



## MEMORANDUM

**Date:** January 13, 2015

**To:** Helen Youngblood  
Senior Planner, CZO, AICP  
Durham City-County Planning Department

**CC:** Amy Wolff  
Senior Planner  
Durham City-County Planning Department

**From:** George Buchholz, REM, PWS

**Re:** Autopark Center  
Biological Opinion Letter  
SHZ-13000

A portion of the proposed Autopark Center is located at the edge of a large Significant Natural Heritage Area (SNHA) known as the Lower New Hope Creek Floodplain Forest and Slopes which comprises approximately 1,830 acres of land surrounding Jordan Lake. As part of the zoning process, our wetland biologist conducted a natural resource investigation on June 5, 2014 of the current ecological functional value of an area within and surrounding the proposed Autopark Center site. The purpose of this investigation is to determine if fauna movement during seasonal flooding events would be impacted by the proposed development of this site. Following is a summary of our findings as well as our conclusions.

The property is located on approximately 6.23-acres of land located in the northwest quadrant of the intersection of NC 751 and I-40 in southwest Durham County (Durham County PIN Numbers: 0718-01-15-5265, 0718-03-14-3464 (hereinafter called "subject property"). Please refer to Figure 1 (Vicinity Map) for the location of the subject property. As part of the zoning process, a Development Plan has been submitted, restricting the limits of development on this site to no more than 3.6 acres (see attached Development Plan – Sheet C-2).

For this investigation, the Review Area (see attached Figure 2A) included the subject property and land extending west to the approximate 234 contour elevation. A total of 19.0 acres was reviewed, of which, 6.23 acres make up the subject property. The Review Area included evaluation of land located immediately adjacent to the west of the subject property, which is owned by the U.S. Army Corps of Engineers (USACE) and currently leased by the NC

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Wildlife Resource Commission (NCWRC) as managed game lands. This managed land area, is considered a Significant Natural Heritage Area (SNHA). The SNHA is known as the Lower New Hope Creek Floodplain Forest and Slopes. To define the SNHA within the Review Area, McAdams Company assumed the floodplain limits as the basis for determining a 100 meter floodplain buffer. Therefore, the SNHA comprises approximately 14 acres of the Review Area.

The objective of this natural resource investigation was to assess the quantity and quality of upland habitat as a wildlife, or fauna, corridor between the location of the proposed site improvements and the wetland/floodplain complex associated with Lower New Hope Creek Floodplain Forest and Slopes (i.e. the SNHA).

Prior to field investigations, research was conducted of potential ecological habitat and a thorough review of aerial photography analyzed to determine the past land use history of the SNHA. On-site field investigations were initiated on June 5, 2014 to evaluate the forest community. Inventory Points along a representative transect were established that originated within the interior of the subject property and were aligned west towards the wetland/floodplain complex associated with New Hope Creek. Vegetative data and fauna observations were recorded where changes of vegetative assemblages occurred. Representative Inventory Points (IP1 through IP4) were GPS surveyed and are discussed below (see attached Figure 2A. Natural Resource Investigations).

Inventory Points (IP):

**IP1:**

Canopy Layer

*Pinus taeda, Acer rubrum, Liquidambar styraciflua*

Secondary Canopy Layer (Sapling and Shrub)

*Acer rubrum, Liquidambar styraciflua, Carya ovata, Prunus serotina, Quercus phellos, Quercus alba*

Herbaceous and Vine Layer

*Smilax rotundifolia, Vitis rotundifolia, Toxicodendron radicans*

General Observations

Area appears to fairly young and may have been timbered in the past

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Fauna Observations

A squirrel was observed. Deer tracts were also observed.

**IP2:**

Canopy Layer

*Pinus taeda, Liriodendron tulipifera, Liquidambar styraciflua, Fagus grandifolia*

Secondary Canopy Layer (Sapling and Shrub)

*Carpinus caroliniana, Liriodendron tulipifera, Acer rubrum, Pinus taeda, Juniperus virginiana, Carya ovata, Fagus grandifolia*

Herbaceous and Vine Layer

*Smilax rotundifolia, Trifolium spp., Campsis radicans, Toxicodendron radicans*

General Observations

Area appears to fairly young and may have been timbered in the past; however secondary canopy layer is more developed.

Fauna Observations

Evidence of deer scrapes.

**IP3:**

Canopy Layer

*Liriodendron tulipifera, Acer rubrum, Liquidambar styraciflua, Carpinus caroliniana, Quercus phellos, Carya ovata*

Secondary Canopy Layer (Sapling and Shrub)

*Carpinus caroliniana, Liriodendron tulipifera, Betula nigra, Rosa palustris, Carpinus caroliniana, Vaccinium corymbosum,*

Herbaceous and Vine Layer

*Lonicera japonica, Smilax rotundifolia, Polystichum acrostichoides, Vitis rotundifolia, Toxicodendron radicans, Microstegium vimineum*

General Observations

Well-developed secondary canopy with greater flora diversity with a mature canopy layer. There is a predominance of mast species.

