

**Stakeholder Participation in Watershed Management**  
An Evaluation of the Jordan Lake Stakeholder Project

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## **Abstract**

The Jordan Lake Stakeholder Project (JLSP) was a public participation project convened by the NC Department of Water Quality (DWQ) in response to high levels of nutrients found in Jordan Lake, a reservoir in the central piedmont of North Carolina. The DWQ is a frequent convener of such time- and resource-intensive projects, yet lacks methods for evaluating their successes and benefits. This project will give environmental regulators guidance on the use of collaborative processes in watershed management.

I evaluated the JLSP based on a framework of substantive and procedural factors and practical outcomes to identify the presence of criteria thought to be indicative of successful collaborative projects. Examples of criteria include process execution, process fairness, and public acceptance. I developed indicators for each criterion and used the presence or attainment of these indicators to denote the existence of the criterion. For example, indicators of process design included a clear impetus for the project, defined project goals and outcomes, and clear expectations of participants.

My findings indicate that the JLSP was successful in developing a pollutant load level for the watershed and recommendations for a nutrient management strategy. Concepts such as reductions in nutrient loading from existing development, Adaptive Management, and nutrient-trading were included in the rules proposed by the DWQ, based on the recommendations by the JLSP participants. In addition, the project encouraged communication and partnerships among municipalities in the watershed. However, issues such as the complexity of pinpointing pollution sources and a disproportionate allocation of costs and benefits produced by potential regulations may have been too complex and contentious for stakeholders to reach consensus-based decisions.

## **Acknowledgements**

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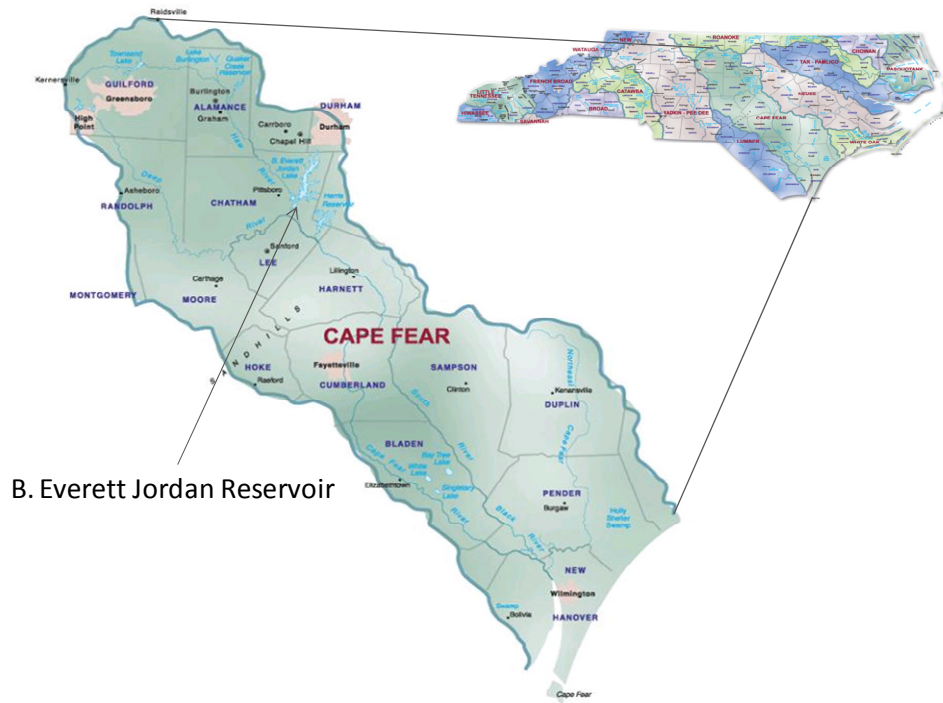
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## **Chapter 1 Introduction**

B. Everett Jordan Reservoir (Jordan Lake) is a nutrient-rich reservoir located in the upper Cape Fear River Basin in central North Carolina (Fig. 1). The lake has been plagued by high nutrient levels since its impoundment in 1983, when the Environmental Management Commission designated Jordan Lake as a Nutrient Sensitive Water (North Carolina Division of Water Quality 2007). In 2003, after several years of collecting data and developing a nutrient response model, the North Carolina Division of Water Quality (DWQ) convened the Jordan Lake Stakeholder Project (JLSP) to develop a Total Maximum Daily Load (TMDL) and nutrient management strategy for the watershed. The DWQ believed that by convening this group to develop the TMDL and nutrient management strategy they would gain much-needed support for possibly unpopular regulatory action.

The Jordan Lake Stakeholder Project is a typical example of the Division of Water Quality's use of stakeholder processes to engage the public during the initial stages of the regulatory process. The DWQ has been an avid proponent of public participation, convening close to twenty public participation projects in their regulation of water quality issues across the state (Maguire and Steelman 2006). The JLSP was one of the largest public participation projects ever convened by the DWQ, resulting in large costs in terms of both time and resources for the agency and the participants. The agency lacks, however, a method to assess the effectiveness of using these public participation processes (Maguire and Steelman 2006). The intent of my project is to provide feedback to the DWQ on their use of public participation processes by evaluating the success of the Jordan Lake Stakeholder Project.



B. Everett Jordan Reservoir

Figure 1: B. Everett Jordan Reservoir is located in the northern portion of the Cape Fear River Basin in central North Carolina (North Carolina Division of Water Quality 2007).



## **Chapter 2    Background on Collaborative Processes**

### *Definition of Collaborative Processes*

Koontz, et al. (2004) define collaborative processes as “collaboration among or between different stakeholder groups as a means for airing diverse viewpoints and generating information that will address increasingly complex environmental problems,” and as processes where “government shares decision-making power and authority with other stakeholders.” In the literature, there are several different definitions and labels for these types of processes. For the purpose of this report, I will use the term ‘collaborative processes’ to refer to “multiparty natural resource management projects, programs, or decision-making processes using a participatory approach” as defined in Conley and Moote (2003).

### *History of Public Participation in Environmental Decision Making in the United States*

Public participation has been a component of regulatory decision making since the late 1940’s (Koontz, et al. 2004). Prior to then, federal agencies’ involvement with the public was limited to gaining support for projects, rather than incorporating the public into the decision making process (Wagenet and Pfeffer 2004). In 1946, the enactment of the Administrative Procedure Act set minimum requirements for agencies to involve the public in the rulemaking process (Koontz, et al. 2004). The public’s involvement, however, was normally limited to public hearings and comments, resulting in the “fine-tun[ing of] agency proposals” (Sabatier, et al. 2005).

The 1960’s witnessed a change in the public’s role in environmental management (Wagenet and Pfeffer 2004). During this time, parallel movements increasing the public’s awareness of environmental degradation and a lack of transparency and inclusiveness in the

regulatory process encouraged the public to hold government regulators more accountable for their actions (Wagenet and Pfeffer 2004, Rowe and Frewer 2000). In addition, policy experts held a growing belief that many regulatory initiatives fail when a “top-down” or technocratic approach is followed (Webler and Tuler, *Public Participation in Watershed Management Planning: Views on Process from People in the Field* 2001).

These sentiments resulted in a wave of regulatory actions aimed at increasing the public’s level of participation in the development of environmental policy. In 1969, the National Environmental Policy Act (NEPA) was created, fostering civic participation by acknowledging the need for community input (Wagenet and Pfeffer 2004). Other actions taken by the U.S. Environmental Protection Agency (EPA) to increase stakeholder involvement followed, including EPA’s issuance of their “Public Involvement Policy” that outlined broad goals and specific guidelines for public participation in environmental decision-making (Wagenet and Pfeffer 2004).

Although the public was involved in an increasing number of regulatory processes, their role was still normally cursory. During the 1990’s, the government was, once again, faced with the public’s increasing dissatisfaction with the current regulatory solutions to environmental problems (Koontz, et al. 2004). Concurrently, the government was placing a greater emphasis on increasing accountability to the public and relying more heavily on local resource management (Rowe and Frewer 2000, Sabatier, et al. 2005). Collaborative processes were a natural solution to these problems.

Over the past twenty years, EPA has substantially increased its use of public participation in the development of environmental policies (Irvin and Stansbury 2004, Conley and Moote

2003). This increase is premised by the notion that if citizens become active participants in government, the regulations that develop from these collaborative process will be more just and effective (Irvin and Stansbury 2004). An increase in the number of partnerships, support from federal and state agencies, and funding is evidence for the popularity of collaborative processes (Leach, Pelkey and Sabatier 2002).

### *Support for Collaborative Processes*

Collaborative processes have been hailed as a way to reduce conflict among stakeholders; improve community relations with industry and government; allow environmental, social, and economic issues to be addressed in tandem; and produce better decisions (Conley and Moote 2003). In addition, regulations developed through collaborative processes are thought to be more attuned to the public's preferences and thus less contentious (Irvin and Stansbury 2004).

Irvin and Stansbury (2004) suggest the benefits of collaborative processes can be grouped into two categories, decision process and decision outcome, with two beneficiary groups, governments and citizens. During the process, government officials benefit from collaborative processes by learning from and informing participating citizens, building trust and alleviating hostility of stakeholders, and gaining legitimacy in their decision-making. Citizens benefit during the process by learning from and informing government representatives, enlightening others about new ideas and perceptions, and gaining the skills necessary to be active citizens. The outcomes of collaborative processes can benefit government officials by breaking previous gridlocks to achieve results, avoiding litigation costs, and developing better policies and implementation procedures. Citizens benefit from collaborative outcomes by achieving

necessary results, gaining control over the policy process, and being affected by better and more informed regulations.

### *Potential Problems with Collaborative Approaches*

Although participatory processes offer the allure of agreements based on consensus, public support and successful policy implementation, these agreements are not without costs. Public participation projects can be costly, time-consuming, and ineffective when not implemented in appropriate situations or with appropriate design and execution (Korfmacher 2001). Legal requirements for agencies to take action on environmental issues lead many collaborative processes to be run by the agencies themselves, resulting in a “top-down” approach that negates many of the benefits of collaborative processes (Wagenet and Pfeffer 2004). Alternatively, when multiple agencies or jurisdictions are represented in the process there may be a lack of authority to creating binding resolutions from the group (Irvin and Stansbury 2004).

In addition, many researchers question whether collaborative processes really do obtain the benefits attributed to them (Irvin and Stansbury 2004, Koontz, et al. 2004, Korfmacher 2001, Michaels 2001). One concern is that compromises made during collaborative processes can lead to solutions “less protective of natural resources than under traditional efforts” (Koontz, et al. 2004, 19). In addition, many question if these processes truly include a group of stakeholders representative of the general population. Special interest groups are normally over-represented, because they may be most concerned with the economic impacts of regulation, while the general public may be less involved because of the large time commitments these processes require (Irvin and Stansbury 2004, Sabatier, et al. 2005).

### *Lack of Evaluation of Collaborative Processes*

Despite their increased use and possible limitations, evaluation of collaborative processes concerning environmental issues has been limited (Chess 2000). There is an overall lack of empirical studies documenting the effectiveness and results of collaborative processes (Rhoads, et al. 1999). This lack of evaluation is damaging to the continued use of collaborative processes because there is little evidence to support the use of collaborative processes by regulatory agencies (Chess 2000). Environmental managers need to know whether these processes really do lead to improved resource management (Conley and Moote 2003). Process conveners need to identify whether the time and effort invested in collaboration by the participants is likely to produce tangible results (Leach, Pelkey and Sabatier 2002). Regulators should be aware of what can reasonably be expected of these processes and what variables influence them (Conley and Moote 2003).

Documentation of the types of policy questions collaborative partnerships are trying to address and an assessment of their accomplishments is necessary to determine the effectiveness of these partnerships (Leach, Pelkey and Sabatier 2002). Some researchers call for the use of a comprehensive set of criteria to determine the success of a project (Rowe and Frewer 2000). Others disagree, stating that because participants often disagree on what constitutes a “good process,” a comprehensive set of criteria will not be successful across the board (Webler and Tuler, *Public Participation in Watershed Management Planning: Views on Process from People in the Field* 2001, 29). Regardless of the method employed, agencies and participants need to realize the risks as well as opportunities that these processes provide (Leach, Pelkey and Sabatier 2002).

### **Chapter 3    Collaboration in Watershed Management**

The increased use of collaborative processes has been especially evident in the field of watershed management. Large areas spanning multiple government jurisdictions, numerous affected parties, and a wide range of pollutants and sources are just a few of the issues that are addressed by collaborative watershed management. Although there has been more extensive research and evaluation of collaborative processes in watershed management than in other environmental fields, there is still a lack of evaluation aimed at providing conveners with practical feedback. The Jordan Lake Stakeholder Project (JLSP) was a collaborative process convened by the North Carolina Division of Water Quality (DWQ) to develop a nutrient management strategy for an impaired reservoir. Because the DWQ is frequent convener of collaborative projects, evaluation of the JLSP would be beneficial to future watershed collaboration within the state.

