NORTH CAROLINA INFRASTRUCTURE NEEDS AND DATABASE TASK FORCE

REPORT TO THE LEGISLATIVE STUDY COMMISSION ON WATER AND WASTEWATER INFRASTRUCTURE

November 1, 2010

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EXECUTIVE SUMMARY

State funding agencies have a significant amount of information on water and wastewater infrastructure needs that has not previously been compiled for state policy makers. Every four years, DENR participates in EPA's drinking water and wastewater infrastructure needs survey. The EPA surveys were designed to inform Congressional funding decisions; information from the surveys has gone to EPA, but has not been shared with state officials. The surveys only gather information on projects eligible for awards under the federally funded State Revolving Funds, but with a few additional questions could be a good source of information on infrastructure needs for legislators and other state officials. A slightly expanded survey, combined with information from other existing state sources, could be the basis for a biennial report to the General Assembly on statewide drinking water and wastewater infrastructure needs.

Incorporation of information on drinking water infrastructure needs into the State Water Supply Plan may not be the most effective way to provide that information to state and local decision-makers. The State Water Supply Plan focuses on water quantity – demand, supply and water shortage response. Many drinking water infrastructure needs are unrelated to the primary purpose of the State Water Supply Plan and would be lost in the large volume of information on water quantity. Local water system planning could be improved by incorporating an asset management plan, capital improvement plan, and financial plan into the local water supply plan. A similar comprehensive plan for wastewater systems would benefit local planning for wastewater system maintenance and growth. A biennial report to the General Assembly focused specifically on statewide infrastructure needs would be more likely to meet the needs of state policy makers.

The different state infrastructure funding agencies currently operate individual program databases that were created for program management purposes and to meet the specific information needs of each agency. Some program databases are also used to generate information for the public and for federal agencies. Information in these databases can be put to additional uses. For example, existing information in the funding databases can be combined into a single report on state infrastructure funding activity. The state funding agencies will submit a consolidated funding report to the General Assembly for the first time this year, using data obtained from the different agency databases. The report will, for the first time, provide an overview of all state agency drinking water and wastewater infrastructure funding awards for the 2009-2010 fiscal year and cumulatively for all projects that have not yet been completed.

A single state database for both infrastructure needs and funding is not needed for program management purposes and faces several barriers, including the need for a common project identification system; entry and access to data by multiple funding agencies; public access to data; and cost. Before moving toward a single database, there needs to be additional study of: 1. Intended uses

and scope of the database (including the feasibility of a single database as a program management tool for six different state funding agencies); 2. Information needs and reporting requirements of the individual funding agencies; and 3. Costs and benefits of a single database.

In the near term, the genuine need for more comprehensive information on both infrastructure needs and funding activity can be met by compiling information from the different agencies into combined reports to the General Assembly.

Recommendations

- The EPA drinking water and wastewater needs surveys should be expanded to include questions about planned water resource development (including reservoir construction); growth-related drinking water infrastructure needs; and the estimated costs for those additional infrastructure needs.

- The Task Force recommends further study of the feasibility and cost of expanding the drinking water needs survey to include all North Carolina water systems.

- Results of the needs survey should be combined with information on failing systems; unfunded infrastructure project applications; and infrastructure needs identified by local and regional economic development or planning entities and provided to the General Assembly in a biennial report.

- State funding agencies should cooperate to develop a common definition of "failing system" and develop a method for assessing the costs of consolidating failing systems with more viable systems.

- Local governments should be encouraged to provide GIS maps of water and wastewater systems to the Center for Geographic Information and Analysis for inclusion on statewide infrastructure GIS data layers based on a consistent data standard developed by CGIA.

- Information on drinking water infrastructure needs should not be added to the State Water Supply Plan. Instead, the State should encourage local governments to create a comprehensive drinking water system plan at the local level that includes an asset management plan, capital improvement plan and financial plan as well as water supply information included in the local water supply plan.

- The State should encourage local governments to create a similar comprehensive wastewater system plan (including an asset management plan, capital improvement plan and financial plan) for local planning purposes.

• The State should identify ways to assist public water and wastewater systems in preparing comprehensive local management plans. One possibility would be to provide planning grants directly to water/wastewater systems or to regional organizations such as the COGs.

• State infrastructure funding agencies should build on the first combined funding report (for FY 2009-2010) and provide an annual combined report to the General Assembly on water and wastewater infrastructure funding activity. The report should allow state officials and the public to see how infrastructure funds have been allocated geographically and by project type.

• Before considering creation of a single infrastructure need and funding database, there should be additional study focused on the intended use of the database; individual funding agency data needs; access to data; cost; and the feasibility of meeting statewide information needs in more cost-effective ways.

BACKGROUND

Session Law 2010-144 (attached as Appendix A) created the North Carolina Infrastructure Needs and Database Task Force and directed the Task Force to report back to the Legislative Study Commission on Water and Wastewater Infrastructure by November 1, 2010 on the following:

> (1) Development of a statewide needs survey to build on the base of the existing United States Environmental Protection Agency water and wastewater infrastructure survey process that will provide a more accurate assessment of statewide water and wastewater infrastructure needs.
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> (2) Development of a plan to incorporate relevant information obtained from the United States Environmental Protection Agency survey and any additional state needs survey into the State water supply plan.
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> (3) Recommendations for the establishment and maintenance of a statewide water and wastewater infrastructure resource and funding database, or alternative information systems or processes that are capable of consolidating and integrating statewide information on water and wastewater infrastructure needs, resources, and funding and making this information more accessible to applicants, government agencies, and policymakers.

Session Law 2010-144 identified a number of state agencies and local government organizations to be represented on the Task Force. In August, 2010 the Secretary of Environment and Natural Resources, Dee Freeman, invited the named agencies and organizations to identify a representative to serve on the Task Force. A list of Task Force members is attached as Appendix B.

