



CZD-22-7

Conditional Zoning
Application

Status: Active

Submitted On: 11/21/2022

Primary Location

400 EASTOWNE DR
CHAPEL HILL, NC 27514

Applicant

Jessie Hardesty
 919-287-0824
 hardesty@mcadamsco.com
 621 Hillsborough St
Suite 500
Raleigh, NC 27603

Application Information

Project Name *

UNC Health Eastowne

Application Type*

New Conditional Zoning District (CZD)

Application Type

–

Additional Addresses / PINs associated with Project

Existing Zoning District(s)*

OI-3, OI-2, and MU-OI-1

Proposed Zoning District(s)*

OI-3

Proposed Address(es)

Existing Use(s) *

MOB and Head Start

Existing Use Group

–

Existing Use Group(s) (A, B, C)

B

Proposed Use(s) *

Office (medical office buildings)

Proposed Use Group(s) (A, B, C)

B

Are new residential dwelling units proposed?*

No

Project Description*

Medical Office Building Campus

Applicant Authorization

The undersigned applicant hereby certifies that, to the best of the applicant's knowledge and belief, all information supplied with this application is true and accurate.

Applicant Signature*

Relationship to Property Owner*

Jessica Hardesty
Nov 16, 2022

Other

If other, please explain relationship to property owner. *

Proposed Use Group(s)

Engineering and Planning Consultant

If the applicant is an entity, provide detailed information regarding the principals of the entity.

Pursuant to NCGS § 160D-703(b), a request for rezoning to a conditional zoning district shall only be made by application from all the owner(s) of property included in the area proposed to be rezoned.

A Property Owner Authorization Form must accompany this application if it's submitted by an individual or entity other than the current property owner of record.

Property Owner Information

Address / PIN of Lot Included in Proposal *

Property Owner Name *

9890800195, 9890800643,
9890802764, 9890803947,
9890807564, 9890911209

Health System Properties LLC

If the property owner is an entity, provide detailed information regarding the principals of the entity. *

Simon George, VP of Real Estate and Development UNC Health Care

Property Owner Address *

5221 Paramount Pkwy Suite 460,
Morrisville, NC 27560

Property Owner Email*

Simon.George@unchealth.unc.edu

Property Owner Phone*

984-974-0240

Relationship to Applicant *

Applicant is the consultant

Project Contacts

Name

Simon George

Email

simon.george@unchealth.unc.edu

Phone

Role

Name

Bill Derks

Email

derks@mcadamsco.com

Phone

Role

Name

James Eason

Email

eason@mcadamsco.com

Phone

Role

Name	Email
Karla Carson	Karla.Carson@unchealth.unc.edu
Phone	Role

Name	Email
Cameron Ebron	cameron.ebron@unchealth.unc.edu
Phone	Role

Name	Email
David Parker	david@dcinsightllc.com
Phone	Role

Name	Email
Andy King	Aking@Gestaltad.com
Phone	Role

Site Conditions

Overlay Districts - Check all overlay districts that are present on the property, whether or not the project will intersect with them.

Resource Conservation District (RCD)

Jordan Buffer

Watershed Protection District (WPD)

100 Year Floodplain

Neighborhood Conservation District (NCD)

Historic District

Type of Proposed Uses / Activities in Jordan Buffer

Allowable

Land Area

Net Land Area (NLA) (sq. ft.)*

2202829

Choose credited street area, permanent open space, or both, not to exceed 10% of NLA

Credited Street Area (sq. ft.)

220283

Credited Permanent Open Space (sq. ft.)

435600

Gross Land Area (GLA) (sq. ft.)*

2423112

Total Land Area in RCD (sq. ft.)*

288974

Project Area, if different from GLA (sq. ft.)

—

Land Disturbance Area

Proposed Land Disturbance (sq. ft.) *

1742400

Proposed Land Disturbance (ac.)*

40

Proposed Total Disturbance in Jordan Buffer (sq. ft.)

*

43560

Disturbance in Zone One, in SQFT

Zone One Disturbance (sq. ft.)

—

Zone Two Disturbance (sq. ft.)

—

Proposed Total Disturbance in RCD (sq. ft.) *

43560

Stream Side Zone Disturbance (sq. ft.)

43560

Managed Use Zone Disturbance (sq. ft.)

—

Upland Zone Disturbance (sq. ft.)

—

Impervious Surface Area (ISA)

Existing ISA (sq. ft.) *

403365

ISA to be Removed (sq. ft.) *

268329

New ISA (sq. ft.) *

1420056

Street Setback, in Feet

—

Interior Setback, in Feet

—

Total Proposed ISA (sq. ft.) *

1555092

Net Change in ISA (-/+) (sq. ft.)

Existing ISA Ratio*

0.18

Solar Setback, Feet

—

Lot Width, in Feet

—

Proposed ISA Ratio*

0.7

Impervious Surface Area (ISA) in Resource Conservation District (RCD)

Street Frontage, in Feet

—

Primary Building Height, in Feet

—

Is the area sewered or unsewered?

—

Stream Side: Existing ISA (sq. ft.)

—

Secondary Building Height, in Feet

—

Stream Side: Removed ISA (sq. ft.)

—

Stream Side: New ISA (sq. ft.)

—

Stream Side: Total ISA (sq. ft.)

—

Managed Use: Existing ISA (sq. ft.)