#### *Background on Collaboration in Watershed Management*

The benefits of collaborative processes have enticed environmental regulators to increase their use, particularly in the field of watershed management. Prior to using collaborative approaches individual political jurisdictions regulated their own portion of the watershed, focusing their management on individual pollutants (Sabatier, et al. 2005). These policies focused on permitting point source pollution, such as industrial dischargers and wastewater treatment plants (Korfmacher 2001). Non-point sources such as agriculture and stormwater runoff were widely left unregulated, despite these sources' detrimental effect on water quality. The result was mediocre improvements in water quality.

In addition to excluding pollution sources, the public was also excluded from the regulatory process. The involvement of the public in these regulatory decisions was a secondary objective (Wagenet and Pfeffer 2004). However, because of the large number of citizens affected by water quality regulations, these issues are a salient issue for the public (Korfmacher 2001). This exclusion left the public dissatisfied with the results and resentful towards agency officials who had little connection to the watershed (Sabatier, et al. 2005).

Attempting to rectify the inefficiencies in this approach to regulation, regulators have attempted to revise their methods by using collaborative watershedwide management approaches to water quality. These approaches have revised watershed management to focus on local initiatives that cross jurisdictional boundaries (Michaels 2001). In addition, watershed regulations have shifted focus from point source dischargers to decisions about land use, agricultural practices, and the allocation of costs and benefits among water resource users (Korfmacher 2001). These programs emphasize active stakeholder involvement, employ integrated solutions, and recognize the authority of multiple agencies and jurisdictions (Michaels 2001). By involving the public in these decisions, regulators more fully understand the public's values for water resources, costs are distributed more efficiently, and there is greater support for implementation (Korfmacher 2001). This style of management allows all water users and polluters in a watershed to develop regulatory solutions acceptable to all, known as win-win solutions (Sabatier, et al. 2005).

The increased use of collaboration in watershed management has resulted in many researchers recognizing the need for evaluation to examine what has been learned and how collaborative efforts may be adjusted in the future (Leach and Pelkey 2001). In an assessment of 37 watershed partnerships, Leach and Pelkey (2001) found adequate funding, effective

leadership and management, interpersonal trust, and committed participants to be key themes in successful watershed partnerships. Koontz and Johnson (2004) collected data from Ohio watershed groups to determine if the composition of the stakeholders affected group accomplishments. From their research, they found that groups with diverse stakeholder representation excelled in creating plans and prioritizing issues. Groups with an equal balance of governmental and non-governmental representatives prioritized planning, research, and maintenance goals, while groups lacking governmental representatives prioritized only policy changes (Koontz and Johnson 2004). Duram and Brown (1999) analyzed survey responses from 64 federally funded watershed planning initiatives to assess the success of public participation. They found public participation to be most useful during the planning stages of outreach, and in identifying and prioritizing issues (Duram and Brown 1999). In addition, they found public participation efforts increased awareness of watershed conditions, increased interagency communication, and reached consensus on resource management plans (Duram and Brown 1999).

### *The Jordan Lake Stakeholder Project Case Study*

#### Jordan Lake Watershed Regulatory History

Jordan Lake is an impounded reservoir located in the Cape Fear River Basin (North Carolina Division of Water Quality 2007). The watershed encompasses 1,686 square miles within 10 counties and includes some or all of the urban areas of Durham, Chapel Hill, Cary, Burlington, Greensboro, and several other small municipalities (Fig. 2) (Tetra Tech 2003). The hydrologic structure of the watershed and lake results in three distinct segments: the Upper New Hope Arm, the Lower New Hope Arm, and the Haw River Arm (Fig. 2). The Upper New Hope



Arm is extremely shallow, resulting in very slow turnover rates and rapid nutrient accumulation. Land use in the watershed is mixed, ranging from agriculture lands to urban development, which leads to difficulty in assessing and regulating nutrient loads.

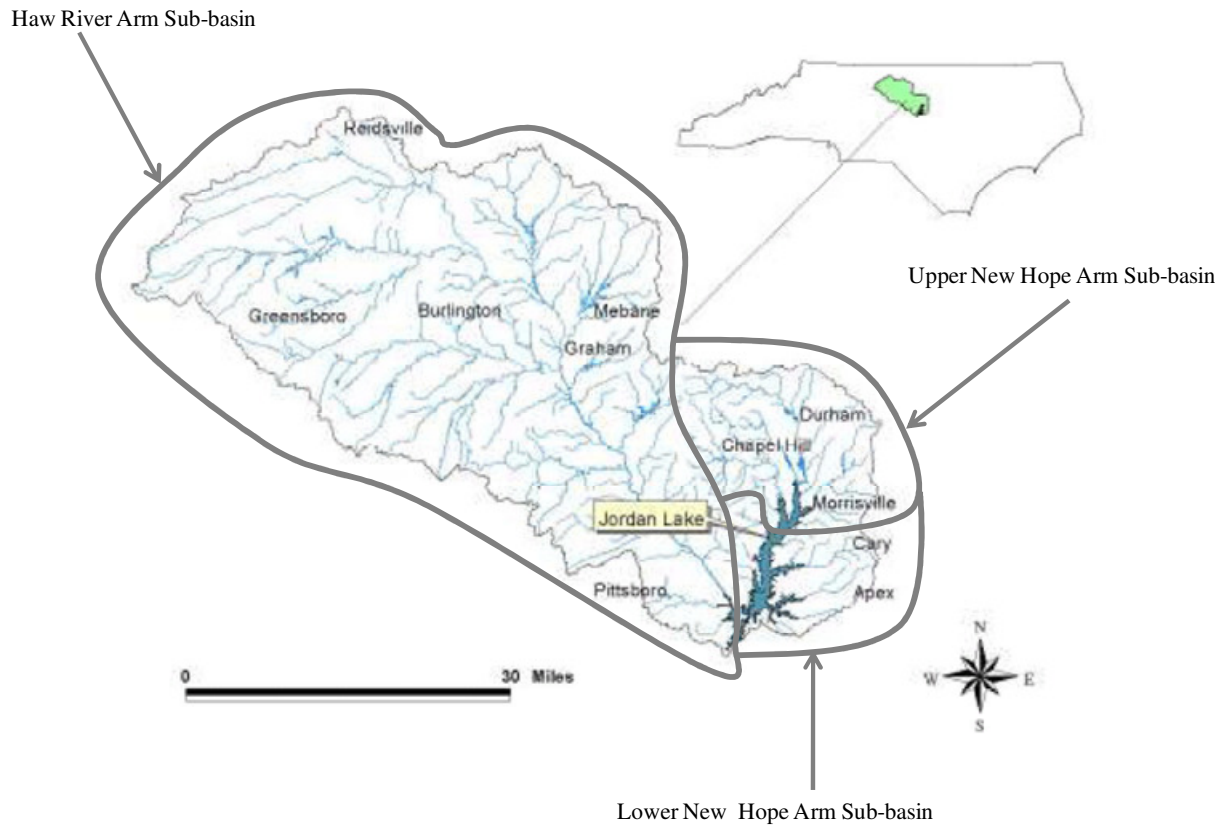


Figure 2: The Jordan Lake Watershed, located in central North Carolina, contains several municipal jurisdictions (North Carolina Division of Water Quality 2007).

During the 1970's, environmental advocates, the Town of Chapel Hill, and the City of Durham unsuccessfully challenged the US Army Corps of Engineers' (ACOE) plan to build the Jordan Lake reservoir (Jacobs 1974). Their lawsuit was based on predictions by water quality experts that the hydrology of the Jordan Lake watershed would result in low turnover rates and high nutrient levels in the lake (Jacobs 1974). Despite several initial victories by the petitioners,

the lawsuit was finally decided in favor of the ACOE and the reservoir was impounded in 1983 (Jacobs 1974).

As initially predicted, high levels of nutrients were found in Jordan Lake shortly after its impoundment, prompting state regulators to classify the lake as a Nutrient Sensitive Water in 1983 (North Carolina Division of Water Quality 2007). Over the years, efforts by the NC Division of Water Quality (DWQ) and individual jurisdictions in the watershed have had little success in lowering the nutrient concentrations in the lake. In 1997, the Clean Water Responsibility Act (CWRA) (NC General Statute 143-215.1(c1) to (c5)) mandated the state take action to reduce nutrient levels in reservoirs determined to be Nutrient Sensitive Waters by developing a nutrient management plan to address future development in the watershed (Triangle J Council of Governments 2005). Believing that nutrient levels in Jordan Lake were less than what the state was reporting and fearing potential regulations mandated by the CWRA, local jurisdictions commissioned a nutrient response model to identify current sources and levels of nutrients in the lake. The results from the model indicated that the lake had even higher nutrient levels than what the state thought, prompting local jurisdictions to begin working with the state on possible regulatory solutions (Tetra Tech 2001).

During the development of the nutrient response model, the DWQ designated the Upper New Hope Arm as impaired in the 2002 Impaired Waters List (Triangle J Council of Governments 2005). This additional designation placed a heightened priority on the development of a Total Maximum Daily Load (TMDL) and a nutrient management strategy to address elevated chlorophyll *a* levels resulting from excessive nutrient loads to the lake (Triangle J Council of Governments 2005). To expedite the regulatory process, the DWQ used the nutrient

response model commissioned by the local jurisdictions and augmented it with additional water quality data for use in the development of the TMDL and nutrient management strategy.

### The Jordan Lake Stakeholder Project

In 2003, the DWQ convened the Jordan Lake Stakeholder Project (JLSP) to assist with the DWQ's and the Environmental Management Commission's (EMC) development of the TMDL and nutrient management strategy for Jordan Lake (North Carolina Division of Water Quality 2007). The Triangle J Council of Governments (<http://www.tjcog.dst.nc.us/>) and the Piedmont Triad Council of Governments (<http://www.ptcog.org/>) facilitated the process. The JLSP brought together 222 individuals representing the diverse interests of 113 organizations from the watershed (Triangle J Council of Governments 2005). Twenty-one meetings were conducted between May 2003 and December 2004, when the official project concluded (Triangle J Council of Governments 2005).

At the conclusion of the official stakeholder project, a TMDL for each subwatershed had been developed. The targets are detailed in Table 1. The group had not been able to develop a nutrient strategy about which all participants could agree (Triangle J Council of Governments 2005). The project did make several recommendations about the content of the nutrient strategy on which the majority of the stakeholders were in agreement (Triangle J Council of Governments 2005). The recommendations were consistent with the following three overarching statements:

1. All of the stakeholders supported an adaptive management approach for the TMDL, nutrient targets, and nutrient management strategy.
2. All of the stakeholders supported a phased implementation of the nutrient management strategy.

3. Most of the stakeholders were interested in exploring the possibility of a nutrient trading program (Triangle J Council of Governments 2005).

Because the stakeholders were not able to develop a comprehensive nutrient management strategy or TMDL, informal meetings with the DWQ and stakeholders continued through 2007. In June 2007, the DWQ put forth a proposed set of rules for public comment. The public comment period closed on September 15, 2007. At the time of writing, the DWQ was responding to comments provided by stakeholders in order to make any necessary adjustments to the proposed rules. As of February 2008, the rules had not been heard by the Environmental Management Commission (EMC) but were slated to be on the May 2008 agenda. The EMC is comprised of environmental professionals appointed by the Governor and is responsible for adopting rules for the protection, preservation and enhancement of the State's air and water resources (North Carolina Environmental Management Commission 2008). Once the EMC approves the rules, the rules will be heard by the Rules Review Commission of the North Carolina General Assembly. If the rules receive a favorable report by the Rules Review Commission, they will then be voted on by the NC General Assembly. Voting on the Jordan Reservoir Nutrient Strategy by the NC General Assembly is expected during the 2009 Session.

Table 1: Total Maximum Daily Load reduction targets for the subwatersheds located in the Jordan Lake watershed (North Carolina Division of Water Quality 2007).

Subwatershed	Total Nitrogen percent reduction <sup>(a)</sup>	Total Phosphorus percent reduction <sup>(a)</sup>
Upper New Hope Arm	35%	5%
Lower New Hope Arm	N/A <sup>(b)</sup>	N/A <sup>(b)</sup>
Haw River Arm	8%	5%

<sup>(a)</sup> Nutrient load reduction targets from 1997-2001 baseline  
<sup>(b)</sup> Provides a loading cap equal to 1997-2001 baseline nutrient loads.

## **Chapter 4 Project Objective**

This project will give environmental regulators guidance on the use of collaborative processes in watershed management. I will evaluate the Jordan Lake Stakeholder Project (JLSP) based on procedural, substantive and outcome criteria in an attempt to determine the overall effectiveness of public participation in the JLSP. Specifically, this project addresses the following questions:

1. To what extent did stakeholders find the collaborative process beneficial to improving water quality in the Jordan Lake Watershed?
2. Did stakeholders find this process an effective means of developing a nutrient management strategy for the Jordan Lake Watershed?
3. To what extent did the stakeholder process influence the NC Division of Water Quality's regulation of nutrients in the Jordan Lake Watershed?

