Summary of

Upper Neuse River Basin Association Monitoring Activities, FY2015

During FY2015 the Upper Neuse River Basin Association (UNRBA) began to generate the data and information that will ultimately be used for the re-examination of the Falls Lake Nutrient Management Strategy. Cardno continued to provide assistance to the UNRBA by coordinating monitoring, quality assurance, and data storage. In mid-2014, Cardno was joined by Environment One, the primary laboratory on the UNRBA monitoring team. The monitoring program approved by the UNRBA includes two distinct types of monitoring: routine monitoring and special studies. Routine monitoring occurs on a regular schedule (e.g., quarterly, monthly, weekly) for a regular set of pollutants or constituents. Special Studies may be short or long-term, may not have a regular schedule, or may focus on one particular aspect of the watershed. These studies are not considered optional studies, but are prioritized based on data gaps identified in the previous study and available funding. The program also directs Cardno to develop an on-line database system to store all of the data collected by the UNRBA and any data the UNRBA decides to include in the re-examination of the strategy.

FY2015 Milestones

July 2014. Routine Monitoring Plan approved by NC Division of Water Resources

August 2014 Routine Monitoring began

November 2014 Special Studies approved by Path Forward Committee

February 2015 On-Line Web Portal for Data Storage and Retrieval (Beta Version)

Environment One Technicians monitoring a stream

What is included in Routine Monitoring?

Routine monitoring is separated into three different categories depending upon how the monitoring data will be used.

1. Lake monitoring is performed to evaluate algae (chlorophyll *a*), turbidity, and organic carbon in the lake. The lake monitoring also includes parameters to describe processes that affect algae, turbidity, and organic carbon.
2. Lake Load monitoring is performed to measure the amount of selected parameters related to algae, turbidity, and organic carbon as they enter Falls Lake.
3. Jurisdictional Load monitoring is performed to measure the amount of selected parameters (again related to algae, turbidity, and organic carbon) that travels across jurisdictional boundaries. Both county and municipal boundaries are considered for this monitoring. This monitoring will help to show the jurisdictional contributions of nitrogen and phosphorus to Falls Lake. Locations are displayed on Figures 1 and 2 of the UNRBA Monitoring Plan developed by Cardno. Data that help determine nutrient loads (i.e., nitrogen and phosphorus loads) are included in the Lake and Jurisdiction Load portions of the monitoring program.

Lake Monitoring	Lake Load Monitoring	Jurisdictional Load Monitoring
Monthly, 12 Locations By the NC Division of Water Resources	Monthly or Semi Monthly, 18 Locations By the UNRBA	Monthly, 20 Locations By the UNRBA

Other items funded with routine monitoring include a calendar year annual report and a subject matter expert for all monitoring programs. Calendar year annual reports are scheduled to be completed in the spring of each year.

What is included in the Special Studies?

Special Studies include any monitoring or administrative work that is not covered under Routine Monitoring. The UNRBA Monitoring Plan recommended eight special studies in addition to the routine monitoring. Three additional

special studies were generated by November 2014. The Path Forward Committee voted to fund the following three special studies in the FY2015 budget:

1. High flow monitoring at selected wetland-dominated monitoring locations. This purpose of this additional monitoring is to better describe the interaction between wetland-dominated Lake Load monitoring locations and storm events. This study was not included in the original monitoring plan.
2. Wet weather monitoring at selected lake loading stations. The purpose of this additional monitoring is to improve the nitrogen and phosphorus (i.e., nutrient) load estimation at Lake Load monitoring locations in the upper watershed. Monitoring locations include the Little River, Eno River and Ellerbe Creek. This study was included in the original monitoring plan.
3. Monitor nutrient movement from lake sediment to lake water. The purpose of this monitoring is to measure the amount of nitrogen and phosphorus that may be leaving lake-bottom sediment and moving into the water. Although not included in the original monitoring plan, a variation of this study was included in the original monitoring plan.

Also funded in Special Studies are two administrative items:

- administrative support for a UNRBA meeting with the US Environmental Protection Agency and
- FY2015 water quality summaries for the general public.