

## **Freshwater Mussel Survey Report**

Replacement of Bridge No. 38 on SR 3255  
Over Cedar Fork Creek  
Randolph County, North Carolina  
TIP number B-5740  
WBS Element # 45696.1.1

Prepared For:



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Figure 1: Project Vicinity & Survey Location

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## 1.0 Introduction

The North Carolina Department of Transportation (NCDOT) proposes the replacement of Bridge No. 38 on SR 3255 (Farmer Road) over Cedar Fork Creek in Randolph County (Appendix A, Figure 1). Cedar Fork Creek is located in the Yadkin River basin. The Atlantic Pigtoe (*Fusconaia masoni*) is currently being evaluated by U.S. Fish and Wildlife Service (USFWS) and could be listed as a protected species under the Endangered Species Act (ESA). This species has been documented as occurring in Randolph County. The Cape Fear Shiner (*Notropis mekistocholas*) is listed currently listed as a protect species under the ESA by the USFWS for Randolph County. However, this species has never been documented in the Yadkin River Basin and is considered only in Section 4.0 this report.

A review of the NC Natural Heritage Program (NCNHP) records, last accessed July 21, 2017, indicates there is an element occurrence (EO) for this target mussel species within a 5-mile buffer of Bridge No. 38 (Figure 2). The closest occurrence for Atlantic Pigtoe (EO ID 22271) is on Cable Creek approximately four linear miles away and approximately 12 stream miles from the project. The only listed observed date for this EO was June 6, 2003.

## 2.0 Waters Affected

Cedar Fork Creek is in the Yadkin River basin (HUC# 03040103). From the project location, Cedar Fork Creek flows approximately five stream miles to its confluence with Back Creek.

### 2.1 NPDES Dischargers

There are no NPDES permitted dischargers located within the 5-mile buffer for Bridge No. 38 (Figure 3).

### 2.2 303(d) Classification

Cedar Fork Creek is not on the North Carolina Department of Environmental Quality (NCDEQ) - Division of Water Resources 2014 303(d) list of impaired streams or the 2016 draft list.

## 3.0 Target Federally Protected Species Description

### 3.1 Atlantic Pigtoe (*Fusconaia masoni*)

#### 3.1.1 Characteristics

The Atlantic Pigtoe was described by Conrad in 1834 from the Savannah River in Georgia. This species has a medium, sub-rhomboid shaped shell that rarely exceeds 60 mm in length. Individuals of this mussel, from headwater streams tend to be more elongate than those found in larger streams. The posterior ridge is angular and very distinct. Its valves are usually compressed, but the umbos extend well above the dorsal margin. The periostracum generally is yellowish brown or greenish brown with a parchment-like texture. The nacre is somewhat shiny and can be white, salmon, orange or iridescent blue. There are two pseudocardinal and two

lateral teeth in the left valve and one of each in the right valve. The anterior pseudocardinal tooth in the right valve is vestigial.

### **3.1.2 Distribution and Habitat Requirements**

The Atlantic Pigtoe was described by Conrad in 1834 from the Savannah River in Georgia. This freshwater mussel is a southern Atlantic Slope species that is found from the Ogeechee River Basin in Georgia north to the James River Basin in Virginia. Historically, this species occurred in every Atlantic drainage in North Carolina except the Cooper-Santee and Waccamaw river basins. The Atlantic Pigtoe has declined across its range. It appears that this mussel has recently been extirpated from the Deep River in Moore County, Cape Fear River in Harnett and Cumberland counties, as well as the Black River in Sampson, Bladen, and Pender counties.

The Atlantic Pigtoe inhabits mostly medium to large streams. It prefers clean, swift waters with stable gravel, or sand and gravel substrate. This species often is found at the downstream edge of riffle areas. The Atlantic Pigtoe is a tachytictic breeder. Gravid females of this freshwater mussel have been found from late June through early July. Identified fish hosts for this species include the Bluegill and Shield Darter.

### **3.2 Survey Efforts**

A stream assessment was conducted in association with this project by NCDOT personnel Neil Medlin (Permit # 16-ES00030) and Jared Gray on May 9, 2016.

### **3.3 Stream Conditions at Time of Survey: Cedar Fork Creek**

The stream substrate consisted of cross cutting bedrock with some cobble, with sand dominant and gravel subdominant. Although these substrate components are typically associated with stable instream habitat, these components in the project area of Cedar Fork Creek loose and unstable from apparent frequent movement due to flashy flows in the stream. Rack lines of debris well outside of the top of stream bank also supported this hypothesis. Cedar Fork Creek at the project bridge drains a developed area of Asheboro with a high percentage of impervious surface.

### **3.4 Methodology**

No survey was conducted at this location due to the small stream size and degraded, instream habitat.

### **3.5 Results**

No survey was conducted at this location.

