

**DRAFT
ENVIRONMENTAL ASSESSMENT AND
FINDING OF NO SIGNIFICANT IMPACT**



**UNCW 2008 PRIVATIZED HOUSING PROJECT
WILMINGTON, NORTH CAROLINA
(PARCEL ID#RO5511-003-001-000)**

**Prepared for: University of North Carolina at Wilmington
Clark♦Nexsen Project #: NC464.4**

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1.0 PROJECT DETAILS

TITLE: UNCW 2008 Privatized Housing Project

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2.0 PROJECT DESCRIPTION

The subject property is currently undeveloped woodland located on the University of North Carolina at Wilmington (UNCW) campus in Wilmington, North Carolina. The property is located in the northeastern quadrant of the approximately 648-acre campus of UNCW. The subject property is located off Walton Drive, to the west of International House, Cornerstone Residence Hall, and Seahawk Landing. A site location map is presented as Figure 1 in Appendix A.

2.1 UNIVERSITY POSITION STATEMENT

The UNCW is an advancing institution with over 12,000 students and over 1,500 faculty and staff. In an attempt to balance environmental concerns and necessary growth, when the latest Campus Physical Master plan was adopted two years ago, only 30 of the remaining 170 acres of forest on campus was designated for development. Currently there are no plans for any development on the remaining 140 acres. The area, plus the 10 acres in the Bluethenthal Wildflower Preserve, will be a conservation area on UNCW campus. In addition, the University maintains almost 200 acres of conservation lands in the surrounding counties. UNCW has made a significant commitment to the environment in North Carolina.

Chancellor DePaolo has reported that in the past year, an ad hoc committee reviewed sustainability practices across campus and catalogued many activities currently taking place. The proposed project has been registered with U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System and has already scored 21 points out of the necessary 26 points required for LEED Certification. The UNCW 2008 Privatized Housing Project is expected to be the first LEED-certified project completed at UNCW. As UNCW constructs new facilities the University is also targeting LEED certification as a goal. UNCW Administration is also planning to pilot pervious pavement material in a parking lot expansion in the coming months and the University has a significant recycling program. These are only a couple of the activities that occur on a daily basis on

campus. The ad hoc committee also researched best practices at campuses across the country and has made numerous recommendations. A standing sustainability committee has been established to review and implement these recommendations, as evidence of the UNCW Administration's commitment to the environment.

2.2 CONSTRUCTION DETAILS

The University is planning to build a 662 suite-style residential housing facility arranged in a community of four 3-story wood-framed buildings, approximately 62,500 square feet each on a total of 13.6 acres of land. In addition, the site design will include an approximately 1000 car concrete parking deck provided for students, faculty, and visitors sized at approximately 234-feet by 340-feet. Asphalt pavement design will also be included in the project. Each of the four apartment buildings will be approximately 42 feet tall for a total of three occupied stories.

The proposed number of parking spaces associated with the project is 1038, including 21 handicapped spaces, in accordance with NC Accessibility Code. Twelve (12) of these accessible spaces are provided using surface parking while the balance are provided within the ground level of the parking structure. All parking spaces will conform to the dimensional and grade restrictions indicated in the Code.

The project will be constructed utilizing traditional Neo-Georgian style with classical trim and detailing to match the architectural vernacular on the campus. The buildings will also include a game room, student lounge, commons area, music room, study rooms, mailbox room, RHA and staff offices. Each apartment will feature a large, modern living and dining area, modern kitchen with a full appliance package including a washer and dryer, private bedrooms and bathrooms. Individual bedrooms will include high speed internet, telephone, and cable television connections.

A proposed site plan for the project is provided in Appendix A, Drawing CS101.

2.3 SITE IMPROVEMENTS

Site improvements will include grading, drainage, sidewalks, utilities, and landscaping. Roadways and pedestrian pathways will be designed so students have easy access to their apartment buildings and students traveling to other dormitories or Seahawk Landing will have a clear means of egress. The overall complex will include a complete circulation network of streets, bike paths, bike racks, and sidewalks. All utilities will be provided through underground service. They will include power, sanitary sewer, storm sewer, telephone, data, cable TV, and water. A proposed utility plan for the project is provided in Appendix A, Drawing CU101.

2.4 IMPERVIOUS SURFACE

The subject property is currently undeveloped woodland and contains no areas of impervious surface. The proposed project will consist of approximately 6.36 total acres of impervious surface area, including buildings, pavement, and sidewalks. The total amount of impervious area will be approximately 47% of the 13.60 acre project area.

