



North Carolina Department of Health and Human Services
Division of Public Health

Pat McCrory
Governor

Aldona Z. Wos, M.D.
Ambassador (Ret.)
Secretary DHHS

Daniel Staley
Acting Division Director

MEMORANDUM

TO: Environmental Review Commission
The Honorable Brent Jackson, Co-Chairman
The Honorable Mike Hager, Co-Chairman

FROM: N.C. Commission for Public Health
Dr. Ronald B. May, Vice-Chair

SUBJECT: Interim Progress Report regarding implementation of HB 894

DATE: March 31, 2015

Pursuant to G.S. 130A-320 SECTION 2, the N.C. Commission for Public Health is required to submit an interim progress report regarding implementation of HB 894, *An Act to Improve Source Water Protection Planning*. Please consider the attached report as the Commission's fulfillment of this reporting requirement.

If you have any questions or need additional information, please contact Jay Frick, N.C. Division of Water Resources, by phone at (919) 707-9102 or via e-mail at jay.frick@ncdenr.gov.

cc: Tom Reeder, Assistant Secretary for Environment
John Evans, Chief Deputy Secretary
Matthew Dockham, Director of Legislative Affairs
Brad Knott, Deputy Director of Legislative Affairs
Powell Baggett, Assistant General Counsel
Jay Zimmerman, Director, N.C. Division of Water Resources
Jessica Godreau, Chief, N.C. Public Water Supply Section
Chris Hoke, Director, Regulatory and Legal Affairs

www.ncdhhs.gov • www.publichealth.nc.gov

Tel 919-707-5000 • Fax 919-870-4829

Location: 5605 Six Forks Road • Raleigh, NC 27609

Mailing Address: 1931 Mail Service Center • Raleigh, NC 27699-1931

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An Interim Progress Report on Implementation of HB 894: An Act to Improve Source Water Protection Planning

April 1, 2015

Submitted by the NC Commission for Public Health
Compiled in cooperation with the NC Division of Water Resources



An Interim Progress Report on Implementation of HB 894: An Act to Improve Source Water Protection Planning

Summary

The accidental release of 4-methylcyclohexanemethanol in Charleston, West Virginia and the coal ash spill in North Carolina have raised concerns about potential public health impacts of contaminants entering raw drinking water supplies. In an effort to mitigate these concerns, the legislature introduced HB 894. This bill, which was passed in its final form on August 11, 2014, mandates the development and implementation of source water protection (SWP) plans for "every supplier of water operating a public water system treating and furnishing water from surface supplies" (§ 130A 320 (c)).

To date, SWP planning has occurred throughout the state on a voluntary basis and has followed a template recommended by US EPA. Consequently, the commonly recognized meaning of SWP planning includes identification of proactive activities designed to reduce the risk of contamination. However, deficiencies related to emergency response mechanisms currently exist. Therefore, a logical approach to improve SWP planning includes expanding on the existing template, with particular emphasis on emergency response protocols associated with spillable contaminants. As a result, SWP plans developed and implemented per HB 894 requirements could conceivably result in public water utilities identifying proactive strategies, as well as reactive emergency response protocols, which can be prioritized with respect to local situations and concerns.

This interim report was prepared to comply with § 130A-320 Section 2, and it is structured in two sections. The first section reviews activities to date by the North Carolina Division of Water Resources to begin implementation of HB 894. Such activities include background research, input from the North Carolina Source Water Collaborative, and initiation of the formal stakeholder process. The second section provides comment on the current state of SWP in North Carolina, identification of issues likely to complicate mandatory SWP planning, and implementation/reporting schedules required to assess compliance with the legislation.

Acronyms Used in this Report

BMP – Best Management Practice

DWP – Drinking Water Protection

LWSP – Local Water Supply Plan

PCS – Potential Contaminant Source

PWS – Public Water Supply

SDWA – Safe Drinking Water Act

SWP – Source Water Protection

US EPA – United States Environmental Protection Agency

WSRP – Water Shortage Response Plan

Section 1: Current Status of Implementation Activities

(a) Background Information

HB 894 was originally signed into law on June 30, 2014, with language that included “unfiltered” as a characteristic of the water supply source. This language was inconsistent with federal designations and resulted in initial confusion within the regulated community. On August 11, 2014, HB 894 underwent a technical correction that removed “unfiltered” as a descriptor and added the general concept of “treatment” as a condition for regulation. In its current form, the new law applies to 131 surface water systems serving nearly 8 million consumers.

