

Executive Summary

Collective Stormwater Management Evaluation

Purpose

The local governments in Wake County have a long history of environmental awareness, concern, and action. Over the last decade, the 12 municipalities and the County have worked collaboratively on a number of environmental initiatives, including the Watershed Management Plan (2002), the Open Space Plan (2004), the Growth Management Plan (2003) and the Comprehensive Groundwater Investigation (2003). The concern for the health of the local environment also extends to the citizens of Wake County, who have overwhelmingly supported recent votes on environmental issues. As an example, the Wake County Open Space bond referendum in 2004 passed at nearly 75 percent approval.

While awareness and interest in environmental protection exists at the local government and citizen level, the County's waters continue to experience degradation. The length and number of streams on the State's 303(d) list of impaired waters has increased since the last update in 2002 as illustrated in Figure ES-1. Also, an assessment of the County's 81 watersheds as part of the Wake County Watershed Management Plan rated nearly 63 percent of the watersheds as either "impacted" or "degraded." The number one pollutant identified in the plan was sediment. If not managed closely, the pending future growth and

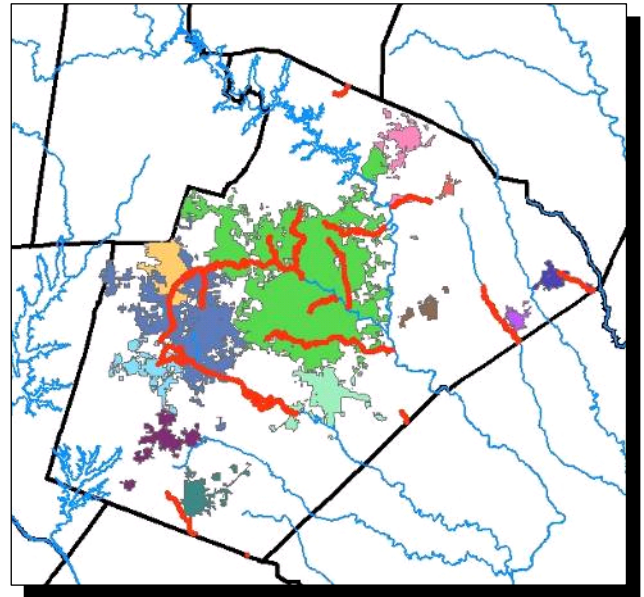


Figure ES-1: Streams in red have been identified as "impaired waters" on the State's 303(d) list for 2002.

development in Wake County could result in the further impairment of these water resources, having a pronounced impact on the quality of life in Wake County.

The local governments in Wake County recognized this possibility and continued their commitment to protecting, preserving, and restoring the quality and quantity of the County's water resources by initiating the work associated with this report. The County retained CDM to study the programmatic, operational, and funding options available for the development of a collaborative stormwater management program involving some or all of the thirteen units of local government in Wake County. To support this process, the County and the 12 municipalities participated in a facilitated stakeholder process (Stormwater Focus Group) to determine the level of support and benefits of a collaborative stormwater program and to develop recommendations for future phases of work associated with the project.

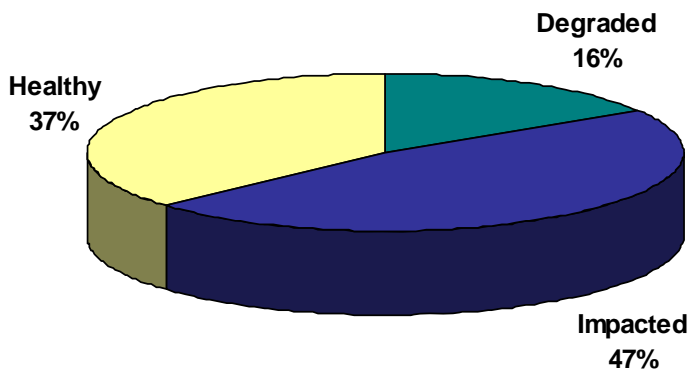


Figure ES-2: An assessment of the County's 81 watersheds as part of the Wake County Watershed Management Plan rated nearly 63 percent of the watersheds as either "impacted" or "degraded."