—

Managed Use: Removed ISA (sq. ft.)

—

Stream Side: Net ISA Change (-/+) (sq. ft.)

Managed Use: New ISA (sq. ft.)

—

Managed Use: Total ISA (sq. ft.)

—

Upland: Existing ISA (sq. ft.)

—

Upland: Removed ISA (sq. ft.)

—

Upland: Proposed ISA (sq. ft.)

—

Managed Used: Net ISA Change (-/+) (sq. ft.)

Upland: Total ISA (sq. ft.)

—

Proposed Setbacks and Height

Street Setback (ft.)*

22

Interior Setback (ft.)*

8

Solar Setback (ft.)*

9

Upland Zone: Net ISA Change (-/+) (sq. ft.)

Lot Width (ft.)*

15

Street Frontage (ft.)*

15

Primary Building Height (ft.)*

125

Secondary Building Height (ft.)*

125

Please list proposed setback, height, and street frontage dimensions if project intersects multiple properties.

n/a

Proposed Net Change in ISA

—

Floor Area and Dwelling Units

Number of Buildings

Existing Buildings*

5

Buildings to be Demolished*

4

Buildings to be Constructed *

7

Total Buildings*

8

Floor Area

Provide a data table with a breakdown of the proposed total floor area by use (residential and non-residential) in the site plan.

Existing Floor Area (sq. ft.)*

228000

Floor Area to be Removed (sq. ft.)*

78000

New Floor Area (sq. ft.)*

1710000

Net Change in Floor Area (-/+) (sq. ft.)

Total Floor Area (sq. ft.)*

1860000

Proposed Floor Area Ratios (FAR) and Associated Zoning District(s)

Streamside Zone: Proposed Floor Area, in SQFT, and Floor Area Ratio (FAR)

Floor Area in Resource Conservation District (RCD)

Stream Side: Existing Floor Area (sq. ft.)
12708

Managed Use Zone: Proposed Floor Area, in SQFT,
and Floor Area Ratio (FAR)

Proposed Floor Area in Resource Conservation District, if applicable

Proposed New Residential Floor Area, in SQFT
—

Streamside Zone: Proposed Floor Area, in SQFT, and
Floor Area Ratio (FAR)
—

Upland Zone: Proposed Floor Area, in SQFT, and
Floor Area Ratio (FAR)

Stream Side: Removed Floor Area (sq. ft.)
12708

Stream Side: New Floor Area (sq. ft.)
—

Stream Side: Total Floor Area (sq. ft.)
—

Stream Side: Existing Floor Area Ratio
—

Stream Side: Proposed Floor Area Ratio
—

Managed Use: Existing Floor Area (sq. ft.)
—

Managed Use: Removed Floor Area (sq. ft.)
—

Managed Use: Proposed Floor Area in SQFT
—

Managed Use: Total Floor Area (sq. ft.)
—

Managed Use: Existing Floor Area Ratio
—

Provide a breakdown of the project floor area by use in the site data table in the site plan.

New Field

—

Commercial

Managed Use: Proposed Floor Area Ratio

—

Existing Commercial Floor Area, in SQFT

—

New Total Commercial Floor Area, in SQFT

—

Upland: Existing Floor Area (sq. ft.)

—

Upland: Removed Floor Area (sq. ft.)

—

Office

Existing Office Floor Area, in SQFT

—

Upland: Proposed Floor Area (sq. ft.)

—

Upland: Total Floor Area (sq. ft.)

—

Proposed Total Office Floor Area, in SQFT

—

Institutional

Upland: Existing Floor Area Ratio

—

Upland: Proposed Floor Area Ratio

—

Existing Institutional Floor Area, in SQFT

—

Proposed Total Institutional Floor Area, in SQFT

—

Uses

Proposed Number of Hotel Rooms

—

Proposed Number of Restaurant Seats

—

Proposed Seats in Place of Worship

—

Proposed New

—

New Field

Buffers, Recreation, and Utilities

Landscape Buffers

Required Buffers

North: Required Type / Width (ft.)

20 ft Type C

South: Required Type / Width (ft.)

30 ft Type D

East: Required Type / Width (ft.)

100 ft Type E

West: Required Type / Width (ft.)

20 ft Type C

Northern Buffer Width

—

Southern Buffer Width

—

Proposed Buffers

North: Proposed Type / Width (ft.)*

20 ft Type C

Eastern Buffer Width

—

Western Buffer Width

—

South: Proposed Type / Width (ft.)*

30' Modified

East: Proposed Type / Width (ft.)*

100 ft Type E

West: Proposed Type / Width (ft.)*

20 ft Type C

Percent of Proposed Tree Canopy Coverage*

30

**Proposed Combined Total Recreation Space/
Recreation Area**

—

**Proposed Recreation Space Ratios (RSR) and
Associated Zoning District(s)**

New Field

—

Utilities

Water*

OWASA

Sewer*

OWASA

Telephone

—

Electrical*

Underground

Solid Waste*

Private

Recycling*

Private

Cable TV / Internet

New Field

**Are cable TV, internet, and telephone services
available for the development?**

Yes

Parking

Vehicular Parking

Existing Vehicular Spaces*

1629

Existing Accessible Vehicular Spaces*

113

Vehicular Spaces to be Removed*

600

New Regular Vehicular Spaces*

—

New Accessible Vehicular Spaces*

—

Total Vehicular Spaces*

—

Motorcycle/Moped Spaces

—

Total Vehicular Spaces

—

Proposed Loading Spaces*

—

Bicycle Parking

Existing Bicycle Spaces*

30

Bicycle Spaces to be Removed*

4

New Bicycle Spaces*

—

New Field

—

New Bicycle Spaces*

—

Property Owner Authorization

Property Owner Name(s)

Property Owner Email

Property Owner Address

Property Owner Phone

The undersigned property owner hereby certifies that, to the best of their knowledge and belief, all information supplied with this application is true and accurate.

