

UNRBA Path Forward Committee Meeting

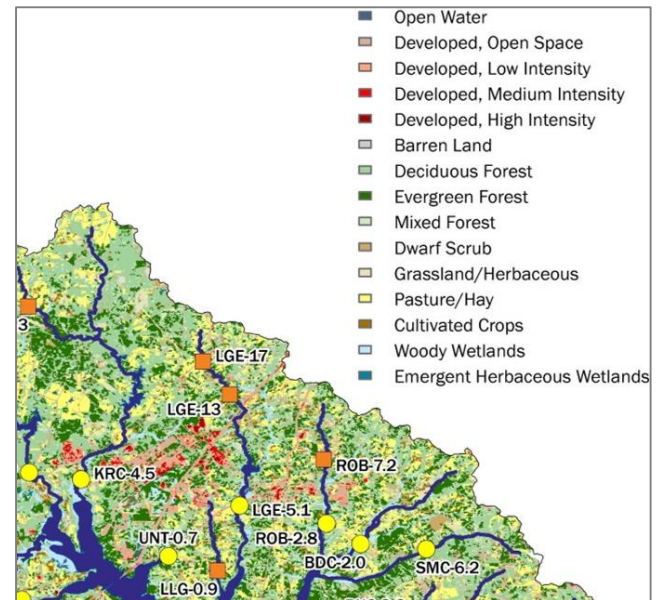
MRS Project Status Update

July 25, 2018



Data Management Plan and Description of the Modeling Process

- Describes the procedures for managing model inputs and outputs
- Describes development of the input files
- Describes modeling process
- Submitted for review by the MRSW and PFC in June
 - No written comments received
 - **Discuss feedback/request to finalize**



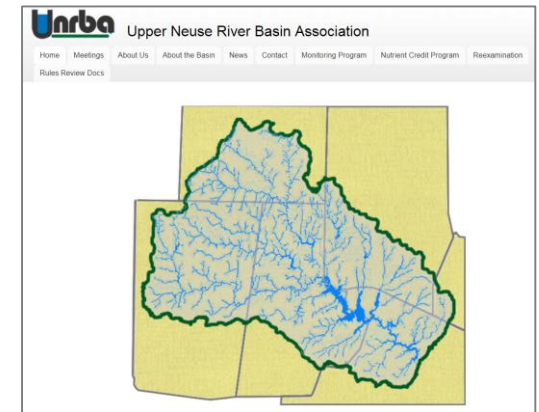
Preparations for the Fall Stakeholder Meeting

- Main goals
 - Provide a status update on model development
 - Provide an opportunity for stakeholders to comment
 - Elicit feedback on specific topics
- Preparation
 - Continue drafting data memorandum 1
 - Review and finalize for distribution
 - **Discuss potential meeting date for October**



MRS Materials on the UNRBA Website

- <https://www.unrba.org/reexamination>
- Most recent information and work products first
 - Modeling Quality Assurance Project Plan (Approved by DWR)
 - Stakeholder meeting materials
 - October 2017 (focus on watershed modeling)
 - September 2016 (project kickoff/stakeholder concerns)
 - Model selection process
 - Conceptual modeling plan
 - Planning phase of the project (2012 to 2014)
 - Task 1 – Re-examination strategy
 - Task 2 – Review existing data and reports (through 2011)
 - Task 3 – Review methods for estimating nutrient loads
 - Task 4 – Recommend future monitoring and modeling studies ->
 - UNRBA Monitoring Program
 - UNRBA Modeling and Regulatory Support Project