Stormwater Management in Wake County

Before considering the potential structure and benefits of a collaborative stormwater management program, CDM performed a comprehensive review of the current stormwater activities performed by each of the local governments within the County. An Individual Needs Assessment (INA) survey and report was developed to compile common information on each jurisdiction. CDM staff held meetings with appropriate staff at each jurisdiction to gather information on all stormwater-related activities performed within the County. The INA helps each community to evaluate their existing levels of service in the areas of operations and maintenance (O&M), program management (PM) and compliance, and capital improvements (CIP) as well as identify how these programs may need to adapt to future growth and upcoming changes to regulatory requirements.

Nine out of 12 of the local governments within the County do not currently have a stormwater department or designated stormwater staff. The stormwater-related activities are typically administered through the combined efforts of several departments within the local governments. In some instances, such as sediment and erosion control, the County administers the program for some of the smaller local governments.

Stormwater Levels of Service

The term “level of service” (LOS) is used to describe the beneficial results gained by the community and the environment from each jurisdiction’s stormwater program. A higher LOS will produce more beneficial results in terms of better flood control and protection, better control of erosion and

sedimentation, and better water quality and stream habitat. This LOS concept is useful for assessing each of the three major stormwater program areas that have been described previously (PM, O&M, and CIP).

For the purposes of this study, different levels of service have been defined and assigned standard letter grades, with “A” being the highest and “F” being the lowest. These standard definitions facilitate evaluation of the LOS currently provided by each jurisdiction’s stormwater program, and allow consideration of alternative levels of service, with their associated benefits and costs.

A matrix has been developed to assist in understanding the different levels of service as they relate to the three major program areas (see Figure ES-3). Within this matrix, the first column contains the LOS letter grade identification ranging from “A” to “F.” Subsequent column headings are provided for the three program areas, and each box within the matrix contains a brief description of the key elements required to achieve the given LOS for each program area.

The assessment of the stormwater management programs and activities in Section 3 of this report

Level of Service	Operation and Maintenance	Program Management and Compliance	Capital Improvement Projects
A	Fully Preventative/ 100% Routine	Comprehensive Planning, Regulatory Compliance, Full Implementation	Prioritized / Fully-Funded
B	Mixture of Routine and Inspection Based	Pro-Active Planning, Regulatory Compliance, Systematic Implementation	Phased Implementation / Allocated Budgets
C	Inspection Based Only	Priority Planning, Regulatory Compliance, Partial Implementation	Complaint, Inspection-Based / Moderate Budget
D	Responsive Only	Some Planning, Partial Compliance, Partial Implementation	Critical Needs Only / Minimum Budget
F	Non-Responsive	No Planning, Noncompliance, Limited Implementation	No Planning / No Budget

Figure ES-3: Level of Service Matrix

rate the stormwater efforts in the County and the 12 municipalities at a LOS “C”, on average, with many programs and activities receiving grades of “D” and “F”. While many local governments have implemented policies that exceed the regulatory minimums set by the state and federal government, effective enforcement of these policies are generally insufficient for most communities due to a lack of adequate staffing and program funding. For other areas of the stormwater program, the O&M of the stormwater drainage system is mostly reactive and the planning for stormwater impacts resulting from future growth has yet to be considered. Although a “C” is generally considered a passing grade, the ongoing degradation of water quality in the County is a clear indicator that current efforts to control stormwater runoff and protect water quality are insufficient. In addition, the impending NPDES Phase II regulations, which are unfunded mandates from the federal government, will further strain the resources used to manage stormwater impacts in the County.

It should be noted that the grades assigned in this report are a “snap-shot” in time of the performance of these programs. Depending on resources from year to year, the LOS for a community may fluctuate up or down. In the future, however, the LOS will trend downward as growth continues for all jurisdictions in the County unless additional resources are provided.

Existing and Future Stormwater Management Program Expenditures

After assigning LOS ratings to each of the stormwater management components for all 13 jurisdictions, CDM used information provided in the INA surveys and the jurisdiction budget documents to estimate the approximate annual expenditures for each jurisdiction in the three components of stormwater management. Currently, the jurisdictions in Wake County spend approximately \$17.1 million per year on stormwater management related activities within their existing corporate limits and the unincorporated County, as shown in Table ES-1 on the following page.

