



City of Raleigh Secondary and Cumulative Impacts Management Plan for Public Utilities Infrastructure

Including the Communities of Garner, Kinghtdale,
Rolesville, Wake County, Wake Forest,
Wendell, and Zebulon

Triennial Report

Prepared for



Prepared by



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1 Introduction

The City of Raleigh (City) is updating the Secondary and Cumulative Impacts (SCI) Management Plan for Public Utilities Infrastructure projects within the City's water and sewer service area. The City and the North Carolina Department of Environment and Natural Resources (NCDENR) executed a Memorandum of Agreement (MOA) in December 2008 and a Supplemental MOA (see appendix A), in December 2013, to address upgrades to Waste Water Treatment Systems. The MOA requires the City to prepare a report that updates the SCI Management Plan for the City and the towns of Garner, Knightdale, Wendell, Zebulon, Wake Forest, Rolesville, and Wake County. A Record of Decision (ROD) was issued in 2009 (see appendix B). The City merged its water and wastewater utilities with these Towns and County, and the SCI Management Plan includes these local governments, referred to as merger communities. This SCI Management Plan update is the third report prepared for the City, and updates the latest SCI Management Plan Report completed in 2011.

The SCI Management Plan must identify changes in land use or utility infrastructure that were not anticipated in the Plan; describe significant changes to the land use plan and infrastructure plans in the study area; and describe changes to sediment and erosion control programs, stormwater programs, ordinances related to riparian buffers and open space requirements, and other management measures described in the SCI Management Plan. In some cases communities' representatives included transportation information although it is not required by the Master Plan scope of analysis. This report has been reviewed through the State Clearinghouse under the provisions of the North Carolina Environmental Policy Act. Comments received as part of that review can be found in appendix C. It has met the requirements for the triennial report update.

2 Project Study Area

The project study area defined in the 2009 SCI Management Plan encompassed the current land area of Raleigh, Garner, Knightdale, Rolesville, Wake Forest, Wendell, and Zebulon, their extraterritorial jurisdictions (ETJ), and their long range urban service areas. The study area was based on locations to which the City of Raleigh plans to extend water and sewer infrastructure. This study area remained unchanged in the December 2011 SCI Management Plan update. The same governing elements are used for the current update to the Plan; however a boundary change has been proposed to expand the urban service area in the Town of Wake Forest. The study area and proposed expansion area is shown in Figure 1. GIS data references can be found in Appendix D.

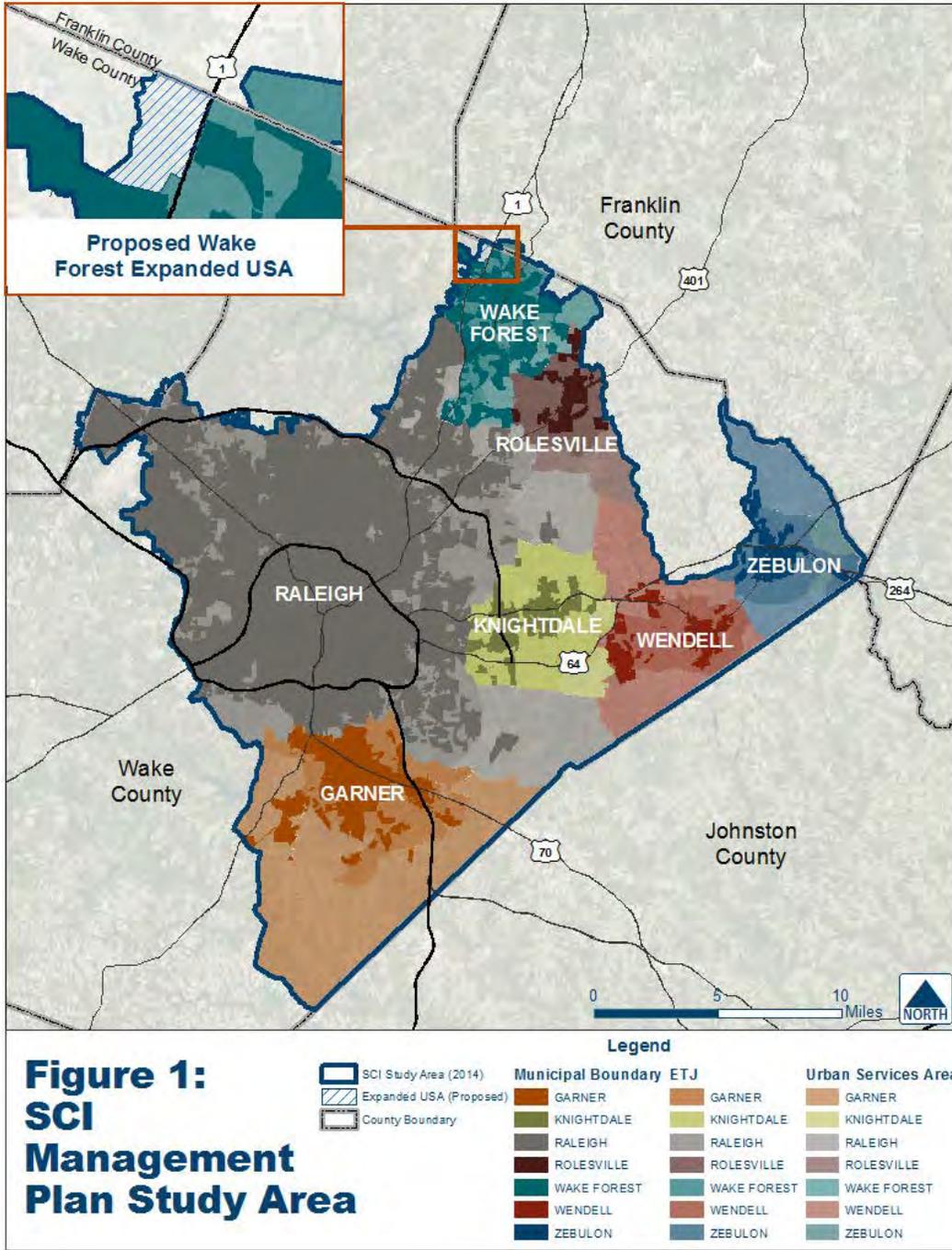


3 Purpose and Need for Proposed Infrastructure

The purpose of and need for the proposed infrastructure is a function of the City of Raleigh's commitment to its citizens and the citizens of the towns to which it provides water and wastewater services. This commitment remains unchanged since the original 2009 SCI Management Plan. The city is committed to providing water and wastewater services for a growing population that has begun to rebound from the economic recession of 2009 and 2010 and the subsequent slow job growth. Improved economic conditions in the Raleigh area has led to population growth that is expected to continue into the future.



Figure 1 - 2014 SCI Management Plan study area





In addition to providing water to a growing population, the City has a requirement to meet specified levels of water and wastewater service as outlined in each one of the merger agreements.

Population projections for the City of Raleigh and its merger communities have changed from the November 2009 report. Projections from that report came from a variety of sources, including the individual merger communities and the Capital Area Metropolitan Planning Organization (CAMPO). The December 2011 update used projections that included a range of population projections (low growth, median growth, and high growth) for the service area that the City of Raleigh used for planning purposes.

Updated population projections currently used by the City of Raleigh for planning purposes reflect to some extent the rebound in growth the area was experiencing prior to the recession and also share a common source. Population projections for the 2014 SCI Management Plan are based on projections developed for CAMPO's 2035 Long Range Transportation Plan (LRTP) and extrapolated forward and corrected for annual population figures announced by the North Carolina Office of State Budget and Management. Population projections are shown in Table 1.

Table 1: Total population projections for service area

Year					
2010	2020	2030	2040	2050	2060
483,253	638,544	799,142	963,217	1,134,247	1,316,237

Source: Draft Water Resource Allocation Plan, 2013

Although demand projections were not discussed in the 2009 plan or the 2011 update, demand projections are included for this updated analysis and are shown in Table 2. Demand projections were provided by the individual merger partners for the Triangle Regional Water Supply Plan (2014). The projections include projections for non-revenue water such as treatment plant process water, finished water used for distribution system maintenance (line flushing), plus other non-revenue elements, including water lost due to system leakage. Non-revenue projections are highlighted in gray. In general, per capita demand projections have been trending downward in recent years because of improved efficiency and conservation as well as other factors such as the continued development of the Reuse system. The Reuse system allows reclaimed water to be treated to a high standard and re-used instead of being discharged into a waterway. The Division of Water Resources provides data for the water system, water use, water supply sources, wastewater information, and planning which are included in appendix A.



Table 2: Total demand projections for service area

Total Demand Projections for Service Area						
Sector	2010	2020	2030	2040	2050	2060
Residential	29.43	36.45	44.26	51.67	58.12	65.08
Commercial	11.44	14.17	17.20	20.09	22.56	25.26
Industrial	1.30	1.61	1.96	2.28	2.57	2.88
Institutional	3.40	4.19	5.08	5.93	6.72	7.52
WTP process	0.13	0.16	0.19	0.23	0.26	0.29
Distribution process	2.18	2.70	3.28	3.83	4.26	4.77
Other non-revenue	4.16	5.15	6.26	7.30	8.22	9.20
Total	52.00	64.40	78.20	91.30	102.71	115.00
Per capita demand (gpcd)	107.0	100.8	97.8	94.8	90.6	87.4

Source: Draft Water Resource Allocation Plan, 2013

4 Overview of the 2008 to 2012 Environmental Sampling and Monitoring Program Report

The City of Raleigh implemented a comprehensive Sampling and Monitoring Program that includes the areas of the City municipal boundaries and ETJs of the City and the merger communities (see Figure 2). The goal of the monitoring program is to provide defensible data to DENR that analyzes long-term potential secondary and cumulative impacts from growth and development, and provide data to DENR’s Basinwide Water Quality Management Plan for the Neuse River basin. The City published a 2007 Sampling and Monitoring Program Report that contains a baseline summary of existing conditions of the monitoring study area (see Figure 2). The 2008 to 2012 Environmental Sampling and Monitoring Report provides the first five-year status report and comparison to the baseline conditions of 2007.

The 2008 to 2012 Environmental Sampling and Monitoring Report investigated water quality sampling, stream observation and photo documentation, benthic macro invertebrate sampling, fish community sampling, and mussel surveys. All sampling was conducted in accordance with appropriate quality assurance and quality control standards per the Division of Water Quality. The Report shows that water quality data collected from 24 sampling stations does not indicate any clear trends or evidence of a systematic decline in water quality in the study area. While there are some sampling stations that reported a localized decline in one or two water quality parameters, there is no indication of systematic decreases in water quality from upstream headwaters to downstream areas.