Property Owner Signature

No signature

Authorizations

Applicant Authorization

The undersigned applicant hereby certifies that, to the best of their knowledge and belief, all information supplied with this application is true and accurate.

Applicant Authorization

Applicant Signature

Relation to Property Owner

No signature

—

Please provide the current Property Owner's Information for the selected zoning lot.

Property Owner Name(s)

Property Owner's Address

Property Owner Email

Property Owner Phone

Property Owner / Contract Purchaser Authorization



Town of Chapel Hill
Planning Department
 405 Martin Luther King Jr Blvd
 Phone: (919) 968-2728

Email: planning@townofchapelhill.org
www.townofchapelhill.org

Property Owner Authorization of Application for Conditional Zoning District

Staff Use Only

Application Number:

Pursuant to NCGS § 160D-703(b) Conditional Districts, property may be placed in a conditional district only in response to a petition by all owners of the property to be included.

This Property Owner Authorization form must be completed and signed by the current property owner(s) of each zoning lot involved in the proposed Conditional Zoning District application. Please submit a separate form per property owner.

Project Name: UNC Health Eastowne

Property Address: See Attached Addresses
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Parcel Identifier Number(s) (PINs): See Attached for PINs

Property Owner Name (must match County tax records): HEALTH SYSTEM PROPERTIES LLC

Property Owner Address: 5221 PARAMOUNT PKWY, Ste 230, Morrisville, NC 27560

Email: Simon.George@unchealth.unc.edu

Phone: 984-974-5388

Relationship to Applicant: Vice President - Real Estate Development UNC Health
--

If the property owner is an entity, provide detailed information regarding the principals of the entity.
--

Property Owner Authorization

The undersigned property owner hereby authorizes the application for Conditional Zoning District and certifies that, to the best of the owner's knowledge and belief, all information supplied with this application is true and accurate. The property owner also confirms their support of the application as proposed.

Signature: Simon George

Date: 11/21/2022

Print Name: Simon George

UNC Health Eastowne CZ

PINs

500 Eastowne Drive - 9890800195,

998 Eastowne Drive - 9890807564

600 Eastowne Drive - 9890800643

700 Eastowne Drive - 9890802764

800 Eastowne Drive - 9890803947

4 EASTOWNE OFFICE PARK P73/142 - 9890911209

April 6, 2023

PUBLIC PURPOSE

The Eastowne development being proposed by UNC Health will provide an additional 1,100,000 square feet (1,250,000 square feet total) of state-of-the-art medical office services within the Town of Chapel Hill. The location, immediately adjacent to the interchange at 15-501 and I-40 provides a unique location to provide easily accessible medical services for the citizens of the Town as well as a regional impact. The location will remove the outpatient traffic trips that currently have to go to the main campus medical facility from the Town's streets. In addition, the project size has been dialed in based on anticipated traffic impacts in the area surrounding East Potential LUMO modifications needed for development of Eastowne's full build-out scenario.

The development at Eastowne will also free up, "decompress", the space at the main campus. This will allow for future changes at that location to improve the services and patient experience at that location as well.

At the same time, in conjunction with the Town, many interested groups and citizens, UNC Health has committed to preserving a minimum of 10-acres of a 20-acre parcel of woods, steep slopes and floodplain areas from development. Beyond that, UNC Health has committed that any future development on the remaining 10-acres of the 20-acre total, would be the last piece developed in what is currently seen as a 20-year build-out time frame.

Inside the Eastowne Drive loop UNC Health will undertake a stream restoration project. The existing, manmade pond will be removed and the streams from 15-501 to Eastowne Drive will be restored to its natural stable form. The stream's riparian buffers will be graded and revegetated to ensure stability and re-establishment of the natural riparian processes. The stream and vegetated buffers will become a feature of the development.

Other public benefits from the development include the addition of bike lanes and a multi-use path on Eastowne Drive, a multi-use path along the project frontage on 15-501, pedestrian connections through-out the campus, area for a future BRT stop and support for affordable housing.

These commitments; 1. A connected, state-of-the-art, walkable, multi-modal, dense medical campus, and 2. Preservation of existing developable land will require some modifications to the Town's current regulations. Those required modifications are listed below.

But, at the end of the day, the services provided to the public, both within Chapel Hill and regionally, will all be dramatically improved by the construction of the Eastowne campus. The services will remain in the Town of Chapel Hill. The investments will remain in Chapel Hill both at Eastowne and the main campus. The ongoing partnership between UNC Health and the Town of Chapel Hill and its residents will remain strong.

LUMO MODIFICAITONS REQUIRED

Potential LUMO modifications needed for development of Eastowne full build-out scenario.