REPORT

1. State Infrastructure Needs Survey

EPA drinking water and wastewater infrastructure surveys. DENR participates in infrastructure needs surveys conducted by the United States Environmental Protection Agency every 4 years. These surveys identify infrastructure needs that may be eligible for funding from the State Revolving Fund (SRF) loan programs; survey results are used to advise Congress on the amount of federal funding required for the SRF nationwide. The surveys go to both public and private systems, but under North Carolina law only publicly owned systems are eligible for SRF loans.

The scope of the EPA drinking water and wastewater surveys are slightly different:

> EPA drinking water infrastructure needs survey: All systems with > 100,000 customers are surveyed; the state then surveys a sample of systems with > 3,300 and < 100,000 customers. The survey does not reach systems with fewer than 3,000 customers; EPA uses modeling to project the need of those systems.
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> EPA wastewater infrastructure needs survey: The survey is sent to 500 municipalities, 100 counties, engineers and other public wastewater utilities. As a practical matter, the wastewater survey, unlike the drinking water survey, reaches all publicly owned and operated wastewater systems in North Carolina. Survey questions cover wastewater, stormwater and nonpoint source needs. To be included in the survey, the needs must be supported by engineering reports or a capital improvement plan.

(As an example of the EPA surveys, a copy of the EPA small community wastewater needs survey is attached as Appendix C).

Needs that may not be captured: Purely growth-related projects may not be captured in the surveys, because there are limitations on use of the SRF monies for those projects. The drinking water SRF fund cannot be used for projects intended to address future growth. The wastewater SRF fund can consider growth-related projects, but these projects are not prioritized. The drinking water SRF cannot be used for reservoir construction, so costs associated with proposed reservoir development are not captured in the survey.

The EPA-required surveys do not capture the following types of information:

- Regularly updated information on infrastructure needs related to economic development and future population growth
- Current information on water/wastewater system service areas

• Infrastructure needed to address failing water/wastewater systems, except to the extent those needs are included in a capital improvement plan or engineering report

• Infrastructure needs related to water system efficiency, drought resilience, and development of new water sources (such as reservoirs)

Filling the gaps: The EPA survey can be expanded to include additional questions about issues of interest to the State, such as planned spending on reservoir construction and growth-related infrastructure needs. Other potential sources of information on infrastructure needs would include: the list of projects not funded by state infrastructure funding agencies in the most recent grant/loan awards; enforcement records identifying systems with ongoing compliance problems (such as a Special Order by Consent); and infrastructure needs identified by local and regional economic development or planning organizations.

More specific information on drinking water infrastructure needs could be obtained by surveying all water systems. (The EPA survey only goes to systems that serve more than 100,000 customers and a sample of systems that serve between 3,000 and 100,000 customers; EPA uses modeling to project the infrastructure needs of systems serving fewer than 3,000 customers.) Because of the large number of water systems in North Carolina, there may be significant additional costs involved in expanding the survey to reach all water systems. The feasibility and cost of expanding the number of drinking water systems surveyed should be the subject of further study.

To identify infrastructure needed to facilitate takeover of a failing system, it may be necessary to develop an accepted definition of "failing system" and a method for estimating the costs of repairs and/or new infrastructure needed to facilitate consolidation of systems.

At the recommendation of the Legislative Study Commission on Water and Wastewater Infrastructure, the General Assembly amended G.S. 159G-23 to include preparation of an asset management plan in the list of priority factors for consideration in providing state funding for water and wastewater system improvements. Session Law 2010-151. The law defines "asset management plan" as:

> The strategic and systematic application of management practices applied to the infrastructure assets of a local government unit in order to minimize the total costs of acquiring, operating, maintaining, improving, and replacing the assets while at the same time maximizing the efficiency, reliability, and value of the assets. G.S. 159G-20.

As a result, development of an asset management plan has become one of the "common criteria" used in awarding state infrastructure funds. (Having a capital improvement plan had been incorporated into the common criteria earlier.) The State should continue to encourage water and wastewater systems to develop asset management plans. Information in the plans can be used to support inclusion of an infrastructure project in the infrastructure needs survey. EPA already requires validation of projects included in the federal needs survey; local governments provide that validation by showing that the project is part of a capital improvement plan or supported by a specific governing body action.

Maintaining an ongoing asset management plan would strengthen system management, but it would also validate the project as a genuine infrastructure need.

A list of infrastructure needs based on results of the infrastructure needs surveys, projects identified by economic development and planning organizations, and compliance information on failing systems should be provided in a biennial report to the General Assembly at the beginning of each legislative session. Although the EPA surveys are done only every four years, the survey could be updated in the out years with current information from the other sources. Since the needs survey process already exists, there would likely be no significant new costs associated with adding a small number of new survey questions or in gathering and reporting the information. The state is already collecting a significant amount of information on infrastructure needs, but much of that information has never been gathered into a single report accessible to state policy-makers.

Water/Wastewater System Service Areas: The Task Force concluded that a needs survey is not an effective way to gather information on water and wastewater system service areas. To be useful, service areas should be mapped and available in GIS format. Water systems that submit a Local Water Supply Plan are requested to submit a service area map as part of their plan. However, many of these maps are not available in GIS formats. The Division of Water Resources converted the initial map submissions into a set of GIS formatted data files but since then have lacked the resources to update the files. The Rural Center's Water 2030 study updated service area information based on conditions in 2004 and these GIS data files are available through the Center for Geographic Information and Analysis (CGIA).

The North Carolina League of Municipalities surveyed a number of its members to determine whether municipalities would be willing to share information on addresses served by its water/wastewater system for purposes of generating GIS maps. The municipalities surveyed did not want to share customer addresses as a basis for creating a service area map because of confidentiality concerns. But members indicated that many --if not most -- municipalities already produce service area maps for their own use and would be willing to share the maps. Members of the Association of County Commissioners indicated a willingness to share customer addresses (without identifying information). The Task Force concluded that even local governments that do not actually produce maps could generally provide digitized address information to be used in mapping and there are ways to share that information without violating customer confidentiality.