The Division of Water Resources assigned the task of implementing HB 894 to the North Carolina Drinking Water Protection (DWP) Program within the Public Water Supply Section. The DWP Program is well-positioned to implement mandatory SWP planning. The DWP Program has already developed a voluntary SWP planning process based upon a template provided by US EPA. The process takes a comprehensive approach to identify potential contaminant sources (PCSs) and then prioritize strategies to manage the risk from PCSs. It seems reasonable that the existing process could serve as a basis for the mandatory planning requirements developed pursuant to HB 894. In addition to providing a standard process, the DWP Program readily supports traditional SWP planning by maintaining related products and services, including: (i) technical data assessments of the state’s nearly 9,000 public water sources; (ii) susceptibility analysis to categorize relative risk to public drinking water sources; (iii) web-based, interactive GIS planning tools that spatially represent drinking water assessment areas, PCSs, and other features; and (iv) partnerships with other state agencies that recognize drinking water protection as a priority when funding environmental projects.

(b) Research of Related Topics

A technical approach to address the emergency preparedness component of SWP planning was identified in early discussions as a potential improvement to the process. In particular, an approach that utilizes real-time, in-stream data collection coupled with variable treatment options was reviewed. Such a system can be described as follows: Contaminant-specific probes are installed in-stream and provide continuous monitoring of water quality conditions. Incoming data is used to detect any of a diverse set of chemical species that could potentially contaminate the water supply. Following detection of a specific contaminant, associated data such as concentration, stream flow rate, and anticipated dilution rates are used to determine adjustments in the engineering processes occurring at the water treatment facility.

DWP Program staff evaluated the applicability of this concept to North Carolina water systems. Probably the best example is demonstrated by the Intelligent River Project being developed by Dr. Gene Eidsen at Clemson University. Although the concept shows promise, the technology is still in the developmental phase and has not reached a level of practical application, and computerized, real-time data monitoring is likely cost prohibitive when using currently available, “off-the-shelf” technology. Also, the marketplace does not currently offer economically feasible probes capable of real-time detection of all the chemical species of interest to a water utility (1,4-Dioxane, for example).

Maintenance and calibration issues are also of concern with this emerging technology. Therefore, preliminary findings suggest cost and reliability issues may compromise the effectiveness of such systems, which is unacceptable in emergency scenarios where rapid and accurate decision-making is required to avoid a public health threat. In conclusion, there are likely few water utilities in the state with the expertise and resources required to implement this technology effectively. As technical and economic issues are resolved, this approach may be best suited as an expansion to the state's ambient monitoring network.

As an additional research exercise, DWP Program staff reviewed West Virginia's Senate Bill 373, which was passed to mandate SWP planning following an accidental release of 4-methylcyclohexanemethanol into the Elk River. Assuming that enhancements to spill response strategies denote a meaningful improvement to SWP planning, then provisions considered within West Virginia SB 373 may be applicable to water systems in NC. For example, the West Virginia Bill establishes a "Zone of Critical Concern" for surface water supplies that includes a five hour travel time to the intake. This definition clearly addresses the issue of spillable contaminants near drinking water intakes. Additionally, SWP plan elements identified in West Virginia SB 373 include: an analysis of alternate sources; a communication protocol to notify health agencies and the public during a contamination event; and analysis of a system's ability to close its intake during an emergency. Key concepts of the West Virginia legislation may provide a useful model to help the agency draft rule language pertinent to HB 894.

(c) Input from the North Carolina Source Water Collaborative

The North Carolina Source Water Collaborative is a statewide partnership of environmental professionals who have voluntarily assembled to identify and implement drinking water protection strategies. Founded in December 2011, the Collaborative includes participants from non-profit organizations, university programs, state, local and federal agencies, professional associations, and regional councils of government. The Collaborative's stated purpose is to "develop and support strategies designed to preserve the lakes, streams, rivers and aquifers used for drinking water and the land that protects and recharges these sources of water."