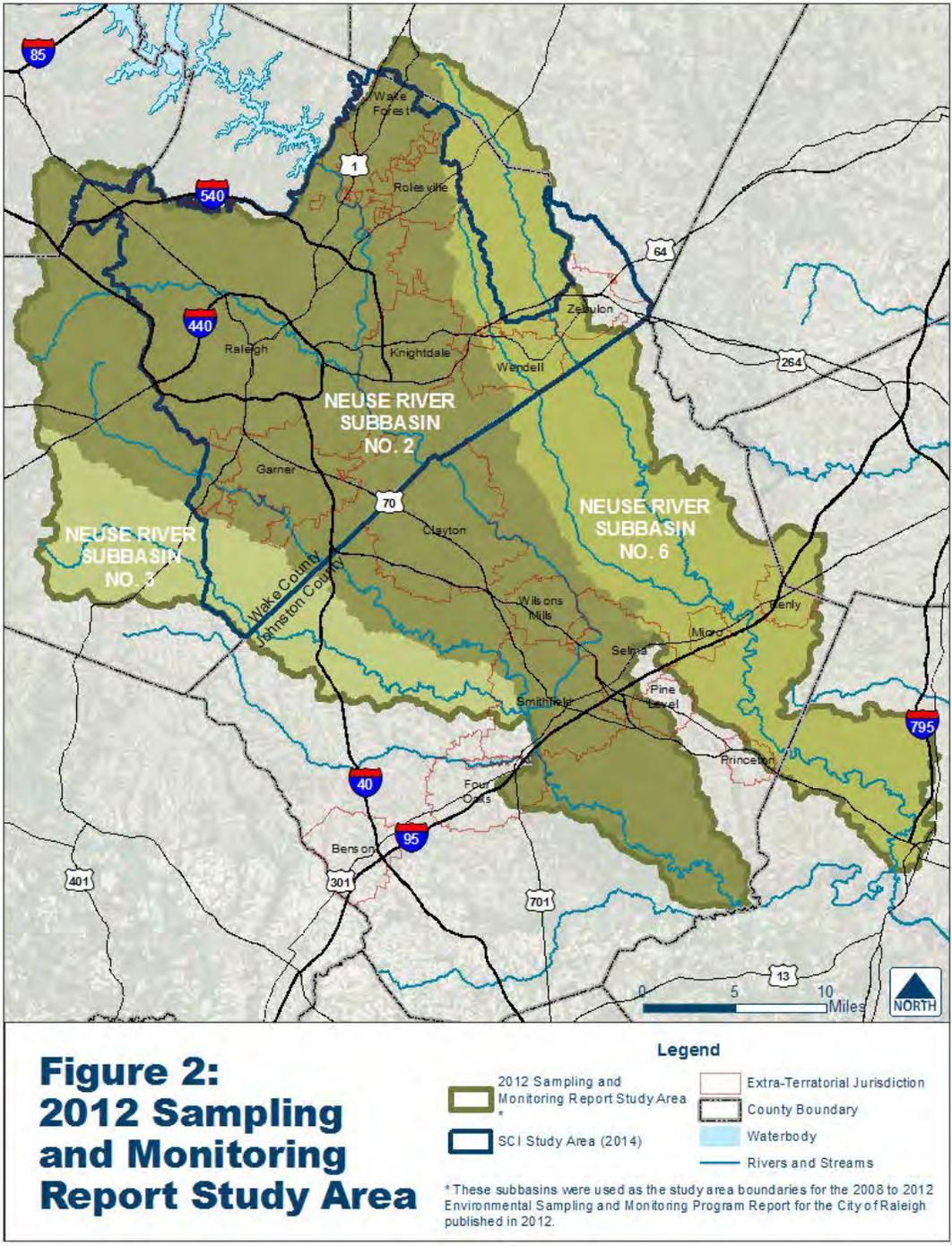
The analysis contained in the 2008 to 2012 Environmental Sampling and Monitoring Report indicates growth and development in the study area in the past five years has not contributed to new water quality impairment or changes in the status of existing water quality impairment. It should be noted that occasional



exceedences of a water quality standard or benchmark did occur, but these are expected as part of natural variations in water quality.



F3igure 2 - Sampling and Monitoring Report study area





The photo documentation occurred at sites downstream of higher density residential and urbanized areas. This documentation provides a site specific assessment of new residential growth that has a corresponding increase in land converted from agriculture or forested areas to residential and commercial use. New residential development has occurred in the study area, but the rate of growth decreased during 2008 to 2012 due to the economic downturn. The data collected for this analysis does not indicate evidence of a declining trend in water quality, benthic macro invertebrate ratings, or fish community ratings from the 2007 baseline data. Localized impacts from the photo documentation assessment indicated site-specific issues as reflected in the stream scores for physical changes in stream morphology. Streams that were disturbed in 2007 showed similar levels of disturbance in the 2011 field observations.

The benthic macro invertebrate analysis supports the conclusions of the water quality analysis. The report concludes that growth and development in the study area over the past five years has not contributed to benthic impairment or changed the status of an existing benthic impairment.

Fish community surveys were performed in 2007 and 2012. The survey locations were selected downstream of higher density development in the study area. None of the stations demonstrated a decrease in classification from 2007 to 2012. The fish community surveys support the conclusions from the water quality and benthic analysis.

Mussel surveys were conducted in 2007 and 2010 to assess potential impacts to native fresh water mussels and the federally listed endangered dwarf wedge mussel. The survey results indicate a stable mussel population in Swift Creek. The dwarf wedge mussel was found at five of the 83 sample sites, and the known range of the dwarf wedge mussel was extended by 2 miles to a total range of 10 miles in Swift Creek. The mussel survey results conform to the overall conclusions from water quality, benthic analysis, and fish community surveys.

Construction areas of residential development in the study area appeared to have the greatest localized impact to streams, likely due to large areas of land disturbance that remains undeveloped and/or unvegetated. According to the Sampling and Monitoring Report, new erosion and sedimentation control requirements for ground stabilization should help alleviate these localized issues.

The report concluded that the construction and operation of the City's water and sewer infrastructure projects since 2010 are not contributing to a decline in watershed health or stream quality. The data analyses do not indicate a systematic decline in environmental status due to indirect impacts from growth and development.

5 Description of Future Infrastructure Plans

The City of Raleigh has future infrastructure plans and programs described in the following sections of this report. The City's Capital Improvement Program (CIP) analyzes major facility and infrastructure needs,



establishes priorities, and schedules the development of funded projects generally over a five year period. The CIP links the City's Comprehensive Plan and its policies, approved in October of 2009, and city-wide initiatives, and departmental plans to the timing, location, character, and funding of future capital projects (appendix B contains the fiscal year (FY) 2015 – 2019 Capital Improvement Program).

5.1 Capital Improvement Program (CIP)

The public utilities element of the City's CIP includes projects for treatment and distribution of the city's drinking water supply, collection and treatment of wastewater, maintenance involving the rehabilitation or replacement of the aging water distribution system, sewer collection system, water and wastewater treatment infrastructure, construction and maintenance of elevated water storage tanks and pumping stations, building projects for operations, developing future water supply, and delivery of re-use water that has been processed by the wastewater treatment plant. The utility system plans to invest \$1 billion in capital needs over the next 10 years, including \$54 million in FY 2015. The utility system is in the final stages of all capital projects related to the mergers with the surrounding merger towns. The City's Public Utilities Department completed construction of the following projects in FY 2014:

- Neuse River Wastewater Treatment Plan (NRWWTP) Expansion to 75 MGD – Phase I
- E.M. Johnson Water Treatment Plan (EMJWTP) Filter Bottom Rehabilitation & Sodium Hypochlorite Placement
- Rehabilitation of the North Bank Crabtree Creek Interceptor
- Crabtree Creek Wastewater Conveyance Improvements Phase I
- Asset Management Program Development
- Zebulon Little Creek WWTP Upgrade & Rerating to 2.2 MGD
- Marsh Creek Sanitary Sewer Improvements
- Various Water and Sanitary Sewer Main Replacements
- Knightdale Mango Creek Sanitary Sewer Improvements

The recently adopted FY 2015 CIP details investments totaling \$890.4 million over the next 5 years. There are a few key planning-related changes between the FY 2012 and FY 2015 CIP budgets. They are as follows:

- The CIP now includes two new funding elements or categories – Convention and Performing Arts Complex and Technology. These two elements have a budget of \$22.1 million and \$28.7 million, respectively, for the 2015-2019 period.
- The transportation element of the CIP increased markedly – from \$73.1 million to \$150.7 million between FY 2012 and FY 2015. This is in part due to implementation of two bond referenda that were passed in 2011 and 2013. Major streets projects (\$68.1 million budgeted for the 2015-2019 program) and the street improvement program (\$60.9 million budgeted for the 2015-2019 program) have the largest increases.



- Although the Parks, Recreation and Cultural Resources element has a much smaller budget for FY 2015 as compared to FY 2012 (\$116.8 million versus \$25.4 million), an upcoming \$92 million bond referendum that will go before voters in fall 2014 looks to address many facility and park reinvestments and improvements.

The City's Public Utility Department recently developed an Asset Management Plan (AMP) with the goal to apply asset management best practices to develop a sustainable and continuous infrastructure replacement prioritization plan. The Asset Management Plan was completed in August 2013. It contains recommendations for condition assessment and infrastructure replacement and rehabilitation (R & R) that have been incorporated in the five-year CIP.

Highlighted projects in the utility element of the CIP include water main replacement of \$131 million over the next ten years to replace water distribution and sewer collection system that is over 50 years old. Fifteen sewer interceptor upgrade projects are identified by the 2013 Sewer System Capacity Study. The projects identified in the study address wet weather flow capacity within the sanitary sewer collection system. The Neuse River East Parallel Interceptor Phases II and IV are key long-range sanitary sewer collection systems addressing current and projected wet weather flow and growth. Other highlighted projects include: Crabtree Valley Sewer Replacement, Lower Walnut Creek, NRWTP Anaerobic Digesters, East Neuse Regional Pump Station, NRWTP Onsite Re-use, and NRWTP Dewatering Building Odor Control.

Water main expansion includes the highlighted Oak Forest 30-inch water main project and sixteen other water main projects. Six water pump stations rehabilitation and upgrades are planned over the next five years, and the water booster pump stations rehabilitations are planned over a ten-year period.

The EMJWTP Johnson Water Treatment Plant Expansion includes three phases over a ten-year period. The CIP highlighted project includes basin improvements to this 120 MGD WTP water treatment plant totaling \$36.4 M over ten years.

Little River Projects include land acquisition reimbursements to Wake County for the land needed to construct the Little River Reservoir in Eastern Wake County. The highlighted Little River project provides \$5million to Wake County to fulfill a contractual obligation to reimburse the County.

Water tank upgrades projects provide for the rehabilitation and maintenance of elevated water tanks in the water distribution system, including a highlighted project to replace the 100,000 gallon Springdale tank with a new 500,000 gallon elevated tank.

The EM Johnson Water Treatment Plant Maintenance provides replacement of major equipment and facilities that have reached their useful service life. The highlighted project provides \$2 million for the rehabilitation and improvement of the EMJWTP solids and handling system.



Miscellaneous water and wastewater projects provide for the rehabilitation of sanitary sewer siphons, also identified as a highlighted project are alternatives to aerial creek crossing. Rehabilitation techniques will include cured-in-place pipe liners, pipe bursting, replacement, manhole rehabilitation, and siphon box replacement.

Capital equipment projects include hydrant and nozzle replacement to update Raleigh to national standards. The highlighted project is a 10-year plan to update all hydrants and will include materials only, City staff will perform installations.

Watershed Initiatives implement the adopted Watershed Protection Ordinance of 2011 and funds watershed conservation and protection, including the expansion of land protection in the Falls Lake and Upper Neuse River watershed.

5.2 Watershed Program

The City of Raleigh's first formal watershed protection program, created in 2005, was a land conservation effort. Referred to as the Falls Lake Initiative (FLI), the program was later changed to the Upper Neuse Clean Water Initiative (UNCWI) in order to formally include all sub-watersheds within the Falls Lake watershed boundary. Since the establishment of the UNCWI program, the city brought online a new drinking water resource (Lake Benson) in April of 2010. Since 2005, UNCWI has helped protect just over 7,000 acres and 70 miles of stream through the implementation of 81 conservation projects. The City of Raleigh's watershed protection program has helped fund approximately half of these projects, and invests in upstream green Infrastructure, a complex system of land streams, river, and lakes that helps to protect source waters

5.3 Organizational Analysis and Development Study

The City of Raleigh conducted an Organizational Analysis and Development Study, published in September 2012. The study compiled, measured, and analyzed the costs and benefits of relocating the Stormwater Utility Division from the Public Works Department to the Public Utilities Department. The study recommends retaining the Stormwater Utility Division's current physical and organizational location within the Public Works Department rather than shifting to the Public Utilities Department. The study suggests focusing on collaboration in three primary areas: regulatory compliance, long-term capital improvement planning, and public outreach and education.

