The proposed improvements described in Section 3 may require local, State, and/or Federal permits or approvals prior to the onset of construction. Based on the types of projects identified in the Buckhead Creek watershed, permits or approvals may be required for any of the following reasons:

- Stream and/or wetland impacts.
- FEMA floodway impacts.
- Land disturbance.
- Potable water and sewer line adjustments.
- NCDOT ROW encroachment.

The permitting matrix shown in Table 6-1 shows the different types of permits that are anticipated for each proposed flood mitigation project. The water quality retrofits may require erosion control permits if the area of disturbance is greater than 1.0 acres, but permits or agreements from DWQ, ACOE, FEMA, and NCDOT are not anticipated for these projects.

The types of 404/401 permits are described below and may vary based on the length of stream impacts and/or acreage of wetland impacts. Wetlands will need to be delineated to determine the acreage of impacts. Permit requirements for a given project may change based on the final design and any changes to the existing regulations. The appropriate permitting agencies should be contacted during the design process to determine if permits will be required for the proposed project.

## 6.1 North Carolina Division of Water Quality 401 Water Quality Certification and US Army Corps of Engineers 404 Permit

Proposed improvements within the City of Fayetteville must adhere to the requirements set forth in Sections 401 and 404 of the Clean Water Act. Required permitting can range from activities that are pre-authorized to those requiring a pre-construction notification (PCN) for a Nationwide Permit (NWP) to those requiring an Individual Permit (IP). Individual permits may be required for projects with stream impacts greater than 300 feet and wetland impacts greater than 0.5 acres. It is anticipated that NWP #3 (Maintenance) and NWP #13 (Bank Stabilization) may be required to support the projects that include work within streams or channels that are claimed jurisdictional by the US Army Corps of Engineers (USACE). Individual permits may be required for floodplain benches where significant wetland impacts may be encountered. More detailed explanations of the types of 404 permits are provided below.

**NWP #3 – Maintenance.** This permit authorizes the repair, replacement or rehabilitation of any previously permitted or currently serviceable structure. A PCN is not required if minor deviations in the structure's configuration or filled area that occur as a result of changes in materials, construction techniques, or safety standards necessary to make repair or replacement, provided that environmental impacts are minimal. A PCN to the USACE is required if a significant amount of sediment is excavated/filled within the channel. NC

Division of Water Quality (DWQ) does not typically require a PCN for NWP #3 but usually receives one as a courtesy.

Other provisions imposed by the State of North Carolina require that culvert inverts must be buried a minimum of 1-foot below the streambed for culverts greater than or equal to 48 inches in diameter to allow low flow passage of water and aquatic life. Culverts less than 48 inches in diameter should be buried to a depth of 20% or greater of the diameter of the culvert.

**Table 6-1: Permitting Matrix for Proposed Projects**

| | FEMA | 404/401 (NWP) | 404/401 (IP) | NCDENR/ NPDES | NCDOT |
|---|---|---|---|---|---|
| **Primary System** | | | | | |
| Ferncreek floodwall and floodplain bench | | | | | |
| Raeford Road culvert | | | | | |
| Raeford Road floodplain bench | | | | | |
| Coventry Road culvert and floodplain bench | | | | | |
| Devonshire floodplain bench and Glenwick berm | | | | | |
| Lake Francis wetland restoration/enhancement | | | | | |
| **Secondary Systems** | | | | | |
| Buckhead Kingsford | | | | | |
| Broyhill Road | | | | | |
| Ferncreek Norwood | | | | | |
| Westwood | | | | | |
| Raeford Faison | | | | | |
| Montclair | | | | | |
| Coventry Road | | | | | |
| Roxie Avenue | | | | | |
| Ashton Road Ramblewood Drive | | | | | |
| Ashton Road Friar Avenue | | | | | |
| Ashton Road | | | | | |
| Kimberly Drive | | | | | |

**NWP #13 – Bank Stabilization.** This permit authorizes the reshaping of channel banks or bank stabilization activities that are necessary for erosion prevention. The placement of material is prohibited in any special aquatic site in a manner that may impede surface water flow into or out of a wetland area, or in a manner that will be eroded during normal or high flows. The activity must be part of a single and complete project and cannot exceed 1 cubic yard per running foot placed below the high water mark line. If stabilization activities exceed 500 linear feet, then a PCN is required for both the USACE and DWQ. DWQ must also be notified should fill be placed within the streambed.