The North Carolina Center for Geographic Information and Analysis (CGIA) provides a platform for statewide GIS information. CGIA already has data layers for water and wastewater service areas. The maps currently in the system are based on 2004 information collected by the N.C. Rural Center in preparation of the Water 2030 report. The most efficient way to make service area information more easily available would be to encourage local governments to provide new or updated maps to CGIA to be incorporated into the existing data layers. Since water systems that have water supply plans already provide service area maps as part of the plan updates, the Division of Water Resources could share those maps with CGIA.

The Task Force recommends that CGIA develop a consistent standard for service area GIS data to simplify future updates of both water and wastewater system service areas. A means for regularly updating service area information -- particularly for wastewater systems -- would also be needed. The Task Force believes that additional study will be required to develop a method for updating service area data on a regular basis, including estimation of costs.

2. **Incorporation of infrastructure needs into the State Water Supply Plan.**

The Session Law directed the Task Force to recommend ways to incorporate information on infrastructure needs into the State Water Supply Plan (SWSP). The Plan, required under G.S. 143-355(m), collects and reports information from local government and other large community water systems concerning water supply needs. The Plan focuses on current and future demand for water supply; identification of water sources; and planning for water shortage, including conservation measures corresponding to different levels of drought, as included in local water supply plans. The plan focuses on raw water available to supply community water systems. It does not address infrastructure needed for the treatment and distribution of drinking water to water system customers.

Information on projected population growth and water demand found in the State Water Supply Plan could be useful in projecting some future infrastructure needs -- particularly those that are growth-related or involve construction of new water sources (such as reservoirs). In that respect, the State Water Supply Plan may be a useful source of information for infrastructure planning.

Incorporation of infrastructure needs information into the State Water Supply Plan would require a significant change in its scope. Many infrastructure needs – such as rehabilitation of existing water lines; extension of lines (within existing treatment capacity); and improvements in water treatment – do not directly involve the issues of water quantity that have been the subject of the State Water Supply Plan.

The Task Force concluded that adding infrastructure information to the Plan would not result in a useful tool for statewide infrastructure planning. The sheer volume of information makes the State Water Supply Plan an unwieldy vehicle for conveying information on drinking water infrastructure needs. As an alternative, the Task Force suggests moving forward with creation of a biennial report to the General Assembly specifically on drinking water and wastewater infrastructure needs.

The Task Force believes, however, that there is value in encouraging water systems to supplement the local water supply plan with an asset management plan and capital improvement plan. For purposes of planning, water system managers and local officials need to see information on water supply needs and infrastructure needs (in terms of both maintenance and growth) side by side.

G.S. 159G-23 already directs state infrastructure funding agencies to give priority to water and wastewater systems that have capital improvement plans; asset management plans; sound fiscal policies; and efficient operation and management. In the long-term, infrastructure and fiscal planning could be improved by incorporation of an asset management plan, capital improvement plan and a financial plan into the local water supply plan and development of a similar comprehensive plan for wastewater systems. Small systems may lack the planning resources necessary to create a comprehensive plan; before moving toward a comprehensive planning requirement, the State should identify ways to provide that assistance. One possibility would be to provide planning grants directly to water/wastewater systems or to regional organizations such as the COGs.

3. **Database or other information system on water and wastewater infrastructure.**

Existing Databases: Infrastructure needs and funding data collected by the various state funding agencies are currently being managed using several different database computer programs. The Construction Grants and Loan Section in DENR's Division of Water Quality uses a Microsoft Access database to track loan/grant awards and construction contracts for the wastewater State Revolving Fund (SRF). One of the primary purposes of the database is to allow DENR to meet EPA reporting requirements for the Clean Water State Revolving Fund. EPA requires an annual report that covers project awards, project starts, project completions and compliance with requirements on use of women and minority-owned businesses. The database could also generate a list of unfunded project applications. Information gathered through the EPA wastewater infrastructure needs survey goes into a separate Oracle database.

The Public Water Supply (PWS) Section in DENR's Division of Environmental Health has a drinking water project database that was originally created to track expenditures from the last state bond issue. The database has been expanded to track milestones for projects that receive loans through the Drinking Water SRF. Public Water Supply tracks project awards; compliance with requirements on use of women and minority-owned businesses; project starts; project milestones; project completions; and project readiness. Public Water Supply does not currently have a database of drinking water infrastructure needs information gathered through the EPA drinking water needs survey. The program is currently working with the Environmental Finance Center to create a needs database. Currently, the only source of drinking water infrastructure needs information available in a PWS database would be in the form of an Access database of unfunded applications submitted by local governments in prior years.

The Safe Drinking Water Information System (SDWIS) developed by EPA tracks water system violations and may be useful in identifying water systems that require infrastructure improvements for compliance reasons. Division of Water Quality tracks wastewater violations in the Basinwide Information Management System (BIMS); the BIMS system was intended largely to meet EPA reporting requirements for wastewater discharge systems.

Both the drinking water and wastewater SRF programs also have unfunded project lists from the 2009 American Recovery and Reinvestment Act (ARRA) awards process. ARRA funds could be used for certain types of projects not previously funded through the regular SRF program. For example, there was a specific allocation for "green" projects (i.e., projects providing water efficiency or energy efficiency benefits).

The N.C. Rural Center uses an off-the-shelf Microsoft product -- GIFTS -- to track grant funding. The system can track both funded and unfunded project applications.

Both the Clean Water Management Trust Fund and the Department of Commerce funding programs use a Microsoft Access database. CWMTF uses its database to track funding requests, funded projects and unfunded applications. CWMTF also uses information in its database to generate web-based reports on program activities. The Department of Commerce has a database to track fund awards and funded projects.