6 Falls Lake Rules

The North Carolina General Assembly passed the Falls Lake Nutrient Management Strategy (15A NCAC 02B .0277), also known as the Falls Lake Rules, in January of 2011. A copy of the legislation is included in appendix C. The purpose of the legislation was to restore water quality in the lake by reducing the amount of pollution entering upstream from the lake. The rules required that government entities within the Falls

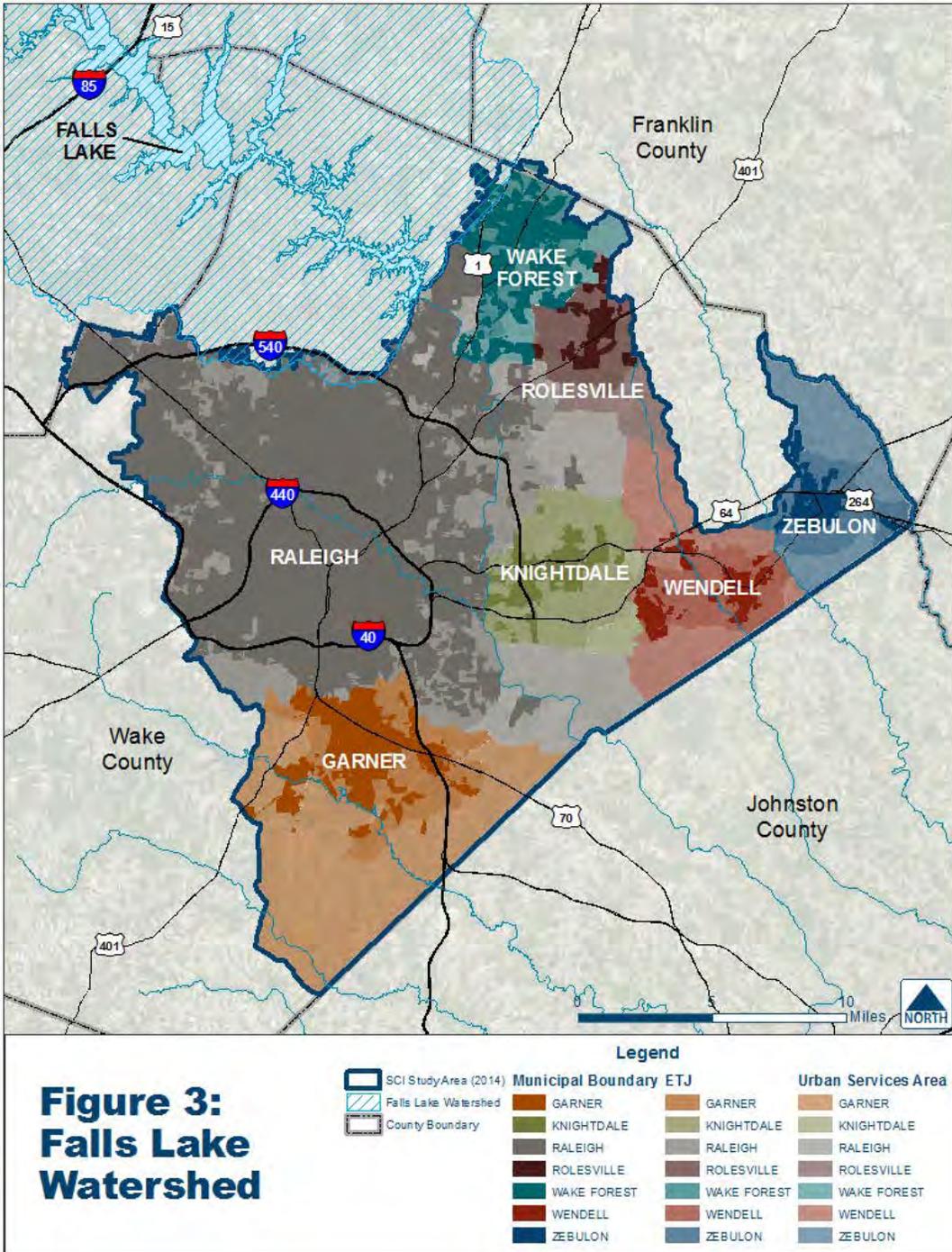


Lake Watershed develop stormwater management programs that require new developments to include a stormwater management plan that addresses nitrogen and phosphorous loads contributed by the new development. Within the SCI study area, the City of Raleigh, the Town of Wake Forest, and Wake County were affected. The Falls Lake Watershed is shown in Figure 3.

The law also required the NCDENR Department of Water Quality (DWQ) to develop a New Development Model Program to assist local governments in developing their local stormwater management programs. The North Carolina Environmental Management Commission approved the DWQ's Model Program on March 10, 2011. The Model Program contained a model ordinance and a nutrient loading accounting tool which estimated nutrient loading from new development and loading changes due to best management practices (BMP) implementation. Local governments had until August 10, 2011 to develop and submit draft local programs. Plans for the City of Raleigh, the Town of Wake Forest, and Wake County were finalized in December, 2011. In addition, merger communities' local ordinances were modified to reflect the new stormwater programs.



Figure 3 - Falls Lake watershed





7 Wake County Updates to SCI Management Plan

This section outlines the changes that have occurred to Wake County's environmental ordinances, plans, and policies since the December 2011 update of the SCI Management Plan.

7.1 Ordinances

There have been several relevant changes to Wake County's Unified Development Ordinance (UDO) since the 2011 SCI Management Plan, although they are largely administrative changes. These changes include adding the Falls Lake Watershed Regulations discussed in section 6 in July of 2012, and appropriately referencing the adopted statewide rules. In March of 2013 the UDO was updated to reflect a flood insurance rate map date of April 16, 2013. A copy of changes made to the UDO since 2011 is included in appendix D1.

7.2 Planning

The City of Raleigh and the Town of Rolesville's annexation agreement has expired. No changes have been made to the Wake County Land Use Plan.

8 City of Raleigh Updates to SCI Management Plan

This section outlines the changes that have occurred to the City of Raleigh's environmental ordinances, plans, and policies since the December 2011 update of the SCI Management Plan.

8.1 Ordinances

The City adopted a UDO in February 2013 and it became effective September 1 of the same year. No major changes to the requirements for open space protection, riparian buffer, floodplain protection, erosion and sediment control, and stormwater management were incorporated. The UDO consolidated the City's ordinances into one document to simplify the code, eliminate redundancies, avoid conflicts between regulations, and make it more user-friendly to the public.

8.2 Planning

There are a few key planning-related changes between the FY 2012 and FY 2015 CIP budgets. They are as follows:

- The CIP now includes two new funding elements or categories – Convention & Performing Arts Complex and Technology. These two elements have a budget of \$22.1 million and \$28.7 million respectively for the 2015-2019 period.
- The transportation element of the CIP increased markedly – from \$73.1 million to \$150.7 million between FY 2012 and FY 2015. This is in part due to implementation of two bond referenda that were passed in 2011 and 2013. Major streets projects (\$68.1 million budgeted for the 2015-2019



program) and the street improvement program (\$60.9 million budgeted for the 2015-2019 program) have the largest increases.

- Although the Parks, Recreation, and Cultural Resources element has a much smaller budget in FY 2015 as compared to FY 2012 (\$116.8 million versus \$25.4 million), an upcoming \$92 million bond referendum that will go before voters in fall 2014 looks to address many facility and park reinvestments and improvements.

A copy of the adopted FY 2015-FY 2019 Capital Improvement Program is included in appendix D2.

8.2.1 Land Use

The City has updated its Land Use Plan several times since 2011. The March 2013 update proposed 43 areas for amendment. In each case, staff felt an alternate future land use designation was more consistent with surrounding areas, and would better align with future UDO zoning categories. Copies of the ordinances for these amendments are included in appendix D2. A copy of the Land Use Plan (Future Land Use Map) is also included in appendix D2. There are three pending amendments to the Comprehensive Plan – one that updates text and action items based on an annual review of the document, and two citizen-initiated Future Land Use Map changes. These have been scheduled for a public hearing before the City Council.

As part of the UDO implementation, the City is currently in the process of rezoning approximately 30percent of the City's land area. This zoning remapping is focused on converting legacy zoning districts to the new districts in the UDO. This process affects mainly commercial, industrial, and high-density residential areas. In general, the density allowed under the new system will be similar to the density allowed under the existing zoning districts. In some districts, the allowable building height or frontage requirements may change.

The first remapping draft is now under public review. The Planning Commission will begin its review on October 14th, with Council review and map adoption as the last step. Overview maps with information on staff-proposed changes for base zoning, height, and frontage are included with this response. These maps will likely change over the course of the full public and elected body review process.

9 Rolesville Updates to SCI Management Plan

This section outlines the changes that have occurred to the Town of Rolesville's environmental ordinances, plans, and policies since the December 2011 update of the SCI Management Plan.

9.1 Ordinances

No changes have been made to the Town of Rolesville's environmental ordinance since the 2011 SCI Management Plan was completed.

9.2 Planning

No major changes have occurred to the Town's land use plan and zoning.



The Town has identified a Land Use Plan and Comprehensive Transportation Plan in its 2014 – 2019 Capital Improvement Plan that are projected to be initiated in 2015.

10 Wake Forest Updates to SCI Management Plan

This section outlines the changes that have occurred to the Town of Wake Forest's environmental ordinances, plans, and policies since the December 2011 update of the SCI Management Plan.

10.1 Ordinances

The Town of Wake Forest adopted a UDO in July of 2013. A copy of the UDO is included in appendix D3. The Wake Forest UDO combines into a single document the town's zoning, subdivision, land use, grading, storm water management, and historic preservation regulations. The UDO introduced a form-based zoning ordinance that focused on design standards which organized base zoning codes into rural to urban transects that classified development form with the appropriate land use and development context. These zoning changes did not affect the density of the development, only the design of new development.

Modifications to the UDO since original publication include adding the Falls Lake Watershed Regulations discussed in Section 6. Other changes have been largely clarifying changes with no substantive changes being made.

In 2013, the Town developed a Manual of Specifications, Standards, and Design (MSSD) which provided developers with standards for designing stormwater infrastructure, erosion and sediment control methods, and other infrastructure included in development. The MSSD is incorporated by reference in the UDO.

10.2 Planning

No major changes have occurred to the Town's land use plan or other planning documents. The Town is updating its hazard mitigation plan. All the municipalities within Wake County are going through a consolidation of all Hazard Mitigation plans into one plan with each municipality having their own chapter.

10.3 Other

10.3.1 Education

The Town of Wake Forest has developed an Adopt-a-Stream program where citizens can monitor water quality, conduct stream trash clean ups, and improve stream water quality by planting live stakes and adding stream habitat for macro-invertebrates. The initial program was funded through a grant from the Southeastern Environmental Education Alliance. The Town currently has twenty volunteer monitoring groups reporting monthly data on water quality parameters including; nitrogen, phosphorus, temperature, turbidity, dissolved oxygen (DO), and pH. There have been two stream clean ups in the past year and two



additional ones are planned for this year. Several scout groups have taken on Eagle Scout projects and completed bank stabilization with grading, coir matting, and plant installation.

The Town hosted several technical workshops in 2013 and 2014. A Backyard Stream Repair Workshop was held in the winter 2013 in conjunction with the North Carolina Cooperative Extension where citizens, designers, and other municipalities were able to learn about stream repair practices and then go out to a site and conduct repair work. The Town also held a Stormwater BMP Inspection and Maintenance Workshop in spring 2014 in conjunction with the North Carolina Cooperative Extension. There were approximately 60 attendees that learned about maintenance and annual inspections. In addition, the town conducts quarterly environmental educational programs at local schools and sets up a booth at town festivals and functions. Overall the Town has conducted over 200 hours of outside environmental education training in the past year. There were also over 2,000 face to face interactions, and 950 direct hours of student interaction.