2.5 STORM WATER CONTROL

A new storm water collection system comprised of drop inlets and catch basins is proposed for the project. Storm water management, in accordance with NCDENR, Division of Water Quality regulations and design standards, will be provided by routing runoff from the proposed impervious surfaces to multiple underground infiltration galleries. These galleries will be sized to capture and treat the first 1.5” of runoff by forcing this water to infiltrate into the groundwater table. This method of treatment will increase usable open space in the “quad” areas of the complex and will more completely reduce total suspended solids (TSS) discharge from the site. Erosion and sediment control devices will also be used during construction to minimize sediment discharge from the site during the construction phase of development. A layout of the proposed storm drain system can be found in Appendix

A, Drawing CG101 – Storm Drainage & Grading Plan.

2.6 CONSTRUCTION PLANS

The construction of this project is anticipated to begin in the spring of 2008 to be completed in the summer of 2009. Four apartment buildings will be constructed during this time frame on a staggered schedule eventually completing one building per month until the final building is ready for occupancy by the University. The parking garage will be constructed on a parallel track with the construction of the buildings.

3.0 PURPOSE AND NEED FOR PROJECT

The University is in dire need of additional on-campus housing for students as enrollment continues to increase. This project represents Phase III of an effort to provide a residential neighborhood on the campus that is connected to the academic portion of the University. The buildings in this project are to be grouped together around open green space, with the parking structure being located directly adjacent to the buildings, surrounded by natural areas that will remain intact.

4.0 ALTERNATIVES ANALYSIS

During the winter of 2007, UNCW and Clark Nexsen reviewed six potential building sites on campus prior to recommending the current site to the Board of Trustees. The other sites were not acceptable due to size, impact on wetlands, and issues regarding parking and the distance to campus. Also important to note is that the University is now building new buildings on existing parking lots. Existing parking lots S and T will accommodate four new buildings within the next five years. The construction of the structured parking deck proposed under this project will replace the displaced faculty parking from those parking lots.

5.0 EXISTING ENVIRONMENT CHARACTERISTICS

A site reconnaissance was conducted on October 2, 2007. The proposed project site is located in the City of Wilmington on the UNCW campus. The subject property is part of the UNC Wilmington natural Longleaf Pine Forest. Generally, the surrounding properties in the vicinity of the subject property are part of the University campus. The property is bounded to the north by residential property, to the east by undeveloped woodland and existing dormitories/parking lots associated with Seahawk Landing, Cornerstone Residence Hall, and International House, to the south by Cahill Drive, and to the west by Reynolds Drive. The existing conditions site survey is presented in Appendix A. Original color photographs of the subject property and the adjoining properties are presented in Appendix B.

5.1 TOPOGRAPHY

A review of the USGS Topographic map (Figure 1), Wrightsville Beach, NC Quadrangle, indicates that the elevation at the subject property is approximately 45 feet above sea level. The topographic mapping appears to indicate that the topography within the vicinity of the subject property slopes to the northeast towards tributaries of Bradley Creek. However, during the site inspection, the subject property was observed to have rolling topography, with the majority of the site sloping to the south toward Cahill Drive. The highest point on the site is at 47-feet above sea level in the northwestern corner of the site, near Reynolds Drive. A narrow 100-foot wide ridge bisects the site from Reynolds Drive to Walton Drive at an elevation of approximately 40-feet above sea level, southwest to northeast. The lowest area on the site is a large depression (~200-feet in diameter) approximately 34-feet above sea level. The low area currently accepts stormwater runoff routed via drainage swales from Cahill Drive and Reynolds Drive. An existing site conditions figure displaying surveyed topography in the project area is included in Appendix A as Drawing CX101.

5.2 SOILS

The USDA Soil Survey information for New Hanover County, North Carolina (USDA, 1977) indicates that the underlying soils are a combination of Baymeade(Be) fine sand and Seagate fine sand (Se). The Baymeade fine sand map unit is mapped on the northern and eastern portions of the site while the Seagate fine sand map unit is mapped across the southern part of the project area. Baymeade soils have 1 to 6 percent slopes and a depth to a root restrictive layer that is greater than 60 inches. The natural drainage class is well drained and water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. The shrink-swell potential is low. This soil is not flooded and is not ponded and does not meet hydric criteria. Seagate soils have 0 to 2 percent slopes and depth to a root restrictive layer is 20 to 40 inches, and exhibits a strongly contrasting textural stratification. The natural drainage class is moderately well drained and water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very low. The shrink-swell potential is low. This soil is not flooded and is not ponded and does not meet hydric criteria.

5.3 LAND USE

The area of the subject property is primarily utilized by students, faculty, and members of the public for recreational purposes. Various hiking trails and physical fitness areas are found throughout the subject property. There are no structured fitness areas within the boundaries of the site.