An additional objective of this project is for Drs. Lynn Maguire, Duke University, and Toddi Steelman, North Carolina State University, to use the analysis and results in a larger project they are currently working on. This project will evaluate the success of participatory processes completed by the North Carolina Division of Water Quality (DWQ). The DWQ can then use this evaluation as a guide for when and where the use of participatory processes is warranted (Maguire and Steelman 2006).

## **Chapter 5    Evaluative Method**

Deciding how to evaluate a collaborative process is no easy task. I begin this chapter with a review of the current literature on evaluative methods for collaborative process. I then describe the evaluative method I chose to evaluate the Jordan Lake Stakeholder Project.

### *Review of Collaborative Processes Evaluation Research and Theory*

Researchers believe that evaluation of collaborative processes is useful in (1) determining when there is a need for collaborative processes, (2) addressing the criticisms of collaborative processes, and (3) quantifying the benefits of collaborative processes (Conley and Mooto 2003). With the recognition that the evaluation of collaborative processes has been neglected, researchers have been quick to hypothesize how these processes should be evaluated. Decisions regarding what and how to evaluate are essential because the answers to these questions will dictate how the results of the evaluation will be interpreted. The following sections discuss possible approaches to conducting an evaluation of a collaborative process.

#### What to evaluate?

When conducting an evaluation of a collaborative process, researchers need to make several decisions regarding what is to be evaluated, including whether the process, the outcome, or both should be evaluated (Chess 2000, Conley and Mooto 2003, Rowe and Frewer 2000). The process of a collaborative project includes how the participation activities took place, as opposed to the results of the project (Chess 2000). An evaluation of the process could entail searching for what makes for an effective process, instead of whether the outcome of the process was effective (Rowe and Frewer 2000). Examples could include inclusiveness of representation or the types of decision-making methods that were employed (Conley and Mooto 2003). Outcome evaluation

focuses on the result of a collaborative process (Chess 2000). Results can be defined as the achievement of defined goals, but also as social outcomes resulting from the collaborative experience (Conley and Moote 2003).

### When to evaluate?

With the question of what to evaluate also comes the questions of when the evaluation should take place. Whether the process, outcomes, or both are to be evaluated, researchers can conduct evaluations either during a project or after the project has concluded. Chess (2000) defines three primary forms of evaluations used in the evaluation of collaborative processes: summative evaluation, formative evaluation, and impact evaluation. By evaluating a project retrospectively using summative evaluations, evaluators can evaluate both the process and outcomes of a collaborative project (Chess 2000). To determine if the project is on track to achieve its supposed goals, evaluators can conduct formative evaluations during the process (Chess 2000). Formative evaluations mainly evaluate process; however, formative evaluation results can in some situations be an early indicator of the project's outcome. Impact evaluation focuses on the long-term outcomes of a collaborative project (Chess 2000). Although costly and time-consuming, impact evaluations are useful in determining the accountability of collaborative projects (Chess 2000).

### Evaluation

Once the evaluator has determined what is to be evaluated (process, outcome, or both) and from what perspective the evaluation will be taken (on-going or retrospective evaluation), the next step is to determine how the evaluation will be conducted.

### ***Evaluative Criteria***

Most evaluations compare elements of a participatory process to a set of criteria (Conley and Moote 2003). Evaluators use criteria as indicators of both the expected benefits and consequences of a collaborative process (Conley and Moote 2003). Many researchers have developed criteria lists for collaborative process evaluation, and many criteria consistently appear in the lists, leading some researchers to speculate on the effectiveness of a comprehensive criteria list for a general analysis of collaborative processes (Chess 2000, Conley and Moote 2003, Rowe and Frewer 2000). Conley and Moote (2003), however, advocate tailoring criteria to each process evaluation to produce a more detail-rich evaluation; evaluations with similar criteria can then be compared.

Evaluation criteria correspond with the two components of the collaborative process, process and outcome. Rowe and Frewer (2000) categorize evaluation criteria as acceptance criteria or process criteria. Acceptance criteria relate to the development and implementation of a procedure, while process criteria relate to the potential public acceptance of a procedure (Rowe and Frewer 2000). Rowe and Frewer (2000) believe that an effective evaluation will take both types of criteria into account.

### ***Standards for Comparison***

In addition to developing the evaluative criteria, the evaluator should decide what elements of the participatory process the criteria should be compared against.

*Comparison of Outcomes* Identifying whether a collaborative process achieved its goals and how those objectives were met is the most common form of evaluation (Conley and Moote 2003). This type of evaluation entails measuring the outcomes of a collaborative process



and comparing the outcomes with the goals outlined by the project (Conley and Moote 2003). However, although this seems to be a straightforward task, goal comparison can be quite challenging because goals often not clearly defined and may be difficult to measure (Chess 2000). In addition, goal evaluations do not evaluate the appropriateness of the goals and can miss important outcomes if they are not specifically defined as goals (Conley and Moote 2003).

One method for evaluating the goals of a collaborative process is user-based evaluation (Chess 2000). User-based evaluation entails soliciting from the participants what their goals for the project had been, their satisfaction with the project and its outcomes, as well as their perceptions of the project (Chess 2000, Conley and Moote 2003, Creighton 2005). This is the most common method for gathering information on the goals of a project (Conley and Moote 2003). Creighton (2005) outlines a strategy where stakeholders are interviewed at the beginning of the process to identify their goals and are then asked to complete a questionnaire after the process has concluded to measure how well the process met their expectations. In this evaluation goals must be clearly defined at the start of the process and it must be understood that different stakeholders will have different expectations and goals (Creighton 2005). Whereas evaluators are not confined to this particular strategy of user-based evaluation, most include gathering stakeholder perceptions through interviews or questionnaires, or a mixture of both (Conley and Moote 2003, Chess 2000).

Goal-free evaluation evaluates the effects and outcomes of a process without being constrained by goals defined by the process (Chess 2000). This approach is meant to capture all of the benefits and detriments of a collaborative project that may not be included in goals defined either by the participants or theory (Chess 2000). Many times, these overlooked outcomes are social outcome benefits. Social outcomes are the benefits of a collaborative process that may not

be defined by the goals of a project, such as improved community relations, better acceptance of regulations, and increased dialogue among stakeholders and regulators (Creighton 2005). Many researchers believe that social outcomes are just as important as defined goals when evaluating collaborative processes and that their inclusion in evaluations is crucial (Conley and Moote 2003). Beierle (1999) has defined five social goals of public participation that should be included in evaluation as:

- (1) incorporating public values into decisions,
- (2) improving the substantive quality of decisions,
- (3) resolving conflict among competing interests,
- (4) building trust in institutions, and
- (5) educating and informing the public.

Success is then defined as the attainment of these goals (1999).

*Comparison of Multiple Collaborative Processes* Evaluators can compare similar collaborative efforts to determine how differences in processes or goals can result in different outcomes of both defined and social goals (Beierle and Cayford 2002, Conley and Moote 2003). For this evaluation to be useful, collaborative efforts included in a single study should have several shared characteristics (Conley and Moote 2003). For example, in a study conducted by Leach, et al. (2002), techniques for measuring six evaluative criteria were developed. The criteria were then applied to 44 watershed partnerships in California and Washington to evaluate the success and effectiveness of each partnership.

*Comparison of a Collaborative Process to Theory* Theory-based or best-practices evaluation applies theory-based criteria of successful collaboration to the collaborative project being evaluated (Chess 2000, Creighton 2005). For example, one theoretical framework which has been used to evaluate several environmental public participation projects requires the process be (1) fair, allowing people to participate, initiate discussion, and debate claims; and (2) competent, by using best available information (Chess 2000). These evaluations allow the researcher to examine broad concepts and questions regarding the effectiveness of collaborative processes and allow evaluators to compare results among processes (Conley and Moote 2003, Chess 2000). Theory-based evaluations rely on a presumed link between theory and successful outcomes. However, because of the lack of evaluation of collaborative processes, these links may not have been substantially proven. In addition, a criticism of theory-based evaluation is that many collaborative projects have been successful by either attaining their defined goals or producing social benefits despite failing to meet theoretical criteria (e.g., inclusiveness of all stakeholders), prompting questions regarding the necessity of these criteria for success (Conley and Moote 2003).

#### *Evaluation Method Employed*

To answer the research questions previously outlined I conducted a formative, or retrospective, evaluation of the Jordan Lake Stakeholder Project. As suggested by the literature, I focused my evaluation on both the process and the outcome of the project. To conduct my evaluation I used a framework of substantive factors, procedural factors, and practical outcomes as defined by the research of Drs. Maguire and Steelman (Maguire and Steelman 2006). The framework identifies factors and outcomes whose existence is believed to be necessary for successful public participation projects. I developed indicators for each criterion and used the

presence or attainment of these indicators to denote the existence of the criterion (Table 2). For example, I searched for the attainment of stakeholder goals as an indicator of the achievement of participant claims.

My rationale for choosing this method was two-fold. First, my project is part of a larger project that will eventually compare the success of multiple collaborative efforts; therefore, it will be useful for these efforts to be evaluated using a similar framework. Because this framework was developed by Maguire and Steelman (2006), who are also conducting the larger project, I felt confident that similar frameworks will be used in the subsequent evaluations. Second, this framework seems to be in line with many of the recommendations expressed in the literature. The framework allows for the evaluation of both the collaborative process and outcome. In addition, the criteria are rather general so that criteria specific to the process which is being evaluated can be defined.

To complete this evaluation my analysis revolved around three separate components: the analysis of quantitative data collected from stakeholder surveys, the analysis of qualitative data collected from stakeholder surveys, interviews, and process documents; and a comparison of the recommendations produced by the JLSP and the rules proposed by the N.C. Division of Water Quality.

Table 2: Evaluative framework of factors and outcomes, criteria, and indicators used to evaluate the Jordan Lake Stakeholder Project.

Factors/ Outcomes	Criteria	Indicator
Substantive Factors	Participant claims	Preconceived opinions on public participation
		Initial reactions to the JLSP
		Motivation for participation
	Strategic behavior	Actions taken by participants to undermine process
Procedural Factors	Process fairness	All relevant parties were represented
		Participants treated each other with respect
	Process design	Clear impetus for project
		Project goals/ outcomes were defined and clear
		Expectations of participants were clear
	Process execution	Consensus was defined for participants
		Sufficient and clearly defined duration of process
		Consistent representation of stakeholders
		Neutral and capable facilitators
		Conveners were competent in their role
		Public participation was included in decision-making
	Technical support	Sufficient education and comprehension of technical information
		Stakeholders' acceptance of technical information
Sufficient technical information to make informed decisions		
Practical Outcomes	Immediate products	Development of the TMDL and Nutrient Management Strategy
	Implementation	Inclusion of recommendations in subsequent state actions
	Public acceptance	Support for the recommendations of the JLSP and subsequent state actions
	Participant experiences	Satisfaction with JLSP
		Development of interactions/relationships among stakeholders and with the state
Socioeconomic consequences	Perceptions on equity of recommendations and TMDL	

## Quantitative Analysis

I collected quantitative data on stakeholders' perceptions of the process through a stakeholder questionnaire (Appendix A). The questionnaire attempted to gauge stakeholders' emotions, thoughts, and opinions on procedural and outcome components of the JLSP. To achieve this, the survey asked respondents to rate their agreement with given statements regarding components of the JLSP. The survey was divided into five sections: process fairness, process design, process execution, technical support, and outcomes. In each section were 5 to 7 statements similar to the criteria indicators. Stakeholders' agreement or disagreement with a statement could then be translated into either the presence or absence of the indicator. For example, in the process fairness section stakeholders were asked to rate their agreement with a statement suggesting that all stakeholders from the watershed were represented in the meetings. A stakeholder's agreement with this statement indicated the presence of the criterion that all relevant parties were represented. In addition to perceptions, the survey also collected general background information on each participant.

Of the 95 project participants listed in Appendix A of the JLSP Final Report (<http://h2o.enr.state.nc.us/nps/documents/200502JordanStakeholdersFinalReport.pdf>), I identified 55 participants who had attended more than 20% of the meetings (4 meetings) (Triangle J Council of Governments 2005). Of those 55 participants, I obtained an email address for 41 participants. I emailed the questionnaire to those 41 participants. For the next three weeks I sent out weekly reminders to those participants who had not returned their survey. During the fourth week I made reminder phone calls to those participants who had not completed the survey. At the conclusion of the four weeks I had received six surveys. Six weeks later I re-sent the survey and one additional survey was returned. In addition, I administered the survey

over the phone to three interview participants who had not yet completed the survey. These efforts resulted in ten, or approximately 25%, of the surveys being returned.