CDM also provided conceptual program costs for improved levels of service within each jurisdiction. An improved LOS is considered moving from a lower to a higher LOS grade (e.g. to go from a “C” to a “B”)

for any of the three program elements. The costs for improved levels of service were based on the results of the benchmarking analysis and typical funding distributions for established stormwater programs across North Carolina. Based on the review of these established stormwater programs, the model programs in the state are currently providing a “B” LOS for stormwater. In order to elevate the current LOS provided by all of the jurisdictions in the County to a LOS “B” for all program elements, it is projected that the total expenditures for stormwater management would need to increase by approximately \$9.1 million (or by 50.8

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Table ES-1
Collective Stormwater Management Evaluation, Wake County, North Carolina
Estimated Current and Projected Costs for Providing Stormwater Management
Services in Existing and Future Planning Areas

Jurisdiction	Current Program Expenditures ²	Existing Planning Area LOS "B" Program Expenditures ³	Future Planning Area Current LOS Expenditures ⁴	Future Planning Area LOS "B" Program Expenditures ⁵
Town of Apex	\$ 499,000	\$ 1,116,000	\$ 3,020,000	\$ 6,750,000
Town of Cary	\$ 2,105,000	\$ 4,475,000	\$ 3,450,000	\$ 7,330,000
Town of Fuquay-Varina	\$ 246,000	\$ 428,000	\$ 3,080,000	\$ 3,610,000
Town of Garner	\$ 364,000	\$ 1,144,000	\$ 3,240,000	\$ 6,230,000
Town of Holly Springs	\$ 350,000	\$ 996,000	\$ 2,450,000	\$ 4,690,000
Town of Knightdale	\$ 71,000	\$ 330,000	\$ 600,000	\$ 2,770,000
Town of Morrisville	\$ 283,000	\$ 722,000	\$ 410,000	\$ 1,040,000
City of Raleigh	\$ 11,971,000	\$ 15,886,000	\$ 15,690,000	\$ 25,940,000
Town of Rolesville	\$ 27,000	\$ 196,000	\$ 230,000	\$ 1,700,000
Town of Wake Forest	\$ 711,000	\$ 1,259,000	\$ 1,440,000	\$ 2,550,000
Town of Wendell	\$ 96,000	\$ 173,000	\$ 1,410,000	\$ 2,540,000
Town of Zebulon	\$ 52,000	\$ 279,000	\$ 950,000	\$ 2,470,000
Wake County	\$ 323,000	see note 6	see note 6	see note 6
Countywide Totals	\$ 17,098,000	\$ 27,004,000	\$ 35,970,000	\$ 67,620,000

Notes:

1. All costs are in 2005 dollars
2. Total estimated expenditures for current programs, based on INA survey information. Current program expenditures for Wake County exclude Erosion and Sedimentation Control provided by the County in the incorporated areas and Soil and Water Conservation activities countywide.
3. Estimated expenditures necessary to provide a "B" LOS within existing corporate limits
4. Projected expenditures necessary to maintain the current level of service within existing corporate limits and future planning areas (ETJ, SRUSA, LRUSA)
5. Projected expenditures necessary to provide a "B" LOS within existing corporate limits and future planning areas (ETJ, SRUSA, LRUSA)
6. Future Cost for County program is contingent on the collaborative programs and will be developed during next phase of the project

percent) to a total of approximately \$27.0 million annually, as shown in Table ES-1.

The rapid and inevitable growth of the individual cities and towns in the County must also be considered when projecting future expenditures for stormwater management since the same service must be provided over a larger area. For example, an increase in stormwater-related expenditures will be required if a municipality plans to maintain their existing LOS for the expanded planning areas,

that is extraterritorial jurisdiction (ETJ), short-range urban services area (SRUSA), and long-range urban services area (LRUSA). Conversely, if a municipality maintains their existing budget levels related to stormwater, the customers should expect to experience a decrease in the level of service as the municipality expands into future planning areas. Table ES-1 also provides projected expenditures for all jurisdictions to provide stormwater management services within both their existing corporate limits and their projected future

planning areas. If each community maintains their current LOS for existing and future planning areas, total expenditures related to stormwater management are projected to be nearly \$36 million. If each community raises their current LOS to LOS “B” for both existing and future planning areas, total expenditures are projected to exceed \$67 million. It is anticipated that the municipalities would reach the limits of their projected planning boundaries (LRUSA) within the next 20 to 25 years.