5.4 WETLANDS

The National Wetland Inventory (NWI) map, Wrightsville Beach, NC Quadrangle, was reviewed to determine if the subject property is located in or adjacent to a wetland. EDR also conducted a resource review and the subject property was visually inspected during our field investigation. The NWI map and EDR report indicated that while the subject property is not located in a wetland area, it is located within ½-mile of documented wetland areas. NWI and USGS topographic

mapping also depict and National Hydrography Data (NHD) tributary to Bradley Creek which runs approximately 2,650 feet to the north and approximately 3,000 feet to the south of the subject property. The freshwater forested/shrub wetlands areas are located to the north, east, south, and west of the subject property and appear to be associated with a stream. The subject property was visually inspected during our field investigation for wetland areas. There were no indications that the area of proposed construction contained hydric soils or vegetation, and/or any other indications that the proposed area was wetlands. Formal wetland delineation was not conducted during this assessment. UNCW provided Clark Nexsen with a United States Army Corps of Engineers (USACE) certified Wetland Location Survey dated October 8, 2002 (Draper Aden Associates, 2002) indicating that the subject property is not within or near wetland boundaries. A copy of the NWI map and the USACE Wetland Location Survey is included in Appendix C.

5.5 FLOODPLAINS

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the City of Wilmington, the subject property is located in flood zone X. Zone Z is designated as areas determined to be outside the 0.2% annual chance floodplain. According to Mr. John Fullerton, with the City of Wilmington Planning Department, the subject property is not located in a flood zone. A copy of the FEMA Flood Insurance Rate Map is provided in Appendix C. Interview correspondence is provided in Appendix D.

5.6 PRIME OR UNIQUE AGRICULTURAL LANDS

The review of historic aerial photography indicated that the subject property has been undeveloped woodland as early as the 1950's. Therefore, no loss of potential agricultural land will occur as a result of the project. There is no area available for potential cultivation on-site.

5.7 PUBLIC LANDS AND SCENIC, RECREATIONAL, AND STATE NATURAL AREAS

There are no national parkways or scenic rivers in the immediate vicinity of the subject property according to the resource review performed by EDR. The EDR report indicated, however, that the subject property is located within the boundaries of the UNC-Wilmington Longleaf Pine Forest which is listed as a North Carolina State Natural Area. A review of the North Carolina *OneMap* geographic information system data was also conducted which confirmed the status of the longleaf pine forest within the project boundaries as a State Significant Natural Area. The North Carolina Natural Heritage Program was consulted via mail to identify potential natural heritage resources within the project boundaries. A letter was received from Mr. Harry LeGrand on November 1, 2007 confirming the location and extent of the UNC-Wilmington Longleaf Pine Forest. Information obtained from the Natural Heritage Program did not indicate any state parks, state lakes, state recreational areas, natural and scenic rivers, or zoological parks on or adjacent to the subject property. Interview correspondence is provided in Appendix D.

5.8 AREAS OF ARCHAEOLOGICAL OR HISTORICAL VALUE

The North Carolina Department of Cultural Resources, State Historic Preservation Office and the North Carolina Office of State Archaeology, Underwater Archaeology were contacted for historic landmarks and cultural resources on or adjacent to the subject property. A letter was received from Mr. Peter Sandbeck, with the State Historic Preservation Office, on December 7, 2007 indicating that no historic resources will be affected by the proposed project. In addition, according to information provided by Mr. John Fullerton, with the City of Wilmington Planning Department, the subject property is not listed on local records as a National Register of Historic Places (NRHP) site. Mr. Nathan Henry, with the North Carolina Underwater Archaeology Branch, responded on October 23, 2007 indicating that there are no records of any archaeological sites within the project boundaries. Mr. Henry also stated that there is a low probability that significant historical or prehistoric archaeological sites are present. A formal cultural resources survey was

not conducted for the purposes of this assessment. Interview correspondence is provided in Appendix D.

5.9 AIR QUALITY

The proposed project area is currently undeveloped woodland. The University of North Carolina at Wilmington falls within the North Carolina Department of Environment and Natural Resources (NCDENR) Division of Air Quality Wilmington Regional Office. The State of North Carolina has adopted the National Ambient Air Quality Standards for all major pollutants. The air quality within New Hanover County is generally considered good. The nearest monitoring station is located on the USS North Carolina Battleship, docked in downtown Wilmington approximately four miles from the UNCW campus. According to the U.S. Environmental Protection Agency (EPA) AIRS-AQS Air Trends program records from 1990-2006, levels of the six principal air pollutants were at or below the national average levels.

5.10 NOISE LEVELS

The noise levels observed during the site reconnaissance were of normal undeveloped areas with some residential impacts. Regular vehicular traffic was observed along Reynolds and Cahill Drive, as well as car and home stereo, and other construction activities occurring on the campus near the subject property.