The stakeholder questionnaire produced quantitative data from the respondent's ranking of their responses and qualitative data from their responses to the open-ended questions. However, because of the small percentage of returned surveys, I was not able to conduct any meaningful statistical analyses on the data.

### Qualitative Analysis

I conducted a qualitative analysis on information gathered from process and media documents, open-ended questions on the stakeholder survey, and participant and convener interviews. Process documents are materials used to correspond with participants and enhance the efficiency and productivity of the participatory process. Examples of process documents that I collected were meeting agendas, meeting summaries, and correspondence between stakeholders and conveners. The majority of these documents were available on the Triangle J Council of Governments' website (<http://www.tjcog.dst.nc.us/>).

In addition to process documents I also gathered media documents covering the JLSP. These materials were available through LexisNexis (<http://www.lexisnexis.com>). Open-ended questions on the stakeholder survey previously described served to collect qualitative responses from stakeholders. I conducted participant interviews with both stakeholders and conveners of the JLSP. My interview protocol and stakeholder and convener interview questions are detailed in Appendix B. To select the stakeholder participants, I ranked each participant by the number of meetings they attended. I then chose eight stakeholders with high levels of participation who were representative of the many jurisdictions and interest groups represented in the JLSP. I

contacted these eight stakeholders and was successful in conducting interviews with four of them. I also interviewed two of the key conveners and one of the facilitators of the process. During the interviews, I asked respondents about their experiences participating in the JLSP as well as their perceptions on stakeholder projects and the future of collaboration in the region.

My qualitative analysis consisted of reviewing the text data for the presence of the defined indicators. Within each indicator I then coded similar ideas or thoughts to discern themes. The analysis of text data using codes is recommended by the literature (Rossman and Rallis 2003).

#### Comparison of JLSP Recommendations to Rules Proposed by the DWQ

To evaluate the major outcome of the JLSP, the stakeholder recommendations for a nutrient strategy, I identified specific recommendations from the Final Report of the Jordan Lake Stakeholder Project (Triangle J Council of Governments 2005). I then compared these recommendations with the current rules proposed by the DWQ (15A NCAC 02B .0262-.0272 and .0311) to identify similarities and dissimilarities. Because the nutrient management strategy and TMDL have not yet been enacted by the state, identifying products of the JLSP that have been incorporated into the state's draft rules so far will act as proxy for the criteria of implementation listed in Table 2.



## **Chapter 6 Evaluation Results**

The results of my evaluation of the Jordan Lake Stakeholder Project are from three separate analyses: a quantitative analysis, a qualitative analysis, and a comparison of the JLSP recommendations to the rules proposed by the DWQ.

### *Quantitative Results*

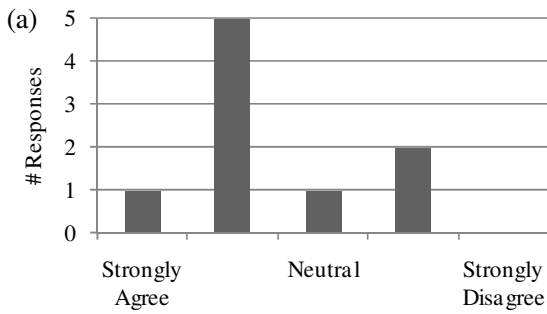
I collected quantitative data on procedural factors and practical outcomes from a stakeholder survey (Appendix A). Because of the small number of survey responses I received, I could not conduct meaningful statistical analysis of the data. A visual inspection of the data, however, does reveal some results.

### Procedural Factors

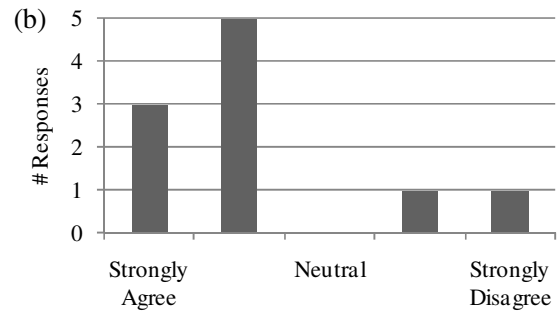
The stakeholder survey solicited responses from stakeholders on the following criteria for procedural factors: process fairness, process design, process execution, and technical support.

### *Process Fairness*

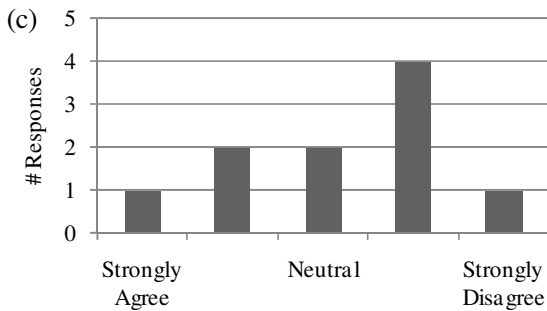
For the indicators of process fairness, respondents generally agreed or were neutral that all interested parties were represented in the discussion (Fig. 3(a)) and that the facilitators (TJCOG) respected the stakeholders' claims (Fig. 3(b)). There is more variance, however, in the stakeholders' response to stakeholders treating other stakeholders' claims with respect (Fig. 3(c)).



“All of interested parties were represented in the discussions.”



“The facilitators of the JLSP treated all stakeholder’s claims and positions with equal respect.”



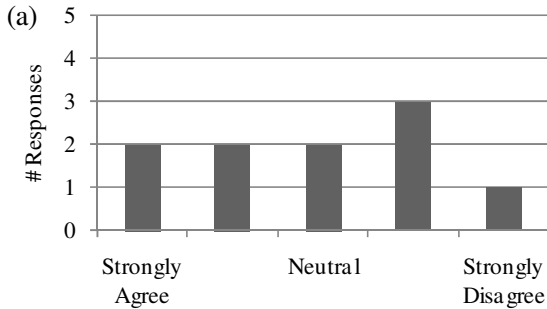
“Other stakeholders of the JLSP treated all stakeholder’s claims and positions with equal respect.”

Figure 3: Jordan Lake Stakeholder Project participant responses to questions on process fairness solicited from a stakeholder survey.

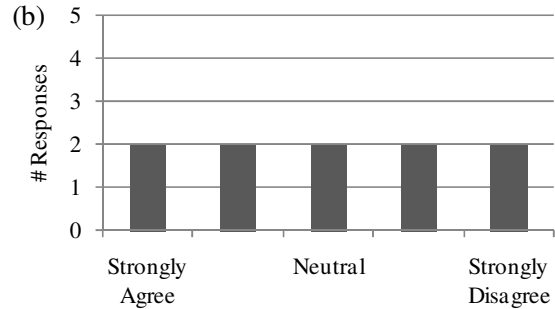
### ***Process Design***

On issues of process design, stakeholders’ responses were extremely varied. Regarding issues of defined goals of the project (Fig.4(a)) and the role of the DWQ (Fig. 4(b)), stakeholders’ indicated all levels of agreement, including neutral responses. However, on issues of TJCOG neutrality (Fig.4(c)), stakeholders’ roles (Fig.4(d)), and time commitments

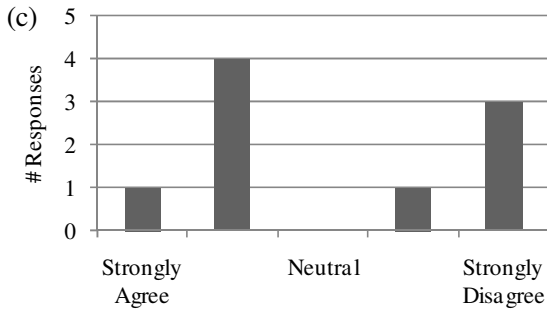
(Fig.4Figure 4(e)), stakeholders responded with either agreement or disagreement, with few, if any, neutral responses.



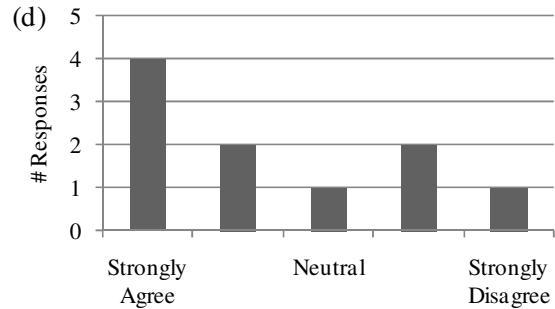
“The intended purpose of the JLSP was clearly defined to all stakeholders.”



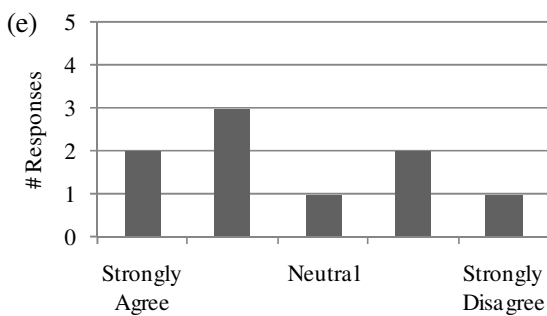
“The DWQ’s role in the JLSP was clear throughout the duration of the process.”



“TJCOG was a neutral facilitator throughout the duration of the JLSP.”



“I understood my role in the JLSP.”



“From the onset of the process, conveners informed me of the time commitment participating in the JLSP would require.”

Figure 4: Jordan Lake Stakeholder Project participant responses to questions on process design solicited from a stakeholder survey.

### ***Process Execution***

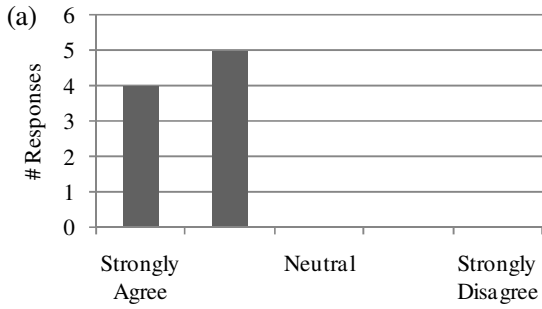
On issues of process execution, stakeholders overwhelmingly agreed with statements on punctuality (Fig.5(a)), time limits (Fig.5(b)), convenience (Fig.5(c)), location neutrality (Fig.5(d)), and equal participation (Fig.5(e)). Stakeholders agreed that the charter was followed (Fig.5(f)); however, after this survey was distributed I learned that, although a charter is mentioned in some of the process documents, it was never developed or implemented. This finding leads me to question the accuracy of the results not only for this question, but for the other questions administered in the survey.

### ***Technical Support***

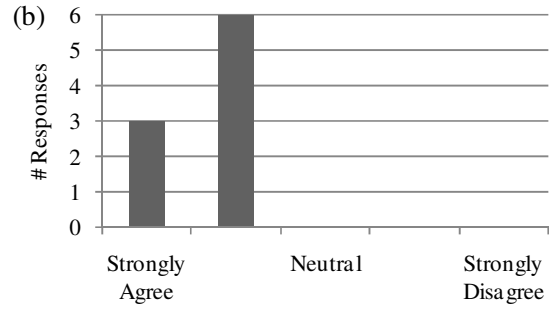
From the responses, it appears that the stakeholders as a group had very mixed feelings on technical support (Fig.6Figure 6). Stakeholder agreement varied on statements regarding their individual (Fig.6(a)) and group (Fig.6(b)) comprehension of the technical information, the availability of education on technical issues (Fig.6(c)), the recognition of technical parties as experts (Fig.6(e)), the neutrality of technical information (Fig.6(f)), and the sufficiency of technical information (Fig.6(g)). Stakeholders indicated their disagreement with the statement that the group accepted the validity of the data (Fig.6(d)).

### **Practical Outcomes**

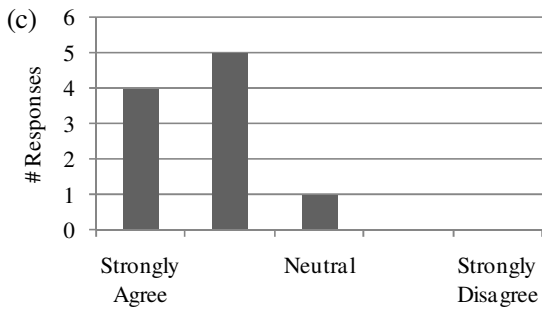
Responses regarding the practical outcomes of the Jordan Lake Stakeholder Project indicated varying levels of acceptance by stakeholders (Fig.7). Stakeholders gave mixed responses on issues of consensus (Fig.7 (a)), win-win solutions (Fig.7 (b)), stereotypes (Fig.7(c)), water quality protection (Fig.7(d)), equity (Fig.7(e)), education (Fig.7(f)), and future participation (Fig.7(g)).