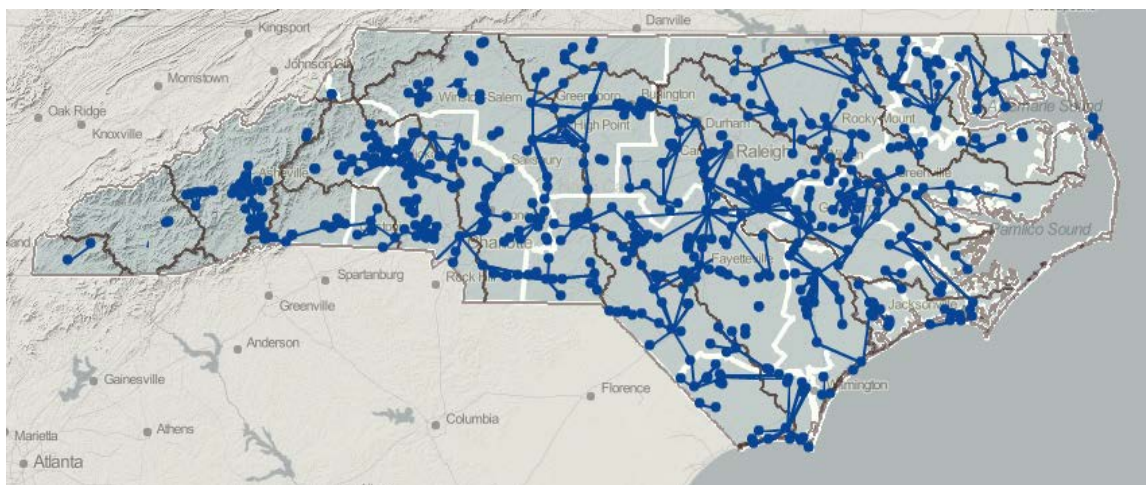
Staff of the DWP Program addressed the Collaborative during two of its quarterly meetings to initiate discussion and feedback associated with HB 894. The first of these meetings occurred on August 22, 2014. Meeting participants appeared enthusiastic about the potential of HB 894 but noted there were many unanswered questions. There was also feedback related to concerns associated with the role and responsibilities of local utilities. Two main themes emerged from the discussion. First, the Collaborative agreed that it did not view its members as the sole stakeholder mechanism for development of HB 894. It was recognized that wider representation was likely necessary to adequately develop this legislation. Subsequent discussion provided insight regarding recruitment of additional professionals that could broaden the stakeholder effort. The second major theme included concerns on the economic burden that mandatory SWP planning and implementation could impose on local utilities, especially if real-time in-stream monitoring is encouraged or required. In general, implementation costs for SWP projects can vary widely, and there was concern that HB 894 was passed as an unfunded mandate. It was noted that mandatory implementation could in some cases serve as a disincentive, resulting in the exclusion of

meaningful SWP activities, especially if local officials are unsure that funding will be readily available to pursue such projects.

DWP Program staff addressed the Collaborative again on November 18, 2014 within the context of a special meeting devoted entirely to HB 894. The primary purpose of this meeting was to discuss the viability of several draft components to support implementation of HB 894. The three main topics discussed included: (i) identification of strategies to emphasize emergency response within the existing, traditional SWP planning model; (ii) an assessment of the potential for strengthening regulatory oversight of selected PCSs; and (iii) the potential for web-based tools to support emergency preparedness.

Participants tended to agree that a variety of emergency response activities could be incorporated into the existing SWP planning model. In particular, the identification of alternate sources (e.g., a secondary intake), interconnections with neighboring systems, and increased storage capacity could effectively be utilized during a spill event to provide uninterrupted service. It was noted that many water utilities in North Carolina have already invested in such strategies, thereby reducing their contaminant threat under existing SWP protocols. The figure below, which includes surface and ground water systems, illustrates this point with respect to system interconnections.

Figure 1. Water system interconnections as reported by UNC's Environmental Finance Center.



The topic of increased regulatory oversight of selected PCSs raised concern among Collaborative members. Most notably, the concept of expecting water utilities to perform additional oversight of state-regulated facilities that are identified as PCSs was not well received. Logistical concerns are intensified for facilities geographically outside the jurisdictional boundaries of the local utility. It was noted that water systems do not have the expertise, staff or financial resources to accept a regulatory role in a manner that will effectively reduce contamination risk. Furthermore, existing statutes do not provide the authority necessary for a local government to compel a PCS owner to take any specific

action to reduce the risk of contamination to the water source. Therefore, any efforts to assign new regulatory responsibilities to water utilities will likely be met with resistance.

The topic of web-based tools to support emergency preparedness was well received by Collaborative members. The agency has expertise in this area, but funding will need to be identified to expand and maintain such tools and keep them relevant to the regulated community.

(d) Initiation of a Formal Stakeholder Process

Based upon internal discussions and input from the North Carolina Source Water Collaborative, a list of potential stakeholders was completed in October 2014. The stakeholder team will be expected to provide guidance and recommendations regarding standardized SWP planning formats and to help identify mandatory provisions for implementation. The team will also critique draft rule language once it is made available by the agency.