Article 3.8 Dimensional Standards

Table 3.8-1 Dimensional Matrix (OI-3)

- > FAR
 - o Current - 0.566 Proposed – 0.680
 - o Clarification that the entire 50-acre property can be used for FAR calculation.

Article 3.6.3 Resource Conservation District

Justification – Impact to the RCD inside the Eastowne Drive loop are necessary to complete the stream restoration project proposed from 15-501 to Eastowne Drive. In conjunction with the restoration a single road crossing of the RCD is included to provide interconnectivity for the project inside the Eastowne Drive loop. A second impact, on the tip of an intermittent stream is proposed for stormwater management. This stream, identified by the Town to be buffered, was not identified as intermittent in a determination by the USACOE.

Modifications.

Table 3.6.3-2 Permitted Uses with Resource Conservation District

- > Streets, bridges & other similar transportation facilities.
 - o Current – Requires a SUP all zones
Proposed – Permitted in all zones as part of CZ approval.
- > Stream and riparian area restoration and maintenance
 - o Current – Pond is allowed with a special use permit. Doesn't specifically list pond draining.
Proposed – CZ – Allows pond draining / dam removal
 - o Current – Lists as restoration not enhancement.
Proposed – CZ - Enhancement permitted.
- > Detention/retention basin and associated infrastructure.
 - o Current – Prohibited in stream side zone, permitted in other zones.
 - o Proposed – Permitted in all zones for specific locations identified on approved CZ.
- > Art. 3.6.3(h)(4) Requirements for Development Activities
 - o Current - List of requirements for development applications unless exempted by Town Manager.
 - o Proposed – Development or land-disturbing activities in the RCD approved as part of the CZ with final details provided with submittal of Final Plans.

Article 5.14 - Signage

- > Current:
 - o Commercial Center Sign Dimensions:
 - Height (max) 12'

- Width (max) 10'
 - Thickness (max) 12"
 - Minimum Letter Height on Panels 9"
 - External wall signage: maximum of 3 wall signs per individual establishment per street frontage.
 - Ground signs: maximum 1 ground sign per street frontage
- > Proposed:
 - Four (4) new UNC Health Eastowne Business Park and/or medical office site type commercial center signs up to 240 square feet on Eastowne Drive for MOB1 shall be allowed for the proposed development on the inner Eastowne loop.
 - Height (max) 12'
 - Width (max) 20'
 - Thickness (max) 18"
 - Minimum Letter Height on Panels 12"
 - External wall signage (to include building address and/or name) shall be permitted on each building and parking structure at a location that allows for optimal visibility and wayfinding.
 - Internal site wayfinding signage shall be permitted at each intersection for vehicular and pedestrian traffic.
 - The northern 20 parcel will be allowed up to two (2) ground mounted signs if the parking structure is constructed.
 - Internal building signage not facing the public right-of-way for identification and wayfinding is not subject to review by the Town.

Article 5.3.2 – Steep Slopes

Justification - The steep slopes being impacted are inside the Eastowne Drive loop and primarily consist of manmade slopes associated with existing parking, buildings, the pond dam and a earth stockpile from MOB1. Redevelopment of this side from a suburban office park to a state-of-the art, high density, walkable development with structured parking requires the ability to impact the steep slopes to a greater extent than allowed by ordinance.

Modifications

- > Art. 5.3.2.(c) Applicability
 - Current – Art. 5.3.2.(c)(3) “...shall not apply to existing cut and fill slopes associated with roads, parking lots or driveways.”
 - Proposed – In addition steep slopes shall not apply to manmade slopes associated with development including grading for buildings, building pads, sidewalks, trails, ponds, stormwater treatment facilities, stockpiles, and erosion control facilities.
- > Art. 5.3.2.(f) Disturbance Limitations
 - Current – “No more than twenty-five (25) percent of the total combined area of 4:1 (25 %) or steeper slopes shall be disturbed unless a variance is granted by the Board of Adjustment.
 - Proposed – Percentage disturbed shall be approved with the approval of the CZ.

- > Proposed: Total project max. 4.5 spaces per 1,000 sq ft of floor area. Owner will provide continued monitoring of the utilization of vehicular parking throughout the project and submit an updated parking analysis with each Final Plan submittal. The number of parking spaces and parking space ratio will be revised as appropriate for the change in demand over time.

Article 5.12.1.a.4 Utilities – Water Main and Fire Hydrant Installation

- Current – No building permit until water mains and hydrants are installed and operational
- Proposed – No building permit for construction with combustible materials until water mains and hydrants necessary for fire protection are installed and functional fire certification provided to the Town and OWASA.

NARRATIVE

UNC Health Eastowne

EXISTING CONDITIONS

The original Eastowne development was constructed with single and two-story office buildings in the 1970's and 1980's that are approaching the end of their useful life. The current site is strategically located adjacent to I-40 and 15-501 with the Phase 1 development being located at the western intersection of Eastowne Drive and 15-501. The first medical office building (MOB 1), completed in 2021, is in the southwest corner of the site which is bound on the eastern and northern boundaries by a Resource Conservation District (RCD). A parking deck was constructed with MOB 1 and accommodates parking for both MOB 1 and the future MOB 2. The balance of the current "inner loop", the property bounded by 15-501 and the Eastowne Drive right-of-way consists of four office buildings and surface parking. The "Northern 20", the property between Eastowne Drive and Interstate 40, is undeveloped.