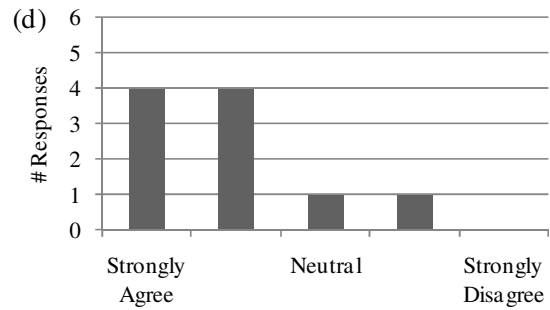
"Meetings began and ended on time."



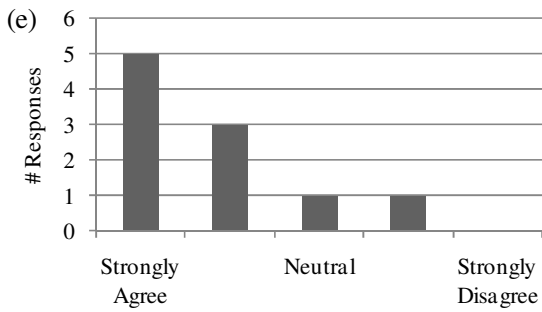
"Time limits set in the meetings were honored."



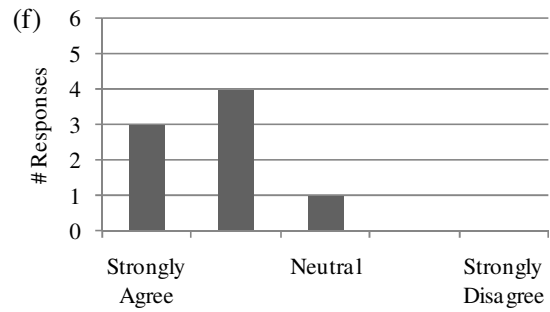
"The meeting times and locations were convenient for stakeholders to participate."



"The meetings were held in neutral locations."

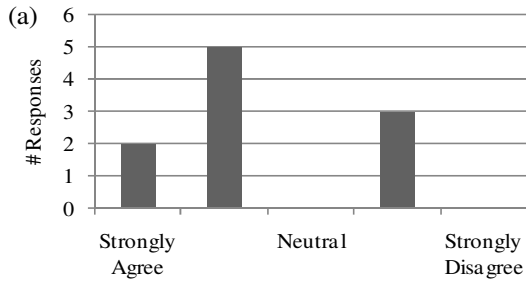


"Facilitators allowed all parties to participate equally."

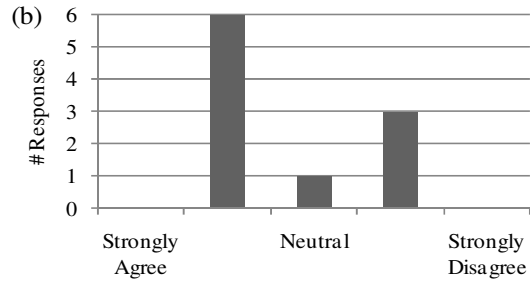


"The charter was followed in meetings."

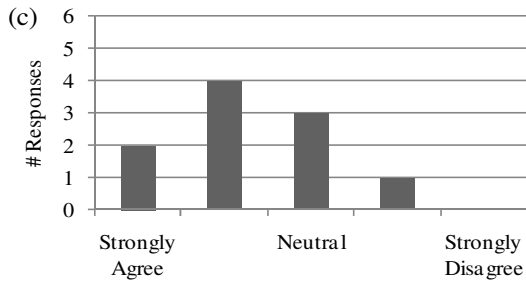
Figure 5: Jordan Lake Stakeholder Project participant responses to questions on process execution solicited from a stakeholder survey.



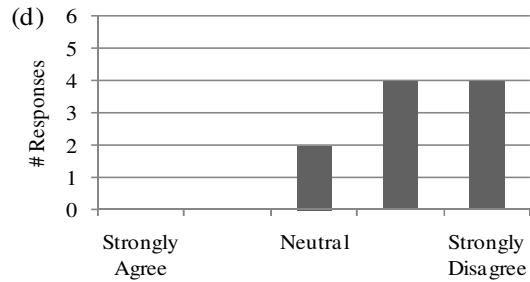
Panel (a) illustrates stakeholders' agreement with the question (a) "Technical information was presented in a manner that I could understand."



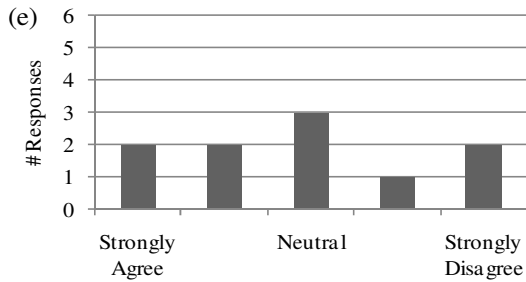
Panel (b) illustrates stakeholders' agreement with the question (b) "Technical information was presented in a manner that the majority of stakeholders could understand."



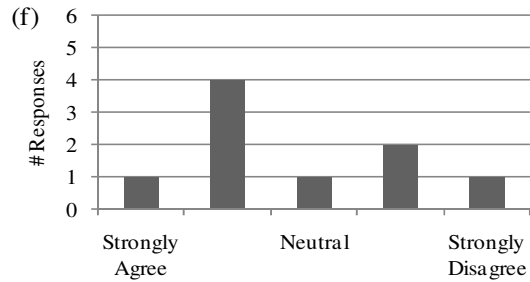
"When needed, stakeholders were given the opportunity to be educated on unfamiliar technical information."



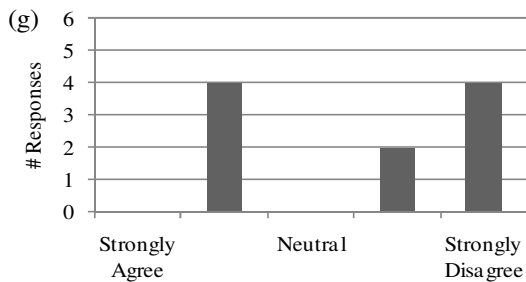
"Stakeholders accepted the validity of the data presented."



"Stakeholders recognized technical parties as experts in their fields."

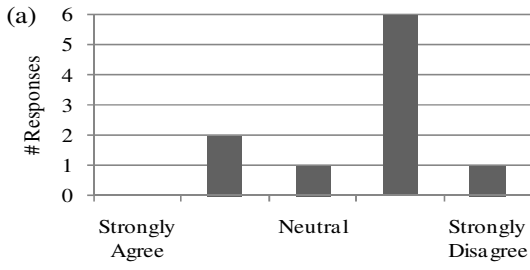


"Technical information was presented in a neutral manner."

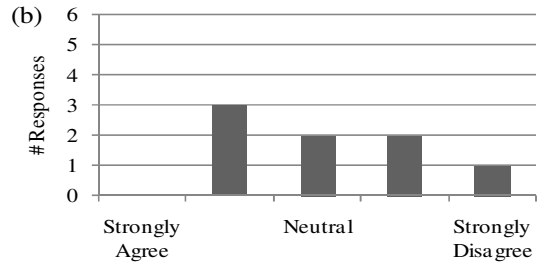


"There was sufficient technical information to make informed decisions."

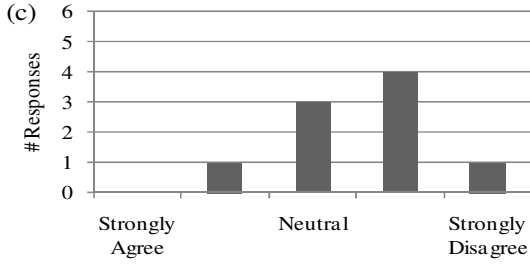
Figure 6: Jordan Lake Stakeholder Project participant responses to questions on technical support solicited from a stakeholder survey.



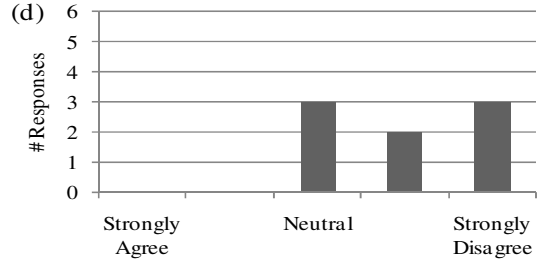
“The final recommendations of the JLSP were based on the consensus of the group.”



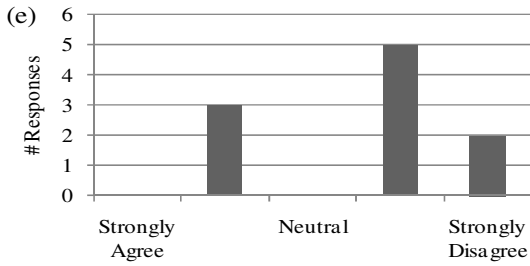
“The JLSP recommendations included win-win solutions.”



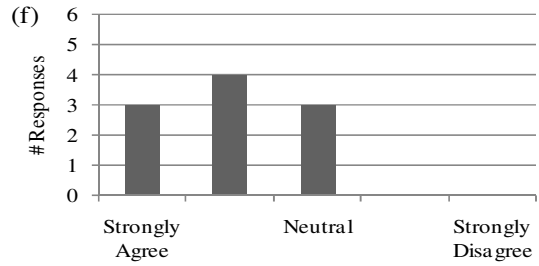
“Stakeholders were able to overcome stereotypes and opinions previously formed of each other.”



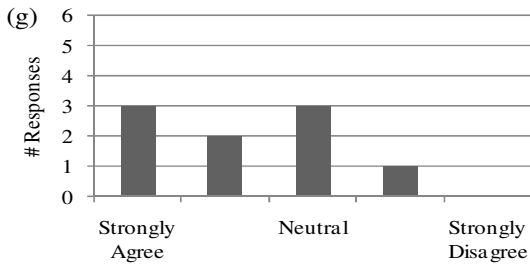
“If implemented, the final recommendations would adequately protect the water quality of Jordan Lake.”



“The final recommendations placed an equitable burden on all parties.”



“By participating in the JLSP, I became more educated on the state’s regulatory process.”



“Because of my experience with the JLSP, I have adjusted the way I participate in state-convened stakeholder processes.”

Figure 7: Jordan Lake Stakeholder Project participant responses to questions on outcomes solicited from a stakeholder survey.

## *Qualitative Results*

I analyzed responses to open-ended questions posed to JLSP participants in surveys and interviews, along with process documents, to find evidence of indicators of the evaluative criteria previously defined. Because of the limited response to my request for information, the results listed below may not be representative of participants in general.

### Substantive Factors

#### ***Participant Claims***

*Opinions on public participation processes* Participants in general seemed to realize the potential benefits associated with public participation projects. However, they also acknowledged these processes are time-intensive and not always successful. These sentiments are embodied in the words of one stakeholder, “I’m sold on the importance and the relevance of the process but at the same time I know that sometimes it is more or less successful than others.”

*Initial reaction to the JLSP* For the most part participants realized this process was going to be extremely challenging because of the sheer number of potential stakeholders and issues. One stakeholder described the project as “the mother of all stakeholder projects.”

*Motivation for participation* Stakeholders felt the need to represent their organization’s voice at these meetings. Many were concerned with the “potential implications of such large decisions.”

#### ***Strategic Behavior***

Although participant responses indicate several actions by both stakeholders and conveners that could be considered strategic behavior, actions taken by participants to undermine



the process, none of the issues were reported by more than one participant. Therefore, there are not substantiated occurrences of strategic behavior in the Jordan Lake Stakeholder Project.

### Procedural Factors

#### ***Process Fairness***

*Representation of all relevant parties* Stakeholders widely agreed that all relevant parties were invited to participate and that any lack of participation was by their own choosing. “All interested parties had equal opportunities for representation, but they didn’t all take equal advantage of those opportunities during the process.” Several stakeholders mentioned that local jurisdictions were adequately represented. I confirmed this statement by reviewing the attendance rosters from each meeting. Conveners mentioned that the developers and agriculture interests chose not to participate. “I felt like the municipalities were very well represented.” Some stakeholders mentioned that elected officials were not present at the discussions but were represented by their staff. This seemed to pose a problem at the conclusion of the project when elected officials did not agree with the recommendations of the group. According to the responses, the only group that should have been present but did not receive an invitation was the North Carolina Department of Transportation, whose omission was accidental.

*Treatment of Participants* The majority of participants indicated that stakeholders did not respect the positions of other stakeholders. One stakeholder indicated that “the pro-environmental groups were generally closed-minded in respect to the [concerns over cost and feasibility expressed by the] point dischargers.” Several participants attributed this to stakeholders treating “one another’s claims as not their problem.” In addition, one stakeholder

indicated that “there were times when one side dominated the conversation and the other side interrupted to end the conversation.”