Information regarding HB 894 was distributed along with a call-for-participation on the stakeholder team. Instructions in the message encouraged forwarding the information to anyone that might have interest in the new legislation. Additionally, the call-for-participation was distributed statewide via the agency's Watershed Restoration Improvement Team listserv. The DWP Program received responses from more than 70 professionals willing to serve on the stakeholder team. The team currently includes representation from professional associations, non-profit organizations, councils of government, local government and local utilities, state and federal agencies, and industry representatives. An additional 24 people have requested ongoing receipt of information to monitor activities associated with HB 894. See Appendix A for a complete listing of stakeholder participants.

The first stakeholder meeting to address development and implementation of HB 894 was held on December 16, 2014 in the Ground Floor Hearing Room of the Archdale building in downtown Raleigh. The meeting was primarily designed to provide background and orientation such that participants could approach discussion of the legislation from a common reference point. The meeting was planned and coordinated by DWP Program staff of the Division of Water Resources.

Presentations and activities were prepared to address the following topics:

- Introduction of objectives, roles and information sharing,
- Overview of the language in HB 894,
- Existing SWP planning process,
- Existing tools and resources relevant to SWP planning,
- Exercise: Identifying priorities and improvements for PCSs ,
- Online GIS-based applications relevant to SWP planning,
- A framework to develop and implement HB 894, and
- Group discussion and feedback: identifying initial stakeholder preferences.

Stakeholder feedback was primarily obtained via: (i) a group exercise to examine PCSs, (ii) a survey to capture initial preferences, and (iii) post-meeting communication with individual stakeholders. Regarding PCSs, there is interest in prioritizing PCS risk categorization with respect to spillable and/or treatable criteria. The group also identified several new categories of PCSs that could be considered to improve the assessment process. Based on the survey of initial preferences, the majority of participants believe a modified version of the existing SWP planning template will likely be applicable to HB 894. The group also agreed that existing tools and resources will be useful and relevant to the implementation of HB 894. A detailed summary of the meeting, including presentation notes and results of individual survey preferences, can be found at <http://www.ncwater.org/hb894>.

A second stakeholder meeting is anticipated for late April or early May 2015. It is estimated that composition of draft rule language will begin by July 2015.

Section 2: Current Status of SWP Activities, Issues and Implementation/Reporting Schedules

(a) Current Status of SWP Activities in the State

The PWS Section of DWR has supported a robust approach to SWP planning prior to passage of HB 894. That is not to suggest that additional activity to improve and promote local SWP planning is unwarranted. However, it should be realized that SWP planning will not alleviate all risk associated with potential contamination or emergency spill events. SWP planning is considered as a tool to help local communities prioritize threats and identify mitigation strategies to address those threats. However, SWP planning is ineffective without implementation, which is dependent upon financial resources, local political will and participation from those affected by the SWP plan. Mandated SWP planning in the absence of any of these factors could significantly reduce the effectiveness of the process. For these reasons, SWP planning in North Carolina has to date remained a voluntary exercise for local communities.

US EPA mandated the creation of North Carolina's Source Water Assessment Program as per Section 1453 of the 1996 Safe Drinking Water Act (SDWA) Amendments. The North Carolina DWP Program was established from these amendments, as well as from the preexisting Wellhead Protection Program that was originally mandated as per Section 1428 of the 1986 SDWA Amendments. The DWP Program has developed guidance materials, online mapping applications, assessment areas, and other technical tools that support voluntary SWP planning. Such tools are either readily applicable to mandatory SWP planning as per HB 894 or they can be made relevant with minor modifications.

As aggregated across multiple agencies and state programs, North Carolina currently maintains a diverse regulatory approach that provides protective benefits to the state's drinking water sources. Because regulatory oversight of potential contaminants currently exists, there may be minimal advantages to increasing regulatory oversight as a component of HB 894, especially if local utilities are expected to accept such responsibilities. One example of an existing regulatory approach is the Water Supply Watershed Protection Program. North Carolina General Statute § 143-214.5 provides for a cooperative program of watershed management and protection to be administered by local governments consistent

with minimum statewide management requirements established by the North Carolina Environmental Management Commission. Under this program, local governments are required to adopt and enforce land use control ordinances to protect surface water sources from non-point source pollution, namely stormwater runoff. These local ordinances must meet the Commission's minimum requirements in Rules 15A NCAC 2B .0100 and .0200. Requirements include minimizing built-upon area from new development, maintaining vegetated setbacks from streams, and the control and treatment of stormwater runoff.