#### **4.0 Discussion/Conclusions**

Based on the degraded habitat, distance to known Atlantic Pigtoe records, and the stream assessment, completion of the proposed project will not effect this species. If the Atlantic Pigtoe were to be listed under the ESA, the Biological Conclusion is indicated below.

##### **Biological Conclusion for Atlantic Pigtoe: No Effect**

The Cape Fear Shiner is listed currently listed as a protected species under the ESA by the USFWS for Randolph County. However, this project is located within the Yadkin River Basin, and the species has never been documented in that basin. Therefore, replacement of Bridge No. 38 will not affect the Cape Fear Shiner.

##### **Biological Conclusion for Cape Fear Shiner: No Effect**

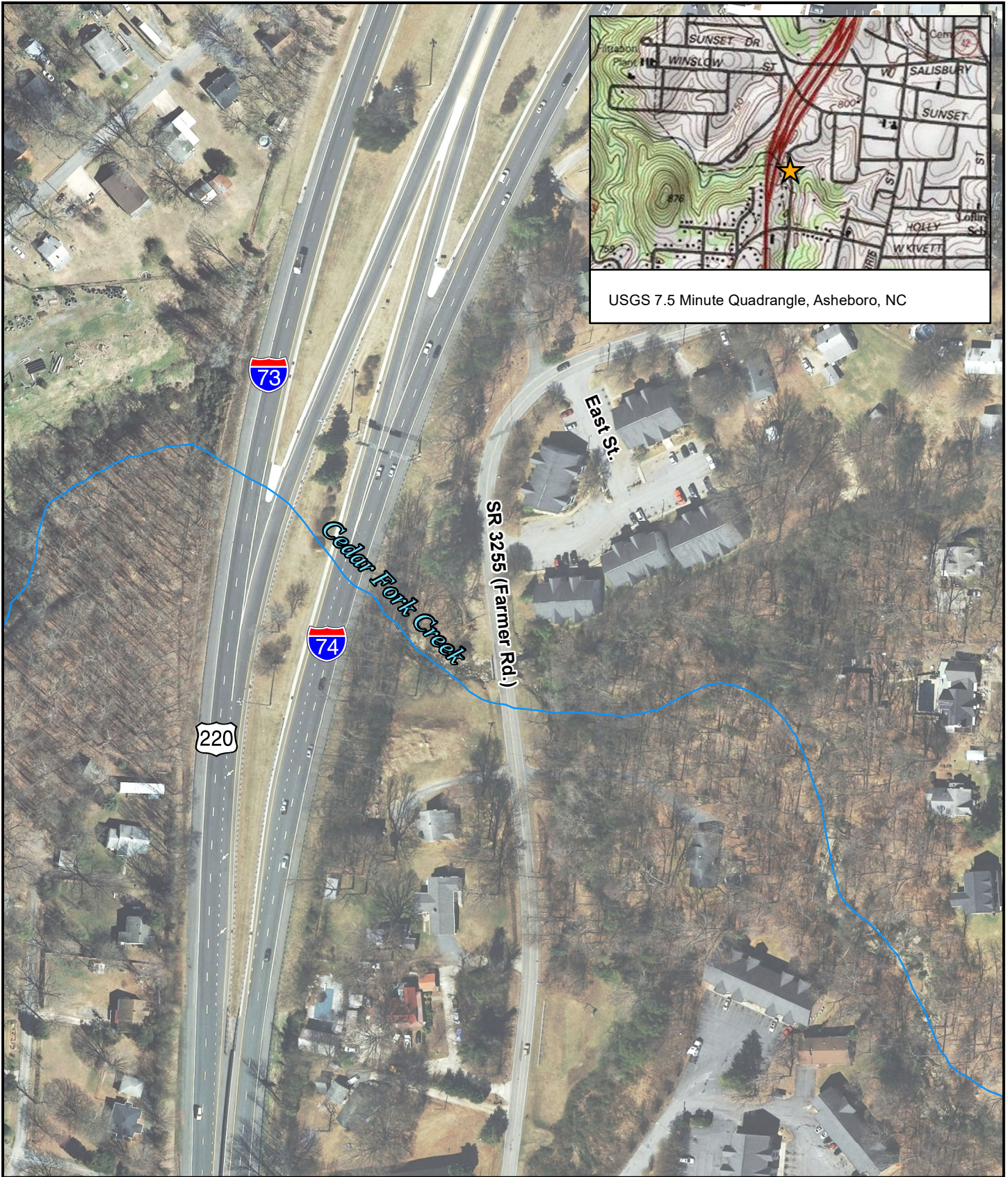
## 5.0 References

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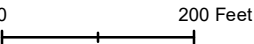
## **Appendix A**