Fauna Observations

A box turtle and a squirrel was observed. Deer tracts were observed.



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**IP4:**

Canopy Layer

*Acer rubrum, fraxinus pennsylvanica*

Secondary Canopy Layer (Sapling and Shrub)

*Asimina triloba, Acer rubrum, Betula nigra, Nyssa sylvatica, Vaccinium corymbosum*

Herbaceous and Vine Layer

*Smilax rotundifolia, Boehmeria cylindrica, Rosa palustris, Parthenocissus quinquefolia, Saururus cernuus, Campsis radicans, Ligustrum sinense, Polystichum acrostichoides, Toxicodendron radicans, Arisaema triphyllum*

General Observations

Evidence of season saturation and floodplain. Within 50 feet of perennial stream. Mature canopy layer with a well-developed secondary canopy layer.

Fauna Observations

A box turtle was observed. Deer tracts were observed.

McAdams Company's natural resource investigations established Inventory Point 3 slightly above the floodplain associated with New Hope Creek. Inventory Point 4 was established within the floodplain associated with New Hope Creek. Based on the vegetative data and fauna observations collected at elevations above the floodplain, the forested area can be best characterized as a Mesic Mixed Hardwood Forest (Inventory Points 1 through 3). More specifically within the subject property, vegetative assemblages indicated a rather immature ecological system which may have been cleared or timbered in the past as noted in representative Inventory Point 1. Vegetative assemblages that lie west and outside of the subject property were more mature, contained a predominance of mast species, and had an increased evidence of fauna species (see representative Inventory Points 2 and 3). These observations indicate that a higher quality of suitable habitat lies west of the subject property.

The basis for this biological opinion considers four factors:

1. The total SNHA located within the Review Area is approximately 14 acres. Of the SNHA located within the Review Area, 11.6 acres lies

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within the 100 meter floodplain buffer. Based on the proposed development plan, future site improvements may not exceed 0.9 acres within the 100 meter floodplain buffer leaving over 84% of the Review Area within the buffer undisturbed and available for movement of fauna during seasonal flooding events.

2. Based on the vegetative assemblages, there appears to be a rather immature ecological system within the subject property itself as compared to areas that lie west of the subject property. Based on this fact, as well as the subject property's location at the immediate intersection of two major transportation corridors (HWY 751 and I-40), it is our professional opinion that areas west of the subject property provide greater terrestrial habitat for fauna than areas proposed for site improvements immediately adjacent to the highways.
3. Of the entire 1,830 acres dedicated to the Lower New Hope Creek Floodplain Forest and Slopes, future site improvements will only encroach upon 0.04% (see attached Figure 2B).
4. Preserved areas on the subject property, including the Major Transportation Corridor (MTC) buffer and tree coverage areas, will provide suitable fauna habitat and migration routes in addition to the remaining SNHA.

**Other Considerations:**

- In accordance with the proposed development plan, all development will be located as close to NC - 751 as possible to provide an adequate corridor (170 ft – 325 ft buffer from the 100 year floodplain) for fauna and wildlife per the NC Wildlife Resource Commission's standards.
- Any development on site will meet all stormwater regulations for developments within the Jordan Lake Watershed Overlay (F/J-B) per Chapter 70, Article X, Sections 70-736 through 70-749 of the City of Durham's UDO. These guidelines include requirements for removal of 85% TSS from stormwater runoff from the site, and nutrient removal. Additionally, the proposed impervious areas will not exceed 50% of the total site area per the commitments of the development plan, which is



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far more stringent than the 70% impervious allowed per the water supply watershed regulations.

