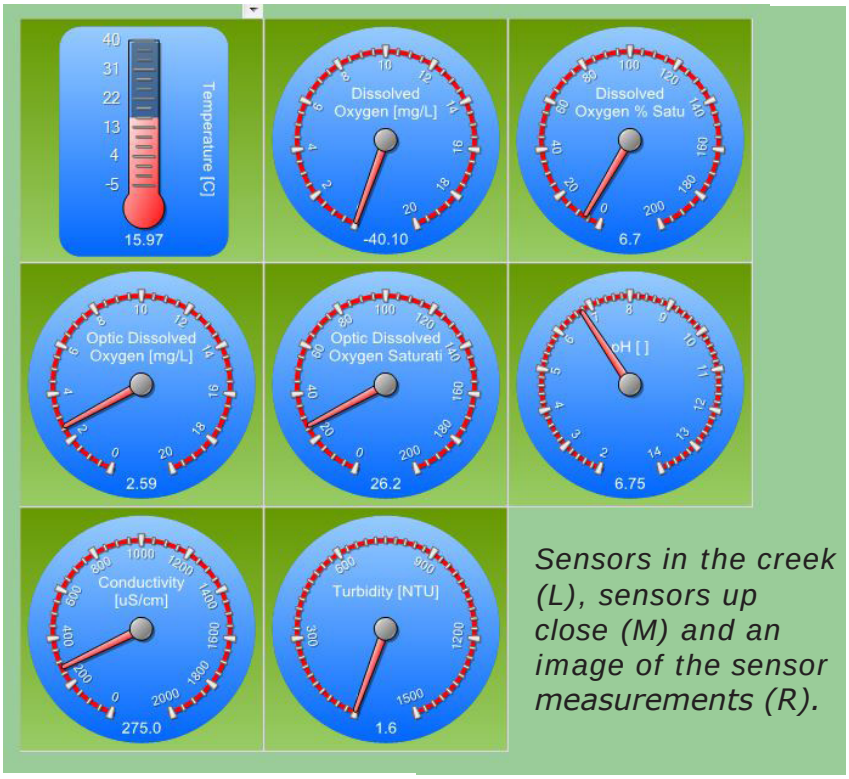
# CREEK WATER QUALITY IN CHARLOTTE

In order to legally have a storm drainage system, the City of Charlotte must meet the conditions of a Clean Water Act Permit. Many things are required by the Permit including *municipal good housekeeping measures, construction site runoff controls, a public education program and protective ordinances such as the Post-Construction Controls Ordinance*. The goal of the Permit is to protect and restore the water quality of Charlotte's creeks, lakes and rivers.

One of the ways that Storm Water Services meets the goals of the Permit and improves water quality is by monitoring water quality of the creeks in Charlotte. Knowing the state of water quality and the types of pollution allows Storm Water Services to adaptively manage pollution prevention and removal efforts.

*Storm Water Services monitors the health of streams by looking for the organisms that should live there. The more "bugs" we find, the healthier the stream.*

*Sensors in the creeks send measurements back to the office every hour so that Storm Water Services can be alerted to pollution problems quickly. We can also track this data over time to let us know if water quality is getting better or worse.*