The existing databases were developed to manage the individual infrastructure funding programs -- and sometimes different functions within the same program. The databases work well for that purpose and may also be capable of generating new information-- such as unfunded project lists and reports based on the results of EPA needs surveys -- that would be useful in planning for infrastructure funding. Information in the separate databases can also, in the near term, be used to create reports on total state infrastructure funding by feeding the data into a single spreadsheet.

Creation of a Single Infrastructure Database. A single state database on infrastructure needs and funding activity would make comprehensive reporting significantly easier. As described below, the state funding agencies are producing a joint infrastructure funding report this year that will provide an overview of all state water/wastewater funding activity. The report combines information from the individual program databases into a single report. Since data had to be collected and then reviewed to eliminate duplication, creation of the first report involved a significant amount of communication between program staff. The ability to enter all funding information and the results of the infrastructure needs surveys into a single state database would undoubtedly make report generation both quicker and easier.

A single infrastructure database is not needed for fund management purposes, however, because no single state agency receives and distributes infrastructure funding. A number of different state or federal/state funding programs - housed in six different agencies - make grants or loans for water and wastewater infrastructure. Each program operates under its own statutory authority and funding criteria. Many of the funding programs in DENR and the Department of Commerce involve federal pass-through funding; those programs operate under criteria set by a combination of federal and state law. The Clean Water Management Trust Fund and N.C. Rural Center have programs established under state law to meet specific types of needs and often to serve defined categories of recipients (such as rural areas and economically distressed communities). Creation of a single fund management

database for all of those programs would be a significant effort because of the need to accommodate the different federal and state information needs and reporting requirements. Each program would also need to be able to both enter and access information in the database. Given the different missions of the existing infrastructure programs – and differing funding criteria – a more in depth study of each agency's information needs would be required before developing a specific recommendation on creation of a comprehensive state infrastructure database.

Since the existing databases meet program management needs, the Task Force believes that the most likely benefit of a comprehensive infrastructure database would be improved public access to information on infrastructure needs and funding activity. A single database would make it easier to provide the General Assembly, local government officials, and the public with a complete picture of infrastructure needs and progress toward meeting those needs. A database for public information purposes should be more limited in scope than a database intended for fund management purposes, however. In the short time available for this study, the Task Force could not study the comparative scope, costs and benefits of a comprehensive funds management database versus a database designed to collect and provide access to information of interest to state and local policy makers. Additional study would be needed before reaching a conclusion about the feasibility of creating a statewide database on infrastructure needs and funding. It would be particularly important to clarify the purpose and scope of such a database

A cost-benefit analysis would be important to any database recommendation. Depending on project scope, cost may be a significant barrier to development of a statewide infrastructure database in the near term. The database for the Water 2030 Report – which provided a snapshot of infrastructure needs for a 25-year period beginning in 2005 – cost approximately $3 ½ million. The N.C. Rural Center, which developed the Water 2030 Report, lacked resources for ongoing maintenance of the infrastructure needs information. As a result, much of the information -- such as water and wastewater system service areas – has not been updated since 2004. The Water 2030 Report also did not include detailed information on actual allocation of state infrastructure funds which fell outside the scope of the report. Developing a cost estimate for a statewide infrastructure database capable of maintaining current information on both infrastructure needs and funding activity will require further work to define the purposes of the database; the desired level of public access to information; and maintenance costs.

The Task Force identified some other specific obstacles that would need to be overcome to create a single infrastructure database. Although there is now a common application form for certain information required by state funding agencies, there is not yet a system for assigning a common project identifier. A common project identification number would be helpful in tracking projects funded by multiple agencies and a necessary step toward a single database of infrastructure funding information. A common project identification system would need the capability to incorporate later phases or additions to a project under the same identifier. It is not clear that any state funding agency

has an existing project identification system that could become the basis for generating a common project identification number that could be used by all programs.

One option would be to create a new project identification system based on the jurisdiction in which the project is located. EPA's infrastructure needs survey, for example, assigns a permanent identification number to each jurisdiction. Staff noted that EPA tracks Recovery Act awards based on the local government's DUNS number.

Development of targeted databases: There is ongoing work on development of additional databases within and between the individual state infrastructure funding programs. DENR is working with UNC's Environmental Finance Center on development of a database for drinking water infrastructure needs using information collected in the EPA needs survey. (A database already exists in DENR's Division of Water Quality for information on wastewater infrastructure needs.) All state infrastructure funding agencies cooperated this year on a combined funding activity report that is described in more detail below; that process has created at least a template for a shared database on funding activity. These incremental efforts could become the basis in the future for a larger sharing of infrastructure needs and funding information.

Combined Funding Report: All state infrastructure funding agencies (including the N.C. Rural Center, DENR, Department of Commerce and the Clean Water Management Trust Fund) have cooperated to produce a combined infrastructure funding report for the first time this year. The report will provide information on drinking water and wastewater projects funded during the 2009-2010 fiscal year and a cumulative list of active infrastructure projects that have received state funding. The cumulative list will provide, by county, a brief description of every project, including: total project cost; amount of state funding; identification of the funding agency or agencies; and local contribution.

The combined report will allow state officials, local governments and the public to more easily see the total distribution of state infrastructure funds in the most recent fiscal year and cumulatively. Some preliminary conclusions based on review of the combined data include the following:

- In 2009-2010, state agencies allocated $247 million in infrastructure funding to local government water and wastewater systems. [Note: The amount of funding available in 2009-2010 was unusually high because it includes $105 million in federal Recovery Act funds for water and wastewater infrastructure.]

- Projects funded in 2009-2010 were distributed across 80 counties.

- The cumulative project list includes over 700 projects located in all 100 counties.

• In a typical year, state and federal infrastructure funding represents only about 30% of total infrastructure funding in N.C. Approximately 70% of the funding comes from private financing obtained by local governments.

• Because of funding criteria governing the state infrastructure funding programs, much of the state infrastructure funding goes to small towns and to rural systems and often gives priority to economically distressed areas.