PROJECT PLAN

When completed, the redevelopment project will consist of approximately 1.1M net new square feet of buildings. The buildings will be modern and energy efficient, constructed with a steel frame, skinned with attractive glass systems and complemented with architectural opaque cladding. The skin will be designed in consideration of the site's prominence at this gateway entrance into Chapel Hill and will be consistent with the UNC Health brand as well as the design of MOB 1.

The second MOB will be built adjacent to the MOB 1 site, optimize access for patients, and serve as the second phase of a welcoming, urban gateway for this project and to the Town. Parking will be accommodated via the existing parking garage and limited accessible surface parking near the second building. To promote walkability, a pedestrian bridge will be installed across the newly enhanced stream after the pond is drained. This bridge will provide access across the RCD to the balance of the existing buildings and will allow staff to move throughout the inner loop.

Future phases of the inner loop will front a center green that provides calming, natural views for patients, staff and visitors. The buildings will be oriented to maximize energy efficiency and views for patients and staff inside the facilities. A one-way loop around the center green will allow vehicles to drop off patients at the front entrances and then quickly move to vertical parking structures while providing a traffic calming measure due to its smaller cross section. There will ultimately be two internal roads that connect MOB 1 and MOB 2 to the balance of the inner loop. This road section will be designed for efficient movement of patients and visitors throughout the campus and will be phased as required once future phases are developed. The internal roads will be designed for multimodal traffic.

GOALS AND OBJECTIVES

The project's primary goal is to redevelop this site with modern, higher density medical, research and associated uses that allow UNC Health to meet the demands for outpatient services while decompressing the Medical Center which will allow for more inpatient bed capacity. Moving and increasing the outpatient services from the Medical Center to Eastowne will enable UNC Health to provide a modern, welcoming, patient centered and family-friendly care delivery system while simultaneously allowing for backfill of vacated space at main campus with inpatient beds.

The development will add a critical and significant component to the gateway into Chapel Hill along 15-501 and the Complete Community vision for this area. The project will be a mixture of modern, sophisticated buildings that complement the architecture achieved at MOB 1 but will vary in size and scale as the needs are defined. Parking will be provided vertically by parking structures with architecture complementary of the adjacent buildings visible from 15-501 or Eastowne Drive.

Connectivity via pedestrian, biking, vehicular and public transit will be provided to give patients, staff and visitors multiple ways to ingress and egress into the campus. The goal is to create an inviting development that effectively and efficiently gets patients parked and safely moving throughout the campus.

Timing is also a critically important goal of this project. To stay competitive in the increasingly challenging healthcare landscape, UNC Health must quickly adapt to the healthcare needs of the State. Building on UNC Health's strong relationship with the Town of Chapel Hill will be instrumental to reach our goal of commencing the design and construction processes for MOB 2 in the Fall of 2023, and to provide us with the flexibility needed to move rapidly as the healthcare landscape inevitably changes in the future.

April 5, 2023

Judy Johnson
Town of Chapel Hill Planning Department
405 Martin Luther King Jr Boulevard
Chapel Hill, North Carolina 27514

RE: UNC Health Eastowne Statements of Compliance with the Comprehensive Plan and Design Guidelines

STATEMENT OF JUSTIFICATION

The proposed zoning brings the subject parcels into greater conformance with the Town's Comprehensive Plan. The property is currently zoned OI-3, OI-2, and MU-OI-1, and OI-3 zoning is requested for all parcels to fulfill the themes and goals of the comprehensive plan elaborated on below. Land uses envisioned within the North 15-501 Corridor Sub-Area A include multifamily, shops & offices, commercial/office, and parks as primary uses and townhomes and institutional as secondary uses. A large portion of the land located in Sub Area A across 15-501 is planned as residential. The proposal for a medical office campus contributes to the mix of land uses desired in this area to create a well-rounded community. Statements below further support the case for the requested OI-3 zoning district.

STATEMENT OF COMPLIANCE WITH COMPREHENSIVE PLAN

The UNC Health Eastowne submittal is proposed in accordance with the CH2020 Comprehensive Plan. The proposed plan addresses the following themes with their corresponding goals: A Place for Everyone, Community Prosperity and Engagement, Getting Around, Good Places, New Spaces, Nurturing our Community, and Town and Gown Collaboration.

THEME 1: A PLACE FOR EVERYONE

UNC Health Eastowne will meet the following goals under Theme 1:

- Family-friendly, accessible exterior and interior places throughout the town for a variety of active uses.
- A welcoming and friendly community that provides all people with access to opportunities

Redevelopment of this site will add new medical offices to the Town's inventory. The new medical offices will allow for improved levels of medical service to the citizens of Chapel Hill and surrounding areas. The master plan has been designed to emphasize green space internal to the development and integrate into the surrounding community. Development of this site will provide an abundance of job opportunities in a well-designed, welcoming medical campus. Development of the site will also include structured parking which will allow for vertical development of the parcel to lessen the environmental impacts typically caused by areas of sprawling surface parking with associated land disturbance and run-off.

THEME 2: COMMUNITY PROSPERITY AND ENGAGEMENT

UNC Health Eastowne meets the following goals under Theme 2:

- Foster success of local businesses
- Promote a safe, vibrant, and connected (physical and person) community

Development of new, energy-efficient modern medical office facilities will add to the prosperity of the Chapel Hill community by allowing denser non-residential growth in the North 15-501 corridor. The UNC Health System will be able to expand to provide jobs to many Chapel Hill residents and attract new residents as well.