North Carolina has also established areas of interest (i.e., critical and protected areas) that are commonly recognized by water utilities as having higher priority when identifying risk to drinking water sources. These established areas are currently recognized by the agency's assessment program and will likely remain relevant for inclusion into mandated SWP planning. As defined in 02B .0202, the critical area is the area adjacent to a water supply intake or reservoir where the risk associated with pollution is greatest. The critical area extends one-half mile from the normal pool elevation of a reservoir or one-half mile upstream from and draining to an intake that is located directly in a stream or river. The remaining portion of the watershed is known as either the balance of the watershed or protected area, depending on the classification of the watershed. The balance of the watershed comprises the entire remaining portion of the watershed. The protected area, which applies only in Class WS-IV watersheds, is defined as the area within five miles of the normal pool elevation of a reservoir or ten miles upstream and draining to an intake located directly in a stream or river.

Protection of North Carolina's surface waters, which includes waters used for public drinking purposes, is accomplished through a variety of other state agencies and programs. Examples of programs that offer additional protection to surface waters include: the fresh surface water quality standards for water supply waters, the riparian buffer programs, the National Pollutant Discharge Elimination System program, the Jordan Water Supply Nutrient Strategy, and the Falls Water Supply Nutrient Strategy.

A regulatory framework exists in North Carolina that addresses potential water shortages and water unavailability (i.e., Local Water Supply Plans (LWSP) and Water Shortage Response Plans (WSRP)). A LWSP is an assessment of a water system's current and future water needs and its ability to meet those needs. North Carolina § 143-355 (I) requires all units of local government that provide or plan to provide public water service, and all community water systems having 1,000 or more connections or serving more than 3,000 people, to prepare and submit a LWSP. Plans are updated at least every five years. By looking at current and future needs, LWSPs allow local governments to better manage water supplies, plan for water supply system improvements, and prepare for a variety of water shortage situations, including those following a contamination event.

A WSRP is a requirement to complete the LWSP. A WSRP establishes authority for declaration of a water shortage, defines phases of water shortage severity, and outlines appropriate responses for each phase. The specific requirements for WSRPs are included in rules governing water use during droughts and water emergencies (15A NCAC 02E. 0607). All public and privately owned water systems subject to § 143-355 (I) are required to prepare and submit a WSRP as part of their LWSP. Updates are required as

needed to address changes such as population growth, new sources or additional demands for water, or after implementation and evaluation of the plan's effectiveness.

There are other existing regulatory examples that impart a level of protection to the state's drinking water sources. A collection of existing regulations was compiled by the DWP Program staff and is provided in Appendix B. There are at least eight subchapters in the administrative code that contain rules that may support protection of public drinking water.

(b) Potential Complications to Implementation

Interactions with HB 894 stakeholders have identified a list of issues and concerns that, if not adequately resolved, could complicate implementation and ultimately reduce the effectiveness of local SWP planning and implementation.

- Plan Development Costs
Based on experiences of the North Carolina Rural Water Association and recent funding activities of the North Carolina Clean Water Management Trust Fund, it is not uncommon for traditional SWP planning efforts to cost approximately \$20,000 or more. This estimate does not include the cost of implementation, and it does not appear to be dependent on water system size or complexity.
- Implementation Issues
Implementation, as currently mandated by HB 894, is necessary for a local SWP plan to have impact. However, implementation costs can vary widely depending upon provisions identified in the plan. This situation results in two issues. First, the true cost of compliance (e.g., planning plus implementation cost) will be difficult to quantify and capture in the required fiscal note. Secondly, there is incentive for local governments to consider only low-cost options within their SWP plans since they will ultimately be responsible to provide funding to comply with the mandatory implementation provision.
- Jurisdictional Concerns
Representatives from local government and water utilities report that they are generally unable to influence activities outside their jurisdictional boundaries. This is problematic since many water systems are subject to potential threats that are upstream and external to their jurisdictional control. Additionally, local governments are hesitant to expend resources and effort to influence activities downstream of their intake, even if such activities are within their jurisdictional control.
- Freedom of Information Concerns
For accountability purposes, the results of SWP planning and implementation as mandated by HB 894 should be made available to the consuming public. However, the release of such information may conflict with § 132-1.7, Sensitive Public Security Information. Because local SWP plans will conceivably contain information regarding the type and location of hazardous materials, this information may be used to initiate malicious or destructive activity.