Preparation of the 2009-2010 combined report required a significant amount of staff time because of the need to collect and reconcile information on funding activity from multiple sources for the first time. Creation of a shared system for generating project identification numbers could eliminate much of the time spent this year in identifying multiple listings for the same project. (Nearly one-third of the state-funded infrastructure projects receive funds from multiple funding programs.) There are also ways to simplify data sharing in the future even in the absence of a common database. At the most simple level, the first report can be used to create a template for a shared spreadsheet into which the different programs can enter funding activities.

RECOMMENDATIONS

• The EPA drinking water and wastewater needs survey process should be supplemented by a brief set of additional state survey questions about planned water resource development (including reservoir construction); growth-related drinking water infrastructure needs and the estimated costs of those additional infrastructure needs.

• The Task Force recommends further study of the feasibility and cost of expanding the drinking water needs survey to include all North Carolina water systems.

• Results of the needs survey should be combined with information on failing systems; unfunded infrastructure project applications; and infrastructure needs identified by local and regional economic development or planning entities and provided to the General Assembly in a biennial report.

• State funding agencies should cooperate to develop a common definition of "failing system" and develop a method for assessing the costs of consolidating a failing system with a more viable system.

• Local governments should be encouraged to provide GIS maps of water and wastewater systems to the Center for Geographic Information and Analysis for inclusion on statewide infrastructure GIS data layers based on a consistent data standard developed by CGIA.

• Information on drinking water infrastructure needs should not be added to the State Water Supply Plan. Instead, the State should encourage local governments to create a comprehensive drinking water system plan at the local level that includes an asset management plan, capital improvement plan and financial plan as well as water supply information included in the local water supply plan.

• The State should encourage local governments to create a similar comprehensive wastewater system plan (including an asset management plan, capital improvement plan and financial plan) for local planning purposes.

• The State should identify ways to assist public water and wastewater systems in preparing comprehensive local management plans. One possibility would be to provide planning grants directly to water/wastewater systems or to regional organizations such as the COGs.

• The state funding agencies should build on the first combined funding report (FY 2009-2010) and provide an annual combined report to the General Assembly on water and wastewater infrastructure funding activity. The report should allow state officials and the public to see how infrastructure funds have been allocated geographically and by project type.

• Before considering creation of a single infrastructure need and funding database, there needs to be additional study focused on the intended use of the database; individual funding agency data needs; access to data; cost; and the feasibility of meeting statewide information needs in more cost-effective ways at least in the near term.

APPENDIX A

GENERAL ASSEMBLY OF NORTH CAROLINA
SESSION 2009

SESSION LAW 2010-144
HOUSE BILL 1746

AN ACT TO: (1) DIRECT THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, IN CONJUNCTION WITH OTHER INTERESTED PARTIES, TO ESTABLISH A TASK FORCE TO DEVELOP A STATEWIDE SURVEY TO SUPPLEMENT THE CURRENT INFORMATION USED TO ASSESS THE STATE'S WATER AND WASTEWATER INFRASTRUCTURE NEEDS, DEVELOP A PLAN FOR INCORPORATING THE INFORMATION COMPILED FROM THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY SURVEY INTO THE STATE WATER SUPPLY PLAN, AND DEVELOP RECOMMENDATIONS REGARDING A STATEWIDE WATER AND WASTEWATER INFRASTRUCTURE RESOURCE AND FUNDING DATABASE; AND (2) DIRECT THE DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES AND THE LOCAL GOVERNMENT COMMISSION OF THE DEPARTMENT OF STATE TREASURER TO JOINTLY EVALUATE THE POTENTIAL BENEFITS OF MONITORING THE FINANCIAL CONDITION OF PUBLIC WATER SYSTEMS AND WASTEWATER SYSTEMS, AS RECOMMENDED BY THE LEGISLATIVE STUDY COMMISSION ON WATER AND WASTEWATER INFRASTRUCTURE.

Whereas, the two primary sources of data currently available to determine the State's water and wastewater needs include the United States Environmental Protection Agency surveys of publicly owned water and wastewater systems conducted every four years by the Department of Environment and Natural Resources and the North Carolina Rural Economic Development Center Water 2030 Initiative; and

Whereas, the Water 2030 Initiative, completed in 2005, provides a snapshot of projected water and wastewater infrastructure needs through 2030, but was funded as a onetime overview, and has not been fully updated since 2005; and

Whereas, while both the United States Environmental Protection Agency surveys and Water 2030 Initiative are useful tools, there continue to be gaps in the information used to determine the State's water and wastewater infrastructure needs, particularly with regard to economic development and growth-related infrastructure needs, water system efficiency measures, and costs related to the development of new water sources; Now, therefore,

The General Assembly of North Carolina enacts:

SECTION 1.(a) Task Force. – The Department of Environment and Natural Resources, the Department of Commerce, the Department of State Treasurer, the Clean Water Management Trust Fund, the State Water Infrastructure Commission, the Office of Information Technology Services, the

North Carolina League of Municipalities, the North Carolina Association of County Commissioners, the Rural Economic Development Center, and the Environmental Finance Center at the School of Government at the University of North Carolina at Chapel Hill shall establish a task force to improve the collection and utilization of information related to State water and wastewater infrastructure needs. The Department of Environment and Natural Resources shall be the lead agency for the task force. The task force may also work with other interested stakeholders in its discretion. The responsibilities and duties of the task force shall include all of the following:

(1) To develop a statewide survey to build on the base of the existing United States Environmental Protection Agency water and wastewater infrastructure survey process that will provide a more accurate assessment of statewide water and wastewater infrastructure needs.

a. The survey shall be designed to address the following information gaps that have been identified in the current information sources:

1. Information on water and wastewater infrastructure needs related to economic development and population growth.
2. Information on water and wastewater system service areas.
3. Information on drinking water needs relevant to determining the need and the cost of proposed reservoir construction.
4. Information on infrastructure needs to address failing water and wastewater systems.
5. Information on the infrastructure needs related to water system efficiency to address the issue of water loss.

b. The task force shall consider how often the information provided by the survey should be updated.

c. The task force shall consider requesting information to update the Water 2030 Initiative as part of the survey design.

d. The task force shall consider how often to update the survey, and how best to formulate and summarize the survey results on the State's combined water and wastewater infrastructure needs in a concise and easily understood format for use by the General Assembly. The task force shall prepare a model report based on this format.