5.11 WATER RESOURCES

The subject property is located within the Cape Fear River basin. The EDR database search was reviewed for water resources on or adjacent to the subject property and did not indicate that the subject property was located within any area of significant surface or groundwater resources. The groundwater aquifers anticipated in the vicinity of Wilmington, North Carolina include a surficial aquifer, underlain by the Pee Dee aquifer. The Pee Dee aquifer is present in the central to southeastern portion of the coastal plain at elevations of 114 to -796 feet below mean sea level. The

North Carolina Division of Water Resources Aquifer Characteristics Database well records indicate wells installed on the Wilmington College (DD 30H and DD 30H1) were located in the Pee Dee aquifer at a depth of 80-180 feet below ground surface. In addition, there were no indications during the site reconnaissance that the subject property contained surface waters. According to the EDR, NWI and topographic mapping, the closest identified surface water resource is a small freshwater forested/shrub wetland area associated with a stream located approximately 1,300 feet to the east of the subject property. In addition, UNCW provided Clark Nexsen with a United State Army Corps of Engineers (USACE) certified Wetland Location Survey dated October 8, 2002 indicating that the subject property is not within or near wetland boundaries. A copy of the NWI map and the USACE Wetland Location Survey is included in Appendix C.

5.12 FOREST RESOURCES

The subject property is located within the boundaries of the approximately 200-acre UNC-Wilmington Longleaf Pine Forest, as identified by the North Carolina Natural Heritage Program and the EDR database search. Existing trees noted during the site reconnaissance include a dominant longleaf pine (*Pinus palustris*) over story with turkey oak (*Quercus cerrus*) under story and a Carolina wiregrass (*Aristida stricta*) ground layer. The current condition of the longleaf pine forest, specifically the under story, is cleared and relatively open as a result of controlled burning in the previous year. The controlled burning of the area is part of a standard silviculture method conducted by UNCW to maintain an open longleaf pine ecosystem. A survey of the existing conditions at the subject property, including the current tree cover, is included in Appendix A, Drawing CX101. A review of historic aerial photography has indicated the area has remained forested since at least the 1950s. An excerpt from the *New Hanover County Natural Area Inventory of the UNC-Wilmington Longleaf Pine Forest* (NCNHP, 2003), which describes a similar condition of the 240-acre forest at the time of the study, is included in Appendix D.

5.13 SHELLFISH OR FISH AND THEIR HABITATS

No aquatic resources were located within the project limits; therefore, no shellfish or fish and their habitats were present on the subject property or the adjacent properties.

5.14 WILDLIFE AND NATURAL VEGETATION

The U.S. Fish and Wildlife Service (USFWS) Internet site was reviewed for endangered or threatened species refuges in New Hanover County. The above investigation did not result in any indication that the subject property was located within or in close proximity to a designated endangered or threatened species protected area. The USFWS was also consulted via email to identify documented occurrences of endangered or threatened species or designated critical habitat within the project boundaries. A letter was received from Mr. Pete Benjamin with the USFWS, Raleigh Field Office, on November 19, 2007 indicating that based on the information provided and other information available, it appears that the proposed project site does not contain any federally-listed endangered or threatened species, their formally designated critical habitat, or species currently proposed for listing under the Endangered Species Act. The USFWS advised that if project plans change or if additional information on listed and proposed species becomes available, their determination may be reconsidered.

The North Carolina Natural Heritage Program and the NC OneMap internet sites were also reviewed to identify potential natural heritage resources within the project limits. The record search indicated that though there were several documented occurrences of endangered species and natural areas located within a two-mile search radius, none were documented within the project area. A figure was developed utilizing the NCNHP data and is included as Figure 2 in Appendix A. In addition, the North Carolina Natural Heritage Program was consulted via mail for potential endangered species and natural areas on or adjacent to the subject property. A letter was received from Mr. Harry LeGrand on November 1, 2007 indicating that a portion of the State-significant natural heritage area, the UNC-Wilmington Longleaf

Pine Forest, is located within the project boundaries. The original project review request was submitted to the North Carolina Natural Heritage Program the estimated land disturbance was approximately 20 acres; however, the land disturbance has been reduced to only 13.6 acres. According to Mr. LeGrand, there was a documented occurrence rare plant located on the tract; the *State Endangered* and *Federal Species of Concern* Pickering’s dawnflower (*Stylisma pickeringii*). The observed record of the *State Endangered* Pickering’s dawnflower (Element Occurrence ID #5827) previously identified by NCNHP on the property is no longer within the project boundaries, based a reduction in the project area. Therefore, the inquiry conducted did not identify any previously documented occurrences of threatened and endangered species located within the project boundaries.