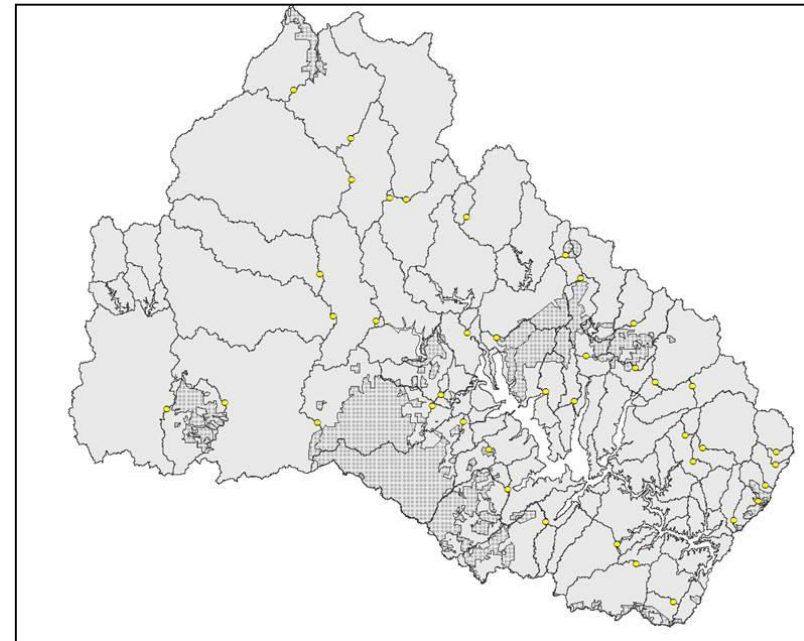
Preparations for the November NC AWWA-WEA Annual Conference

- UNRBA abstract was selected for presentation
- Abstract focused on the outcome of the Credits Project
 - Present 3 practices included in Division of Energy, Mineral and Land Resources (DEMLR) Stormwater Control Measure Credit Document
 - Present 2 practices approved by DWR
 - Soil improvement and removal of illicit discharges
- Share progress
 - WWTP improvements
 - New development
 - Existing development
 - Agriculture
 - Land conservation
- **PFC to discuss options today**



Progress and Next Steps for Data Memo 1

- May PFC meeting discussed progress/stakeholder inputs needs for
 - Catchment delineation
 - Development of EFDC model grid
 - Preliminary analyses regarding segmentation of the lake
- July (today) discuss data compiled for
 - Major wastewater treatment plants
 - Minor facilities and MS4 permits
 - USGS flow and stage data
- August
 - Present data compiled for meteorological data and impoundment data
 - PFC review memorandum
- September: finalize and distribute the memorandum to the stakeholders
- October: stakeholder meeting