Benefits of Collaboration on Stormwater Management

At this time, local governments are being pressured to increase the level and quality of stormwater management services while at the same time being pressured to maintain the program costs at the lowest possible levels. In response to these pressures, local governments are evaluating options to pursue intergovernmental cooperation to improve the quality and delivery of stormwater management services at a reduced cost. For example, the City of Raleigh, among others, participates in the Clean Water Education Partnership (CWEP) as a component of their public education program required under their NPDES Phase I permit. City staff estimates that purchasing TV time alone for public education ads would cost more than \$100,000, yet the City’s share as part of the entire CWEP program is only \$25,000.

The Stormwater Focus Group convened for this study recognized that the resources to support stormwater initiatives will not likely increase in the near term. Therefore, the group explored opportunities to collaboratively address both existing stormwater impacts, future impacts related to growth, and the impending NPDES Phase II regulations. Funding options were also explored

during this study. A primary goal of the group was to determine a way to increase the level of service that is currently provided to the County’s citizens by leveraging existing resources more efficiently and by considering more dedicated and stable sources of funding.

The potential benefits of intergovernmental collaboration depend upon the nature, size, and complexity of the program or service under consideration; the size of the jurisdictions; the estimated economies-of-scale; and staff availability and resource impacts. The potential benefits of intergovernmental collaboration include, but are not limited to, the following:

■ Efficiency and reduction of costs -

Intergovernmental collaboration can potentially mean lower costs per unit of service or per person served.

Efficiency improvements and reduced costs are the most common drivers for intergovernmental collaboration.

■ Limited government

restructuring - Intergovernmental collaboration occasionally allows a local government to avoid the time-consuming, costly, and politically sensitive issue of government restructuring to add a new program.

■ Expanded services -

Intergovernmental collaboration may allow a local government to offer a service, such as stormwater, that it might not otherwise be able to offer as an independent entity. Intergovernmental collaboration can make a high-quality stormwater program financially and logistically possible for small local governments.

■ Improved resource protection -

Intergovernmental collaboration is an effective approach for natural resource protection because environmental issues such as

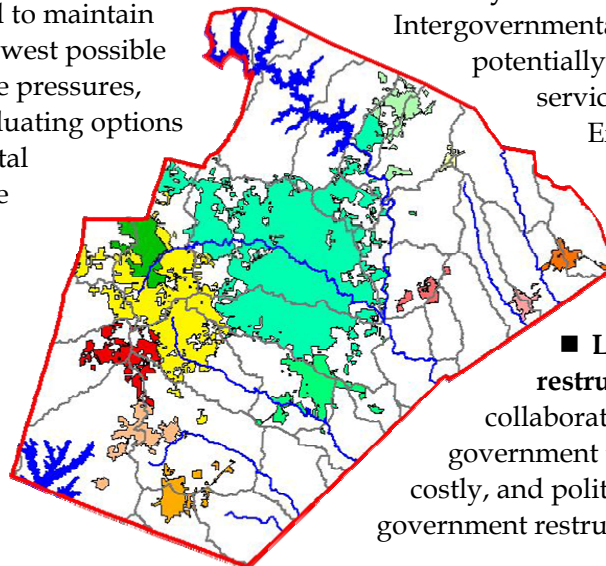


Figure ES-4: Watershed boundaries do not match municipal boundaries, so collaboration on stormwater management is essential.

stormwater management are not restricted by jurisdictional boundaries. For example, portions of Wake County drain to both the Neuse River and the Cape Fear river basin.

Intergovernmental collaboration may provide for more consistent application and implementation of stormwater management services and program requirements throughout the County.

Final Alternatives Evaluation

Focus group members were asked to identify and consider collaborative opportunities for three broad categories of

programs - NPDES Phase II permit compliance, Operations and Maintenance, and Program Management/Regulatory.