(c) Implementation Schedules and Reporting Requirements

As per § 130-A-320 (c) (2) and (3), HB 894 requires schedules for creating and implementing local SWP plans, as well as reporting requirements for the Department to monitor the creation, implementation, and revision of such plans. Internal discussions with several key stakeholders have recommended a staggered approach for creation and submittal of local SWP plans. It is reasonable to consider factors such as a water system's Susceptibility Rating (i.e., a risk assessment as determined by the agency) and the existence of secondary sources as criteria for prioritization. One scenario would require water systems with higher susceptibility and no secondary sources to complete the SWP planning requirement in the first year following rule completion, as such systems may be more vulnerable to contamination events. Systems with moderate or lower susceptibility would be subsequently scheduled such that all water systems are in compliance within a four-year period. This staggered implementation approach benefits the agency because it provides greater opportunity for staff to develop sufficient outreach and assistance mechanisms. It also gives the agency time to adjust to the new regulatory responsibilities, which will presumably be absorbed by the DWP Program without additional staff or resources.

Reporting requirements must be sufficient for the agency to monitor plan development and assess compliance. A variety of reporting mechanisms have been suggested, including submittal to the agency via Local Water Supply Plans and/or on-site evaluation by Regional Office staff during routine sanitary surveys. The agency will be in a better position to define sufficient scheduling and reporting protocols once the substantive SWP planning requirements have been more fully developed.

Appendix A. Listing of HB 894 stakeholder participants and interested parties

Name	Affiliation	Level of participation
Jim Smith	American Council of Engineering Companies of North Carolina	Stakeholder
Bill Gilmore	American Council of Engineering Companies of North Carolina	Stakeholder
Peter Raabe	American Rivers	Stakeholder
Johanna Reese	Association of County Commissioners	Stakeholder
Beth Eckert	Cape Fear Public Utilities	Stakeholder
Mike Richardson	Cape Fear Public Utilities	Stakeholder
Pam Ellis	Cape Fear Public Utilities	Stakeholder
Jim Prosser	Centralina COG	Stakeholder
Jason Wager	Centralina COG	Stakeholder
David Czerr	Charlotte Mecklenburg Utility Department	Stakeholder
Jennifer Frost	Charlotte Mecklenburg Utility Department	Stakeholder
Michael Layne	City of Burlington	Stakeholder
Clarissa (Christy) Lipscomb	City of Hendersonville	Stakeholder
Ron Reid	City of Hendersonville	Stakeholder
Ed Buchan	City of Raleigh	Stakeholder
Leigh Ann Hammerbacher	City of Raleigh	Stakeholder
Caitlin Burke	Conservation Trust for North Carolina	Stakeholder
Ervin Lane	Division of Waste Management, Solid Waste Section	Stakeholder
Paul Clark	Division of Water Resources	Stakeholder
Kari Cahoon	Domtar Paper Co.	Stakeholder
Mark McIntire	Duke Energy	Stakeholder
Linwood Peele	DWR - Planning Section	Stakeholder
Susan Pope	DWR - Public Water Supply Section	Stakeholder
Rebecca Sadosky	DWR - Public Water Supply Section	Stakeholder
Jay Frick	DWR-Public Water Supply Section	Stakeholder
Jessica Godreau	DWR-Public Water Supply Section	Stakeholder
Bob Midgette	DWR-Public Water Supply Section	Stakeholder
Chris Smith	Fayetteville PWC	Stakeholder
Andrew Kota	Foothills Conservancy of North Carolina	Stakeholder
Anthony Whitehead	Greenville Utilities Commission	Stakeholder
Eric Romaniszyn	Haywood Waterways Association	Stakeholder
Mark Bishop	Hazen and Sawyer	Stakeholder
Phil Trew	High Country COG	Stakeholder
Dan McLawhorn	Lower Neuse River Basin Assoc	Stakeholder
Haywood Phthisic	Lower Neuse River Basin association	Stakeholder
Forrest Westall, Sr.	McGill Associates & Executive Director of the Upper Neuse River Basin Assoc.	Stakeholder

