



City of Boiling Spring Lakes

9 East Boiling Spring Road
Southport, NC 28461

STAFF REPORT

Agenda Date:

April 7, 2026

Title:

Stormwater Department Status of Work Completed

Department:

Stormwater

Background Information:

The City has created a new stormwater department to implement and mitigate the effects of stormwater flooding in the City limits that has become worse over the last several years due to the increase of building development. The increase in building development impacts the existing roadside drainage ditches/swales, primary drainage ditches and mechanical conveyance systems with additional stormwater from new impervious surfaces. In order to limit flooding due to the increased development, the stormwater department was created to maintain the existing stormwater infrastructure, plan for future impacts from new development, implement strategies to mitigate flooding and provide support to other City Departments with permitting and general master planning. The information below provides a description and photos of work that has been completed since the inception of the department. Currently the team has reshaped and ditched a total of **24,668 lf.** of roadside drainage ditches. Last year ditching totals were **19,969 lf. (2025)** and this years ditching totals to date are **6,879 lf (2026)**.

In addition to ditching and stormwater maintenance, the team has finished the first phase of the stormwater upgrade to the Miller and Pine Lake Road intersection. The attached photos show the performance of the system during the most recent storm event that produced approximately 3” of rain in a relatively short period of time. Due diligence and construction scheduling for phase 2 has started and will include upgrades to culverts and ditches from Miller Rd to E. Boiling Spring Road. The recent storm event has shown other vulnerable areas within the city that include areas in the Highlands and along South Shore Drive. South Shore Drive along the “S” curve experienced a minor wash on the outlet side of the pipe culvert crossing, due to the recent storm event that became a hazard to vehicular traffic. The public works team addressed the issue during the storm event that included placing additional fill material in the wash out. Following the storm, the team began work on a temporary solution to prevent additional washouts to occur until the permanent repair can be completed. The temporary solution included the installation of a road gutter stormwater chute. This chute was placed along the low point of the curve. This chute will easily convey additional road gutter runoff to the downstream discharge point. See the attached photos of the completed work.

The stormwater team is also working on a project located along North Shore Drive that includes the removal of an existing 24” perforated pipe that has become clogged with roots and silt and continuously underperforms and causes flooding to adjacent property owners. The project includes the removal of the existing pipe with a new 24” HDPE solid doubled wall pipe that will provide increased hydraulic performance for the conveyance of stormwater. The new pipe will terminate into a concrete headwall that will discharge into a rip-rap plunge pool to minimize scouring and soil erosion. The team will also create a graded swale just above the pipe system to handle additional stormwater from larger rain events.

Another area of concern during this most recent storm event was an area in the Highlands. The team was out inspecting the situation and determined that several cross pipes were undersized and needed upgrades. The team will be replacing the existing pipes to handle additional stormwater from upstream. As we investigate further, pipes that seem problematic will be replaced with new High Density Polyethylene Pipe (HDPE).

In addition to replacing culverts and cleaning drainage ditches, the team is also removing overgrown vegetation from many of our primary ditches, checking existing storm pumps and preparing areas that are flood prone prior to major storm events. The team is also grooming the lake bed at Pine Lake and work will be on-going for the next several weeks.

Financial Impact:

The financial impact to the City will have cost savings overall when stormwater and flooding have less of an impact to City infrastructure and residential properties.

Recommendation:

No additional recommendations are being considered since last month’s report.

Attachments:

The following list below provides a description of the ditching work that has been completing in the last month:

Note: The team has reshaped and cleaned approximately 1,891 lf. of drainage ditches to include the following area;

- | | |
|-------------------------------|-------------------------------|
| 1.) 295 lf. Garage Road | 4.) 188 lf. Morningside Drive |
| 2.) 218 lf. Gum Road | 5.) 135 lf. North Shore Drive |
| 3.) 641 lf. Fifty Lakes Drive | 6.) 414 lf. West Shore Drive |

Total Ditching for March (03-23-2026) = 1,891 lf.

PHOTOS



Pine Lake and Miller
Performance Photo



Pine Lake and Miller
Pipe Discharge



Pine Lake and Miller
Rip-Rap Apron



South Shore Drive
Temporary Stormwater Repair



South Shore Drive
Temporary Stormwater Repair



South Shore Drive
Street Washout



North Shore Drive
Inlet Rip-Rap Protection



North Shore Drive
Stormwater Swale Construction



Inlet Box Maintenance & Repair



Inlet Box Maintenance & Repair



Stormwater Safety and
Maintenance Repair Work



Stormwater Safety and
Maintenance Repair Work



Ditch Clean and Reshaping



Ditch Cleaning and Reshaping
With Inlet Protection



Ditch Clean and Reshaping
Swale Construction



Typical Road Inlet Protection
with Flared End Section



Primary Ditch Clearing
And Restoration