A site reconnaissance was conducted on October 2, 2007, which included several transects across the undeveloped wooded area between Walton Drive, Cahill Drive, and Reynolds Drive, which includes the project limits. No formal species-specific biological surveys were conducted for the purposes of this assessment. The following table illustrates the results of the record search and the habitat, including highlighted findings within the project area, which were noted during the site reconnaissance:

Table 1 – Threatened and Endangered Species and Natural Communities, Documented Occurrences within 2-Miles of the Subject Property

Resource Type	Common Name	Scientific Name	Federal Status	State Status	Habitat	Field Notes
Animal	Coachwhip	<i>Masticophis flagellum</i>	None	SR	dry and sandy woods, mainly in pine/oak sandhills	Habitat was observed in the vicinity of the site and project may impact habitat
Animal	Eastern Fox Squirrel	<i>Sciurus niger</i>	None	SR	open forests, mainly longleaf pine/scrub oak	Habitat was observed in the vicinity of the site and project may impact habitat

Resource Type	Common Name	Scientific Name	Federal Status	State Status	Habitat	Field Notes
Animal	Southern Hognose Snake	<i>Heterodon simus</i>	FSC	SC	sandy woods, particularly pine-oak sandhills	Habitat was observed in the vicinity of the site and project may impact habitat
Natural Community	Xeric Sandhill Scrub Coastal Fringe Variant	N/A	None	None	Open canopy of longleaf pine over a turkey oak understory with live oak and dwarf live oak. The ground layer is dominated by Carolina wiregrass and a diversity of shrubs and wildflowers.	Habitat was observed in the vicinity of the site and project may impact habitat
Natural Community	Vernal Pool	N/A	None	SR	Vegetation similar to longleaf pine flatwoods and savannahs. Flooded in spring, exposed in summer. The ground layer commonly contains redroot, pinebarren rush, switchcane, spadeleafe, and white bluestem.	Habitat was not observed on the site or in the vicinity of the site
Natural Heritage Area	UNC-Wilmington Longleaf Pine Forest	N/A	None	SNHA	Rolling, dry sandhills interspersed with numerous small wet depressions. Also contains several community types, including Xeric Sandhill Scrub Coastal Fringe Variant, Small Depression Pocosin, and Vernal Pools.	Habitat was observed in the vicinity of the site and project may impact habitat
Vascular Plant	Blue Water-hyssop	<i>Bacopa caroliniana</i>	None	SR-P	shallow ponds, marshes, natural lakes, and tidal creeks	Habitat was not observed on the site or in the vicinity of the site
Vascular Plant	Brown Bogbutton	<i>Lachnocaulon minus</i>	None	SR-P	savannas, seeps	Habitat was not observed on the site or in the vicinity of the site
Vascular Plant	Carolina sunrose	<i>Crocanthemum carolinianum</i>	None	SR-P	sandhills, pinelands, dry savannahs	Habitat was observed in the vicinity of the site and project may impact habitat
Vascular Plant	Golden Crest	<i>Lophiola aurea</i>	None	E	very wet, mucky habitats in pine savannas	Habitat was not observed on the site or in the vicinity of the site

Resource Type	Common Name	Scientific Name	Federal Status	State Status	Habitat	Field Notes
Vascular Plant	Pickering's Dawnflower	<i>Stylisma pickeringii</i> var. <i>pickeringii</i>	FSC	E	sandhills	Habitat was observed in the vicinity of the site. Documented occurrence was not within project boundaries.
Vascular Plant	Raven's Seedbox	<i>Ludwigia alata</i>	FSC	SR-T	savannas, swamps, marshes, wet open places	Habitat was observed in the vicinity of the site and project may impact habitat
Vascular Plant	Savanna Milkweed	<i>Asclepias pedicellata</i>	None	SR-P	dry savannas and moist flatwoods	Habitat was observed in the vicinity of the site and project may impact habitat
Vascular Plant	Shrubby Seedbox	<i>Ludwigia suffruticosa</i>	None	SR-P	limesink ponds, clay-based Carolina bays	Habitat was not observed on the site or in the vicinity of the site
Vascular Plant	Twisted-leaf Goldenrod	<i>Solidago tortifolia</i>	None	SR-P	dry savannas and mesic flats	Habitat was observed in the vicinity of the site and project may impact habitat
Vascular Plant	Venus Flytrap	<i>Dionaea muscipula</i>	FSC	SR-L, SC	savannas, seepage bogs, pocosin edges	Habitat was observed in the vicinity of the site and project may impact habitat

E – Endangered, T-Threatened, SC-Special Concern, SR-Significantly Rare, EX-Extirpated, SR-P-Species at Peripheral of its Range, SR-L – Range limited to NC, SR-T- Species rare throughout ranges, SNHA-Significant Natural Heritage Area.

The UNCW Department of Biology and Marine Biology staff was contacted to determine the extent of historically observed or documented wildlife and natural vegetation in the vicinity of the proposed project. Several additional plant and animal species were reported by University academic staff as being observed during previous academic studies within the overall UNCW Longleaf Pine Forest, of which the project area is

included. University staff and students have identified several bird species in the UNCW Longleaf Pine Forest including certain listed *Species of Concern (SC)* in North Carolina: brown creeper (*Certhia americana*), yellow-bellied sapsucker (*Sphyrapicus varius*), Cooper's Hawk (*Accipiter cooperii*), and Loggerhead shrike (*Lanius ludovicianus*). In addition, pileated woodpecker (*Dryocopus pileatus*) and brown-headed nuthatch (*Sitta pusilla*) have been observed in the forest. The pygmy rattlesnake (*Sistrurus miliarius*), as well as sightings of the southern hognose snake (*Heterodon simus*) are two more *Species of Concern* in North Carolina that have been reportedly identified in the forest. Fox squirrels (*Sciurus niger*) and their habitat have also been identified in the UNCW Longleaf Pine Forest by University staff and students, as well as occurrences of Venus flytraps (*Dionaea muscipula*). A copy of all consultation documents, species lists, and maps are provided in Appendix D.