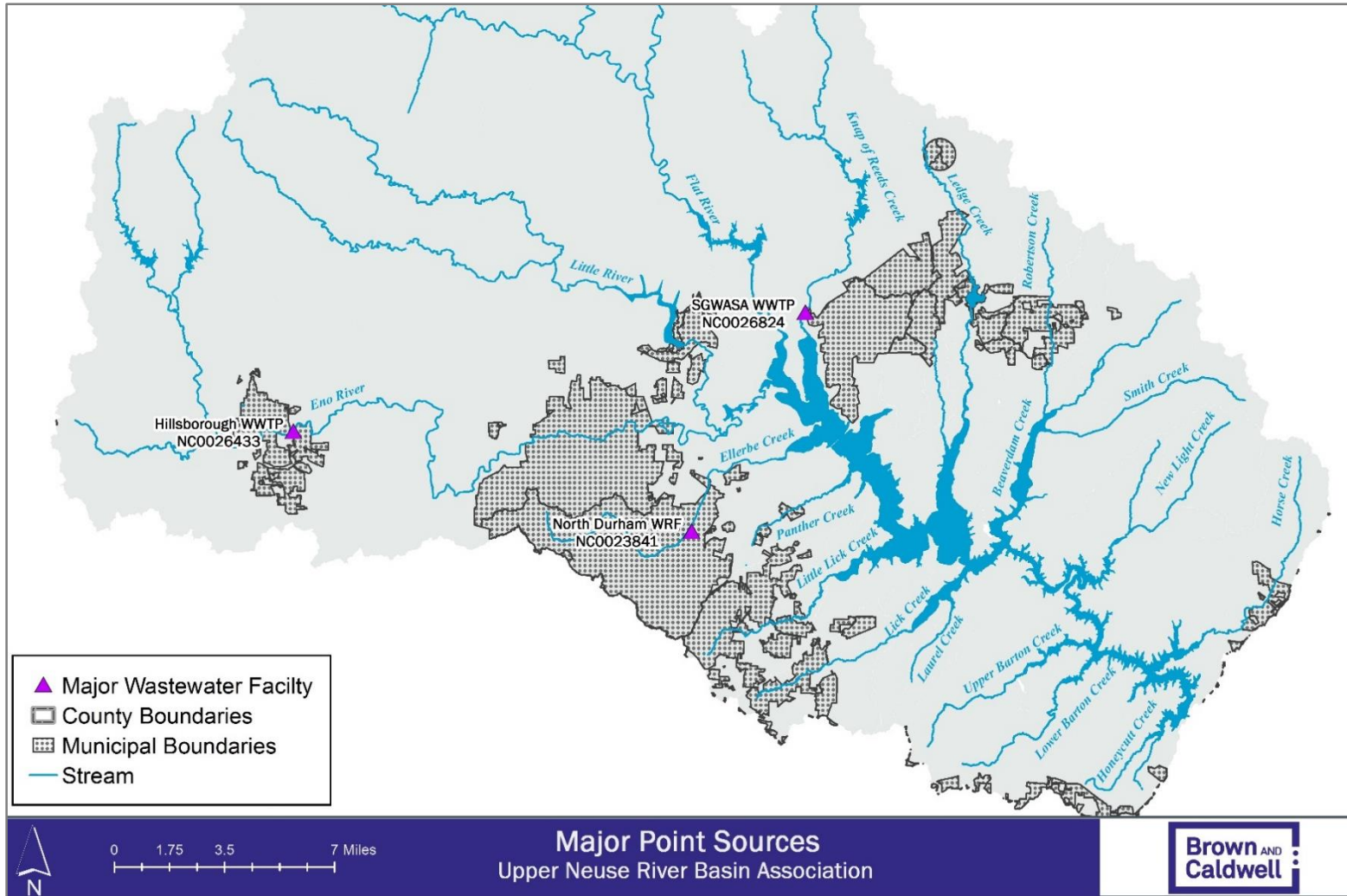
Major Wastewater Facilities

Major Wastewater Facilities

- Three major wastewater treatment facilities in the watershed (discharging more than 1 million gallons per day of treated effluent)

Major Wastewater Treatment Facilities in the Watershed		
NPDES Permit Number	Facility Name	Receiving Water
NC0023841	North Durham WRF	Ellerbe Creek
NC0026433	Hillsborough WWTP	Eno River
NC0026824	SGWASA	Knap of Reeds Creek

Location of Major Wastewater Facilities



Summary of Effluent Data Provided by the Three Major Facilities in the Watershed

Owner:	SGWASA			NDWRF	Hillsborough		
Permit Number:	NC0026824			NC0023841	NC0026433		
	Jan-Mar 2006, Sep-Dec 2007	Apr 2006- Aug 2007	2014-2017	2014-2018	2006- 2010	Jan 2011- Aug 2013	Sept 2013- Dec 2017
Flow (MGD)	D	D	D	D	D	D	D
Temperature (°C)	5/W	D	5/W		5/W	5/W	5/W
pH	5/W	D	5/W		5/W	5/W	5/W
Dissolved Oxygen (mg/l)	5/W	D	5/W		5/W	5/W	5/W
Conductivity (UMHOS/cm)	3/W	3/W	5/W				
BOD ₅ (20°C) (mg/l)	5/W	5/W	5/W		5/W	5/W	2/W
Total Suspended Residue (mg/l)	5/W	D	5/W		5/W	5/W	2/W
Ammonia Nitrogen (mg/l)	5/W	5/W	5/W		5/W	5/W	2/W
Nitrate plus nitrite (mg/l)	W	W	W		W	W	W
Total Kjeldahl Nitrogen (mg/l)	W	W	W	W	W	W	W
Total Nitrogen (mg/l)	W	W	W	W	W	W	W
Total Phosphorus (mg/l)	W	W	W	W	2/W	W	W