### ***Process Design***

*Clear impetus for project* The JLSP was convened in response to the state’s legal obligation to develop a Total Maximum Daily Load and nutrient management strategy in response to the high levels of nutrients found in the lake. However, many stakeholders believed that the standard which the DWQ uses to determine nutrient concentrations, chlorophyll *a*, is a flawed methodology. For this reason these stakeholders did not believe a compelling case had ever been made for impairment at Jordan Lake and therefore did not see a reason for the JLSP. “I don’t think there was ever a convincing case made for impairment.” Other stakeholders felt there was a lack of evidence to gain support for the regulations, “There was never any water quality problems that the general public could truly see and taste and smell and react to.”

*Clearly defined goals and outcomes* As indicated by the majority of stakeholders and confirmed by the process documents, the purpose of the JLSP was to develop a TMDL and nutrient management strategy for the lake with comments from stakeholders. However, many stakeholders felt that the path to these goals was not well-defined. “At times I struggled with what was the end, where were we going with this.” In addition, several stakeholders indicated that the DWQ had a separate agenda to push through their own version of the strategy. The terms “hidden agenda” and “preconceived idea” were used in numerous statements. In one participant’s words, “The state knew where they wanted to go with this and they were going to lead the Jordan Lake Stakeholder Project group to that outcome.”

*Clear expectations of participants* Many stakeholders expressed frustration with the fact that the expectations of them were never clearly defined. To quote one participant, “I never felt comfortable with where we were fitting into the process.”

### ***Process Execution***

*Consensus* Few participants mentioned the idea of consensus. However, of those who did mention it, they were concerned that it had never been defined and they felt it had not been achieved. “Maybe this process was never meant to be consensus based. I know that someone has to make the final decision and I think that everybody understands that; but I don’t know if that was ever spelled out.”

*Duration of the process* A review of the process documents reveals that the JLSP was extended several times. In addition, even after the official stakeholder project was concluded, additional informal meetings to discuss the regulations were still held. Stakeholders indicated that clear endpoints and deadlines within the project would have been preferred. As one stakeholder mentioned, “We needed a deadline or formal end to the meetings.”

*Consistent representation of stakeholders* Stakeholders participating in the JLSP were not required to commit to attend all meetings. Many organizations sent representatives based on availability and discussion topics. In addition, because of the long duration of the process, staff turnover resulted in inconsistent participants. Several participants mentioned that for future projects a point person from each organization should be identified and required to attend; conveners should “make certain to have the same staff member attending meetings throughout the process.”

*Neutral and capable facilitators*      Participant responses regarding the facilitators varied. Many participants felt that Triangle J and Piedmont Triad Councils of Government were neutral and competent facilitators who did the best they could given the situation. “I think that [the facilitators were] not just neutral facilitators but really competent facilitators.” However, several stakeholders felt that the facilitators were not neutral. Some of these stakeholders believed that the facilitators favored the stakeholders, “As time went on I think there was a shift and that both [facilitators] fell on the side of the stakeholders.” While other stakeholders indicated that facilitators merely pushed the DWQ’s agenda; they were “not able to present the different options to stakeholders in a way that was independent of DWQ’s preferred method and options.”

*Competency of conveners*      Stakeholder responses regarding the DWQ’s role in the project were mixed. Some stakeholders felt that the DWQ did a good job with what they had to work with; “I thought DWQ did the best job they possibly could.” Other stakeholders felt that the DWQ was unprepared to undertake this project and that the DWQ was close-minded; “[DWQ] staff was ill-prepared to create meaningful rules.”

*Inclusion of public participation in decision-making*      Many stakeholders believed that their input was not incorporated into decisions made by the DWQ; “Decisions were made at the state level that we had no input in.” Several stakeholders indicated occasions when the DWQ made decisions regarding how to interpret results from the nutrient response model between stakeholder meetings. In the words of one stakeholder, it “seemed like decisions were made in between meetings.” In reviewing process documents and speaking with conveners, however, it does appear that some decisions were based on discussions with stakeholders. The decision to

divide the lake into three segments with three TMDL's was based on the suggestion of stakeholders.

### ***Technical Support***

*Sufficient education and comprehension of technical information* The majority of participants felt that the education component of the JLSP could have been improved by conducting it at the beginning of the process. In addition, several stakeholders felt confused by the intricacies of modeling and believed the "DWQ could tweak [the model] anyway they wanted to come up with any number they wanted." Additional education on the modeling component was suggested.

*Stakeholders' acceptance of technical information* Participants indicated that a group of stakeholders had concerns over the validity of the nutrient data presented by the DWQ and therefore did not accept the data. Many participants felt that several meetings were "hijacked by contention" brought about by the DWQ's failure to address these concerns. A review of the correspondence since the JLSP indicates that the accuracy of the data is still a concern for some stakeholders.

*Sufficient technical information* Several stakeholders expressed concern that there were not sufficient data collection points within the tributaries to "determine the origin of the [lake's] problems."

## Practical Outcomes

### ***Immediate Products***

The Jordan Lake Stakeholder Project developed a Total Maximum Daily Load and recommendations for a nutrient management strategy for the Jordan Lake watershed (North Carolina Division of Water Quality 2007, Triangle J Council of Governments 2005). Several participants felt that the project was instrumental in focusing regulators' attention towards issues surrounding nutrient loading from existing development. The draft rules proposed by the state are the first to ever attempt to regulate runoff from existing development. In addition, some participants felt that the inclusion of Adaptive Management and nutrient trading in the proposed rules were the result of the JLSP.

However, several stakeholders felt that the TMDL, recommendations, and proposed rules “would look the same” had the JLSP not convened.

### ***Implementation***

The TMDL developed by the JLSP has been approved by the Environmental Protection Agency (North Carolina Division of Water Quality 2007). Some of the recommendations of the project have been incorporated into the nutrient management strategy proposed by the DWQ. A later section, “Comparison of JLSP Recommendations to Rules Proposed by the DWQ,” identifies similarities between the recommendations and the proposed rules.

### ***Public Acceptance***

Several stakeholders felt that the recommendations produced by the JLSP were a compromise they were forced into and were unsure if they could support them. One stakeholder

indicated that he agreed with the compromise only “because he felt backed into a corner.” Many stakeholders expressed concern that the recommendations were not truly based on consensus, but an uneasy agreement from the group. However, a handful of participants did indicate their support for the recommendations and the subsequent rules proposed by the DWQ.

### ***Participant Experiences***

*Satisfaction with project* Stakeholders responses’ varied when indicating their satisfaction with the project. Four out of nine stakeholders indicated their time was well-spent and that it was a beneficial process, even if they did not agree with the final outcome. As one stakeholder said, “There were a lot of good things that came out of it.” The remaining five participants, however, indicated that the project was not worth the amount of time spent on it.

*Development of interactions/ relationships* The majority of participants agreed that communication among stakeholders increased due to the JLSP. Municipalities seemed to benefit from this communication by forming coalitions in the subwatershed and sharing ideas on stormwater point source reductions. One stakeholder indicated that “between municipalities, relationships got better.” Interactions between municipalities and interest groups seemed to deteriorate. One group described the project as “divisive process” and “that it was going to take a long time to heal.”

### ***Socioeconomic Consequences***

Two themes emerged regarding the socioeconomic consequences of the JLSP. One theme was the concern that jurisdictions furthest from the lake were facing implementation costs much larger than jurisdictions closer to the lake that benefit from the improved water quality. As one upstream stakeholder explains, “It is hard to understand how a community a great distance

from the shoreline with stringent buffer rules can have equal regulations as a community heavily developed on the shoreline.” The second theme, which elicited varied responses from participants, deals with the allocation of reductions between point and non-point sources. Several participants believed that point and non-point source reductions were allocated uniformly and equitably based on the fact that each was required to reduce the same percentage. In the words of one stakeholder, “Point source total Nitrogen and total Phosphorus loading reductions were allocated uniformly and equitably among all dischargers.” However, other stakeholders felt that point sources would end up “carrying the burden of reductions,” even though their contribution to the nutrient load is much smaller than from non-point sources.

#### *Comparison of JLSP Recommendations to Rules Proposed by the DWQ*

I compared the recommendations produced by the Stakeholder Project, as outlined in the Jordan Lake Stakeholder Project Final Report (<http://h2o.enr.state.nc.us/nps/documents/200502JordanStakeholdersFinalReport.pdf>), to the Jordan Reservoir Water Supply Nutrient Rules proposed by the DWQ (15A NCAC 02B .0262-.0272 & .0311) to determine if stakeholder recommendations had been incorporated into the DWQ’s draft rules. The Final Report was prepared by the Triangle J Council of Governments at the conclusion of the JLSP, in February 2005. The draft rules were prepared by the state of North Carolina in June 2007. The recommendations can be divided into three categories: general recommendations, point source recommendations, and non-point source recommendations. The following sections will present the results of recommendations that seemed to be of particular importance during the project. Recommendations were deemed important based on their level of discussion during the meetings, or their occurrence in my discussions with participants.



### General Recommendations Comparison

Stakeholders recommended that there be an equal allocation of reductions between point and non-point sources when compared to their baseline loading rates and that the principles of adaptive management be included in the nutrient management strategy. Both of these recommendations are included in the draft rules. Section .0262 (3) requires both point and non-point sources to reduce nutrient loading by an equal percentage of their 1997-2001 baselines. Section .0262 (7) Adaptive Management requires the Environmental Management Commission to evaluate the effectiveness of the rules after five years and for the Division of Water Quality to incorporate additional water quality data. Phased implementation is also included throughout the rules, allowing regulated parties time to determine how to efficiently achieve reductions. Stakeholders also addressed the need for a nutrient management strategy for the middle area of the lake, between the Haw River Arm and the Upper New Hope Arm. The draft rules define this subwatershed as the Lower New Hope Arm Subwatershed. There is no Total Maximum Daily Load (“TMDL”) calculated for this area, however, nutrients are capped at current levels.

### Point Source Recommendations Comparison

Point source dischargers recommended that all dischargers, large and small, be treated equally in the rules and that the TMDL be completely allocated among existing dischargers. The TMDL is completely allocated among the existing dischargers. However, requirements for optimization and compliance with wasteload allocations only apply to existing dischargers with permitted flows greater than or equal to 0.1 million gallons/day (Section .0270(5)). This distinction excludes small dischargers from the regulatory requirements of the rules.

Stakeholders also recommended that nutrient trading among point sources and between point sources and non-point sources should be allowed for in the TMDL and rules. Section .0269 and Section .0270(9) allow for this trading. Section .0296 allows for trading among sources by providing the authority for parties regulated by the rules to offset their nutrient loads by obtaining credit for reduction activities conducted by others. Section .0270(9) specifically allows point sources in a subwatershed to form a compliance group that would collectively meet the nutrient control requirements.

Point source dischargers also recommended that phased implementation and optimization requirements be included in the rules. Both of these recommendations are incorporated in the draft rules. Section .0270(5) allows dischargers until 2016 to meet reduction goals and states that the first step should be to improve and optimize nutrient reduction at each facility. Minor dischargers, however, are not required to do either.

#### Non-Point Source Recommendations Comparison

Jordan Lake Stakeholder Project participants recommended that all land uses should be included in the non-point source allocation and that allocations be based on a long-term average loading from 1991-2000. Comparing these recommendations with the proposed rules, I found that most, but not all, land uses were included in the rules. Silviculture, for example, is not included in the nutrient management strategy. In the proposed rules, nutrient allocations are based on the model period average of 1997-2001, not the longterm average of 1991-2000 as recommended by the stakeholders (Section .0265(3)).

Stakeholders felt that the non-point source nutrient strategy should be uniform and watershedwide, include all jurisdictions in the watershed, incorporate some flexibility as to how

local jurisdictions could meet the nutrient targets, and provide credit to jurisdictions for past efforts in nutrient management. A review of the draft rules confirms that the regulations are in fact uniform and watershedwide for all jurisdictions in the watershed. Additionally, the existing development rule (Section .0266) allows jurisdictions flexibility in how they meet reduction targets, as well as allowing them to request credit for their prior nutrient management efforts.

Nutrient loading from existing sources was a concern of stakeholders. This concern is addressed in Section .0266, which requires local jurisdictions to develop a strategy to meet nutrient reduction targets from existing development.

Regarding nutrient management, or fertilizer use, stakeholders recommended that parties affected by the rule should complete both training on nutrient application and a written nutrient management plan. Section .0263(4) stipulates that parties affected by the rule complete either the training or the plan, but not both.

Finally, stakeholders felt that education and outreach programs to homeowners, commercial property managers, and developers, as well as funding, should be components of the nutrient management strategy. A review of the draft rules indicates that education is only required for homeowners and NC Department of Transportation officials. There is no mention of funding in the draft rules.

## **Chapter 7 Discussion and Conclusion**

### *Discussion of Results*

The majority of participants in the JLSP were unresponsive to requests to participate in this evaluation. Based on my discussions with participants who did wish to participate in the evaluation, I believe the poor response rate can be attributed to two main factors: (1) because the JLSP was not a pleasant experience for most participants due to the contentious nature of the issues and the large amount of time it required, stakeholders were reluctant and even unwilling to become involved again; and (2) because the Jordan Lake rules have not been finalized, stakeholders were reluctant to discuss the project.