6.0 PREDICTED ENVIRONMENTAL EFFECTS OF PROJECT

The following sections describe the direct, indirect, and cumulative environmental impacts of the proposed construction. The purpose of this section is to identify the environmental consequences of proceeding with this project. The identification of impacts is needed to properly assess the costs of a project against its potential benefits and to evaluate mitigation requirements.

6.1 TOPOGRAPHY

The proposed project will change the existing topography in the immediate vicinity of the subject property; however, there will be no impacts to the 100-year or 500-year floodplain.

6.2 SOILS

The existing topography at the subject property consists basically of two major soils types and rolling topography. A depression in the relative southern center of the site is at an elevation approximately 4' below the nearest adjacent roadway grade. The proposed project will include significant grading in order to accommodate the new

residential buildings and parking structure with positive drainage away from the structures. Earthwork operations will include the import of fill being brought in to fill the existing low areas of the site within the site limits. The construction is not expected to contaminate the existing soils and no contaminated soils are known to be at the project site.

6.3 LAND USE

The proposed project will alter the current land use and affect the area in terms of conservation, development, and ecological function. The proposed project is included in the 2005 UNCW Campus Master Plan and a portion of the forest has such been designated for the proposed development. The proposed project will also be a similar land-use to the surrounding campus and residential housing. The site plan includes management for storm water and landscaping to provide a reduction in the impacts of the project. Select preliminary site drawings which outline the proposed land use are presented in Appendix A. The proposed project, due to its size, scope, and location will not significantly impact the overall land use of the area.

6.4 WETLANDS

There were no wetland areas identified on the subject property or in the immediate vicinity of the subject property. In addition, UNCW provided Clark Nexsen with a United State Army Corps of Engineers (USACE) certified Wetland Location Survey dated October 8, 2002 indicating that the subject property is not within wetland boundaries. Therefore, no wetlands will be lost as a result of the proposed project.

6.5 FLOODPLAINS

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the City of Wilmington, the subject property is located in flood zone X. Zone Z is designated as areas determined to be outside the 0.2% annual chance floodplain. In addition, Mr. John Fullerton, with the City of Wilmington Planning Department, indicated that the subject property is not located in a flood zone.

Therefore, there will be no impacts to the 100-year or 500-year floodplains.

6.6 PRIME OR UNIQUE AGRICULTURAL LANDS

No loss of potential agricultural land will occur as a result of the proposed project. Currently, there is no cultivation occurring at the subject property and no area is available for potential cultivation on-site. In addition, the urban location of the project site, as well as the minimal size, prevents an agricultural option.

6.7 PUBLIC LANDS AND SCENIC, RECREATIONAL, AND STATE NATURAL AREAS

There were no indications of any state parks, state lakes, state recreational areas, natural and scenic rivers, or zoological parks on or adjacent to the subject property. The wildlife and natural areas search identified the subject property as being a portion of the UNCW Longleaf Pine Forest, listed as a Significant Natural Heritage Area in North Carolina. The forest was identified in 2003 as being approximately a total of 240 acres in size. The area has been partially developed since that time, per the University's master plan, resulting in approximately 170 acres of contiguous longleaf pine forest intact, as reported by UNCW Administration. The predicted impact to the state natural area will consist of a total of 13.6 acres of clearing and grading in preparation for construction. The predicted impact will only be approximately 8% of the remaining 170-acre designated significant natural heritage area. Upon completion of Phase III of construction, a total of 156 acres of the forest will remain. Phase II of the UNCW Privatized Housing Project (March 2006) consisted of a total of 14.21 acres of impacts to forest resources which at that time was approximately 6% of the total size of the forest. Phases II and III of the UNCW Privatized Housing Project will result in a combined total of 27.81 acres of impacts to forest resources which will be approximately 14% of the total size of the forest. The proposed construction plans will include a landscape plan, which will enhance the beauty of the project site. The proposed project, due to its size, scope, and location may impact public lands and scenic, recreational, and state natural areas.

6.8 AREAS OF ARCHAEOLOGICAL OR HISTORICAL VALUE

The North Carolina Department of Cultural Resources, State Historic Preservation Office and the North Carolina Office of State Archaeology, Underwater Archaeology were contacted for historic landmarks and cultural resources on or adjacent to the subject property. A formal cultural resources survey was not conducted for the project area. There are no documented areas of archaeological or historical value located within or directly adjacent to the subject property; therefore, no archaeological sites or historic properties are anticipated to be adversely affected by the proposed project.

