



City of Boiling Spring Lakes

9 East Boiling Spring Road
Southport, NC 28461

STAFF REPORT

Agenda Date:

May 5, 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 **25,591 lf.** of roadside drainage ditches. Last year ditching totals were **19,969 lf. (2025)** and this year ditching totals to date are **7,802 lf (2026)**.

In addition to ditching and stormwater maintenance, the team has finished the North Shore Drive stormwater project. This project included the removal of an existing 24" perforated pipe that has become clogged with roots and silt and continuously underperformed and caused flooding to adjacent property owners. The existing 24" perforated pipe was removed and replaced with a new 24" HDPE solid doubled wall pipe that will provide increased hydraulic performance for the conveyance of stormwater. The new pipe terminates into a concrete headwall and discharges into a rip-rap plunge pool to minimize scouring and soil erosion. In addition to the new pipe installation, a natural grass swale was constructed at grade to catch additional stormwater during larger rain events that exceed the pipe hydraulic capacity. The swale has been shaped in a parabolic configuration for increased performance and stabilized with matted hay fabric until the vegetation has been established. The swale design will also help reduce run-off velocities and remove pollutants via infiltration through the vegetated section.

Another major stormwater project was located at the railroad tracks along Fifty Lakes Drive. This project consisted of excavating an area of mucky organic soils that was waterlogged and did not

have the ability to recharge into the sub-soil layer. The intent of this project was to remove the saturated material and provide an area for stormwater volume storage prior to entering the existing 60” concrete pipe culvert under the tracks and alleviating some upstream flooding. With coordination and approval from MOTSU, a plan was developed and implemented. The stormwater team spent time excavating, shaping, stabilizing and bank protecting the area. The cut excavation on average is about 2.5 ft. deep with a storage volume capacity of approximately 95,000 gallons of water. This project has been completed and is operational.

In addition to the major projects that are described above, other smaller drainage issues are being corrected that include reshaping a scour hole and adding a flared end section to an existing 48” pipe culvert along Windemere Drive. Another primary ditch along Fifty Lakes Drive is also being cleared of vegetation, reshaped and bank slope protected. This will provide flooding relief upstream that has been problematic in the past. The city stormwater department has been working with local builders as well with regards to individual lot drainage plans. The collaboration between the city and the local builders to mitigate run-off for new development will surely have a welcomed impact to the area. The public works team has also played a part in stormwater management by providing manpower to lake bed maintenance.

The attached photos provide a visual of the work that has been describe above.

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 923 lf. of drainage ditches to include the following area;

- 1.) 175 lf. South Shore Drive
- 2.) 546 lf. Juniper Road
- 3.) 202 lf. North High Point Road

Total Ditching for April (04-21-2026) = 923 lf.

PHOTOS



North Shore Drive
Stormwater Management
Swale Construction



North Shore Drive
Stormwater Management
Stabilized Grass Swale



North Shore Drive
Inlet Rip-Rap Protection



North Shore Drive
Head Wall & Rip-Rap Protection



North Shore Drive
Head Wall w/Plunge Pool



Fifty Lakes Drive
Basin Excavation



Fifty Lakes Drive
Basin Slope Fabric Underlayment



Fifty Lakes Drive
Basin Slope Fabric Underlayment



Fifty Lakes Drive
Basin Rip-Rap Slope Protection



Fifty Lakes Drive
Basin Completion



Stormwater Management
General Pipe Outlet Protection



Stormwater Management
Typical Pipe Replacement



General Roadside Ditching



Culvert Scour Hole Repair



Culvert Scour Hole Repair
Fabric Underlayment



Culvert Scour Hole Repair



New Ditch Construction



Pipe Culvert Outlet Protection



Primary Ditch Clearing
and Re-Shaping



Primary Ditch Clearing
and Re-Shaping



Primary Ditch Clearing
(view downstream)
Re-Shaping and Rip Rap Protection



Primary Ditch Clearing
(view upstream)
Re-Shaping and Rip-Rap Protection



Primary Ditch Clearing
Secondary Roadside Ditch Shaping