### Substantive Factors

In my evaluative framework, there were two criteria for substantive factors: participant claims and strategic behavior. Indicators of participant claims were preconceived opinions on public participation, initial reactions to the JLSP, and motivation for participation. The indicator for strategic behavior was actions taken by participants to undermine the process.

Participants were correct in their assumption that the JLSP would be difficult and time-consuming. The fact that several of them began the project with these feelings of doubt could have affected the way they participated from the beginning. Additionally, the fact that several participants mentioned issues of potential strategic behavior (although no cases could be substantiated by another participant) leads me to believe that participants were not trusting of each other during this process. Leach and Pelkey (2001) found in their review of 37 watershed partner evaluations, that 43% of respondents listed interpersonal trust as a requirement for a successful project.

## Procedural Factors

There were four criteria for procedural factors in my evaluative framework: process fairness, process design, process execution, and technical support.

### ***Process Fairness***

Indicators for process fairness were the representation of all relevant parties and the respectful treatment of participants. Interviewed participants indicated that stakeholders not present in the meetings were absent by their own choice. In reviewing developments in the regulations subsequent to the JLSP, it appears that many of the stakeholders who did not actively participate in the JLSP, such as homebuilder and realtor groups, are now contesting and delaying the rules proposed by the DWQ. Non-participation by these stakeholders could be seen as a form of strategic behavior intended to increase opposition to the rules.

The NC Department of Transportation (DOT) is one agency that was mistakenly not invited to the discussions. Some conveners believe that the DOT was aware of the JLSP but did not initiate participation because they were focused on other issues and did not realize the nutrient rules would affect them. Since the JLSP concluded, the DOT has been one of the biggest critics of the Jordan Lake rules. The DWQ has held numerous meetings with the DOT to address the DOT's concerns over the rules. The proposed rules now include a separate rule that applies to the DOT. This oversight illustrates the importance of assuring that all potential parties are at least invited to the table.

One of the suggested benefits of collaboration is less contention and delay in enacting collaboratively developed rules (Wagenet and Pfeffer 2004). It does not appear that the JLSP produced this benefit, possibly because not all stakeholders were present in the initial

communications. Beierle and Cayford (2002) have found that when all pertinent stakeholders are not included, problems arise when project recommendations or results are to be implemented. Because the state cannot exclude non-participating stakeholders from subsequent discussions, prior to undertaking additional collaborative efforts the state may want to identify why these stakeholders chose not to participate in order to avoid this problem in the future.

In a review of 37 evaluations of watershed partnerships, Leach and Pelkey (2001) found that 43% of the studies cited the importance of “participants who are cooperative and committed to the process” as important to the success of a partnership. Based on responses from both survey and interview respondents that stakeholders did not always treat each other with respect, I believe that this lack of respect may have contributed to the JLSP’s failure to develop a consensus-based nutrient management strategy.

### ***Process Design***

In my evaluative framework, indicators for process design were a clear impetus for project, well defined project goals and outcomes, and clear expectations of participants. Many stakeholders expressed concern with the chlorophyll *a* standard used to determine excessive nutrient concentrations in water bodies. The chlorophyll *a* standard was not a direct component of the JLSP; however, stakeholders’ concerns about it did affect their ability to agree that a nutrient management strategy was needed for Jordan Lake. Additional research may be warranted on this standard to determine its effectiveness and whether it is appropriate.

Creighton (2005) identifies three stages of public participation planning: (1) decision analysis, (2) process planning, and (3) implementation planning. The first two stages, decision analysis and process planning, include defining what decisions need to be made and how they

will be made, deciding for what decisions public participation is needed, and identifying how stakeholders will be included in the process and how decisions will be made (Creighton 2005). It seems that the concerns regarding the process that were identified by the participants could have been addressed by using Creighton's planning stages. Participant interviews indicated an overall lack of understanding regarding how stakeholder involvement in the JLSP would translate into decisions and recommendations. By using either Creighton's planning stages, or a process similar to Creighton's, the DWQ could have addressed many of the stakeholders' concerns regarding their role at the beginning of the process.

In addition to the DWQ identifying expectations of stakeholders, the development and acceptance of a formal charter could have formalized the expectations on stakeholders. In a case study on a forest planning initiative in northern New England and New York, Webler et al. (2001) found that enforcing the rules of a process helps to legitimize the process and helps to define a good process. Formalizing and enforcing rules within the JLSP would have assisted stakeholders in understanding how the process was to be executed and could have improved the success of the project. Conveners of the project have indicated that the development of a charter should be used in future collaborative projects run by the state.

### ***Process Execution***

The indicators for process execution in my evaluative framework were as follows: consensus was defined for participants, sufficient and clearly defined duration of process, consistent representation of stakeholders, neutral and capable facilitators, competent conveners, and the inclusion of public participation in decision-making.

Interview respondents indicated conveners and facilitators should have defined consensus and a clear endpoint to the process. However, according to Webler et al. (2001), for a process to be legitimate, decisions should be made by consensus, and there should be no clear endpoint to the process. If an endpoint is defined, they argue, a true consensus may not be reached and instead forced decisions may occur (Webler, Tuler and Krueger 2001). Because of the legislatively mandated time constraints placed on many of the DWQ's regulatory processes, however, choosing not to set clear endpoints to the process may not be feasible. In future collaborative projects, the DWQ should attempt to rectify the contradictory issues of consensus and endpoints. Because the DWQ is required by law to retain the final decision-making authority, it should be made clear to stakeholders how consensus- and nonconsensus-based decisions will be incorporated into the final decision. For example, the DWQ could instruct stakeholders that consensus-based recommendations will influence the final decision more than nonconsensus-based recommendations would.

The time-intensive nature of the JLSP made it difficult for representatives of organizations to be present at all meetings and for qualified representatives (i.e., decision-makers) to be in attendance. In addition, the length of the process increased the effect of staff turnover on participation. Irvin & Stansbury (2004) cite inconsistent representation and lack of authority to make decisions as key factors contributing to stakeholder dissatisfaction. Other collaborative projects conducted by the DWQ, such as the Catawba Buffer Rules, consisted of selected individuals from organizations who agreed to participate in the process throughout the duration (North Carolina Division of Water Quality n.d.). Interviews with conveners revealed that identifying specific individuals as organizational representatives in the collaborative process seems to be more productive and a similar scenario may be used in future projects.



### ***Technical Support***

Sufficient education and comprehension of technical information, acceptance of technical information, and sufficient technical information were indicators for technical support in my evaluative framework.

It is apparent that education, validity of data and availability of data were all concerns of the stakeholders. According to the conveners, subsequent collaborative processes have focused more on education at the beginning of the process. The conveners have realized that a thorough understanding of the technical component is helpful to stakeholders and that this education is best conducted at the start of the process.

In a comparison of two public participation projects conducted to clean up contaminated water supplies, Wagenet and Pfeffer (2004) concluded that “citizens must view technical assistance as trustworthy in order to be utilized.” Concern among JLSP stakeholders over the validity and amount of data used as the basis of their recommendations was expressed in both survey and interview responses. The DWQ’s inclusion of Adaptive Management principles in the proposed rules may help to alleviate some of this concern. The rules state that the Environmental Management Commission is to review the rules periodically after implementation to verify their success and make any needed changes. At these reviews additional water quality data will be included. In addition, collaborative projects the DWQ has undertaken since the JLSP have included Technical Advisory Committees, allowing stakeholders to participate in the planning and development of data collection and water quality modeling.

## Practical Outcomes

Criteria for procedural factors in my evaluative framework were defined as immediate products, implementation, public acceptance, participant experiences, and socioeconomic consequences.

### ***Immediate Products***

I defined the development of the TMDL and nutrient management strategy as immediate products in my evaluative framework. Although the JLSP was not successful in developing a comprehensive nutrient management strategy, the project was successful in developing a TMDL that was approved by the Environmental Protection Agency and recommendations that have influenced the rules proposed by the state. Regulations towards existing development, flexibility in compliance with nutrient trading, and re-evaluation of regulations consistent with Adaptive Management principles are all the result of the JLSP.

### ***Public Acceptance***

I used support for the recommendations of the JLSP and subsequent state actions as an indicator of public acceptance. The qualitative results indicate that, of the stakeholders who responded to the survey and interview requests, the recommendations are not widely supported. Lack of consensus seems to be a recurring theme for why the results were not supported. As previously discussed, the adoption of a formal charter that defines consensus could address this concern. However, defining consensus is not a guarantee that consensus will be reached. The issues being tackled in the JLSP, such as the equity of costs and reductions, may have been too divisive to reach consensus even if it had been defined.

### *Participant Experiences*

Stakeholders' satisfaction with the JLSP and the development of interactions and relationships among stakeholders were indicators of participant experiences. Irvin and Stansbury (2004) include increased dialogue among stakeholders and regulators as a potential benefit of collaborative processes. The JLSP did seem to be successful in encouraging communication among municipalities. Participants indicated that stormwater representatives and wastewater treatment plant representatives were able to discuss compliance options with representatives from other jurisdictions and that this may not have occurred without the JLSP. The project seemed to deteriorate long-standing relationships that interest groups, particularly environmental groups, had with municipalities. These relationships are still strained as municipalities try to balance water quality and costs.

### *Socioeconomic Consequences*

In my evaluation, I used perceptions of the equity of the recommendations and the TMDL as indicators for socioeconomic consequences of the JLSP. The greatest divide between stakeholders in the JLSP seemed to arise from the fact that upstream jurisdictions were being required to make large reductions at large cost while downstream jurisdictions benefitted. This divide was not overcome by the JLSP and still remains a contentious issue in the debate today. The current rules do not seem to address this inequity. One potential solution could be to develop a structure of payments by downstream jurisdictions to upstream jurisdictions. Downstream jurisdictions would in essence be paying upstream jurisdictions to provide them with clean water. This solution would more efficiently distribute the costs and benefits across the watershed and could improve relationships.

## Implementation of Recommendations and TMDL

The recommendations and TMDL produced by the JLSP seem to be fairly well incorporated into the current rules. The TMDL reduction targets, as developed by the JLSP, were approved by EPA in September 2007. The incorporation and approval of the JLSP products may not, however, be indicative of success. Several of the stakeholders who participated in this evaluation felt that the JLSP was merely a front to push the DWQ's agenda. If this is true, there should be no surprise that the products of the JLSP were incorporated in the draft documents produced by the DWQ.

### *Conclusion*

There is no question that the Jordan Lake Stakeholder Project was a long and contentious process. The fact that nearly four years later the rules are still being debated is proof of this.

This evaluation set out to answer three questions:

1. To what extent did stakeholders find the collaborative process beneficial in improving water quality in the Jordan Lake Watershed?
2. Did stakeholders find this process an effective means of developing a nutrient management strategy for the Jordan Lake Watershed?
3. To what extent did the stakeholder process influence the NC Division of Water Quality's regulation of nutrients in the Jordan Lake Watershed?

Because the results of this evaluation are based primarily on communication with a small proportion of the participants of the project, the answers to these questions are speculative. Regarding improved water quality, most participants are skeptical that large reductions in nutrients will occur. This skepticism is in part due the high levels of uncertainty surrounding the

data and the nutrient response model. Participants also seemed skeptical that the regulations would be implemented “as is” due to the enormously high costs associated with the rules. For these reasons I do not believe stakeholders found the process to be beneficial to improving water quality in the Jordan Lake Watershed.

Based on the results of the qualitative analysis, I do not believe stakeholders consider the JLSP to be an effective means for developing a nutrient management strategy. The project did not produce its intended product of a nutrient management strategy, only recommendations for a strategy. And while many of these recommendations were incorporated into the subsequent strategy, much additional time was spent by all participants to develop the strategy after the formal end of the JLSP. Stakeholders affected by these rules seem to be exhausted with the continuous debate and are ready for the process to be behind them.

The products of the JLSP did seem to influence the DWQ’s regulation of nutrients in the Jordan Lake Watershed. There are several components of the draft rules (Adaptive Management, existing development, and nutrient trading) whose inclusion in the rules are attributed to the JLSP.

The issues surrounding the regulation of nutrients in the Jordan Lake Watershed are contentious and complex. The Jordan Lake Stakeholder Project was successful in bringing together a diverse group of stakeholders to discuss these issues and collaborate on how they might be addressed. The issues in regulating this watershed, however, may be too great to be overcome by collaboration. However, we cannot know what would have happened with the regulations in the absence of the JLSP. Although the process thus far has been lengthy and contentious, we may have been worse off without the JLSP.

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## **Appendix A: Jordan Lake Stakeholder Project Participant Survey**

Dear Jordan Lake Stakeholder Project Participant,

I am a Masters of Environmental Management Student at Duke University's Nicholas School of the Environment and Earth Sciences. For my master's research project, I am researching the use of stakeholder participation in watershed management and am conducting an evaluation of the Jordan Lake Stakeholder Project. I intend to evaluate the success of the Jordan Lake Stakeholder Project on the basis of your perceptions of both the process and its recommendations. State officials can then use this information in determining when and where stakeholder collaboration processes are appropriate in other watershed management situations.