The Town of Wake Forest recently completed year two of an NCDENR 319 grant, Smith Creek Watershed Restoration and Implementation Project. Smith Creek was placed on the 303(d) impaired waters list in 2008 for benthos. Ratings were “good-fair.” The restoration project extends from the confluence of Smith Creek and Neuse River at the wastewater treatment facility to the Franklin County line and from US1A to Averette Road into the Town of Rolesville and Wake County jurisdictions. This area encompasses Smith, Sanford, Dunn, and Austin Creeks, as well as the Wake Forest Reservoir. The project is a four year study determining BMP retrofit projects to limit sediment from entering watershed streams and determine a broader survey of macro-invertebrate species taxa, and richness on an annual basis. Sampling is conducted in July and sent to a certified lab to be analyzed. Samples from year one have come back classified as “good.” Additional sampling was conducted in the spring to determine new taxa and the results of the testing were classified as “good-excellent.” The Town of Wake Forest has also conducted infrared map studies in addition to BMP and stream repair project ranking. Stream repair projects will be conducted over the next two years to help remove additional sediment from entering Smith Creek Watershed.

11 Town of Garner Updates to SCI Management Plan

This section outlines the changes that have occurred to the Town of Garner’s environmental ordinances, plans, and policies since the December 2011 update of the SCI Management Plan.

11.1 Ordinances

Since the last update in 2011 to the SCI Management Plan, the Town of Garner’s UDO has been amended to change the regulations that pertain to the following topics: signs, permissible uses within certain zoning districts, legal property notice procedures, Board of Adjustment and other quasi-judicial hearing procedures, and parkland fee-in-lieu payments. UDO amendments that do not affect or impact the following environmental areas are not described below.



The amendment regarding parkland fees simply changes the timing of the payment. Instead of being paid all at once at plat recordation, the fee is paid prior to the issuance of building permits for individual lots. This modified payment plan does not affect the open space requirement for residential developments. Amendments include minor changes to the follow sections:

- Stormwater management
- Riparian buffers -Session Law 2012-200 now allows new single-family homes built on existing lots to encroach 20 feet (Zone 2) into the riparian buffer.
- Erosion and sediment control
- Flood plain protection
- Open space requirement
- Air quality
- Tree protection

The Town of Garner's UDO clarifies that Wake County will oversee, administer, implement, and enforce an Erosion and Sediment Control Program for the Town. This policy and program have not changed since 2011.

11.2 Planning

11.2.1 Open Space

The Town's Open Space and Greenway Plan was completed in 2007. Since 2011 there have not been any updates to the plan, and there have not been any new acquisitions.

The Town of Garner officially opened the South Garner Greenway on Oct. 31, 2011, a 10-foot-wide, half-mile paved trail that connects White Deer and Lake Benson Parks to Timber Drive. The new section also connects to other existing trails and greenways in the area, providing miles of exercise and recreational enjoyment. The greenway also provides connectivity to neighborhoods that surround the parks.

11.2.2 Land Use

Future land use planning for the Town of Garner is incorporated in its Comprehensive Growth Plan, which has not been updated since the SCI Management Plan was submitted. The last amendment to the Comprehensive Growth Plan was in June 2011, which converted a neighborhood activity center, at the intersections of US HWY 401 and Ten Ten Road, into a community activity center. While this change primarily reflects development that is already established, it also increases the future development potential and intensity of this area. The Plan now recommends a higher residential density (greater than 10 dwelling units per acre) and community-scale retail developments.



11.3 Other

11.3.1 Air Quality

There have been no changes or updates to this category.

The Capital Area Transit (CAT) has expanded its service since November 2009 to include a bus stop to a newly developed commercial center in Garner.

11.3.2 Education

The Town of Garner remains an active participant in the Clean Water Education Partnership (CWEP). The Town of Garner has increased its stormwater educational efforts through participation in community events with the Parks and Recreation Department at Lake Benson and Black Deer Parks.

In March 2014, the Town approved a development plan for South Garner High School at 8228 Hebron Church Road. Construction should start this year, and the school is targeted to be open in the fall of 2016. The Town anticipates that the addition of this new school will generate new residential development in the vicinity of southeast Garner and Wake County.

11.3.3 Miscellaneous

The Town of Garner has a well-established litter sweep cleanup program. This community initiated program involves a semi-annual clean-up of roads and greenways, and occasionally combines with NC Big Sweep efforts to clean up stream banks as well. In addition, the Town of Garner remains an active member of Wake County task forces for air quality and stormwater management.

Garner is partnering with other cities and towns on the Wake County Multi-Jurisdictional Hazard Mitigation Plan. The Plan is still a work in progress, and all jurisdictions are currently working to ensure that the “mitigation actions” section of the document is in compliance with the standards that North Carolina and the Federal Emergency Management Agency (FEMA) are requiring.

There are several transportation improvement projects currently under way. There is a minor road-widening project on eastbound US Route 70 (US 70) Highway (Hwy) West (W) at Jessup Drive. Utilities in the vicinity are currently being identified, and construction should begin late 2014 or early 2015. This project is scheduled to be finished by the summer of 2015. Significant road construction is underway in the vicinity of US 70 Hwy East (E) and Interstate 40 (I-40) (White Oak area). This includes additional travel and turn lanes on southbound Jones Sausage Road and eastbound US 70 Hwy E. In addition, the eastbound I-40 Exit 306 ramp (to US 70 Hwy E) is also being reconfigured with an additional ramp lane and traffic signal. These improvements are scheduled for completion in December 2014.

Several years ago, the City of Raleigh installed a water main along the north-side of US 70 Hwy E, east of Auburn Knightdale Road to the Johnston County line. In June 2014, the Town annexed a business at 2217



US 70 Hwy E outside the Town's ETJ in this corridor. This business requested annexation in order to make connection to this public water line. The Town anticipates that in the near future, other property owners along this corridor will also desire to connect to this water line.

12 Knightdale Updates to SCI Management Plan

This section outlines the changes that have occurred to the Town of Knightdale's environmental ordinances, plans, and policies since the December 2011 update of the SCI Management Plan.

12.1 Ordinances

The Town of Knightdale (The Town) has updated its Comprehensive Plan, Chapter 3 (Town Resource Analysis). The update primarily focuses on documentation of demographic changes in the Town of Knightdale and its ETJ since 2003. It largely points to the need to undertake a new comprehensive planning process in the next few years.

The Town has made changes to the zoning map, including zoning of the new ETJ that was approved after the last SCI Management Plan update. Including that initial zoning of the new ETJ, there have been 6 rezonings since the last update that will have little to no impact on the SCI Management Plan apart from the re-zoning for Knightdale Station Park. Most of this land was previously zoned for medium-density residential. Today it is zoned as Open Space Preservation. Copies of the staff zoning reports are included in appendix D4.

The Town made only minor amendments to stormwater management rules since the 2011 SCI Management Plan update, including a comprehensive edit of the UDO chapter in which those rules are included. The comprehensive edits included technical edits for consistency of language and referencing, clarifications of intent and interpretation, further definition of broad terms, addition of exemplary graphics and photos, and the removal of redundant text.

In 2012, Wake County began administering the stormwater ordinance for the Town of Knightdale. Wake County's administration of the Town's stormwater ordinance includes plan review, permit issuance, construction inspections, enforcement, and post-construction maintenance inspections of stormwater management devices.

Chapter 7 of the UDO, which addresses open space requirements, was also amended, also for clarification reasons. No substantial changes were made. Similarly, the Town clarified chapter 8 of the UDO which addresses tree protection and landscaping. These changes were also not substantial. Copies of chapters 7 and 8 of the UDO are included in appendix D4.

There were no changes to ordinance sections that address the following environmental areas:



- Erosion/sedimentation control
- Floodplain protection
- Riparian buffers
- Recreational set-asides
- Air quality

12.2 Planning

The Town is updating its hazard mitigation plan. All the municipalities within Wake County are going through a consolidation of all hazard mitigation plans into one plan with each municipality having its own chapter.

The Water Allocation Policy for the Town is updated annually, and recent changes have steered the program towards being more of an incentivized program. The program awards base points to developments according to the type of development that is most desired at the time. The Town has begun allowing bonus points to be added so that developers can reach the minimum of 30 points needed for approval. Bonus points are awarded according to the following categories: Non-Conformity Abatement and Public Infrastructure Improvements, Green Development Standards, Outdoor Enhancement and Transit Improvements, and Amenities (only for projects with residential components). A copy of the most recent Water Allocation Policy is included in appendix D4.

12.3 Other

12.3.1 Education

The Town has begun to partner with local elementary schools to educate students on streams, storm water, and water quality.

12.3.2 Open Space

Recently, the Town opened the 75-acre Knightdale Station Park. This fall a three mile greenway segment called the Mingo Creek Trail is set to open which will provide connectivity to the City of Raleigh's Anderson Park, the Neuse River Greenway, and the Mountains to Sea Trail. The Town has also dedicated open space as more subdivisions are built.

13 Wendell Updates to the SCI Management Plan

This section outlines the changes that have occurred to the Town of Wendell's environmental ordinances, plans, and policies since the December 2011 update of the SCI Management Plan.

13.1 Ordinances

With the exception of open space protection and stormwater management (both discussed below), the majority of the changes to the Town of Wendell's UDO represents clarification changes, and do not include



any substantive changes. There were no changes to ordinances governing riparian buffers, erosion and sediment control, or floodplain protection.

13.1.1 Open Space Protection

Modifications to the Town of Wendell's code of ordinances include the removal of the requirement for new commercial developments to dedicate open space. The Town also added language to the Environmental Protection chapter (chapter 6.6) of the UDO which clarifies the stream buffer calculations. These buffers are a standard 50 feet, but increase two feet per one percent slope. Wetlands, slopes over 25 percent, and impervious surfaces do not count toward the buffer width. A copy of chapter 6 of the UDO is included in appendix D5.

The Town of Wendell, working in conjunction with the Town of Zebulon, developed an Open Space Plan in 2002 that remains valid. The Town of Wendell hopes to update the plan within the next year.

13.1.2 Stormwater Management

The Town also modified its stormwater management policies within the UDO. On March 26, 2012 section 6.5M(1)(d) of the UDO was amended for ultra-low and low-density stormwater development standards. On March 26, 2012 Section 6.5M(4) of the UDO was amended for high-density stormwater development standards. These amendments restricted the amount of nitrogen export associated with these types of developments to 3.6 pounds per acre per year, unless it achieved a low impact development (LID) project as defined by the UDO.

In 2012, Wake County began administering the stormwater ordinance for the Town of Wendell. Wake County's administration of the Town's stormwater ordinance includes plan review, permit issuance, construction inspections, enforcement, and post-construction maintenance inspections of stormwater management devices.

The Town of Wendell was issued its National Pollutant Discharge Elimination System (NPDES) permit effective December 1, 2012. This permit authorizes the Town to discharge stormwater from its municipal separate storm sewer system (MS4) to receiving waters, Buffalo Creek, Little River, and Marks Creek, within the Neuse River Basin. Since the issuance of its permit, the town has obtained membership and is an active participant in the North Carolina Clean Water Education Partnership (CWEP). In the fall of 2013 the Town updated its website to include information to help educate citizens on issues and BMPs relating to stormwater management.

13.2 Planning

No new planning initiatives have been undertaken by the Town since the 2011 SCI Management Plan update, and no changes to the town's Land Use and Comprehensive Plans have been made since 2011. Further, no changes to the Town's CIP have been made. Minor changes to the ETJ boundary have been



made for the annexation of small infill lots into the corporate limits and the town's zoning jurisdiction remains unchanged since July 2011, when approximately 2,000 acres were added to the town's ETJ. Wake County is in the process of developing Lake Myra Park which is within the Town of Wendell. The Park includes 127 acres, much of it along riparian areas within the Marks Creek watershed.