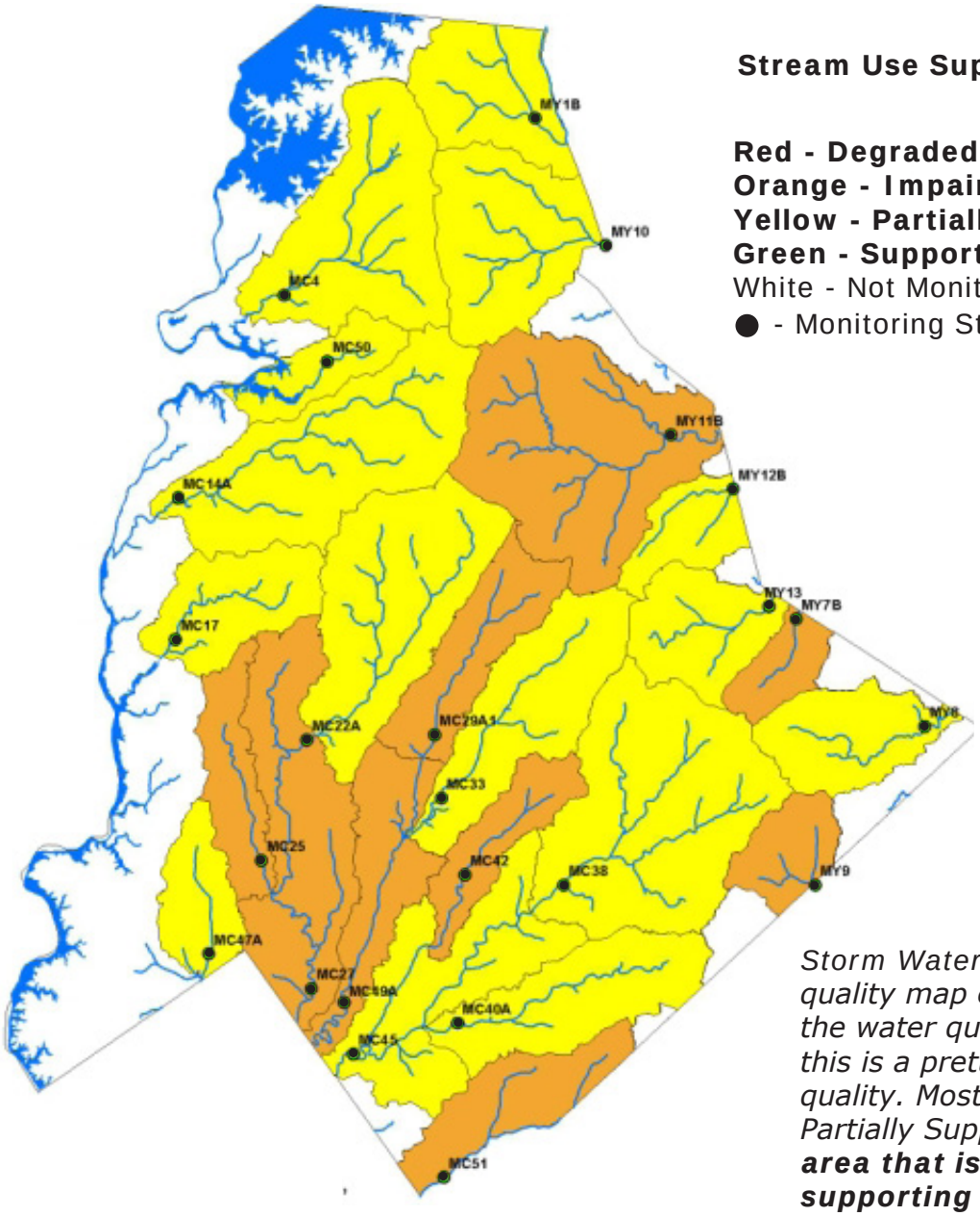



*Sensors in the creek (L), sensors up close (M) and an image of the sensor measurements (R).*

**What is monitored?**

Streams are monitored for many things. Each one is a clue about the health of the stream. Storm Water Services monitors for:

- turbidity (how cloudy is the water; related to soil pollution)
- pH
- temperature
- conductivity
- dissolved oxygen
- nutrients like nitrogen and phosphorus
- metals like zinc, cadmium and lead
- bacteria
- fish and other aquatic life




**Stream Use Support Index (SUSI)**

**Red - Degraded**
**Orange - Impaired**
**Yellow - Partially Supporting**
**Green - Supporting**
White - Not Monitored By Local Stream Monitoring
● - Monitoring Station

*Storm Water Services generates a water quality map each month. This map represents the water quality in January 2013. However, this is a pretty typical depiction of water quality. Most watersheds fluctuate between Partially Supporting and Impaired status.* ***Any area that is not green is considered not supporting its intended use.***

## Supporting vs. Impaired

Waterbodies are assigned a "use" by the NC Department of Environment & Natural Resources (DENR). Typically, the use is based on how people are expected to be using the waterbody. DENR employs a variety of criteria to determine if the quality of water in that waterbody is good depending on the expected use. For example, a waterbody may have more stringent water quality criteria if it serves as a drinking water supply than if it is expected to be used for recreation.

When a waterbody meets the criteria for good water quality, it is said to be "supporting its intended use". If it doesn't meet the criteria, it is said to be impaired. At Storm Water Services, we add partially supporting and degraded categories to provide more information for management decisions.

In Mecklenburg County, the watersheds closest to the lakes are considered drinking water supply watersheds and have different intended use and therefore, development rules and water quality standards. Most of the watersheds in our area, though, are considered passive recreation waterbodies which means that the creeks that run through Charlotte are expected to be suitable for short, intermittent periods of contact such as wading, but not swimming or boating.