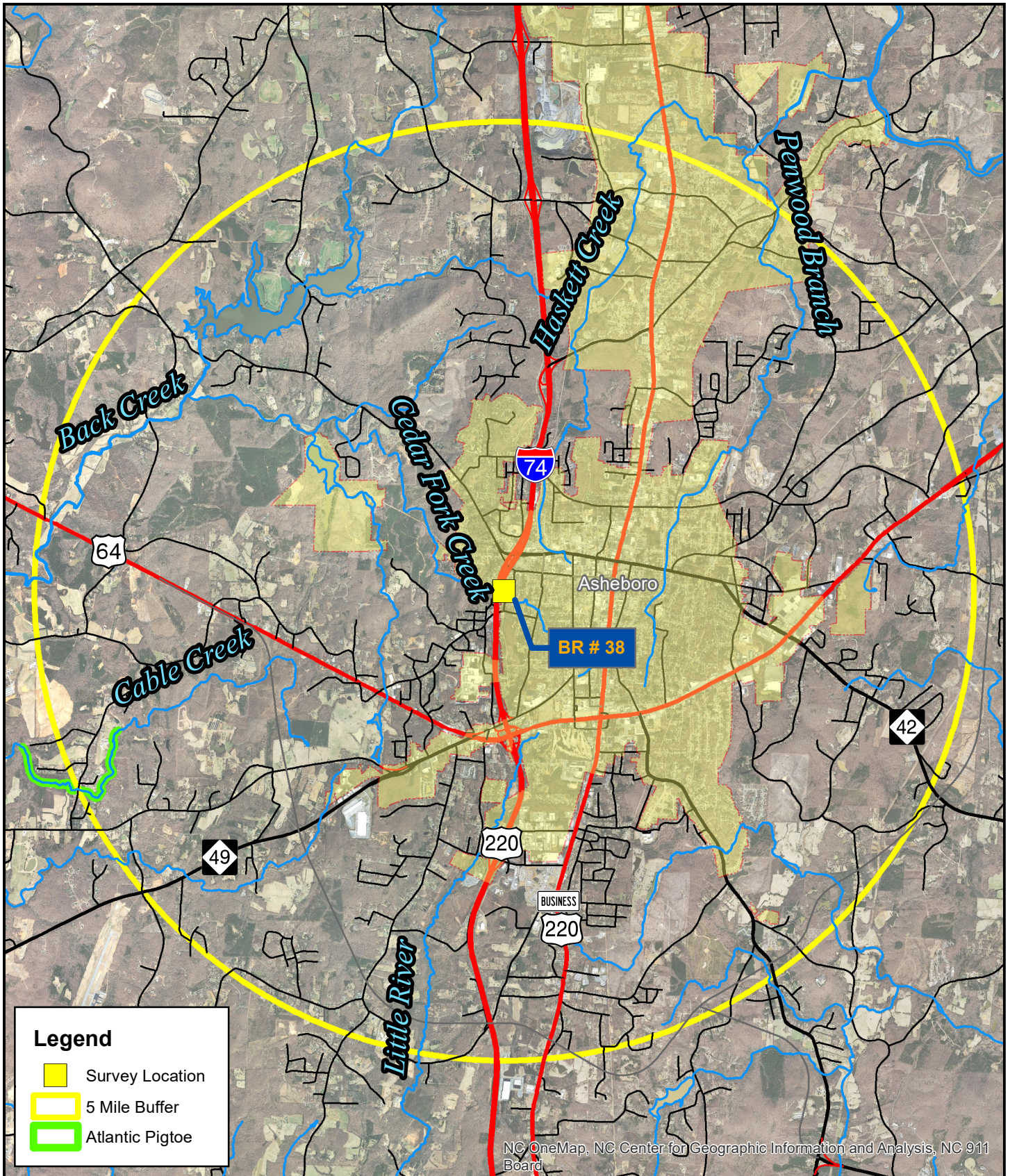
### **Figures**





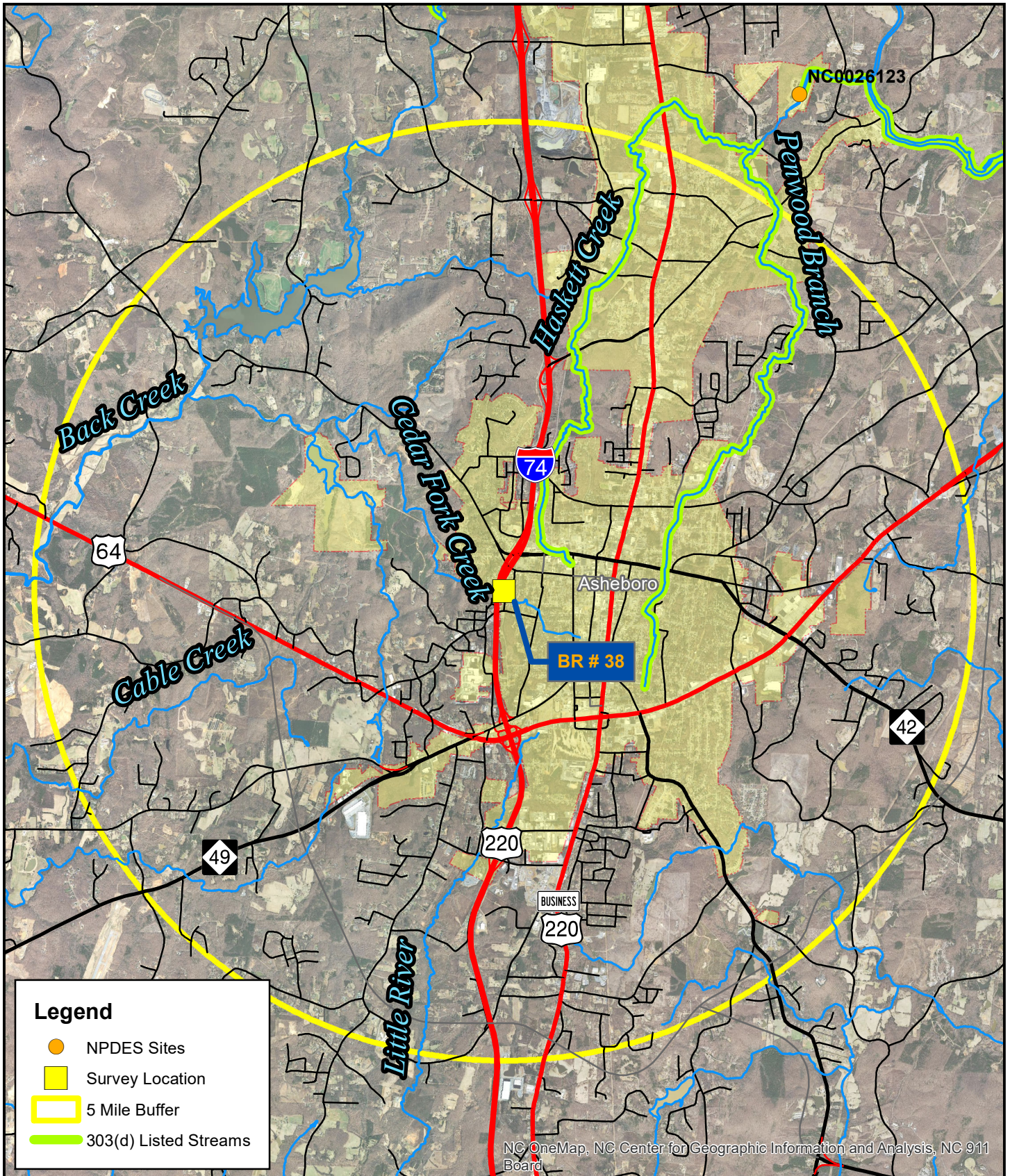




USGS 7.5 Minute Quadrangle, Asheboro, NC

|   |  |   |                 |  |  |                 |
|---|--|---|-----------------|--|--|-----------------|
| Prepared By:<br> | Prepared For:<br> | <b>Freshwater Mussel Survey</b>                           |                 | Date: January 2018   |  | <b>Figure 1</b> |
|   |  | BRIDGE # 38 on SR 3255<br>OVER CEDAR FORK CREEK<br>B-5740 |                 | Scale 0  200 Feet |  |                 |
|   |  | RANDOLPH COUNTY   |                 | Job No. B-5740   |  |                 |
|   |  | Drawn by: GSM   | Checked by: KNM |  |  |                 |



|   |  |  |  |                    |                           |
|---|--|--|--|--------------------|---------------------------|
| Prepared By:<br> | Prepared For:<br> | <b>NC NHP</b><br><b>Element Occurrence</b><br>BRIDGE # 38 on SR 3255<br>OVER CEDAR FORK CREEK<br>B-5740<br>RANDOLPH COUNTY |  | Date: January 2018 | <b>Figure</b><br><b>2</b> |
|   |  |  |  | Scale: 0 — 1 Miles |                           |
| Job No.: B-5740   |  |  |  |                    |                           |
| Drawn by: GSM   | Checked by: KNM  |  |  |                    |                           |



|   |  |  |                    |                 |
|---|--|--|--------------------|-----------------|
| Prepared By:<br> | Prepared For:<br> | <b>NPDES Dischargers and 303(d) Listed Streams</b><br>BRIDGE # 38 on SR 3255<br>OVER CEDAR FORK CREEK<br>B-5740<br>RANDOLPH COUNTY | Date: January 2018 | <b>Figure 3</b> |
|   |  |  | Scale: 0 1 Miles   |                 |
| Job No. B-5740  |  |  |                    |                 |
| Drawn by: GSM      Checked by: KNM  |  |  |                    |                 |