The Town is updating its hazard mitigation plan. All the municipalities within Wake County are going through a consolidation of all hazard mitigation plans into one plan with each municipality having its own chapter.

The Wendell Falls Planned Unit Development (PUD) has begun construction. This project, which is being developed by Newland Communities, will ultimately include 4000 residential units, 2 million square feet of retail, and open space. Construction is expected to reach near build-out in approximately 10 to 15 years.

13.3 Other

13.3.1 Tree Preservation

No changes to the tree preservation chapter of the UDO were made.

13.3.2 Air Quality

The Zebulon-Wendell Express is bus service offered by Triangle Transit Authority with stops in Wendell, Zebulon, and downtown Raleigh and at Wake Medical Center. The bus runs during commuting hours (6:00 am to 9:00 am and 4:00 pm to 7:00 pm Monday through Friday). Because of the NCDOT FORTIFY project (which is widening I-440 and I-40 from US 1 in Cary to US 64 on the east side of Raleigh), headways for the bus service have been increased from one hour to 30 minutes.

13.3.3 Education

The Town is allotted one thirty-minute segment each month on East Wake TV entitled "Wendell Works" to discuss upcoming events, highlight new businesses, and spotlight citizens who have had an impact on the community. The Wendell Board of Commissioners meetings are also aired on East Wake TV. Wendell is also highlighted on the East Wake News and works with the East Wake Newspaper. The Town provides information through the website which was redesigned in 2013 and includes a Facebook page and e-blasts.

14 Zebulon Updates to the SCI Management Plan

This section outlines the changes that have occurred to the Town of Zebulon's environmental ordinances, plans, and policies since the December 2011 update of the SCI Management Plan.

14.1 Ordinances

A minor update to the ordinance that addresses floodplain protection within the Town of Zebulon's UDO was made in April, 2013, but the changes are not considered substantive. The change refers to the updated Cooperating Technical State agreement between the State of North Carolina and FEMA which establishes



the basis for identifying Special Flood Hazard Areas. The Town also amended the section of the UDO that discusses stormwater management. The amendment removed the option for developers of ultra-low, low, and high density projects to pay into the North Carolina Riparian Buffer Restoration Fund to offset any nitrogen load created by their development. The current ordinance requires that all development and redevelopment of these types of projects provide permanent on-site BMPs to lower the nitrogen export amounts. Copies of the ordinance changes are included in appendix D6.

In 2012, Wake County began administering the stormwater ordinance for the Town of Zebulon. Wake County's administration of the Town's stormwater ordinance includes plan review, permit issuance, construction inspections, enforcement, and post-construction maintenance inspections of stormwater management devices.

No other changes were made to the UDO; however the Town of Zebulon is currently updating its entire UDO with an expected completion date of July 2015.

14.2 Planning

14.2.1 Comprehensive Plan

There have been no changes to the Comprehensive Plan or Land Use map. Changes to municipal boundaries (ETJ and town limits), and rezoning's have occurred including an extension of a portion of the Town's northern ETJ to Debnam Street.

14.2.2 Hazard Mitigation Plan

The Town is updating its hazard mitigation plan. All the municipalities within Wake County are going through a consolidation of all hazard mitigation plans into one plan with each municipality having its own chapter.

14.2.3 Capital Improvement Program

Two projects have been added to the CIP since the 2011 SCI Management Plan update, the Beaver Dam Creek Outfall and the Yates Place Street Drainage Improvements. The City of Raleigh has requested input from the Zebulon Board of Commissioners regarding the provision of a gravity sewer along US 264 and Old Bunn Road, a part of the Beaver Creek Sewer Interceptor project. Currently two options are being considered for the sewer interceptor project. Both options provide 192 acres for development, and construction of a 12-inch to 24-inch gravity sewer, and provide a new 1750 gallons per minute (GPM) pump station at Park Village Road, abandonment of an aerial sewer line at the Industrial Park, easement acquisition of approximately 14 acres permanently and 7 acres temporarily, and each includes a \$500,000 project credit. Option 1 would have a lower construction cost, and lower fee capacity fee rate. Option 2 would have a higher sewer capacity fee rate (\$116.95 higher than option 1), additional construction time, and lower operation and maintenance costs.



The Zebulon Board of Commissioners approved Option 2 on April 23, 2014. Therefore, the additional 192 acres has been opened up as future development since it will now be served by a gravity sewer when the project is completed.

14.2.4 Highway 96 (Arendell Avenue) Access Management Plan

The town is currently seeking grants for a project to make improvements identified in the NC 96/Arendell Avenue Access Management Plan developed in 2010. Highway 96 which serves downtown Zebulon and US 64. The goal of the improvements is to allow for safe transportation for the region and help improve air quality by keeping traffic moving. On August 20, 2014, the Board of Commissioners granted approval for staff to apply for grant funding through the Locally Administered Project Program (LAPP) program for right-of-way acquisition and design for Phases I and II for the improvements as shown on the Hwy 96 Access Management Plan. If approved, the town would receive notification of the grant approval in February 2015 with funding available in October 2015. Right-of-way acquisition and design would take roughly one year to complete. The tentative plans for construction wouldn't begin until late 2017.

14.2.5 Air Quality

The Zebulon-Wendell Express is bus service offered by Triangle Transit Authority with stops in Wendell, Zebulon, and downtown Raleigh and at Wake Medical Center. The bus runs during commuting hours (6:00 am to 9:00 am and 4:00 pm to 7:00 pm Monday through Friday). Because of the NCDOT FORTIFY project (which is widening I-440 and I-40 from US 1 in Cary to US 64 on the east side of Raleigh), headways for the bus service have been increased from one hour to 30 minutes.

15 Conclusion

The City of Raleigh and the merger communities continue to take progressive steps to monitor for and address any identified secondary and cumulative impacts associated with currently planned water and wastewater infrastructure. The City of Raleigh's Sampling and Monitoring Program Report concluded that between 2008-2012 there has been no substantial decline in water quality during the monitoring time period. Mitigation programs, land use policies and implementing ordinances have addressed potential secondary and cumulative effects within the study area.



Appendix A: Memorandum of Agreement and Supplemental

**Memorandum of Agreement between the North Carolina Department
of Environment and Natural Resources and the City of Raleigh
Regarding the Use of Their (the City of Raleigh and Towns of Garner,
Knightdale, Rolesville, Wake Forest, Wendell and Zebulon's)
Secondary and Cumulative Impacts Management Plan for Public Utility
Infrastructure**

This Memorandum of Agreement (MOA) is made and entered into on the date herein below last written by and between the City of Raleigh (hereinafter "CITY"), and the NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (hereinafter "NCDENR"), collectively referred to hereinafter as the "Parties".

WHEREAS, beginning in 2000 and ending in 2006, the CITY has entered into individual utility merger agreements with the Towns of Garner, Knightdale, Rolesville, Wake Forest, Wendell and Zebulon (hereinafter "TOWNS"); under the terms of the agreements the CITY has jurisdiction over public utility services, limited to the water and wastewater treatment, conveyance, and collection infrastructure in these TOWNS, and the CITY is responsible for planning new utility infrastructure, and building, operating and maintaining these systems;

WHEREAS, because the CITY is responsible for planning new utility infrastructure, and building, operating and maintaining the utility infrastructure systems in the TOWNS, future utility infrastructure projects will be the CITY'S projects;

WHEREAS, the CITY and TOWNS may be required under the North Carolina Environmental Policy Act ("NCEPA") to prepare an Environmental Document;

WHEREAS, NCEPA environmental documents regarding infrastructure projects are required to address Secondary and Cumulative Impacts (SCI);

WHEREAS, addressing the SCI of growth and development that may be induced or supported by proposed utility infrastructure projects is a repetitive, time-consuming and expensive process for the CITY, TOWNS and NCDENR, and involves addressing essentially the same potential environmental effects from growth and development and measures for mitigation of such effects for each infrastructure project;

WHEREAS, it is to the mutual benefit of the CITY, TOWNS and NCDENR to develop a more effective procedure for addressing the SCI of the growth and development facilitated by the CITY'S utility infrastructure projects and of the measures implemented or to be implemented by the CITY and/or TOWNS to mitigate those impacts that may occur inside and outside of the CITY'S and TOWNS' Planning Areas as defined in Section 2.3 of this MOA;

WHEREAS, the CITY, TOWNS and NCDENR have agreed to use a single comprehensive document to address the SCI of growth and development induced or supported by planned CITY utility infrastructure projects;

WHEREAS, the CITY and NCDENR wish to set out in this MOA the procedures to be used and the obligations and responsibilities of the Parties in developing a comprehensive document to satisfy NCEPA requirements that the secondary and cumulative impacts of a proposed utility infrastructure project be described and discussed;

THEREFORE, the Parties hereby enter into this Memorandum of Agreement,

1. Purpose and Scope of MOA

1.1 Purpose. This MOA defines the duties and responsibilities of the Parties concerning preparation, review and use of a comprehensive document, called The City of Raleigh SCI Management Plan (PLAN), to satisfy NCEPA requirements to address SCI of growth and development induced or supported by the CITY'S future utility infrastructure projects.

1.2 Scope. The PLAN is intended to examine SCI as a result of growth and development induced and supported by the CITY'S utility infrastructure projects for which NCDENR is the lead State agency under the NCEPA.

2. Definitions

2.1 "Environmental Document" means an Environmental Assessment, Finding Of No Significant Impact, Environmental Impact Statement, or Record Of Decision required to be prepared under North Carolina General Statute § 113A-4(2) and NCAC Title 15A, Subchapter 01C.

2.2 "Utility Infrastructure Project" means a public water and wastewater treatment, conveyance, and collection infrastructure project (excluding stormwater treatment and conveyance as well as flood control projects) that is planned, built, operated and maintained by the CITY. These projects are identified annually through a Capital Improvement Planning (CIP) process that typically covers a 5-year planning period.

2.3 "Planning Area" means the project study area defined in the PLAN. It generally is defined by municipal boundaries, extraterritorial jurisdictions, and long range urban service areas.

3. Secondary and Cumulative Impacts Management Plan (PLAN)

3.1 Scope of PLAN. The PLAN to be developed and approved according to this MOA shall identify the SCI associated with the CITY'S and TOWNS' future growth and development including capital projects that are in various master plans regarding utility infrastructure projects and CIPs. The PLAN will identify

the mitigation measures in place for these impacts. Documentation of the ordinances implementing the mitigation measures shall be included in the PLAN.

3.2 **Scope of Secondary and Cumulative Impacts.** For the purposes of this MOA and the PLAN, secondary impacts are the reasonably foreseeable impacts of growth and development induced or supported by the proposed utility infrastructure projects. Secondary impacts may include changes in the pattern of land use, population, density, or growth rate and related effects on air, water, and other natural systems. Cumulative impacts are impacts that result from incremental effects of an activity when added to other past, present and reasonably foreseeable future activities regardless of what entities undertake such actions.

3.3 **Approved PLAN.** The PLAN developed and approved for the purposes of this MOA, and as may be amended according to the procedures set forth in Section 6, shall be attached to this MOA as Attachment 1 upon approval.

4. Procedure for Adopting the PLAN

4.1 **Draft PLAN.** The CITY shall develop a draft PLAN and submit the document to NCDENR for review according to the applicable requirements and established procedures for Environmental Documents under North Carolina General Statute § 113A-4 and the NCAC Title 15A, Subchapter 01C, including State Clearinghouse Review and public meeting, comment and agency review requirements.

4.2 **Final PLAN.** The CITY shall develop and adopt a final PLAN to incorporate revisions agreed upon by NCDENR and the CITY as appropriate to address comments and recommendations received through the review and comment procedure regarding the draft PLAN.