THEME 3: GETTING AROUND

UNC Health Eastowne meets the following goals under Theme 3:

- A connected community that links neighborhoods, businesses, and schools through the provision of greenways, sidewalks, bike facilities, and public transportation
- Connect to a comprehensive regional transportation system
- Create a comprehensive transportation system that provides everybody safe and reasonable access to all the community offers
- A community that has a parking system based on strategies that support the overall goals of a holistic transportation system

This redevelopment project is located adjacent to an existing major transportation corridor, US 15-501, which will allow for easy ingress and egress. Additionally, it is located along an existing bus route to promote and support alternative means of transportation. The project will provide a pedestrian network including greenways and sidewalks to allow for connectivity within and outside of the medical campus. This project supports the initiative to create a connected community by linking neighborhoods through various means of transportation.

THEME 4: GOOD PLACES, NEW SPACES

UNC Health Eastowne meets the following goals under Theme 4:

- A development decision-making process that provides clarity and consistency with the goals of the Chapel Hill 2020 comprehensive plan
- A range of neighborhood types that addresses residential, commercial, social, and cultural needs and uses while building and evolving Chapel Hill's character for residents, visitors, and students
- Open and accessible common spaces for community gathering, cultural uses, and community development
- Future land use, form, and density that strengthen the community, social equity, economic prosperity, and natural environment

The UNC Health Eastowne development will add new, modern medical offices to a site that is currently occupied by older, obsolete buildings. The new buildings will be designed to meet the requirements of the Land Use Management Ordinance which will allow for the development of interesting buildings and spaces to serve the

citizens of Chapel Hill and surrounding areas. It will contribute to the mix of land uses envisioned for the North 15-501 Corridor, balancing the planned residential developments across 15-501 with the non-residential UNC Health Eastowne component. The development plans to incorporate a central green space as a spine to the development that correlates with the planned green space in Parkline East, creating a well-connected community.

THEME 5: NURTURING OUR COMMUNITY

UNC Health Eastowne meets the following goals under Theme 5:

- Maintain and improve air quality and water quality, and manage stormwater to heal local waterways and conserve biological ecosystems within the town boundaries and the Extra Territorial Jurisdiction
- Protect, acquire, and maintain natural/undeveloped open spaces and historic sites in order to protect wildlife corridors, provide recreation, and ensure safe pedestrian and bicycle connections. These spaces could include, among other things, Significant Natural Heritage Areas (SNHA) lands adjacent to and connecting various properties such as riparian lands, etc.
- Support the Parks and Recreation Master Plan and the Greenways Master Plan to provide recreation opportunities and ensure safe pedestrian and bicycle connections
- Protect neighborhoods from the impact of development such as stormwater runoff, light and noise pollution, and traffic

Redevelopment of the subject parcel will enable the construction of upgraded structures, as well as an upgrade on all associated site improvements, such as stormwater controls, impervious surfaces, landscaping, open spaces, etc. While some stream crossings will be necessary, UNC Health Eastowne will strive to protect a majority of the environmentally sensitive areas on site and commit to maintaining open space throughout the development. Pedestrian and bicycle routes will be provided throughout and connect to the overall transportation system to provide alternative means of transportation that support the climate action goals of the Town.

THEME 6: TOWN AND GOWN COLLABORATION

UNC Health Eastowne meets the following goals under Theme 6:

- The University, the UNC Health Care System, and the Town will coordinate closely to manage development in ways that respect history, traditions, and the environment while fostering revitalization and innovation
- Promote access for all residents to health-care centers, public services, and active lifestyle opportunities

Modern medical office facilities will allow UNC Health Care to better attract talent to keep them in and around Chapel Hill after graduation. The new buildings will also meet all accessibility requirements so that all citizens are able to utilize the facility without the issues typically found in older office buildings. The project promotes easy access for students and residents to health care centers, public services, and creates a platform for more active lifestyle opportunities.

Sincerely,

MCADAMS



Jessie Hardesty
Planner III, Planning + Design

UNC Health Eastowne

Facility Energy Management Plan

Overall:

The energy management plan for the UNC Health Eastowne development will attempt to exceed the standards in ASHRAE 90.1 by 20 percent (current North Carolina version). Building envelope design, major building systems design, and site related elements all will contribute to the success of the energy reduction goal. Systems that will be explored include the use of higher insulated building materials, high performance glazing, higher efficiency mechanical equipment, and LED lighting. The project will also evaluate the use of low flow/reduced flow plumbing fixtures, as well as implementation of photovoltaic panels mounted on the roof of the medical office buildings where not in conflict with mechanical, plumbing, electrical devices or life safety and maintenance areas. Final PV sizes will depend on final architecture, available roof area, solar orientation considerations, and use in a net metering format or as allowed by the utility company. Energy modeling will be performed to evaluate options and verify compliance with the energy code and this project's energy goals.

The LEED building standard will be reviewed to assist the design team with its overall approach to energy conservation. Regionalism and proximity to the project site will play a large role in the selection of building products, vegetation materials, and design aesthetics. In addition, a construction waste management plan that includes recycling will be adopted and documented for the project's construction phase to minimize impacts on local landfills.