Minor Facilities

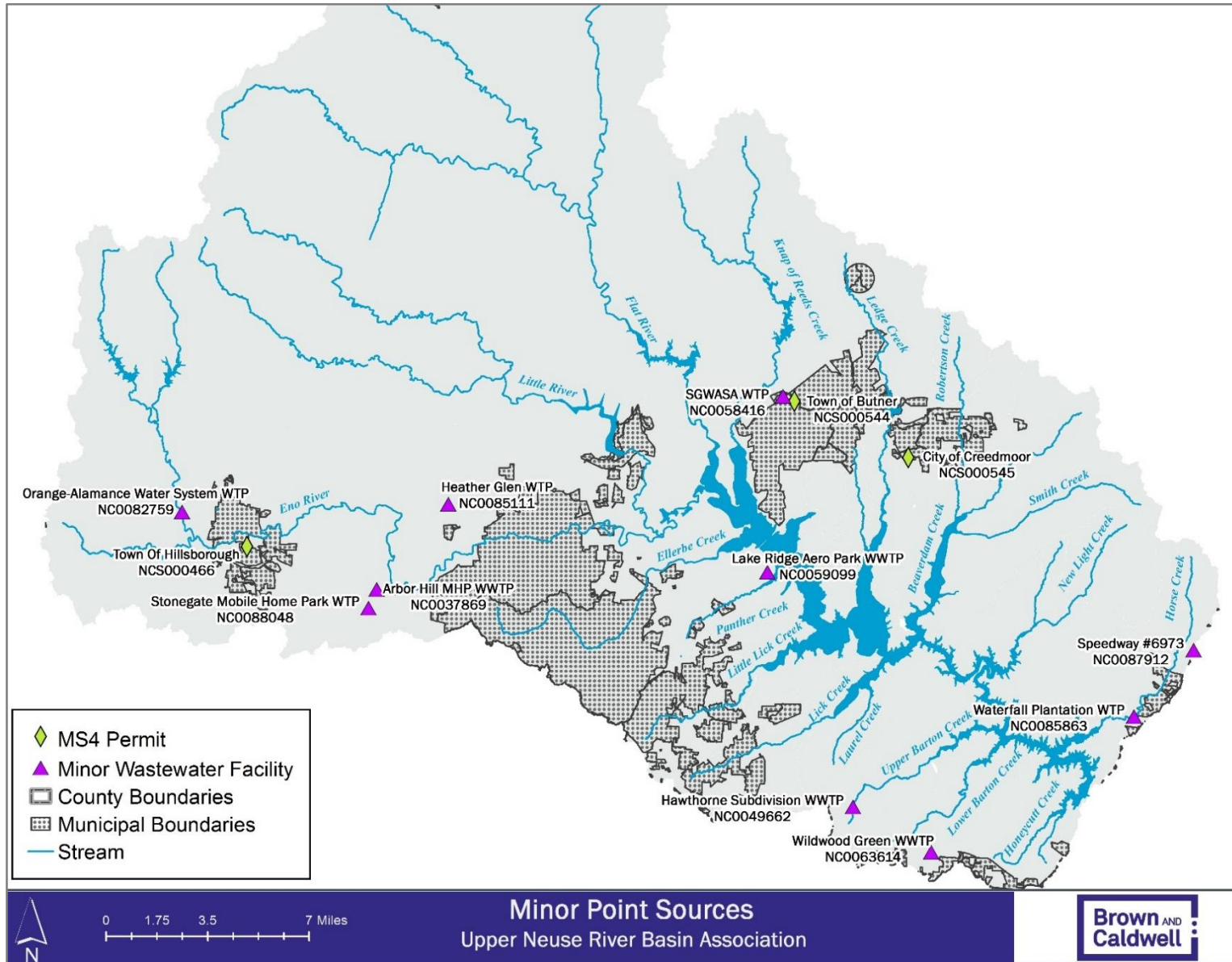
Minor Facilities

- Several minor water or wastewater treatment facilities are located in the watershed
- Gathering available information on discharge flow rate and concentrations

Table 3-3. Minor Wastewater Treatment Facilities

Permit Number	Facility Name	Type	Permitted Flow (MGD)	Receiving Stream
NC0037869	Arbor Hills MHP WWTP	Discharging 100% Domestic < 1MGD	0.0060	Stony Creek
NC0049662	Hawthorne Subdivision WWTP	Discharging 100% Domestic < 1MGD	0.2500	Upper Barton Creek
NC0082759	Orange-Alamance Water System WTP	Water Plants and Water Conditioning Discharge	0.3000	Eno River
NC0059099	Lake Ridge Aero Park WWTP	Discharging 100% Domestic < 1MGD	0.016	Panther Creek
NC0063614	Wildwood Green WWTP	Discharging 100% Domestic < 1MGD	0.1	Lower Barton Creek
NC0085111	Heather Glen WTP	Water Plants and Water Conditioning Discharge	not limited	Sevenmile Creek
NC0085863	Waterfall Plantation WTP	Water Plants and Water Conditioning Discharge	0.0050	Horse Creek