6.9 AIR QUALITY

The proposed project includes a suite-style residential housing facility arranged in a community. In addition, the site design will include an approximately 1000-car concrete parking deck provided for students, faculty, and visitors. Asphalt pavement design will also be included in the project. The proposed parking at the facility currently exceeds 750-spaces; therefore, a Complex Air Source permit will be required to address local ambient air quality. The proposed project is therefore not anticipated to result in any long-term impacts to the local or regional air quality.

6.10 NOISE LEVELS

This project is not anticipated to result in any long-term impacts to the local or regional noise levels. The construction activities for the proposed residence halls will temporarily increase noise levels in and around the project area, but these will be temporary. The operation of the proposed new residence hall will most likely not generate any additional noise.

6.11 WATER RESOURCES

There are no aquatic resources located on the subject property; therefore, impacts to surface water resources are not expected to occur during the construction or operation of the proposed facility. Additionally, the proposed facility is not expected to have an

impact on watersheds of significant importance for public water supplies. The construction plans will include erosion and sediment control requirements in accordance with the North Carolina Erosion and Sediment Control Planning and Design Manual. Potable water will be supplied to the facility by the existing City of Wilmington water lines. A new storm water collection system comprised of drop inlets and catch basins is proposed for the project. Storm water management, in accordance with NCDENR, Division of Water Quality regulations and design standards, will be provided by routing runoff from the proposed impervious surfaces to multiple underground infiltration galleries. These galleries will be sized to capture and treat the first 1.5” of runoff by forcing this water to infiltrate into the groundwater table. This method of treatment will increase usable open space in the “quad” areas of the complex and will more completely reduce total suspended solids (TSS) discharge from the site. Filtration of storm water runoff, in accordance with NCDENR, Division of Water Quality regulations and design standards, will minimize impacts to surficial groundwater at the project site. The proposed project, due to its size, scope, and location will not significantly impact water resources.

6.12 FOREST RESOURCES

The project site is within the boundaries of the UNCW Longleaf Pine Forest as identified by the North Carolina Natural Heritage Program. The predicted impact to forest resources will consist of a total of 13.6 acres of clearing and grading in preparation for construction. The predicted impact will be approximately 8% of the remaining approximately 170-acre contiguous forested area. Longleaf pine and oak over story will be removed. The Privatized Housing Project (Phases II & III) is included in the 2005 UNCW Campus Master Plan and a portion of the forest has as such been designated for the proposed development. Phase II of the UNCW Privatized Housing Project (March 2006) consisted of a total of 14.21 acres of impacts to forest resources which was approximately 6% of the total size of the forest at that time. Phases II and III of the UNCW Privatized Housing Project will result in a combined total of 27.81 acres of impacts to forest resources which will be approximately 12% of the total size of the forested area. Upon completion of

Phase III of construction, an estimated total of 186 acres of contiguous longleaf pine forest will remain. The University has also determined during master planning that future development within the forest will be limited in order to preserve this natural area and will eventually leave no less than 140-acres of contiguous forest on campus. The proposed project, due to its size, scope, and location may impact the integrity of the longleaf pine forest.

6.13 SHELLFISH OR FISH AND THEIR HABITATS

No known shellfish or fish and their habitats are present on the proposed subject property or the adjacent properties; therefore, they will not be impacted by the proposed project.

6.14 WILDLIFE AND NATURAL VEGETATION

The North Carolina Natural Heritage Program (NCNHP) was consulted in order to identify documented occurrences of threatened and endangered species and natural communities in New Hanover County, as well as near the project location. A site visit was also conducted by Clark Nexsen on October 2, 2007 to assist in evaluation of the potential for wildlife and natural vegetation impacts. The primary habitats that were identified at the project site were the UNC-Wilmington Longleaf Pine Forest and the Xeric Sandhill Scrub Coastal Fringe Variant Natural Community (see Section 5.13). These habitats (dry savannahs, sandhills, pinelands, and open forests) are noted by the NCNHP website to potentially contain Pickering's daffodil (*Stylisma pickeringii* var. *pickeringii*), Savanna milkweed (*Asclepias pedicellata*), Carolina sunrose (*Crocantemum carolinianum*), Raven's Seedbox (*Ludwigia alata*), Twisted-leaf Goldenrod (*Solidago tortifolia*), Venus Flytrap (*Dionaea muscipula*), Coachwhip (*Masticophis flagellum*), Eastern Fox Squirrel (*Sciurus niger*), and southern hognose snake (*Heterodon simus*) and documented occurrences have been reported within 2 miles of the project location. NCNHP indicated that construction of the tract would clearly impact the natural area and will render the site of lesser significance. NCNHP expressed concern over the potential impact stating that the