Site/Landscape:

The vegetation design for this project anticipates implementing drought-tolerant, regional planting materials to minimize the need for irrigation. This site was previously developed as an office park with surface parking lots. The new plan will not release any net new storm water and has a goal of releasing less storm water than the current development releases.

The site lighting design will address pedestrian security and aesthetics, while also considering energy efficiency and light pollution. The project will include sidewalks, pedestrian/bicycle pathways connecting through the site and beyond as well as pedestrian bridges crossing the streams. These walkable connections shall provide access to nature and green spaces throughout the campus.

The parking facility will have dedicated spaces for electric charged vehicles with charging stations, spaces for ride share users and bike lockers.

Building:

Architecture + Materials:

Materials intended to be used on the project are low maintenance, long-term products that when used in concert with high performing insulation materials will provide the owner and community a building that will stand the test of time while maintaining the original design condition. The exterior insulation on the project is within the wall cavity and outboard of the primary air barrier to remove dewpoint from within the building. This simple design decision will also increase the efficiency of the insulation by reducing thermal bridging. In addition, the glazing systems used on the project consists of high performing products that limit air infiltration and maximize thermal breaks through enhanced product design.

The building design intends to utilize high albedo paving and roofing materials. It is intended to utilize a

high albedo concrete for parking structures to help reduce the number of lighting fixtures required to light the egress paths as well as reduce the height island effect associated with impervious materials.

The materials selection for this project will place an emphasis on regional sourcing and recycled content similar to the material requirements in LEED. All paints, sealants, and other off gassing materials will be controlled by placing limitations and requirements in the specifications.

Plumbing:

Plumbing, like storm water management, needs to have an integral approach to the overall conservation of water. Toilet rooms will utilize low flow/limited volume toilet fixtures and faucets, and the design team will evaluate the use of sensor technology for flush activation and faucet operation. In addition, the design team will evaluate the type, configuration and quantity of domestic hot water heating systems to further reduce water and energy consumption.

This project will not include the use of gray water or other reclaimed water strategies.

Mechanical:

As a part of the overall approach to an energy efficient building design, the mechanical system design must be evaluated as part of the overall building's efficiency. The mechanical system type(s) and configuration(s) will be evaluated and confirmed to comply with the ASHRAE 90.1 standard (current North Carolina version). Variable volume air handling and pumping systems will be used where applicable. The mechanical design will incorporate a fresh air input and airflow measurement and control strategies to ensure the health and safety of the occupants.

Day Lighting and Electrical Lighting:

The glazing around the building will be designed to maximize daylighting allowing for a greater opportunity for the end users to have access to natural light and views. Interior improvement projects will be requested to evaluate the use of daylight zoning and occupancy sensors on all interior lighting, with a desired maximum lighting power density. This will reduce future energy consumption and provide the end user with a more natural circadian rhythm lighting scheme. The intent is to utilize LED lighting for all exterior and interior lighting if not in conflict with medical requirements.

Alternative Energy:

The building will provide infrastructure and equipment for the installation of roof mounted solar energy collection. This connection will consist of an electrical panel connection, conduit and pulls, as well as photovoltaic panels.

Construction and Future Tenant Improvement Projects:

As a part of the construction process, systems performance testing will be an integral part of the project. An example of this type of testing includes the AAMA hose stream testing of each different glazing assembly to ensure no water leakage exists in the system. In addition, all sealants that act as a part of the air barrier assembly will require a statement of compatibility to ensure the long-term stability of the materials and will also require an adhesion test to verify the onsite condition aligns with the compatibility statement. The mechanical and electrical system commissioning will be performed for the primary infrastructure by a qualified commissioning authority.



Description of Public Art Proposal

UNC Health Eastowne

UNC Health has always been supportive of the arts, both public and private. We envision public art that is located at the main entrances to the Campus from Eastowne Drive with emphasis on the inner loop development. Public art should complement our mission to improve the health and well-being of North Carolinians and others whom we serve, and reflect our focus on world changing research, and building an inclusive and equitable culture.

UNC Health commits to working with the Chapel Hill Cultural Arts Commission in the selection and placement of public art. UNC Health shall make the final artwork selection in concert with interior pieces that will aid our medical teams in promoting healing, health and wellness.

Working with local artists is preferred when suitable.

April 5, 2023
Conditional Zoning Permit
Ernest Odie-Larbi
Town of Chapel Hill Public Works
405 Martin Luther King Jr Blvd.
Chapel Hill, NC 27514

RE: UNC Health – Eastowne Campus
River Basin: Cape Fear
NMS Watershed: Jordan Lake

Ernest,

The UNC Health Eastowne Campus lies on the north side of Highway 15-501, to the south and to the east of the Eastowne Drive loop. It is proposed that the campus be redeveloped and that the existing buildings, parking lots, and associated infrastructure except the new MOB1 building be redesigned and replaced. The proposed redevelopment of the campus will result in changes to the site’s drainage patterns and to an overall increase in the impervious surface area on site.

The proposed development is located in the Cape Fear River basin and within the Jordan Lake Nutrient Management Strategy Watershed. As a result of the redevelopment, the impervious area on site could increase from approximately 18% (405,645 sf) of the site’s full area in the pre-development condition to a maximum of 70% (1,538,761 sf) in the post-development condition. All existing impervious will remain on the site until its demolition is required by the proposed phased improvements. Underground detention vaults and underground sand filters are proposed to manage the stormwater runoff from the proposed development.