**NWP #27 – Stream and Wetland Restoration Activities.** This permit authorizes stream enhancement, stream restoration, and channel relocation for restoration purposes that provide gains in aquatic functions. Stream channelization and the conversion of streams to other aquatic uses such as impoundments or waterfowl habitat are not authorized. A PCN to the USACE is required for any restoration activities occurring on private or public lands. DWQ requires a PCN if impacts are proposed for greater than 500 feet of stream bank or if in-stream structures are used.

Impacts proposed to the streams may need evaluation under the State Environmental Policy Act (SEPA). An Environmental Assessment (EA) is required under SEPA if greater than 500 linear feet of perennial stream is disturbed and stream restoration or enhancement is not performed. Channel disturbances are defined as activities that remove or degrade stream uses such as channelization, culvert placement, riprap, and other hard structures.

A list of some other conditions that should be followed under regulations provided by the USACE and DWQ are as follows:

- Soil erosion and sediment controls must be used and maintained in effective operating conditions during construction, and all exposed soil and fills should be stabilized at the earliest possible date.
- No activity is authorized under any NWP that is likely to jeopardize the existence of a threatened or endangered species, or which will destroy or adversely modify the habitat of such species.
- No activity is authorized that may affect historic properties listed or eligible for listing in the National Register of Historic Places.
- More than one NWP used for a single and complete project is prohibited.
- Impacts to waters of the US should be avoided and minimized to the greatest extent practicable.
- Mitigation in all its forms will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.
- Hardening techniques should be avoided and minimized to the greatest practicable extent.

## 6.2 Individual Permits

Individual Permits are required when stream or wetland impacts do not meet the conditions of a nationwide permit. Permit applications may be reviewed by multiple agencies including but not limited to USACE, DWQ, EPA, SHPO, NCWRC, and USFWS. The application is also made available for public review. There is no defined timeframe for review of the application for an IP; therefore the permitting process for an IP is typically significantly longer than the review time for a NWP. Typically 404 and 401 Individual Permits are applied for jointly and their review is concurrent.

## 6.3 Mitigation

For stream impacts greater than 150 linear feet or wetland impacts greater than 0.10 acres, mitigation is typically required. Mitigation can be provided onsite or by purchasing credits through a private environmental banker or the North Carolina Ecosystem Enhancement Program (NCEEP). Onsite mitigation may include stream restoration or wetland restoration/enhancement. As discussed in Section 3, removal of the Lake Francis dam would likely provide wetland and stream mitigation credits.

## 6.4 Federal Emergency Management Agency (FEMA)

Streams with a drainage area greater than one square mile are typically modeled and mapped by FEMA for flood insurance purposes. A floodplain has been mapped for Buckhead Creek from approximately 3,330 feet upstream of the railroad tracks to the confluence with Little Rockfish Creek. Approximately 750 feet upstream of Raeford Road to the upstream limit of the study is defined as a Limited Detail Study where a floodplain is mapped, but no floodway has been defined. A floodway is the portion of the floodplain that must remain undeveloped to prevent an increase in the base flood elevation (BFE) of more than a specified amount. The specified amount as regulated by FEMA is typically 1.0 feet, although some communities regulate to a stricter standard. Any proposed projects that will include grading within a FEMA defined floodway will require a Conditional Letter of Map Revision (CLOMR) submitted to FEMA for pre-approval purposes and a Letter of Map Revision (LOMR) upon completion of construction. Table 6-1 identifies the projects where FEMA permitting is expected.

## 6.5 Erosion and Sedimentation Control

North Carolina Department of Environment and Natural Resources (NCDENR) is another agency that requires notification before proposed activities are constructed. NCDENR requires that an erosion and sedimentation control plan be submitted to the Land Quality Section for approval before the start of construction for any disturbance greater than one acre. Erosion and Sedimentation Control permits are anticipated for most of the proposed projects as shown in Table 6-1.