natural area will likely be only a remnant forest of the significant natural heritage area (240-acres), and its significance will be demoted as a result. None of the NCNHP documented occurrences of threatened and endangered species were noted within the project boundaries. University academic staff has also reportedly identified historical occurrences of some of these species within the limits of the UNCW Longleaf Pine Forest during academic studies in previous years, though not necessarily within the project area.. None of the threatened and endangered species listed above and identified during the record review were observed during the site reconnaissance; however, the primary habitat for these species, the UNC-Wilmington Longleaf Pine Forest and the Xeric Sandhill Scrub Coastal Fringe Variant Natural Community, were observed. The project area is also adjacent on the north and east to forestland allowing a wildlife corridor for potential relocation of some wildlife on to conserved lands prior to construction. The proposed project, due to its size, scope, and location may impact the wildlife or natural vegetation present at the project location.

7.0 MITIGATIVE MEASURES

An evaluation of the existing environmental characteristics and the proposed construction has determined that the project may impact environmental components of the proposed project property. The primary environmental effects of the proposed project include standard construction impacts to topography, soils, potential air quality impacts, and the taking of a portion of the UNCW Longleaf Pine Forest. Mitigation of topography and soils impacts will be implemented through strict adherence to erosion and sediment control and storm water management techniques. Mitigation of potential ambient air impacts can be implemented through obtaining a Complex Air Source Permit for the parking associated with the proposed project. The UNCW Longleaf Pine Forest represents a significant natural area and habitat for state wildlife and natural vegetation that may be disturbed by the proposed construction. The total impact to the forest is 13.6 acres (7%) of the estimated total remaining 200-acres of undeveloped woodland. The proposed development is in accordance with the UNCW 2005 Campus Master Plan. The

proposed mitigation for wildlife and natural vegetation impacts is a combination of an environmentally friendly design of the project, the maintenance of wildlife corridors to adjacent forest areas, and the conservation of similar areas across campus. The University has indicated that the total future development intended within the UNCW Longleaf Pine Forest will leave no less than 140-acres of contiguous forest to remain in conservation. The University also maintains the 10-acre Bluethenthal Wildflower Preserve on campus and nearly 200-acres of conservation lands within surrounding counties. The proposed project has also been registered with U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Green Building Rating System and is expected to be the first LEED-certified project completed at UNCW.

8.0 CONCLUSION STATEMENT

 X After preparation/review of this EA, the responsible state agency has concluded there is a *Finding of No Significant Impact (FONSI)* and will not be preparing an *Environmental Impact Statement (EIS)*.

_____ The agency has completed this EA and is hereby submitting it for review and comment. After a consideration of the comments received, the agency will proceed with a *FONSI* or prepare an *EIS*.

_____ **Signed**

_____ **Agency**

Submission Instructions

Note to non-state agency document preparer:

Documents completed for state agencies must first be sent to the appropriate agency for approval and completion of the *Conclusion Statement* prior to State Clearinghouse submission. Contact the appropriate agency for its submission procedures. Documents prepared for the N.C. Department of Environment and Natural Resources will be subject to departmental review prior to submission to the State Clearinghouse.

An EA should not exceed 25 pages in length, excluding exhibit materials. **Sixteen (16) copies** of this document with the cover letter and *Conclusion Statement* should be submitted to the State Clearinghouse, N.C. Department of Administration, Room 5106c, 116 West Jones Street, Raleigh, North Carolina 27603. For the review schedule and submission deadline dates, call the State Clearinghouse at (919) 733-7232.

9.0 REFERENCES

The following published references were used in the preparation of this report:

North Carolina Department of Environment and Natural Resources, Office of Conservation and Community Affairs, Natural Heritage Program, *Natural Area Inventory of New Hanover County*, 2003.

North Carolina Center for Geographic Information and Analysis, NC One Map, December 2007. <<http://www.nconemap.com/Default.aspx?tabid=286>>

North Carolina Department of Environmental and Natural Resources, Division of Water Resources, Groundwater Database Access. December 2007. <http://www.ncwater.org/Data_and_Modeling/Ground_Water_Databases/>.

“Soil Survey of New Hanover County, North Carolina” United States Department of Agriculture, 1977. Web Soil Survey v2.0, October 2007 <<http://websoilsurvey.nrcs.usda.gov/>>.

University of North Carolina 2005 Campus Master Plan, February 2006. Prepared for UNCW by Wallace Roberts & Todd, LLC, Kimley-Horn and Associates, and Paulien and Associates. Wilmington, North Carolina.

US Green Building Council, LEED Project Certification, December 2007. <http://www.usgbc.org/DisplayPage.aspx?CMSPageID=64>

Wetland Location Survey for UNCW, October 8, 2002. Draper Aden Associates, 2002, prepared for University of North Carolina at Wilmington. United States Army Corps of Engineers (USACE) certified on October 8, 2002.