From a list of 71 possible programs developed during brain-storming sessions, CDM categorized a total of ten possible collaborative program elements into two tiers based on the results of voting by the focus group members and CDM's professional judgment. Six of the 10 program elements identified were considered tier 1 opportunities - all others were considered tier 2 opportunities. The six tier 1 opportunities included the following:

- Development of a countywide stormwater resource group
- Development of a countywide environmental monitoring program
- Development of a common GIS system for stormwater asset inventory

- Development of a common ordinance and program for post-construction controls (NPDES Phase II requirement)
- Development of a countywide training program (NPDES Phase II requirement)
- Evaluations of collaborative funding options and alternatives to protect surface and groundwater resources

CDM recommended that these six tier 1 opportunities form the nucleus of the pending countywide collaborative effort. A conceptual plan

The conceptual plan is designed to allow early and relatively-simple collaborative implementation efforts to serve as a catalyst for larger and more complex collaborative implementation efforts.



for the implementation phase was developed and presented to the Stormwater Focus Group. The conceptual plan is designed to allow early and relatively-simple collaborative implementation efforts to serve as a catalyst for larger and more complex collaborative implementation efforts.

The report proposes two parallel initiatives to move forward in the next phase of the project. The first initiative includes the selection and implementation of one

or more demonstration projects from the list of collaborative efforts proposed by the focus group - such as the development of a countywide training program to provide common information on municipal good housekeeping efforts, illicit discharge detection and elimination, and sedimentation and erosion control education. Each jurisdiction that wishes to participate would collaborate and implement these programs to build the foundation for future collaboration efforts in the County. The second initiative includes the

development of a formal work plan, establishment of inter-local agreements, and the identification and implementation of additional cooperative programs or projects and appropriate funding mechanisms.

Schedule and Action Plan for Future Project Phases

CDM and County staff developed a proposed timeline for the next phase of this project, as shown in Figure ES-5. The proposal includes a feasibility phase and consideration of an implementation phase based on the recommendations of the feasibility study. The Stormwater Focus Group from this current phase will continue to participate, holding quarterly meetings (at a minimum) to develop/implement programs. The following section provides the components of each phase and associated decision milestones.



Feasibility Phase (August 2005 – June 2006)

The Feasibility Phase will build on the efforts of this study and will define citizen's expectations for stormwater level of service on a countywide basis. It will include a detailed review of the recommendations from the first phase of the project, and will include a more detailed cost/benefit evaluation of the recommended programs. This phase will also include a preliminary data analysis of the potential revenue that potential funding mechanisms could generate. The funding mechanism analysis will include measurement of sample impervious areas, a basic rate model study of each participating community, and the identification of possible billing mechanisms.

A countywide stormwater management task force comprised of citizens and/or elected officials from each participating local government will be a key

element of the feasibility phase. Concurrent with the ongoing stormwater focus group process from this first phase, the stormwater task force will help identify an expectation for stormwater level of service and will develop recommendations for program structure and funding alternatives for a countywide program.

The feasibility phase will begin in the August/September timeframe upon approval from the County and local government managers. The phase is scheduled to be completed in March of 2006 with the intent for a decision to be made prior to the budget process for FY06-07. At that time, elected officials would decide whether their local government would move forward with the recommendations of the feasibility phase. Upon approval by elected officials, interlocal agreements will be developed to initiate an implementation phase.

Implementation Phase (variable timeframe)

It is anticipated that the feasibility phase will be completed and interlocal agreements will be in place by the end of FY05-06 in order to consider implementation of a collaborative stormwater program in July of 2006. This phase would include several key elements, including the selection and development of a funding mechanism, the development of work plans, budgets and schedules, the formation of a permanent stormwater advisory committee, and the development and implementation of a public education and outreach strategy. Should any community decide to move forward with the implementation of an individual stormwater program before the end of the feasibility phase, the framework of this plan allows for the flexibility to do so while continuing to participate in any or all collaborative efforts.

Description of Key Elements
Decision Milestones Critical decision milestones for Municipal and County Managers and elected officials
Stormwater Focus Group Stormwater staff from local governments will meet at least quarterly to develop/implement programs.
Countywide Stakeholders Group Citizens and/or elected officials from each local government that will identify an expectation for level of service and develop recommendations from program structure and funding mechanism.
Study and Implementation Activities Comprehensive efforts building on the results of the Collective Stormwater Management Program Evaluation, intended to consider the fiscal and environmental advantages of a Countywide Stormwater Management Program and ultimately implement a common program with a dedicated source of funding.
Local Stakeholders Groups Each municipality may chose to convene Local Stakeholder Groups with citizens to make individual determinations regarding the level of service provided by both the County and the municipality and corresponding taxes or user fees to fund the program. Representatives from each of these groups will also represent their municipality on the Countywide Stakeholders Group.