Your feedback on the stakeholder process, through the attached survey, will be extremely useful. The survey is a series of statements which you are asked to rate. In addition, there are several open-ended questions where you can provide further comments. The survey will take 15-25 minutes. Instruction for completing and returning the survey in either hard copy or digital format are provided on the next page. You are under no obligation to participate. If you choose to participate, you may halt completion of the survey at anytime and you may choose not to answer any questions. If you prefer, you may complete the survey by phone by contacting me at the phone number or email below.

The information provided in this survey will assist me in drawing conclusions on the success of the JLSP. I will present my conclusions in a final report at the Nicholas School Masters Project Symposium in April of 2008. I will also share these conclusions with Triangle J Council of Governments and NC Division of Water Quality (NC DWQ). Additionally, the results of my evaluation will be included in a larger project conducted by Dr. Lynn Maguire, Duke University, and Dr. Toddi Steelman, North Carolina State University. Their project will evaluate the success of participatory processes completed by the NC DWQ.

I will hold the results of this survey in strict confidence. Reports utilizing data from the surveys will not reveal which respondents provided which answers. No one but my advisor, Dr. Lynn Maguire, and I will have access to the completed surveys. I will retain the surveys until the project is completed, estimated to be around April 2008. At that time, I will hand over the surveys to my advisor. She will retain possession of these materials until the completion of the project she is conducting with Dr. Toddi Steelman.

Should you have questions or require additional information, please feel free to contact me, Christine Wyman ((919) 326-7347, [ctg5@duke.edu](mailto:ctg5@duke.edu)), or Dr. Lynn Maguire, Duke Professor and primary advisor to this project ((919) 613-8034, [lmaguire@duke.edu](mailto:lmaguire@duke.edu)).

Sincerely,

Christine Wyman

## Introduction

The purpose of this survey is to gain a better understanding of your experience with the Jordan Lake Stakeholder Project and your perceptions on the outcomes of the project and future stakeholder projects. The survey is comprised of a series of statements regarding the project. Please indicate your agreement or disagreement on a scale of 1-5, with 1 being that you strongly agree with the statement, 3 being neutral, and 5 being that you strongly disagree with the statement. In addition, there are several open ended questions where you are asked to provide your own answer.

Depending on your preference, you may submit your responses to me either in electronic or hard copy form. If you prefer to complete the form digitally, please mark your responses directly within this document and email the document to me at [ctg5@duke.edu](mailto:ctg5@duke.edu). Or if you prefer to complete a hard copy of this survey, please print out the survey to complete it and fax your completed survey to me at (919) 787-1063. Please submit responses within ten days of receipt. If you have any questions or wish to complete the survey by phone, please feel free to contact me at [ctg5@duke.edu](mailto:ctg5@duke.edu) or (919) 326-7347.

## Background Information

1. Name: \_\_\_\_\_
2. Affiliation: \_\_\_\_\_
3. Which of the following types of organizations best describes the organization you represented in the JLSP? (Please choose one)
  - Local Governments \_\_\_\_\_
  - State Government \_\_\_\_\_
  - Federal Government \_\_\_\_\_
  - Industry \_\_\_\_\_
  - Non-profit \_\_\_\_\_
  - Other \_\_\_\_\_
4. Did you have the authority to make commitments for your group? Yes \_\_\_\_\_ No \_\_\_\_\_
5. Were the final recommendations consistent with the priorities and goals of the organization you represented? Yes \_\_\_\_\_ No \_\_\_\_\_
6. What percentage of the 21 meetings did you attend between May 2003 and December 2004?  
\_\_\_\_\_

## Survey

Please indicate your agreement or disagreement with the following statements using a scale of 1 to 5. One meaning you strongly agree with the statement, 3 meaning you are neutral on the statement and 5 meaning you strongly disagree with the statement.

	Strongly Agree		Neutral		Strongly Disagree	Unsure
	1	2	3	4	5	
<b>Process Design</b>						
1. The intended purpose of the JLSP was clearly defined to all stakeholders.						
a. In your own words, what was the goal of the JLSP?						
2. The Division of Water Quality's (DWQ) role within the JLSP was clear throughout the duration of the process.						
a. What was the role that DWQ played?						
3. Triangle J Council of Governments (TJCOG) and Piedmont Triad Council of Governments (PTCOG) were neutral facilitators throughout the duration of the JLSP.						
a. If you do not agree that TJCOG and PTCOG were neutral facilitators please explain why.						
4. I understood my role within the JLSP.						
5. From the onset of the process, conveners informed me of the time commitment participating within the JLSP would require.						
6. Additional comments.						

	Strongly Agree	2	Neutral	4	Strongly Disagree	Unsure
<b>Process Fairness</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
1. All of the interested parties were represented in the discussions.						
a. If you do not agree that all interested parties were represented, please list those groups who you feel were left out of the process.						
2. The <i>facilitators</i> of the JLSP treated all stakeholders' claims and positions with equal respect.						
a. If you do not agree that the <i>facilitators</i> treated all stakeholders' claims and positions with equal respect please explain why.						
3. Other <i>stakeholders</i> of the JLSP treated all stakeholders' claims and positions with equal respect						
a. If you do not agree that <i>stakeholders</i> treated one another's claims and positions with equal respect please explain why.						
4. Additional comments.						

	Strongly Agree	2	Neutral	4	Strongly Disagree	Unsure
<b>Process Execution</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
1. Meetings began and ended on time.						
2. Time limits set within the meetings were honored.						
3. The meeting times and locations were convenient for stakeholders to participate.						
4. The meetings were held in a neutral location.						

	Strongly Agree		Neutral		Strongly Disagree	Unsure
<b>Process Execution, continued</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
5. Facilitators allowed all parties to participate equally.						
6. The charter was followed in meetings.						
7. Additional comments.						

	Strongly Agree		Neutral		Strongly Disagree	Unsure
<b>Technical Support</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
1. Technical information was presented in a manner that <i>I</i> could understand.						
2. Technical information was presented in a manner that <i>the majority of stakeholders</i> could understand.						
3. When needed, stakeholders were given the opportunity to be educated on unfamiliar technical information.						
4. Stakeholders accepted the validity of the data presented.						
5. Stakeholders recognized technical parties as experts in their field.						
6. Technical information was presented in a neutral manner.						
7. There was sufficient technical information to make informed decisions.						
a. If you do not agree that there was sufficient technical information to make informed decisions, please explain why.						
8. Additional comments.						

	Strongly Agree		Neutral		Strongly Disagree	Unsure
Outcomes	1	2	3	4	5	
1. The final recommendations of the JLSP were based on the consensus of the group.						
2. The JLSP recommendations included win-win solutions.						
a. If you agree that the JLSP included win-win solutions, please give examples of these solutions. If you do not agree that win-win solutions were included in the recommendations, please explain why.						
3. By working together to develop the recommendations, stakeholders were able to overcome stereotypes and opinions previously formed of each other.						
4. If implemented, the final recommendations would adequately protect the water quality of Jordan Lake.						
a. If you do not agree that the recommendations will adequately protect Jordan Lake, please explain why.						
5. The final recommendations placed an equitable burden on all parties.						
a. If you do not agree that the recommendations were fair to all parties, please explain why.						
6. By participating in the JLSP, I became more educated on the state's regulatory process.						
a. Please elaborate why you did or did not become more educated on the state's regulatory process.						

	Strongly Agree		Neutral		Strongly Disagree	Unsure
	1	2	3	4	5	
<b>Outcomes, continued</b>						
7. Because of my experience with the JLSP, I have adjusted the way that I participate in state-convened stakeholder projects.						
a. If you adjusted the way you participate in stakeholder projects please elaborate.						
8. What do you think the Jordan Lake Nutrient Strategy would look like had DWQ not convened the JLSP?						
9. Additional comments.						

**Thank you for your time and assistance with this project. Please either email your responses to [ctg5@duke.edu](mailto:ctg5@duke.edu) or fax at (919) 787-1063.**

**Follow-up interviews will be conducted with some stakeholders. If you are interested in participating, please contact Christine Wyman at (919) 326-7347 or [ctg5@duke.edu](mailto:ctg5@duke.edu).**

## **Appendix B: Jordan Lake Stakeholder Project Participant and Convener Interview Protocol**

### Informed Consent

Thank you for your interest in participating in the interview process. The interview is a follow up to the participant questionnaire you completed previously. [The previous sentence will be omitted if the potential interviewee was recruited from the non-surveyed population, such as conveners and technical experts.] The purpose of the interview is to gather additional data on components within the Jordan Lake Stakeholder Process that were unclear from the survey. Some of the questions in the interview will seem similar or duplicate to the questionnaire, but they are simply to help me better understand and evaluate the project.

The interview will consist of a series of open-ended questions lasting approximately 30 – 45 minutes. With your permission, I will tape our discussion. This will help me focus more on our discussion and less on taking notes, since I can transcribe the tape to have accurate notes. You are under no obligation to participate. If you choose to participate, you may halt completion of the survey at anytime and you may choose not to answer any questions. There are no right or wrong answers. I am only interested in gathering your perspectives, emotions, and thoughts on the Jordan Lake Stakeholder Project.

The information provided in this interview will assist me in drawing conclusions on the success of the JLSP. I will present my conclusions in a final report at the Nicholas School Masters Project Symposium in April of 2008. I will also share these conclusions with Triangle J Council of Governments and NC Division of Water Quality (NC DWQ). Additionally, the results of my evaluation will be included in a larger project conducted by Dr. Lynn Maguire, Duke University, and Dr. Toddi Steelman, North Carolina State University. Their project will evaluate the success of participatory processes completed by the NC DWQ.

I will hold the results of this interview in strict confidence. Reports utilizing data from the interviews will not reveal which respondents provided which answers. No one but my advisor, Dr. Lynn Maguire, and I will have access to the interview tapes or transcripts. I will retain the tapes and transcripts until the project is completed, estimated to be around April 2008. At that time, I will destroy the interview tapes and I will hand over the transcripts to my advisor. She will retain possession of the transcripts until the completion of the project she is conducting with Dr. Toddi Steelman.

Should you have questions or require additional information, please ask me now. If you have any questions later, please feel free to contact me, Christine Wyman or Dr. Lynn Maguire, Duke Professor and primary advisor to this project: Christine Wyman (919) 326-7347, [ctg5@duke.edu](mailto:ctg5@duke.edu), and Dr. Lynn Maguire (919) 613-8034, [lmaguire@duke.edu](mailto:lmaguire@duke.edu).

If you are willing to participate in the interview, please fill in the lines below.

Name, printed: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Circle one: I am willing/ not willing for the interview to be taped.



## **Participant Interview**

Name:

Organization:

Percentage of meetings attended:

### Initial Perceptions

1. How did you first hear about the Jordan Lake Stakeholder Project (JLSP)?
2. What was your initial reaction of the project?
3. What motivated you to participate in the project?
4. Did you have any concerns of the project prior to its commencement?

### During the Process

5. How involved were you in developing the recommendations?
6. What was the level of interaction among different types of organizations (ie. Developers and non-profit organizations) during the process?
7. Did you feel that the conveners were neutral parties to this project?

### Final Perceptions and Future Recommendations

8. Do you think the JLSP was successful in achieving its goals?
9. What is your perception of the recommendations produced by the project?
10. What aspects of the JLSP do you think regulators should change for future projects?
11. What aspects of the JLSP do you think regulators should retain for future projects?
12. Do you think this project will have any effect on future collaboration within the watershed?
13. Are you still involved or following the rulemaking process?

## Convener Interview

Name:

Agency:

Position:

### Initial Perceptions

1. What was the rationale for using a stakeholder project to develop the TMDL and nutrient management strategy?
2. Prior to the project beginning, what was your perception of the project?
3. Did you have any reservations?
4. How did stakeholders react to your invitations to participate?

### During the Process

5. What was your individual role during the process?
6. Were any stakeholders omitted from the discussions? How did this affect the legitimacy of the discussions?
7. What was the level of interaction among different types of organizations (ie. Developers and non-profit organizations) during the process?
8. How well do you think stakeholders understood technical information? What steps were taken to ensure comprehension?
9. Do you think stakeholders accepted the validity of the technical information?

### Final Perceptions and Future Recommendations

10. Do you think the JLSP was successful in achieving its goals?
11. How do you think the project affected collaboration within the watershed?
12. Do you think the recommendations are representative of the groups' opinions as a whole?
13. Are there any parts of the current rule that can be directly attributed as a result of the stakeholder project?
14. What aspects of the JLSP would you change for future projects?
15. What aspects of the JLSP would you retain for future projects?
16. What kind of an effect, if any, do you think the project has or will have on future collaboration projects initiated by the state?