(2) To develop a plan to incorporate relevant information obtained from the existing United States Environmental Protection Agency survey and any statewide survey developed pursuant to subdivision (1) of this section into the State water supply plan developed pursuant to G.S. 143-355(m). In devising the plan to incorporate the needs survey information into the State water supply plan, the task force shall consider possible modifications to the information collected as part of the local water supply plans or the methodology used to prepare the local water supply plans that would make it easier to incorporate the needs survey information into the State water supply plan.

(3) To recommend a plan for the establishment and maintenance of a statewide water and wastewater infrastructure resource and funding database, or alternative information systems or processes that are capable of consolidating and integrating statewide information on water and wastewater infrastructure needs, resources, and funding and making this information more accessible to applicants, government agencies, and policymakers. The task force shall consider the relative merits of a database and any proposed alternatives, taking into account estimated costs and the

ability of each to meet the goals outlined in this section. In analyzing a database, the task force shall identify options for database system design and structure and delineate the categories of information to be compiled and indexed.

SECTION 1.(b) Task Force Report. – The Department of Environment and Natural Resources shall report the findings and recommendations of the task force to the Legislative Study Commission on Water and Wastewater Infrastructure by November 1, 2010. The report shall include the estimated cost to implement the recommendations and any legislative changes required to implement the recommendations.

SECTION 2.(a) The Department of Environment and Natural Resources and the Local Government Commission of the Department of State Treasurer shall jointly evaluate the costs and benefits of requiring each public water system or wastewater system in the State to demonstrate that the system raises sufficient revenue to cover the costs associated with proper operation of the system, including the costs of maintenance, repair, and replacement of collection, treatment, and distribution infrastructure.

(1) The Department of Environment and Natural Resources and the Local Government Commission shall specifically consider increasing their oversight role to include the following actions:

a. Review grant applications submitted by a system to determine the portion of the proposed grant match that is funded from local revenues as opposed to another grant.

b. Develop benchmarks that a system must meet to ensure that the system is operating in a financially sound manner.

(2) The Department of Environment and Natural Resources and the Local Government Commission shall specifically evaluate the desirability of requiring each public water system and wastewater system in the State to conduct the following actions:

a. Submit an annual audit statement to State water and wastewater infrastructure funding agencies to which the system is applying for loan or grant funds for the purpose of reporting on the operation of the system and to demonstrate whether the water or wastewater rates of each system are sufficient to maintain system operations and meet debt service obligations.

b. Implement remedial measures in the event that the audit statement indicates a shortfall, including the submission of a written explanation for the revenue shortfall from the governing body of the system and the development of a plan to ensure that system revenues cover system costs.

c. Maintain a capital reserve fund.

d. Provide notification to funding agencies when a system is failing to operate in compliance with applicable State and federal water quality standards.

(3) The Department of Environment and Natural Resources and the Local Government Commission shall identify and consider other actions or measures that would improve the oversight of the financial condition of public water systems and wastewater systems.

SECTION 2.(b) For the purposes of this act, "public water system" has the same meaning as in G.S. 130A-313(10), and "wastewater system" has the same meaning as in G.S. 159G-20(25).

SECTION 2.(c) The Department of Environment and Natural Resources and the Local Government Commission shall jointly report their findings and recommendations to the Legislative Study Commission on Water and Wastewater Infrastructure no later than November 1, 2010.

SECTION 3. This act is effective when it becomes law.

In the General Assembly read three times and ratified this the 8th day of July, 2010.

s/ Walter H. Dalton
President of the Senate

s/ Joe Hackney
Speaker of the House of Representatives

s/ Beverly E. Perdue
Governor

Approved 1:54 p.m. this 22nd day of July, 2010

APPENDIX B

Water/Wastewater Infrastructure Needs Task Force Members

State Water Infrastructure Council
Bill Holman, Chair SWIC
bill.holman@duke.edu
919-613-8709

UNC/Environmental Finance Center
Jeff Hughes
jhughes@sog.unc.edu
919-843-4956

Alternate: Shadi Eskaf
eskaf@sog.unc.edu
919-962-2785

State Treasurer's Office
Vance Holloman
vance.holloman@nctreasurer.com
919-807-2351

Alternate:Sharon Edmundson
Sharon.Edmundson@nctreasurer.com
919-807-2381

North Carolina League of Municipalities
Buck Kennedy, Garner City Council
bkennedy@garnernc.gov
919-624-3696

Office of Information Technology Services
Julia Owen
Julia.owen@nc.gov
919-754-6246

N.C. Association of County Commissioners
David Thompson, Director
David.Thompson@ncacc.org
919-715-2893

Councils of Government
Jim Perry, Director Lumber River COG
James.Perry@lumberrivercog.org)
910-272-5058

N.C. Rural Economic Development Center

Billy Ray Hall, President
brhall@ncruralcenter.org
919-250-4314

Alternate: Patrick Woodie
pwoodie@ncruralcenter.org
919-250-4314

Clean Water Management Trust Fund

Richard Rogers, Executive Director
richard.rogers@ncdenr.gov
919-571-6767

Dept. of Environment and Natural Resources

Robin Smith, Assistant Secretary for Environment (Chair)
Robin.w.smith@ncdenr.gov
919-715-4141

APPENDIX C

Clean Watersheds Needs Survey 2008

SMALL COMMUNITY (POPULATION <10,000) NEEDS FORM

Step 1: Basic Facility/Project Information

This step asks you to identify basic facility/project information for your community's facility/project including location, point of contact, type of facility/project, flow, and population. Add additional pages, if necessary.