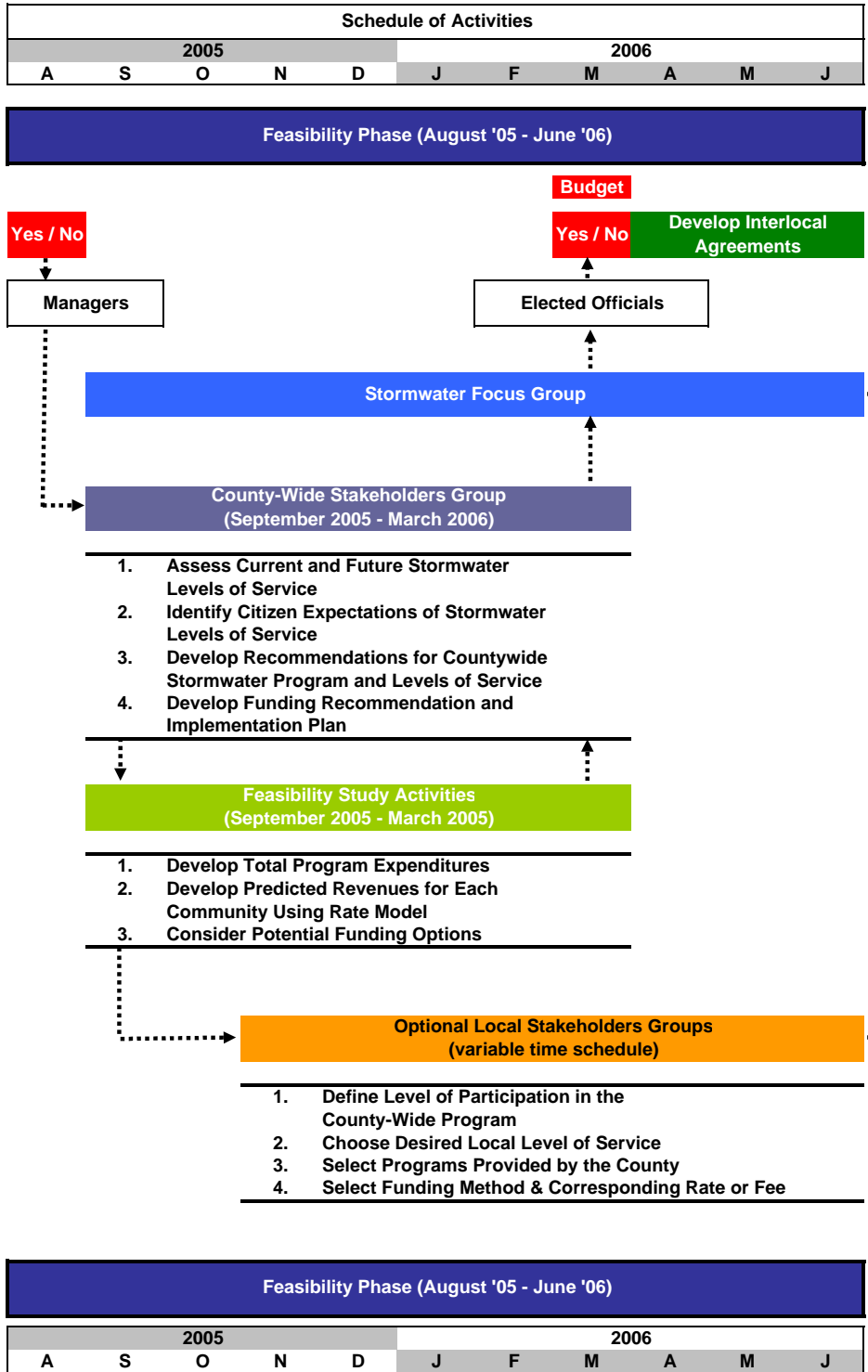


Figure ES-5
Wake County Collective Stormwater Management Evaluation
Proposed Timeline for Feasibility Phase