4.3 **Coordination of the State Clearinghouse Process.** The CITY shall ensure that the components of the draft and final PLAN and proposed revisions to the PLAN are submitted to the State Clearinghouse and are reviewed and approved in accordance with established procedures for Environmental Impact Statements under the NCEPA.

4.4 **Copies of the final PLAN.** After the State Clearinghouse review and NCDENR approval of the PLAN, the CITY shall post it on the City's website and will provide twelve (12) copies of the final PLAN and this MOA to the NCDENR's Environmental Review Coordinator (ERC) for distribution to appropriate NCDENR agencies.

5. Reporting Requirements

5.1 **Report Required.** On a biennial (every two years) basis, the CITY shall submit a joint report (separately identifying each merger town actions) to NCDENR's ERC regarding CITY and TOWN actions that affect the PLAN.

- 5.2 Contents of the Biennial Report. The biennial report shall identify significant changes in actual land use or utility infrastructure that were not anticipated or described in the PLAN; the report shall also describe significant or proposed changes to the CITY'S utility infrastructure plans, and the CITY'S and/or TOWNS' land use plans; sediment and erosion control programs; stormwater programs; ordinances related to buffers and open space requirements; and other major management measures described in the PLAN.
- 5.3 NCDENR Review. If requested by NCDENR, the CITY will meet with agency representatives to discuss the report.
- 5.4 Synchronize Reporting Requirements. The CITY holds a NPDES Phase I stormwater permit which requires an annual report to NCDENR, and the Towns of Garner, Knightdale, and Wake Forest hold NPDES Phase II stormwater permits which also require an annual report to NCDENR. The CITY and the Towns of Garner, Knightdale, and Wake Forest will compile much of the same information for their NPDES stormwater reports and for the biennial report. The timing of these reports shall be synchronized and submitted to NCDENR with the first report due by August 30, 2009.

6. PLAN Revisions

- 6.1 Revisions. The CITY shall revise the PLAN and submit it to NCDENR by January 1, 2019 and by January 1 of each tenth year thereafter. The Secretary of NCDENR or his/her designee may require the PLAN to be updated sooner based upon the findings, conclusions, or contents of the biennial reports and/or the following reasons:
- A. The CITY has made changes to its utility infrastructure plans that may cause significant changes to the elements of the PLAN.
 - B. The CITY and/or TOWNS have made changes to their land use plans that may cause significant changes to the elements of the PLAN.
 - C. NCDENR provides information and data that demonstrate SCI management presented in the PLAN have not been effective in addressing the SCI identified in the PLAN.
 - D. NCDENR provides information and data that demonstrate the existence of additional SCI that were not initially identified during the preparation of the PLAN.
 - E. NCDENR informs the CITY that a new Federally listed endangered or threatened species has been identified within the Planning Area.
 - F. NCDENR informs the CITY of a change in characterization or status of a potentially impacted environmental resource.

G. NCDENR informs the CITY of NCDENR program changes that require consideration of SCI that were not initially addressed during the preparation of the PLAN.

6.2 Approval of PLAN Revisions. Revisions to the PLAN shall be subject to the same review and approval procedures set out in Section 4 of this MOA except as noted below.

6.3 Mitigation measures developed by Towns of Wendell and Zebulon in consultation with the US Fish and Wildlife Service, NC Wildlife Resources Commission and the Natural Heritage Program to address impacts to threatened and endangered species in the Little River watershed may be incorporated into the PLAN without additional public notice or agency review to the extent the mitigation measures have been reviewed and approved as part of the Little Creek Wastewater Treatment Plant (WWTP) EA through the State Clearinghouse NCEPA review process. Mitigation measures developed for other NCEPA and NEPA projects in consultation with the above agencies may also be incorporated into the Plan without additional public notice or agency review as long as the measures have been reviewed and approved through the State Clearinghouse NCEPA review process. This also applies to specific permit conditions or mitigation measures addressing environmental effects from growth and development that will be relevant to multiple projects and the PLAN. These PLAN revisions will be approved through written acknowledgement of the NCDENR Secretary or his/her designee.

7. Use and Effect of the PLAN

7.1 NCDENR shall use the PLAN in reviewing NCEPA documents prepared by the CITY for utility infrastructure projects that are initiated after NCDENR approves the PLAN.

7.2 The Parties agree that the approved PLAN shall satisfy the SCI discussion and analysis requirements of NCEPA for which NCDENR is the lead agency with respect to the environmental impacts of growth and development associated with utility infrastructure projects proposed by the CITY during the period for which the PLAN is in effect.

7.3 The PLAN is not intended to address the direct impacts of proposed utility infrastructure projects. Direct impacts, including direct cumulative impacts, and secondary impacts that are not associated with anticipated growth and development will be discussed in the Environmental Document for each individual project.

7.4 Participation in the MOA does not limit the ability of the lead agency to determine the type of Environmental Document required for an individual utility infrastructure project.

7.5 Impacts that occur outside the Planning Area, but within the impact area defined by the NCDENR lead agency for a proposed CITY utility infrastructure project, will be addressed in the individual Environmental Document for that project.

8. Relationship to Permitting

- 8.1 The Parties agree that participation in this MOA does not limit the regulatory authority of a NCDENR agency or limit the ability of that agency to require additional mitigation for an individual project as a condition of permit issuance.
- 8.2 Participation in this MOA does not imply endorsement by NCDENR of aspects of a project that are not subject to the NCEPA.
- 8.3 The Parties agree that participating in this MOA does not limit the review authority of any agency regarding the proposed Little Creek WWTP or the Little River Reservoir Dam or limit the ability of any agency to require additional data collection during the National Environmental Policy Act process for the proposed Little River Reservoir Dam.

9. Special Conditions Related to Wendell and Zebulon

- 9.1 The CITY is currently developing an NCEPA Environmental Assessment to evaluate the impacts of a proposed expansion of the Little Creek Wastewater Treatment Plant (WWTP). The City will also develop a NEPA Environmental Impact Statement (EIS) to evaluate the impacts of the proposed Little River Reservoir. The PLAN does not cover the SCI for the proposed Little Creek WWTP or Little River Reservoir.
- 9.2 When the NCEPA process is complete for the proposed Little Creek WWTP Expansion, the CITY will request NCDENR to incorporate any mitigation measure approved as part of the NCEPA process into the PLAN pursuant to Section 6 of this MOA.
- 9.3 The Parties agree that the PLAN may be used to describe potential SCI and existing mitigation programs for utility infrastructure projects that will provide service to the TOWNS of WENDELL and ZEBULON. The parties agree additional mitigation measures for SCI may be required by DENR for the federally threatened and endangered aquatic species and will be negotiated on a project-by-project basis for projects serving the TOWNS of WENDELL and ZEBULON until the time at which the PLAN is revised as set forth within Section 9.2 and Section 6.3 of this MOA.

10. Termination and Dispute Resolution

10.1 Termination. This MOA may be terminated by mutual agreement of the signatory Parties at any time. NCDENR and the City of Raleigh may terminate this MOA giving ninety (90) days written notice to the other Party.

10.2 Conflicts and Disputes. If there is an alleged breach of the MOA or other complaint giving rise to a conflict or dispute, the Party making the allegation must give written notice to the other Party. The Parties shall meet to resolve the conflict or dispute. Conflicts and disputes arising from the implementation of this MOA, including possible termination, shall be resolved by the Secretary of NCDENR or his/her designee.

10.3 MOA Administrators. The ERC for NCDENR and the City Manager or his/her designee for the CITY (or successor offices and designees) are designated as the contacts for the purpose of notice, implementation, and administration of the MOA.

11. Effective Dates

The effective date of this MOA is the date of the latest signature below, and it shall remain in effect until December 31, 20____ unless terminated sooner as provided for herein.

In Testimony Whereof, CITY and NCDENR have caused this AGREEMENT to be executed by their respective representatives and attested to by their respective Clerks, on this the 2 day of December, 2008.

City of Raleigh
Signature [Signature]
Name (printed) I. Russell Allen
Title City Manager
Date 12-9-08

NC Department of Environment and Natural Resources
Signature [Signature]
Name (printed) William G. Ross, Jr.
Title Secretary
Date 12-19-08

Attested Signature [Signature]
Title City Clerk
Date 12-9-08

Attested Signature [Signature]
Title Env. Review Coordinator
Date 12-19-08

**AMENDMENT #1 to the Memorandum of Agreement between
the North Carolina Department of Environment and Natural Resources
and the City of Raleigh Regarding the Use of Their (the City of Raleigh
and Towns of Garner, Knightdale, Rolesville, Wake Forest, Wendell
and Zebulon's) Secondary and Cumulative Impacts Management Plan
for Public Utility Infrastructure**

This Amendment to the Memorandum of Agreement (MOA) is made and entered into on the date herein below last written by and between the City of Raleigh (hereinafter "CITY"), and the NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (hereinafter "NCDENR"), collectively referred to hereinafter as the "Parties".

WHEREAS, beginning in 2000 and ending in 2006, the CITY has entered into individual utility merger agreements with the Towns of Garner, Knightdale, Rolesville, Wake Forest, Wendell and Zebulon (hereinafter "TOWNS"); under the terms of the agreements the CITY has jurisdiction over public utility services, limited to the water and wastewater treatment, conveyance, and collection infrastructure in these TOWNS, and the CITY is responsible for planning new utility infrastructure, and building, operating and maintaining these systems;

WHEREAS, the Parties have entered into this MOA and the City has created and updated the PLAN as detailed in Section 3 of the MOA and the NCDENR has reviewed and accepted the same; and

WHEREAS, the CITY developed a comprehensive Environmental Sampling and Monitoring Program in 2007 to provide defensible data to analyze long-term secondary and cumulative impacts from growth and development; and

WHEREAS, from 2008 to 2012 the CITY has implemented the comprehensive Environmental Sampling and Monitoring Program; and

WHEREAS, a five year analysis of data from the comprehensive Environmental Sampling and Monitoring Program does not show any clear trends or evidence of a systematic decline in water quality in the study area which is encompassed by the PLAN;

WHEREAS, the schedule included in the MOA was established prior to 2008 and during the intervening time, the anticipated pace of new additions to the City's water and sewer systems has declined greatly including reductions arising from greatly increased conservation by its consumers;

WHEREAS, a revised schedule can achieve the same goals and expectations for timely monitoring of trends and current environmental impact analysis under a less rigorous and expensive program;

and

WHEREAS, it is to the mutual benefit of the CITY and NCDENR to revisit the MOA in light of these results to modify the MOA to achieve more efficient use of rate payer funds and State resources used to review such data by extending reporting timeframes;

THEREFORE, the Parties hereby enter into this Amendment to the Memorandum of Agreement,

1. Modification of Reporting Requirements

Section 5 is modified to read:

- 5.1 Report Required. The CITY shall submit a joint report (separately identifying each merger town actions) to NCDENR's ERC regarding CITY and TOWN actions that affect the PLAN beginning on December 23, 2014, which will be the triennial anniversary of the acceptance date of the last PLAN update by NCDENR, and each triennial anniversary thereafter.
- 5.2 Contents of the Triennial Report. The triennial report shall identify significant changes in actual land use or utility infrastructure that were not anticipated or described in the PLAN; the report shall also describe significant or proposed changes to the CITY'S utility infrastructure plans, and the CITY'S and/or TOWNS' land use plans; sediment and erosion control programs; stormwater programs; ordinances related to buffers and open space requirements; and other major management measures described in the PLAN.
- 5.3 NCDENR Review. If requested by NCDENR, the CITY will meet with agency representatives to discuss the report.
- 5.4 Synchronize Reporting Requirements. The CITY holds a NPDES Phase I stormwater permit which requires an annual report to NCDENR, and the Towns of Garner, Knightdale, and Wake Forest hold NPDES Phase II stormwater permits which also require an annual report to NCDENR. The CITY and the Towns of Garner, Knightdale, and Wake Forest will compile much of the same information for their NPDES stormwater reports and for the triennial report. If other merger towns are issued NPDES Phase II stormwater permits, the compilation in the annual report also will include information from those towns. The timing of these reports may be synchronized and submitted to NCDENR by December 23rd, 2014.