Step 2: Needs and Costs Information

Identify any water quality or public health-based capital needs and costs that are not already described in Step 2. Submit the portion of the needs not funded by January 1, 2008. They can include estimates for new infrastructure, sustaining current infrastructure, and/or meeting future growth needs (through December 31, 2027).

Submit a copy of documentation describing your community's new needs and costs, such as:

(See Appendix 1 for a complete list of acceptable documents to justify needs and costs):

- For unsewered communities: signed statement from the health department citing onsite wastewater treatment system failure, water quality problem, and/or violations of safe drinking water standards.
- Application for funding (e.g. USDA Rural Development, US EPA, and state grants and loans; Clean Water State Revolving Fund loans)
- Capital Improvement Report
- Preliminary engineering study or Plan of Study
- General Plan or Facilities Plan
- Preliminary or Final Engineer's Estimate
- Sewer System Evaluation Documents
- Administrative Orders, Court Orders, or Consent Decrees
- National Pollutant Discharge Elimination System (NPDES) permit or State Permit (with Schedule)
- CSO Long-Term Control Plan (LTCP)

Alternative: If you do not have sufficient documentation, complete the tables and questions in Step 2 to document new capital needs and costs in your community. Signature Box #2 must be completed to certify the new needs and cost.

Return the completed form to:

State CWNS Coordinator:
Fax:
Address:

Phone:
Email:

Step 1: Basic Facility/ Project Information

Facility/ Project Name:					
The facility is part of the following system:					
Organization responsible for facility/project:					
Point of Contact		**Role/ Title**			
Address					
City		**State**		**Zip Code**	
Phone		**Fax**			
Email					
Permit Number(s):					
County:					

Facility/ Project Type

Choose the appropriate descriptors from the list Appendix 2 to complete the columns “Type” and “Planned Changes.” Indicate whether the facility/project is “Present” or “Projected” by placing a check mark in the appropriate column(s).

Type	Present	Projected	Planned Changes

Does this facility discharge to another facility (ies)? Yes □ No □

If yes, name facility(ies): _____

Flow Information

Complete for following facility/ project types: Treatment Plant, Treatment Lagoon or Pond, Collection: Combined Sewers, Collection: Separate Sewers, Collection: Interceptor Sewers, Collection: Pump

Stations, Storage Facility, Biosolids Handling Facility, Individual On-Site System Area, Decentralized, and Treatment System.

	Millions of Gallons per Day (MGD)		
	Existing	**Present Design**	**Future Design**
Municipal Flow			
Industrial Flow			
Infiltration from Groundwater			
Total Flow			
Wet Weather Flow (Peak)			

Population Receiving Treatment

Complete for following facility/ project types: Treatment Plant, Treatment Lagoon or Pond, Collection: Combined Sewers, Collection: Separate Sewers, Collection: Interceptor Sewers, Collection: Pump Stations, Storage Facility, Biosolids Handling Facility, Individual On-Site System Area, Decentralized, and Treatment System.

	Resident Population			Non- Resident Population*		
	Present	Projected	Projected Year	Present	Projected	Projected Year
From this system						
From upstream collection system(s)**						
Total Receiving Collection						
Cluster Systems						
Onsite Wastewater Treatment Systems						
Total						

* The portion of the population that does not live within the services area of the facility, but still utilizes the facility's infrastructure. Non-resident population includes transient, seasonal, and commuter workers and tourists.

** "From upstream collection systems" describes the total population whose wastewater is discharged to this facility from other facilities upstream in the sewershed.

Step 2: Needs and Costs Information

Identify any water quality or public health-based capital needs. Needs must exist as of January 1, 2008 and are a cost estimate to sustain current infrastructure and meet the future needs (through December 31, 2027) due to population growth.

To complete:

- NEEDS: Identify the category(ies) of needs applicable for your community. Definitions of each the needs categories are available at www.epa.gov/cwns/cwns2008.htm.
- REASON: Mark the reason (public health problem [PH], water quality problem [WQ], or both).
- DESCRIPTION: Describe the needs and project benefits in as much detail as possible:
  - Provide units if applicable) (e.g., length of sewer, capacity of pump, NPS or stormwater best management practices, etc).
  - Include discharge BOD limits and nutrient removal practices for Secondary and Advance Treatment needs
  - Include a description of the environmental benefits of the project/facility
  - Identify the target implementation year and projected end year of needs
- COSTS: If available, provide cost information for each need. Indicate the source (document name) and the base month and year of the cost information. Attach a copy of the source document. If no cost information is available, indicate NA in cost column.
- Add additional pages, if necessary.

NEEDS	REASON	DESCRIPTION	COSTS
Secondary Treatment (including sludge handling/disposal)	PH □ WQ□		
Advanced Wastewater Treatment	PH □ WQ□		
Infiltration/Inflow Correction	PH □ WQ□		

NEEDS	REASON	DESCRIPTION	COSTS
Sewer Replacement/ Rehabilitation	PH □ WQ□		
New Collector Sewers	PH □ WQ□		
New Interceptor Sewers	PH □ WQ□		
Stormwater Management Programs	PH □ WQ□		
Cluster Systems (Decentralized)	PH □ WQ□		

NEEDS	REASON	DESCRIPTION	COSTS
Onsite Wastewater Treatment Systems (Decentralized)	PH □ WQ□		
Nonpoint Source Pollution Control[1] (Please specify)	PH □ WQ□		
Other	PH □ WQ□		

[1] Nonpoint Source (NPS) Pollution Control includes activities that prevent water pollution due to agriculture, silviculture, resource extraction, activities at marinas, storage tanks, and sanitary landfills. It also includes projects that prevent or mitigate negative impacts to ground water and stream bank channels.

