

20 December 2024

Kevin Zelaya, P.E.
Wake County Environmental Services Department
Water Quality Division, Watershed Management Section
337 Salisbury St. / PO Box 550, Raleigh, NC 27602

**RE: SWF-098498-2023 - Proposed Restaurant and Retail
6000 Rogers Rd, Rolesville, NC**

Kevin,

Sambatek NC PC has prepared the following review of the existing wet pond stormwater control measure (SCM) on behalf of Bullard Restaurant Group in support of the proposed commercial development of 6000 Rogers Road, Rolesville, NC 27571 (PIN 1759714313). This review was performed to evaluate the capability of the existing wet pond stormwater control measure (SCM) to provide stormwater management for the development of 6000 Rogers Road.

A hydrologic model reflecting the pre- and post-development conditions was prepared to determine the extent of impacts resulting from this project. Pre-development conditions were considered to be the development conditions existing in 2018, prior to the construction of Granite Fall Parkway and the wet pond facility, as these were the conditions present during the design of the wet pond SCM. Post-development conditions were considered to be the proposed conditions following the construction of the proposed multi-tenant building and onsite impervious area located at 6000 Rogers Road and draining to the existing wet pond SCM. Please see appendix A within the report titled "Stormwater Management Report" dated 12/10/2024 prepared by Sambatek NC PC which show these pre- and post-development conditions. The existing wet pond SCM was modeled using as-built data collected by John A. Edwards & Company following completion of the wet pond SCM in January 2020.

The pre- and post-development hydrologic model was used to evaluate the wet pond SCM's capacity to manage stormwater runoff peak flow rates at analysis point #1. The results of this model indicate that peak runoff flow at the analysis point will decrease from pre-development peak flow rates during the 1-year, 2-year, and 10-year, 24-hour design storm events. The summary of these peak flow rates are included in the table below, however please see appendix B within the Stormwater Management Report for the supporting hydrograph calculations. Runoff volume control was also considered during this study. The runoff drawdown time for the first 1.0-inch of rainfall was computed as 61.4 hours, which is within the permissible range of 48 to 120 hours as allowed by Wake County standards. The supporting drawdown calculations can be seen within appendix C of the Stormwater Management Report. The wet pond SCM was further evaluated to ensure it will provide adequate water quality treatment following construction. The wet pond SCM was found to provide the required water quality treatment, with the pre- and post-development water quality parameters summarized in the table on the following page. The Wake County Municipal Stormwater Design tool was used to prepare these calculations, please see appendix D of the Stormwater Management Report for further information.

Stormwater Design Summary			
Design Criteria		Pre-Development	Post-Development
Peak Flow Rate Control	1-Year, 24-Hour Storm	14.65 cfs	5.40 cfs
	2-Year, 24-Hour Storm	21.63 cfs	9.70 cfs
	10-Year, 24-Hour Storm	42.53 cfs	31.33 cfs
Volume Control	1-inch Storm Volume Drawdown	N/A	2.56 days
Water Quality Volume	Required Treatment Volume	N/A	7,495 cf
	Treatment Volume Provided	N/A	13,582 cf

As a result of this analysis of the existing wet pond SCM under existing and proposed conditions, it is our professional opinion that the proposed development of the parcel located at 6000 Rogers Road, Rolesville, NC will result in no negative downstream effects to either the wet pond SCM or the receiving analysis point.

Should you have any questions about this submission or the accompanying stormwater report, please do not hesitate to contact me at nskelton@sambatek.com or (919) 398-6519.

Sincerely,



Quentin Neal Skelton, PE
Sambatek NC PC