Ken Hudnell	Medora Corp (SolarBee/GridBee)	Stakeholder
April Graham	Mills River Partnership	Stakeholder
Jason Doll	Moffatt and Nichol	Stakeholder
John Goodman	North Carolina Chamber	Stakeholder
Grady McCallie	North Carolina Conservation Network	Stakeholder
Keith Larick	North Carolina Dept of Agriculture	Stakeholder
Joey Hester	North Carolina Division of Soil and Water Conservation	Stakeholder
Anne Coan	North Carolina Farn Bureau Federation	Stakeholder
Gail Bledsoe	North Carolina Forest Service	Stakeholder
Michelle Lovejoy	North Carolina Foundation for Soil and Water Conservation	Stakeholder
Doug Chapman	North Carolina Green Industry Council	Stakeholder
Mark Peters	North Carolina Green Industry Council	Stakeholder
Lisa Martin	North Carolina Home Builders Assoc.	Stakeholder
Sarah Collins	North Carolina League of Municipalities	Stakeholder
Rick Catlin	North Carolina Representative (Bill Sponsor)	Stakeholder
Daniel Wilson	North Carolina Rural Water Association	Stakeholder
Debbie Maner	North Carolina Rural Water Association	Stakeholder
Keith Starner	North Carolina Rural Water Association	Stakeholder
Chad Ham	North Carolina Water Quality Assoc	Stakeholder
Jon P. Carr	NCDRC Certified Superior Court Mediator, Jordan Price Wall Gray Jones and Carlton	Stakeholder
Cindy Gall	NCWOA	Stakeholder
Harold Herring	Neuse WASA (Alternate is Charlie Colie)	Stakeholder
Ruth Rouse	Orange Water and Sewer Authority	Stakeholder
Cy Stober	Piedmont Triad Regional Council	Stakeholder
Donald Long	Save Water Environmental	Stakeholder
Julie Youngman	Southern Environmental Law Center	Stakeholder
Sydney Miller (Syd)	Town of Cary Water Resources Dept	Stakeholder
Mike Schlegel	Triangle J COG	Stakeholder
Katherine Baer	Triangle Land Conservancy	Stakeholder
Chad Wagner	US Geological Survey	Stakeholder
Mike Orbon	Wake County	Stakeholder
Julie Ventaloro	Water Supply Watershed Program Coordinator	Stakeholder
Brooke Massa	Wildlife Resource Commission	Stakeholder
Cameron Moore	Wilmington Cape Fear Home Builders Association	Stakeholder
Susan White	WRRI	Stakeholder
Leslie Carreiro	City of Asheville, Water Resources	Email listserv
Lee Smith	City of Hendersonville, Utilities Director	Email listserv
Chris Hoke	Commission for Public Health - Chief Office of Regulatory Affaris	Email listserv
Jackie Drummond	Division of Waste Management, Solid Waste Section	Email listserv

Julie Gryzb	Division of Water Resources, NPDES	Email listserv
Kim Colson	DWI	Email listserv
Nancy Daly	Ecosystem Enhancement Program	Email listserv
Robin Jacobs	Eno River Association	Email listserv
Julius Patrick	Greenville Utilities Commission	Email listserv
Jan Hester Maynor	Lumber River COG	Email listserv
Lisa Corbitt	Mecklenburg County HD and Groundwater Guardian	Email listserv
Timmy Baynes	Mid-East Carolina Commission (COG)	Email listserv
Pat Harris	North Carolina Dept of Agriculture: Soil & Water Conservation Div.	Email listserv
Tom Reeder	North Carolina Division of Water Resources	Email listserv
Jeff Manning	North Carolina DWR	Email listserv
Hal Bryson	North Carolina Ecosystem Enhancement Program	Email listserv
Erin Wynia	North Carolina League of Municipalities	Email listserv
Deanna Osmond	NCSU - Soil Science Department	Email listserv
Chris Hamby (Dale)	Orange-Alamance Water System (?)	Email listserv
Leila Goodwin	Town of Cary Water Resources Dept	Email listserv
Steve Brown	Town of Cary Water Resources Dept	Email listserv
Sarah Bruce	Triangle J Council of Governments	Email listserv
Veronica Fasselt	USEPA R4 North Carolina Watershed Coordinator	Email listserv
Christy Perrin	WRRRI	Email listserv

Appendix B. Existing regulations that impart protection to drinking water sources

15A NCAC 18C: Public Water Systems

- .0307 ENGINEER'S REPORT, WATER SYSTEM MANAGEMENT PLAN AND OTHER PLANS – (e) Describes the availability and required components of Emergency Management Plans for PWSs (DWR)
- .1200 PROTECTION OF FILTERED WATER SUPPLIES – Outlines recreational activities, waste handling, sewage collection, burial of carcasses and substance disposal that can take place on or around a Class I or II drinking water reservoir. (DWR)