OPTIONAL COST CALCULATION FOR SEWER REPLACEMENT/ REHABILITATION COSTS

*Note: This section of the Small Community Survey is OPTIONAL. If you did not provide cost information for **Sewer Replacement/ Rehabilitation needs** identified in the previous table, this information will allow your state and EPA to better estimate costs associated with your needs.*

Provide the current sewer length and estimated replacement rates for sewers in your community. Note: the maximum replacement rate allowable without supporting documentation is 10% over 20 years (0.5% per year).

Sewer Diameter	Length (feet)	Rehabilitation Rate (in % over next 20 years)	Replacement Rate (in % over next 20 years)	Comments
≤8”				
9”-15”				
16”-21”				
≥22”				

SIGNATURE BOX #2

Needs Certification

As the local official representing this community, I agree that the water quality needs and technical information described herein is accurate for this community. Note: A local official can be an elected official (e.g., mayor) or other qualified official (e.g., public works manager).

Name:

Title:

Signature: | Date:

Cost Certification

There are three alternatives to estimate the costs, presented in order of preference:

1. A professional engineer (PE) signs the cost certification below.
2. A local government official signs the cost certification below and a State Professional Engineer (PE) certifies the cost as reasonable after reviewing the estimate.
3. No cost certification signature is provided; cost curves will be used, if possible, to generate estimated costs. To use cost curves for sewer replacement/ rehabilitation costs, complete the Alternative Cost Calculation for Sewer Replacement Costs box above.

I certify that to the best of my knowledge the cost of the community's clean water needs described herein are accurate.

Name:

Title:

Professional Engineer (PE): Yes ☐ No ☐

Signature: | Date:

TO BE COMPLETED BY STATE

State Professional Engineer (PE) (Signature): | Date:

Only needed if cost certification signature is not from a professional engineer (PE)
Note to State: ***State engineers should not calculate community’s costs, only validate them.***

Appendix 1: List of Acceptable Documents for CWNS 2008

All Types of Needs	Used to Justify Needs	Used to Justify Costs
Intended Use Plan	Y	Y
State and Federal Loan and Grant Applications	Y	Y
CWSRF Loan Applications	Y	Y
Non-governmental Grant Applications	Y	Y
Cost of Previous Comparable Construction	N	Y
State-Approved Area-wide or Regional Basin Plan	Y	Y
State-Approved Local Comprehensive Water and Sewer Plan	Y	Y
Total Maximum Daily Load (TMDL)	Y	N*
National Estuary Program Comprehensive Conservation and Management Plan	Y	N*
Nutrient Criteria Studies	Y	N
Impaired Waters or TMDL Listing	Y	N
Wastewater Facility Needs		
Capital Improvement Plan (CIP)	Y	Y
Facility Plan	Y	Y
Preliminary Engineer's Estimate	Y	Y
Final Engineer's Estimate	Y	Y
Sewer System Evaluation Documents	Y	Y
Diagnostic Evaluation	Y	Y
Sanitary Survey	Y	N
State-Approved Municipal Wasteload Allocation Plan	Y	Y
New Municipal, State, or Federal Regulation	Y	N
Administrative Orders, Court Orders, or Consent Decrees	Y	N

NPDES or State Permit Requirement (with Schedule)	Y	N
CSO Long-Term Control Plan (LTCP)	Y	Y
Approved CSO Long-Term Control Plan (LTCP)	Y	Y
CSO Cost Curve Needs	n/a	Y
NPS Needs		
Watershed-Based Plans	Y	Y
Section 319 Funded or EPA Reviewed Watershed-Based Plans	Y	Y
Approved State Annual 319 Workplans	Y	N*
Approved State 319 Project Implementation Plans	Y	Y
Nonpoint Source Management Program/Assessment Report	Y	N*
Nonpoint Source Management Program/Ground Water Protection Strategy Report	Y	N*
Nonpoint Source Management Program/Wellhead Protection Program and Plan	Y	N*
Nonpoint Source Management Program/Delegated Underground Injection Control Program Plan	Y	N*
Source Water Assessment/Source Water Protection Plans	Y	N
NRCS Conservation Plans and Farm Plans	Y	N*
Electronic Field Office Technical Guide (eFOTOG)	N*	Y
State/Federal Agricultural Cost-Share Program Cost Tables	N	Y
Professional Appraisals	N	Y
Stormwater Needs		
Municipal Stormwater Management Plan	Y	N*
Small Communities		
Information from an Assistance Provider	Y	N

*With exceptions

Appendix 2: Facility/Project Types Information

Use for updating the table “Facility/Project Type” in Step 1.

Facility/Project Types

1. Treatment Plant
2. Treatment Lagoon or Pond
3. Collection: Combined Sewers
4. Collection: Separate Sewers
5. Collection: Interceptor Sewer
6. Collection: Pump Stations
7. Storage Facility
8. Biosolids Handling Facility
9. Recycled Water Distribution
10. Individual On-Site System Area
11. Decentralized System
12. Facility Classified As 'Other' 7
13. Phase I MS4
14. Phase II MS4
15. Non-traditional MS4
16. Unregulated Community (Stormwater)
17. Nonpoint Source-Agriculture - Cropland
18. Nonpoint Source-Agriculture - Animals
19. Nonpoint Source-Silviculture
20. Nonpoint Source-Urban
21. Nonpoint Source-Marinas
22. Nonpoint Source-Resource Extraction
23. Nonpoint Source-Brownfields
24. Nonpoint Source-Storage Tanks
25. Nonpoint Source-Sanitary Landfills
26. Nonpoint Source-Ground Water - Unknown Source
27. Nonpoint Source-Hydromodification
28. Confined Animals(Point Source)
29. Mining (Point Source)
30. Estuary Management
31. TMDL Plan Development
32. Watershed Management Plan Development

Planned Changes

1. No Change
2. New
3. Increase Capacity
4. Increase Level Of Treatment
5. Rehabilitation
6. Replacement
7. Abandonment
8. Expansion
9. Process Improvement
10. Instrumentation/Electrical/Laboratory