Location of Minor Facilities

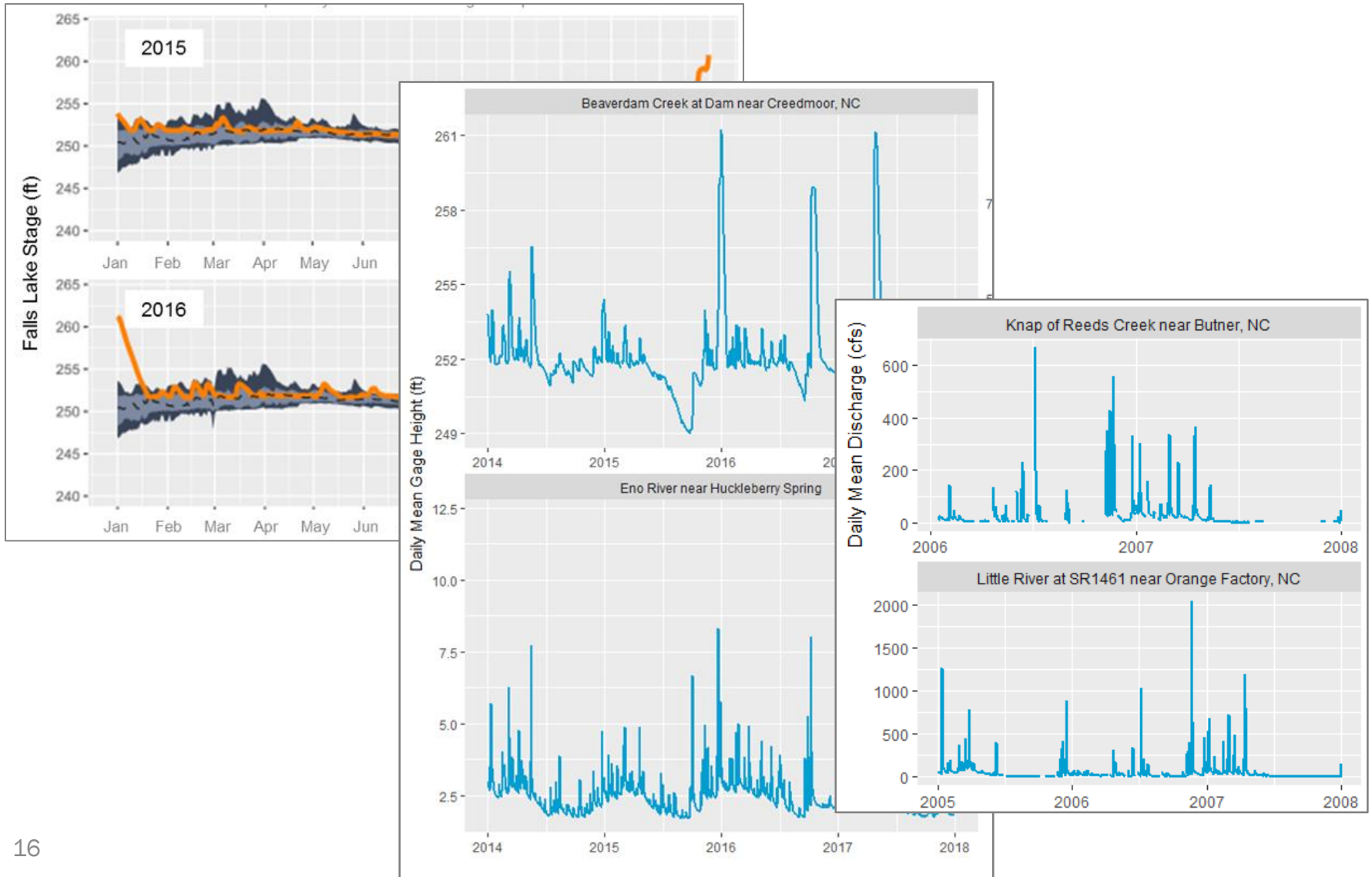


USGS Data

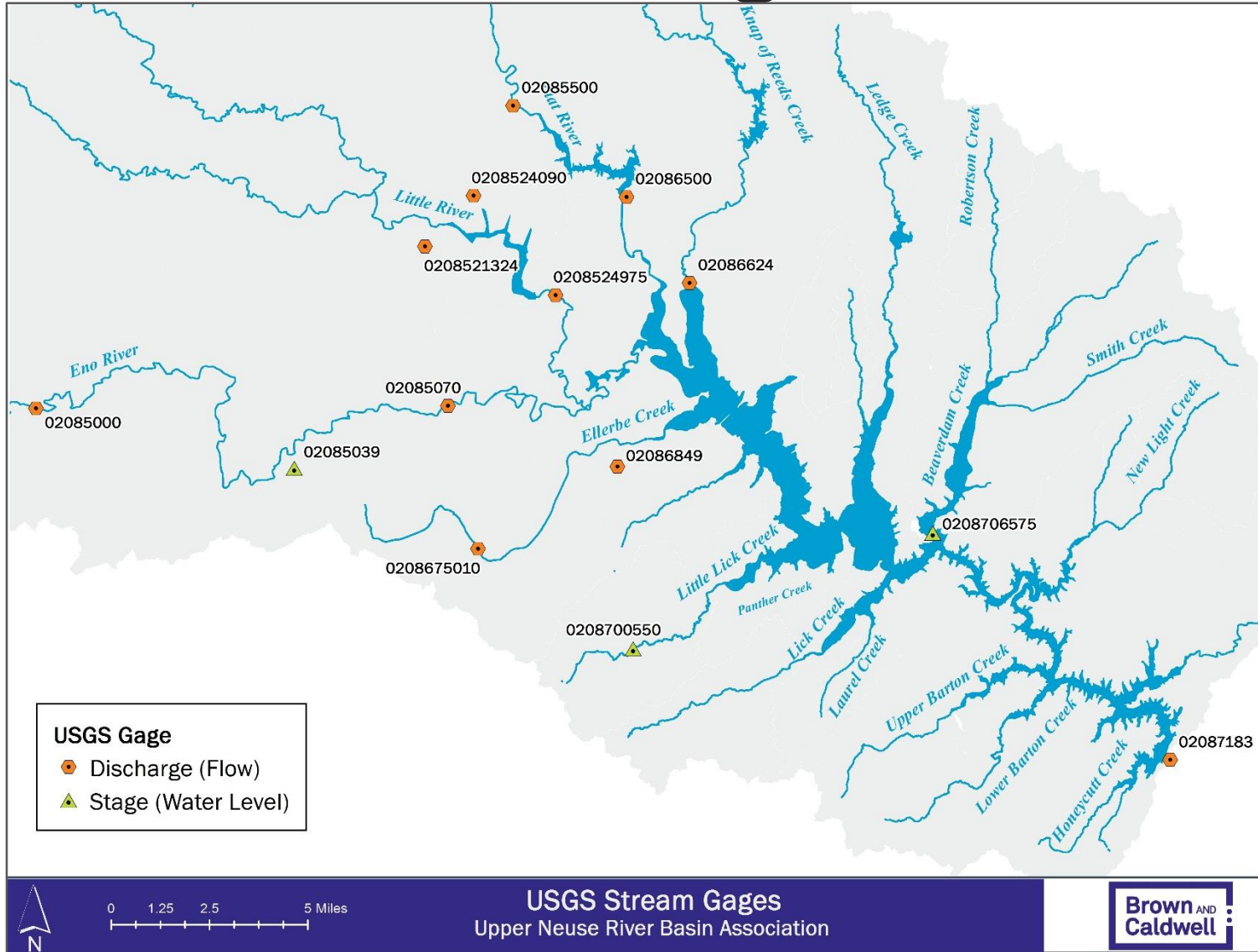
USGS Discharge and Stage Gages

Active USGS Stream Gages							
Gage Number	Waterbody	Drainage Area (mi ²)	Gage Name	Type	Upstream Reservoir	Upstream Major WWTP	Earliest Available Data
02086849	Ellerbe Creek	21.9	Ellerbe Creek near Gorman, NC	Discharge and Stage	No	Yes	1/8/2006
0208675010	Ellerbe Creek	6.01	Ellerbe Creek near Durham, NC	Discharge	No	No	7/24/2008
02085000	Eno River	66	Eno River at Hillsborough, NC	Discharge	Yes	No	10/1/1927