15A NCAC 2B: Surface Water and Wetlands Standards

- .0104 CONSIDERATIONS/ASSIGNING/IMPLEMENTING WATER SUPPLY CLASSIFICATIONS – Determining suitability of waters for use as water supply; local government watershed management; stormwater (DWR and DEMLR)
- .0203 PROTECTION OF WATERS DOWNSTREAM OF RECEIVING WATERS - Requires effluent-based limitations or management practices for discharges of waste or other pollution source into waters for protection of best usage. (DWR)
- .0208 STANDARDS FOR TOXIC SUBSTANCES AND TEMPERATURE (DWR)
- .0212 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-I WATERS – Numerical water quality standards, limits wastewater discharges, no landfills, no land application of residuals (DWR, DWM, DEMLR)
- .0214 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-II WATERS – Numerical water quality standards, wastewater, stormwater, limits on wastewater discharges, land application of residuals, landfills (DWR, DWM, DEMLR)
- .0215 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-III WATERS – Numerical water quality standards, wastewater, stormwater, limits on wastewater discharges, land application of residuals, landfills (DWR, DWM, DEMLR)
- .0216 FRESH SURFACE WATER QUALITY STANDARDS FOR WS-IV WATERS - Numerical water quality standards, wastewater, stormwater, limits on wastewater discharges, land application of residuals, landfills (DWR, DWM, DEMLR)
- .0218 FRESH SURFACE WATER QUALITY STANDARDS FOR CLASS WS-V WATERS - Numerical water quality standards (DWR, DEMLR)
- .0248 thru .0251 - RANDLEMAN LAKE WATER SUPPLY WATERSHED NUTRIENT MANAGEMENT STRATEGY – Stormwater, wastewater, riparian buffers (DWR)
- .0262 thru .0267– JORDAN WATER SUPPLY NUTRIENT STRATEGY – New development, existing development, riparian buffers, agriculture (DWR)
- .0275 – FALLS WATER SUPPLY NUTRIENT STRATEGY - New development, existing development, and agriculture (DWR)

15A NCAC 2E: Water Use Registration and Allocation

- .0607 PUBLICLY AND PRIVATELY OWNED WATER SYSTEM WATER SHORTAGE RESPONSE PLANNING REQUIREMENTS – A Water Shortage Response Plan establishes authority for declaration of a water shortage, defines different stages of water shortage severity, and outlines appropriate responses for each stage.

G.S. 143-355(l): Local Water Supply Plans - A Local Water Supply Plan is an assessment of a water system's current and future water needs and its ability to meet those needs. By understanding current

and future needs, local governments will be better able to manage water supplies and better prepared to plan for water supply system improvements.

15A NCAC 2H: Procedures for Permits: Approvals

- .0100 POINT SOURCE DISCHARGES TO SURFACE WATERS – (NPDES wastewater/stormwater) No specific rule for protecting water supplies, but these rules apply to subject persons who discharge waste or stormwater to surface waters, which can include source waters. (DWR and DEMLR)
- .0404 FACILITY LOCATION AND DESIGN – Requires facilities receiving treated waste in coastal areas to be located at least 500 feet from public surface water supply impoundment. (DWR)

15A NCAC 2T: Waste Not Discharged to Surface Waters

- .0305 DESIGN CRITERIA – Sewer extension rule, requires separation of 100 feet from public water supply source (DWR)
- .0506 WASTEWATER IRRIGATION SYSTEMS – Requires setback of 100 feet between spray/drip irrigation system and public water supply source. (DWR)
- .0606 SETBACKS Requires setback of 100 feet between single-family wastewater irrigation system and public water supply source (DWR)
- .0706 SETBACKS Requires setback of 100 feet between high rate infiltration unit and public water supply source; 500 feet setback for impounded public water supplies. (DWR)
- .1108 Setbacks Requires setback of 100 feet between residuals treatment/storage facilities and public water supply sources. (DWR)
- .1206 SETBACKS – Requires setback of 100 feet between coal combustion products storage/structural fill sites and public water supply sources. (DWR)
- .1300 ANIMAL WASTE MANAGEMENT SYSTEMS – Permitting and compliance activities of animal feeding operations.
- .1400 MANURE HAULER OPERATIONS – Permitting and compliance of animal waste hauling and application.

15A NCAC 2U: Reclaimed Water

- .0701 SETBACKS – Requires setback of 100 feet between final effluent storage facilities (reclaimed water) and public water supply source. (DWR)

15A NCAC 13A: Hazardous Waste Management

- .0107 STDS APPLICABLE TO GENERATORS OF HAZARDOUS WASTES – PART 262 – RCRA, >1,000kg/mo (DWM)
- .0108 STDS APPLICABLE TO TRANSPORTERS OF HAZARDOUS WASTES – PART 263 – RCRA, >1,000kg/mo (DWM)
- .0113 THE HAZARDOUS WASTE PERMIT PROGRAM – PART 270 – RCRA, all sized need permit if hazardous waste will be on site >90days (DWM)

15A NCAC 13B: Solid Waste Management

- .0800 SEPTAGE MANAGEMENT RULES – land application (DWM)