title	Appointing Authority
(1)	Kim Colson – Chair	Acting Director, Division of Water Infrastructure	Ex-Officio
(2)	Dr. Patricia Mitchell	Assistant Secretary, Rural Development Division; Department of Commerce	Ex-Officio
(3)	Vance Hollomon	Deputy Treasurer, Local Government Commission	Ex-Officio
(4)	JD Solomon	Vice President, CH2MHILL	Governor
(5)	Gwen Baker	President, CDM Federal Programs, CDM Smith	Governor
(6)	Leila Goodwin	Water Resources Manager, Town of Cary	Senate Pro Tempore
(7)	Charles Vines	Mitchell County Manager	Senate Pro Tempore
(8)	Cal Stiles	Cherokee County Commissioner	Speaker of the House
(9)	Maria Hunnicutt	Manager, Broad River Water Authority	Speaker of the House

APPENDIX B

2013-2014 Loan and Grant Program Applications Received and Awarded Funding in 2014

Table B.1 provides a summary of the applications received by the Division in September 2013, April 2014, and May 2014 and awarded funding by the Authority in January, May and July 2014. Given the amount of funding available in each program, it is apparent that only a small percentage of the total requests were able to be funded.

Table B.1. 2013-2014 Loan and Grant Program Applications Received and Awarded Funding in 2014

Funding Program and Application Round	Number Applications Received	Number Applications Funded	Dollar Amount Requested	Dollar Amount Funded
Federal-State CWSRF (Sept. 2013 and April 2014 Application Rounds)	74	33	\$228.3 million	\$91.6 million
Federal-State DWSRF (Sept. 2013 Application Round)	66	32	\$281.7 million	\$104.7 million
Federal CDBG-I (April and May 2014 Application Rounds)	132	15	\$184.7 million	\$26 million
State Wastewater Reserve (includes High Unit Cost grants and Technical Assistance grants) (April 2014 Application Round)	39	10	\$15.6 million	\$1.74 million
State Drinking Water Reserve (includes High Unit Cost grants and Technical Assistance grants) (April 2014 Application Round)	17	5	\$8.8 million	\$1.76 million
Totals	328	95	\$719.1 million	\$225.8 million

APPENDIX C

**Suggested Modifications to North Carolina General Statute 159G to Implement the
Recommendations of the State Water Infrastructure Authority**

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