02085070	Eno River	141	Eno River near Durham, NC	Discharge	Yes	Yes	10/1/2004
02086500	Flat River	168	Flat River at Dam near Bahama, NC	Discharge	Yes	No	10/5/2004
02085500	Flat River	149	Flat River at Bahama, NC	Discharge	No	No	10/1/2004
02086624	Knap of Reeds Creek	43	Knap of Reeds Creek near Butner, NC	Discharge	Yes	Yes	1/14/2006
0208521324	Little River	78.2	Little River at SR1461 near Orange Factory, NC	Discharge	No	No	10/1/2014
0208524975	Little River	98.9	Little River at Fairintosh, NC	Discharge	Yes	No	10/24/1995
0208524090	Mountain Creek	7.97	Mountain Creek near Bahama, NC	Discharge	No	No	10/7/1994
02087183	Neuse River	771	Neuse River near Falls, NC	Discharge	Yes	Yes	10/1/2004
0208706575	Beaverdam Creek	52.5	Beaverdam Creek at Dam near Creedmoor, NC	Stage Only	Yes	No	5/3/2006
02085039	Eno River	120.79	Eno River near Huckleberry Spring	Stage Only	Yes	Yes	7/22/2008
0208700550	Little Lick Creek	4.05	Little Lick Creek at NC Hwy 98 at Oak Grove, NC	Stage Only	No	No	7/30/2008

USGS Discharge and Stage Gages



Location of USGS Gages



Questions ?



Work Plan for the MRS Program