2. Modification of PLAN Revisions

Section 6.1 is modified to read:

- 6.1 Revisions. The CITY shall revise the PLAN and submit it to NCDENR by January 1, 2019 and by January 1 of each tenth year thereafter. The Secretary of

NCDENR or his/her designee may require the PLAN to be updated sooner based upon the findings, conclusions, or contents of the triennial reports and/or the following reasons:

- A. The CITY has made changes to its utility infrastructure plans that may cause significant changes to the elements of the PLAN.
- B. The CITY and/or TOWNS have made changes to their land use plans that may cause significant changes to the elements of the PLAN.
- C. NCDENR provides information and data that demonstrate SCI management presented in the PLAN have not been effective in addressing the SCI identified in the PLAN.
- D. NCDENR provides information and data that demonstrate the existence of additional SCI that were not initially identified during the preparation of the PLAN.
- E. NCDENR informs the CITY that a new Federally listed endangered or threatened species has been identified within the Planning Area.
- F. NCDENR informs the CITY of a change in characterization or status of a potentially impacted environmental resource.
- G. NCDENR informs the CITY of NCDENR program changes that require consideration of SCI that were not initially addressed during the preparation of the PLAN.

3. All Other Terms Remain Unchanged

All other terms and condition of this MOA remain enforce and unchanged through the term of the MOA.

4. Effective Dates

The effective date of this Amendment to the MOA is the date of the latest signature below, and it shall remain in effect until December 31, 2018 unless terminated sooner as provided for herein.

In Testimony Whereof, CITY and NCDENR have caused this AGREEMENT to be executed by their respective representatives and attested to by their respective Clerks, on this the _____ day of _____, 20_____.

City of Raleigh

NC Department of Environment and Natural Resources

Signature _____

Name (printed) Perry James

Title Interim City Manager

Date _____

Attested Signature _____

Gail Smith

Title City Clerk

Date _____

Signature _____

Name (printed) John E. Skvarla, III

Title Secretary

Date _____

Attested Signature _____

Lyn Hardison

Title DENR SEPA Coordinator

Date _____



Appendix B: Record of Decision (2009)

Record of Decision

City of Raleigh Secondary and Cumulative Impacts Management Plan for Public Utilities Infrastructure: Including the Communities of Garner, Knightdale, Rolesville, Wake Forest, Wendell, and Zebulon, North Carolina

The City of Raleigh (City) developed a Secondary and Cumulative Impacts Management Plan (SCI Management Plan) for its public utility service area. Beginning in 2000, the City of Raleigh entered into merger agreements with the Towns of Garner, Rolesville, Wake Forest, Knightdale, Wendell, and Zebulon (merger communities). Under the terms of these agreements, the City has jurisdiction over public utility services, including water and wastewater treatment, and distribution and collection systems in these towns. The City is responsible for planning new infrastructure, and for building, operating, and maintaining these systems. Thus the SCI Management Plan covers the City and each merger community including their current land areas, extraterritorial jurisdiction (ETJ) and long range urban service areas (USAs); this area is the Study Area for the SCI Management Plan.

The SCI Management Plan describes the existing environmental conditions within the Study Area, evaluates the SCI for the proposed utility infrastructure, and identifies mitigation programs which address those SCI. Inclusion of all infrastructure plans in one document provides a comprehensive review of the City's and merger communities' growth projections and infrastructure designed to support that growth. For future public utility infrastructure projects proposed by the City that require an environmental review under the NC (State) Environmental Policy Act (SEPA), an environmental assessment (EA) or environmental impact statement (EIS) will be developed to examine the direct impacts of the project. The EA or EIS will reference this SCI Management Plan for secondary and cumulative indirect impacts.

The City has entered into a memorandum of agreement (MOA) with the Department of Environment and Natural Resources (DENR) that outlines how the SCI Management Plan will be used, the time period during which it can be cited in individual EAs and EISs, reporting requirements, and the circumstances under which it must be updated.

For a given infrastructure project, DENR may determine that additional programs to address SCI other than those described in the SCI Management Plan are required to acceptably address the impacts of that project. In this case, the SCI Management Plan will still be used to meet the SEPA requirements, but additional requirements could be required as a condition of one or more of the permits required for the project.

In June 2009, the City submitted the SCI Management Plan and MOA to the State Clearinghouse for a 45-day review period. A public meeting was held on the documents on August 17, 2009. Seven speakers provided oral comments; three of these speakers also provided written comments. No attendees filled out written comment cards at the meeting. No one submitted comments to the State Clearinghouse on the project. One letter was received after the comment period ended, but was included in the comment summary. Responses to the comments are provided in an appendix to the final SCI Management Plan.

DENR approves the use of the SCI Management Plan as outlined in the MOA.

Identification of Alternatives

The SCI Management Plan does not have alternatives as would be required in an environmental document for an infrastructure project. However, there is an alternative in which the City could continue to develop environmental documents in the traditional manner in which each environmental document would include summaries of the direct, indirect, and cumulative impacts.

Traditional Approach Alternative

Typically, EAs or EISs are developed for a given infrastructure project. Each individual EA or EIS includes summaries of direct, secondary, and cumulative impacts. Inefficiencies from developing documents in this manner include the following:

- **Project Area** – Frequently the project area for a given infrastructure project includes a small portion of a given municipality. Thus, a comprehensive view of the growth-related impacts throughout the jurisdiction may not be included in the document.
- **Documentation Inefficiencies** – Often the secondary and cumulative impacts of various infrastructure projects are similar. Thus, many environmental documents contain secondary and cumulative impacts sections that are largely redundant.
- **Review Inefficiencies** – Regulatory agencies review similar information on secondary and cumulative impacts and the local programs in place to mitigate for them for various infrastructure projects for a given municipality. Consequently, numerous individual projects require similar comments and negotiations, consuming regulatory agency and local government time.
- **Governing Board and Capital Planning** – Typically, utility or public works departments develop environmental documents to support permitting decisions. If the permitting authority includes specific permit conditions to address impacts from a given project, the municipal department may require time to go through a process to address these impacts. For example, if requirements for ordinance changes are included in the permit conditions, these must be approved by a City or Town Council. Reviewing secondary and cumulative impacts in one holistic document will help streamline this process as well since City or Town Council action can be completed early.

These inefficiencies result in frustration for both the regulatory agencies and the regulated community, and the effort spent on repetitively addressing the same issues results in less time available for addressing the highest priority SCI.

Preferred Alternative

Under the preferred alternative, the SCI Management Plan approach, an EA or EIS will be developed to address the direct impacts of a given infrastructure project. These environmental documents will not include a specific section on the secondary and cumulative indirect impacts; these will be addressed by referencing the SCI Management Plan. The MOA that DENR and the City have signed outlines the specifics on how the SCI

Management Plan will be used, reporting requirements, its period of standing, and the circumstances under which it must be updated.

This alternative will enable the City, merger communities, and DENR to meet SEPA requirements in a more efficient manner. In addition, the SCI Management Plan enables the public and DENR agencies to review the SCI in light of all proposed infrastructure within the Study Area. This is typically a larger geographic area than would be examined for SCI under a traditional approach; the SCI Management Plan's Study Area extends beyond the City's and merger communities' extra-territorial jurisdictions to include their long range urban service areas. This proposed process does not preclude DENR or limit the ability of any agency to require additional mitigation for an individual project as a condition of a permit.

Selection of Alternative

DENR has selected the SCI Management Plan process as its preferred alternative for meeting SEPA requirements for the City and merger communities' public utility projects. This alternative provides the following benefits:

- Meets SEPA requirements in a more efficient manner than the traditional method of developing and reviewing environmental documents.
- Enables the public and resource agencies to review the City's planned infrastructure and SCI in a more comprehensive manner.
- Allows the City, merger communities, and resource agencies to focus their attention on the environmental impacts that are of greatest importance.

Certification of Avoiding and Minimizing Environmental Impacts

Since the SCI Management Plan does not examine the impacts of a specific infrastructure project, a traditional record of decision (ROD) certification does not apply. However, the SCI Management Plan outlines mitigation programs within the City and merger communities that minimize SCI, which include the following:

- Land use planning to focus higher density development within certain areas of the communities; no water and sewer service is planned in the Falls Lake and Little River watersheds to protect those resources
- Open space plan - riparian buffers, floodplain protection, and subdivision open space requirements help protect open space during development; City and merger communities also implementing open space plans
- Riparian buffers - each local government has riparian buffer ordinances which range from 50 to 100 feet on perennial streams with the inner 30 feet relatively undisturbed
- Erosion and sediment control - each local government either has its own erosion and sediment control program or partners with Wake County to implement a local program
- Stormwater programs - each local government has developed a local stormwater program; some program require stormwater controls when imperviousness exceeds

15 percent; some programs have incentives for low impact development included in their ordinances

These mitigation programs will minimize SCI to the environmental resources within the Study Area.

In addition, the MOA outlines circumstances when the City needs to update its SCI Management Plan, which include:

- The City or merger communities have made significant changes to their land use plans and/or infrastructure plans that may cause significant changes to the elements of the SCI Management Plan.
- DENR has information and data that demonstrate that the mitigation programs presented in the SCI Management Plan have not been effective in addressing SCI.
- DENR has information and data that demonstrate the existence of additional SCI that were not initially identified in the SCI Management Plan.
- DENR informs the City that a new federally-listed endangered or threatened species has been identified within the Study Area.
- DENR informs the City of a change in characterization or status of a potentially impacted environmental resource.
- DENR informs the City of DENR program changes that require consideration of SCI that were not initially addressed during the preparation of the SCI Management Plan.

The SCI Management Plan and MOA do not limit the regulatory authority of any DENR agency or limit the ability of any agency to require additional mitigation for an individual project as a condition of permit issuance.

The City and DENR agreed that the Towns of Wendell and Zebulon did not have adequate management of SCI and that documentation of adequate SCI management would be developed through other on-going environmental documents. The SCI Plan can be used to describe potential SCI and existing mitigation programs for utility infrastructure projects that will provide service to the Towns of Wendell and Zebulon. In addition, the City of Raleigh is currently developing a SEPA EA to evaluate the impacts of a proposed expansion of the Little Creek Wastewater Treatment Plant (WWTP). The City is also developing an Environmental Impact Statement (EIS) under the National Environmental Policy Act to evaluate the impacts of the proposed Little River Reservoir. The SCI Management Plan does not cover the SCI for the proposed Little Creek WWTP or Little River Reservoir. Through the Little Creek EA process, Wendell and Zebulon are actively engaged in developing adequate SCI management strategies. When the Agencies agree to the SCI management strategy for the Little Creek EA, these will be added to the SCI Plan as part of the biennial report process described in the MOA.

The mitigation programs outlined in the SCI Management Plan in conjunction with the terms outlined in the MOA, in accordance with SEPA, represent the City's and merger communities' approach for minimization of SCI.



Appendix C: State Clearinghouse Review Comments



North Carolina Department of Administration

Pat McCrory, Governor

Bill Daughtridge, Jr., Secretary

December 16, 2014

Mr. Kenneth Waldroup
City of Raleigh
Post Office Box 590
Raleigh, North Carolina 27602

Re: SCH File # 15-E-4300-0295; Secondary and Cumulative Impacts Management Plan for Public Utilities Infrastructure for the City of Raleigh

Dear Mr. Waldroup:

The above referenced environmental impact information has been reviewed through the State Clearinghouse under the provisions of the North Carolina Environmental Policy Act.

Attached to this letter are comments made in the review of this document. Because of the nature of the comments, it has been determined that no further State Clearinghouse review action on your part is needed for compliance with the North Carolina Environmental Policy Act. The attached comments should be taken into consideration in project development.