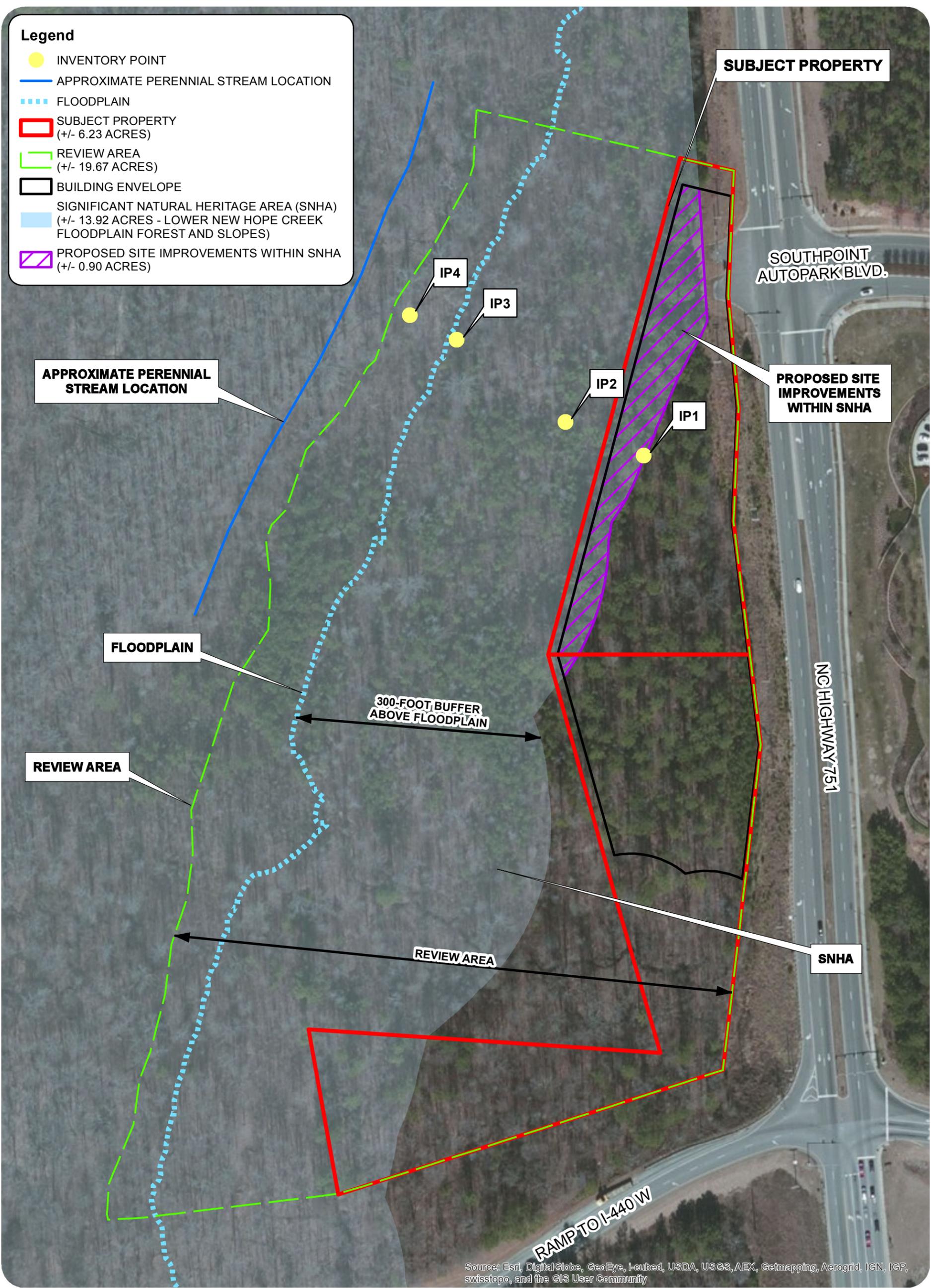
- As part of construction drawing approval for any development on site, a Spill Prevention and Counter Measures plan will be required in accordance with UDO 5.3.4(G). These measure outline cleanup procedures for fuel (or other hazardous materials), counter measure for use in preventing fuel spills from entering the stormwater collection system, and routine clean up procedures for work areas and parking areas.

**Conclusion:**

Based on the natural resource investigations conducted, it is our professional opinion that there will remain a substantial amount of suitable fauna habitat between the proposed site improvements and above the floodplain limits. Therefore, a Biological Opinion can be rendered that the proposed site improvements for Autopark Center should not inhibit fauna movement during seasonal flooding events.

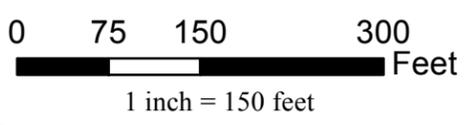
**Legend**

- INVENTORY POINT
- APPROXIMATE PERENNIAL STREAM LOCATION
- ⋯ FLOODPLAIN
- SUBJECT PROPERTY (+/- 6.23 ACRES)
- REVIEW AREA (+/- 19.67 ACRES)
- BUILDING ENVELOPE
- SIGNIFICANT NATURAL HERITAGE AREA (SNHA) (+/- 13.92 ACRES - LOWER NEW HOPE CREEK FLOODPLAIN FOREST AND SLOPES)
- PROPOSED SITE IMPROVEMENTS WITHIN SNHA (+/- 0.90 ACRES)



LAT: 35.761496 N, LONG: -78.853341 W

Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



# SHEETZ - DURHAM AUTOPARK

## FIGURE 2A. NATURAL RESOURCE INVESTIGATION PROJECT #: SHZ-13000

DURHAM, NORTH CAROLINA



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