Sincerely,

A handwritten signature in black ink that reads "Crystal Best".

Crystal Best
State Environmental Review Clearinghouse

Attachments

cc: Region J

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail state.clearinghouse@doa.nc.gov

Location Address:
116 West Jones Street
Raleigh, North Carolina

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAKE

H03: SEWER SYSTEMS (LINES, PUMP
STATIONS)

STATE NUMBER: 15-E-4300-0295
DATE RECEIVED: 11/14/2014
AGENCY RESPONSE: 12/10/2014
REVIEW CLOSED: 12/15/2014

MS LYN HARDISON
CLEARINGHOUSE COORDINATOR
DENR LEGISLATIVE AFFAIRS
GREEN SQUARE BUILDING - MSC # 1601
RALEIGH NC

REVIEW DISTRIBUTION

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DENR LEGISLATIVE AFFAIRS
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION
TRIANGLE J COG

PROJECT INFORMATION

APPLICANT: City of Raleigh
TYPE: State Environmental Policy Act
Environmental Review

DESC: Secondary and Cumulative Impacts Management Plan for Public Utilities
Infrastructure for the City of Raleigh

The attached project has been submitted to the N. C. State Clearinghouse for
intergovernmental review. Please review and submit your response by the above
indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY:

Lyn Hardison

DATE:

12-12-14

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

Rupal Desai

COUNTY: WAKE

H03: SEWER SYSTEMS (LINES, PUMP
STATIONS)

STATE NUMBER: 15-E-4300-0295
DATE RECEIVED: 11/14/2014
AGENCY RESPONSE: 12/10/2014
REVIEW CLOSED: 12/15/2014

MS CARRIE ATKINSON
CLEARINGHOUSE COORDINATOR
DEPT OF TRANSPORTATION
STATEWIDE PLANNING - MSC #1554
RALEIGH NC

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DENR LEGISLATIVE AFFAIRS
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION
TRIANGLE J COG

PROJECT INFORMATION

APPLICANT: City of Raleigh
TYPE: State Environmental Policy Act
Environmental Review

DESC: Secondary and Cumulative Impacts Management Plan for Public Utilities
Infrastructure for the City of Raleigh

The attached project has been submitted to the N. C. State Clearinghouse for
intergovernmental review. Please review and submit your response by the above
indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.



AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY:

Rupal Desai

DATE:

12/10/14



NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAKE

H03: SEWER SYSTEMS (LINES, PUMP
STATIONS)

STATE NUMBER: 15-E-4300-0295
DATE RECEIVED: 11/14/2014
AGENCY RESPONSE: 12/10/2014
REVIEW CLOSED: 12/15/2014

MS CAROLYN PENNY
CLEARINGHOUSE COORDINATOR
CC&PS - DIV OF EMERGENCY MANAGEMENT
FLOODPLAIN MANAGEMENT PROGRAM
MSC # 4719
RALEIGH NC

NOV 21 2014

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DEPT OF TRANSPORTATION
TRIANGLE J COG

PROJECT INFORMATION

APPLICANT: City of Raleigh
TYPE: State Environmental Policy Act
Environmental Review

DESC: Secondary and Cumulative Impacts Management Plan for Public Utilities
Infrastructure for the City of Raleigh

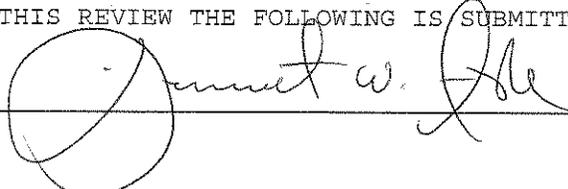
The attached project has been submitted to the N. C. State Clearinghouse for
intergovernmental review. Please review and submit your response by the above
indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.



AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY:



DATE:

11/26/14



North Carolina Department of Public Safety

Emergency Management

Pat McCrory, Governor
Frank L. Perry, Secretary

Michael A. Sprayberry, Director

November 26, 2014

State Clearinghouse
N.C. Department of Administration
1301 Mail Service Center
Raleigh, North Carolina 27699-1301

Subject: Intergovernmental Review State Number: 15-E-4300-0295
City of Raleigh Public Utilities SCIMP, Wake County

As requested by the North Carolina State Clearinghouse, the North Carolina Department of Public Safety Division of Emergency Management Risk Management reviewed the Secondary and Cumulative Impacts Management Plan for Public Utilities Infrastructure in the City of Raleigh and we offer the following comments:

- 1) All Public Utility work within the Special Flood Hazard Area (SFHA) will require a floodplain development permit issued by the local jurisdiction prior to starting work.
- 2) Work within the floodway or non-encroachment area will require either a No-Rise Certification (for projects that do not increase the flood levels during the base flood discharge) or a Conditional Letter of Map Revision (for projects that increase flood levels during the base flood discharge) prior to construction.
- 3) All structures and utilities should be protected to the regulatory flood protection elevation as described in each municipality's ordinance and 44 CFR 60.3.

Thank you for your cooperation and consideration. If you have any questions concerning the above comments, please contact Dan Brubaker, P.E., CFM, the NC NFIP Engineer at (919) 825-2300, by email at dan.brubaker@ncdps.gov or at the address shown on the footer of this document.

Sincerely,

Kenneth W. Ashe, P.E., CFM
Assistant Director
Risk Management

MAILING ADDRESS:
4218 Mail Service Center
Raleigh NC 27699-4218
www.ncem.org



GTM OFFICE LOCATION:
4105 Reedy Creek Road
Raleigh, NC 27607
Telephone: (919) 825-2341
Fax: (919) 825-0408

15-E-4300-0295

November 26, 2014

Page 2 of 2

cc: John Gerber, NFIP State Coordinator
Dan Brubaker, NFIP Engineer
Ben Brown, City of Raleigh Stormwater Development
File

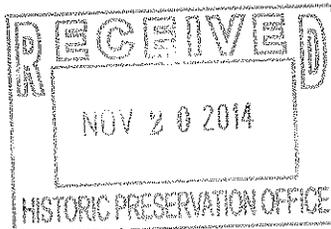
NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: WAKE

H03: SEWER SYSTEMS (LINES, PUMP
STATIONS)

STATE NUMBER: 15-E-4300-0295
DATE RECEIVED: 11/14/2014
AGENCY RESPONSE: 12/10/2014
REVIEW CLOSED: 12/15/2014

MS RENEE GLEDHILL-EARLEY
CLEARINGHOUSE COORDINATOR
DEPT OF CULTURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
MSC 4617 - ARCHIVES BUILDING
RALEIGH NC



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DEPT OF TRANSPORTATION
TRIANGLE J COG

Dec 12/4/14 A (NC) DATE 12/4/14

PROJECT INFORMATION

APPLICANT: City of Raleigh
TYPE: State Environmental Policy Act
Environmental Review

*Dec 12/2/14 S SEE WATER
ASR 11/21/14*

DESC: Secondary and Cumulative Impacts Management Plan for Public Utilities
Infrastructure for the City of Raleigh

The attached project has been submitted to the N. C. State Clearinghouse for
intergovernmental review. Please review and submit your response by the above
indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY: Renee Gledhill-Earley

DATE: 12.11.14



NOV 25 2014



North Carolina Department of Cultural Resources
State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

December 4, 2014

Kenneth R. Waldroup, PE
City of Raleigh Public Utilities Department
PO Box 590
Raleigh, NC 27602

Kenneth.Waldroup@raleighnc.gov

Re: Secondary & Cumulative Impacts Management Plan for Public Utilities Infrastructure, Raleigh,
Wake County, CH 14-2599

Dear Mr. Waldroup:

We are in receipt of your submittal of November 14, 2014, concerning the above-referenced undertaking. We have reviewed the materials submitted and offer the following comments.

We understand the Secondary & Cumulative Impacts Management Plan for Public Utilities Infrastructure Triennial Report does not discuss plans for future projects in Wake County. However, environmental review of future projects will be required at the appropriate time.

To assist us with making a determination regarding the potential effects of future projects, we request you provide maps that clearly illustrate the proposed locations for future undertakings in reference to historic resources using the HPOGIS website.

To obtain shapefiles of our HPO GIS data, please visit the *Data Download* webpage at: <http://www.hpo.ncdcr.gov/gis/CountyDisclaimers.html#DataDownload>. There you will find a zipped file that contains shapefiles for everything you see in HPOWEB and a thorough description regarding the colors and shapes in our symbology. Please feel free to contact us with any questions you may have regarding the HPOGIS website and the HPO GIS data.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,



for Ramona M. Bartos

cc: State Clearinghouse



Appendix D: GIS Data References

The following is a list of GIS data used in the City of Raleigh Public Utility Division's analysis of Secondary and Cumulative Impacts (SCIMP). All GIS data is stored in an ESRI File Geodatabase titled CORPUD_SCIMP.gdb. The list includes that source of the data, a description, and the date it was obtained.

NCDOT Data:

- NCDOT_CountyBoundary – County boundary file. Obtained from NCDOT (<https://connect.ncdot.gov/resources/gis/pages/gis-data-layers.aspx>) in April, 2012.
- NCDOT_Interstate – State-wide interstate file. Obtained from NCDOT in May, 2012.
- NCDOT_USHwy – Statewide US Highway file. Obtained from NCDOT in May, 2012.
- NCDOT_hydromaj_poly – Statewide waterbody file. Obtained from NOneMap (<http://www.nconemap.com/>) in June, 2014.

Wake County Data:

- Wake_Corporate_2014_5 – Municipal corporate limits in Wake County. Obtained from Wake County GIS (<http://www.wakegov.com/gis/services/Pages/data.aspx>) May, 2014.
- Wake_Jurisdictions_2014_5 - Municipal ETJ limits in Wake County. Obtained from Wake County GIS May, 2014.
- Wake_SRUSA_2014_5 – Municipal short term urban service areas, obtained from Mike Ping, GIS Analyst, Wake County via e-mail June, 2014.
- Wake_LRUSA_2014_5 – Municipal long range urban service areas, obtained from Mike Ping, GIS Analyst, Wake County via e-mail June, 2014.

Other data:

- Extended_USA – Proposed urban service boundary expansion by the Town of Wake Forest. Created by URS in June, 2014.
- falls_mgmnt_wbd_20100421 – Falls Lake Watershed boundary. Obtained from NCDENR (<http://portal.ncdenr.org/web/fallslake/home>) in June, 2014.
- falls_mgmnt_wbd_20100421_Diss – Falls Lake Watershed boundary dissolved into one single boundary. Created by URS based on falls_mgmnt_wbd_20100421 in June, 2014
- Johnston_County_ETJ - Municipal ETJ limits in Johnston County. Obtained from Johnston County GIS (<http://www.johnstonnc.com/gis2/content.cfm?PD=data>) in June, 2014.
- Monitoring_Report_Subbasins – Subbasins used in City of Raleigh Public Utilities Departments 2013 Environmental Sampling and Monitoring Program Report. Created using subbasin data obtained from NOneMap in June, 2014.
- Monitoring_Report_Subbasins_Diss - Subbasins used in City of Raleigh Public Utilities Departments 2013 Environmental Sampling and Monitoring Program Report dissolved into one boundary file. Created by URS based on Monitoring_Report_Subbasins in June, 2014.
- NeuseRiverBasinStreams – Streams within the Neuse River Basin. Extracted from a statewide major hydrography dataset obtained from NOneMap in May, 2014.

- StudyArea_2011 – Study area used for the 2011 SCIMP update report. Created by URS in May, 2014.
- StudyArea_2014 – Study area for the 2014 SCIMP update. Created by URS in May, 2014.
- StudyArea_2011Watersheds – Watersheds within the SCIMP study area. Extracted from a statewide watershed dataset obtained from NCOneMap in June, 2014.