Pre-development hydrology and routing calculations have been attached as an exhibit, along with a drainage area map of the existing condition of the site.

The Town of Chapel Hill Requirements for stormwater management on the campus are as follows:

LUMO Section 5.4 Stormwater Management

Sec. 5.4.6. General Performance Criteria for Stormwater Management

The following are required stormwater management performance criteria:

- > Stormwater treatment shall be designed to achieve average annual eighty-five (85) percent total suspended solids (TSS) removal and must apply to the volume of post-development runoff resulting from the first one-inch of precipitation. Alternative treatment methods to achieve eighty-five (85) percent average annual TSS removal may be acceptable. The eighty-five (85) percent requirement applies to

eighty-five (85) percent of the additional suspended solids that are the result of the new development. (Ord. No. 2004-02-23/O-2).

- > The stormwater runoff volume leaving the site post-development shall not exceed the stormwater runoff volume leaving the site pre-development (existing conditions) for the local 2-year frequency, 24-hour duration storm event for all development except single-family and two-family dwellings on lots existing as of January 27, 2003, or on lots pursuant to a preliminary plat that was approved by the town council prior to January 27, 2003. This may be achieved by hydrologic abstraction, recycling and/or reuse, or any other accepted scientific method.
- > The stormwater runoff rate leaving the site post-development shall not exceed the stormwater runoff rate leaving the site pre-development (existing conditions) for the local 1-year, 2-year, and 25-year 24-hour storm events.
- > Land disturbance within the stream channel of any ephemeral stream shall be minimized, and prohibited unless explicitly authorized by issuance of a zoning compliance permit after demonstration of the necessity for the disturbance.

LUMO Section 5.19 Jordan Watershed Stormwater Protection for New Development

Sec. 5.19.3 Jordan Lake Watershed Management for New Development

- > "Redevelopment" means any development on previously-developed land. Redevelopment of structures or improvements that (i) existed prior to December 2001, (ii) would not result in an increase in built-upon area, and (iii) provides stormwater control at least equal to the previous development is not required to meet the nutrient loading targets of this section.

Sec. 5.19.7 Design and Performance Standards for Stormwater Management.

- > Nitrogen and phosphorus loading.
 - Stormwater systems shall be designed to control and treat the runoff generated from all surfaces by one (1) inch of rainfall. The treatment volume shall be drawn down pursuant to standards specific to each practice as provided in the state design manual.
 - The nitrogen load contributed by the proposed development shall not exceed 2.2 pounds per acre per year.
 - The phosphorus load contributed by the proposed development shall not exceed 0.82 pound per acre per year.
 - Notwithstanding 15A NCAC 2B. 104(q), redevelopment subject to this section that would replace or expand existing structures or improvements and would result in a net increase in built-upon area shall have the option of either meeting the loading standards identified in subsections 5.19.7(a)(2) and (3) above, or achieve thirty-five (35) percent and five (5) percent reduction for nitrogen and phosphorus, respectively, compared to the existing development.
 - The applicant shall determine the need for and shall design structural best management practices to meet these loading rate targets by using the approved accounting tool.

- > Nitrogen and phosphorus standards are supplemental. The nitrogen and phosphorus loading standards in this section are supplemental to, not replacements for, stormwater standards otherwise required by section 5.4 of the town's Land Use Management Ordinance.
- > Partial offset of nutrient control requirements. Before using offsite offset options, a development subject to this section shall attain a maximum nitrogen loading rate onsite of six (6) pounds per acre per year for single-family, single-family with accessory apartment, and duplex residential development and ten (10) pounds per acre per year for other development, including multi-family residential, commercial and industrial and shall meet all requirements for structural best management practices otherwise imposed by this section. A person subject to this section may achieve the additional reductions in nitrogen and phosphorus loadings by making offset payments to the North Carolina Ecosystem Enhancement Program (program) contingent upon acceptance of payments by that program. An applicant may propose other offset measures, including providing his or her own offsite offset or utilizing a private seller. All offset measures permitted by this section shall meet the requirements of 15A NCAC 02B.0273(2) through (4) and 15A NCAC 02B.0240.
- > Structural best management practices that are designed, constructed, and maintained in accordance with the criteria and specifications in the design manuals and the approved accounting tool will be presumed to meet the minimum water quality performance standards of this section

North Carolina State Law

The Jordan Lake Rules were suspended by Session Law 2013-395 (Senate Bill 515), effective August 23, 2013. Municipalities could voluntarily enforce the rules until Session Law 2015-246 (House Bill 44) prohibited municipalities from requiring voluntary regulations and rules. As such, LUMO 5.19.7 is not required for the site. Session Law 2018-145 (Senate Bill 469) states that stormwater runoff rules and programs shall not require private property owners to install increased stormwater controls for pre-existing development.

The State laws referenced resulted in the following stormwater requirements for the site: peak flow rate detention for the 1-, 2-, and 25-year storm events and treatment of runoff resulting from the net increase in impervious area for TSS removal.

Proposed Stormwater Management Performance Standards

Sec. 5.4.6 - General Performance Criteria for Stormwater Management

Detention

In accordance with and beyond the requirements of Sec. 5.4.6 (c), detention will be provided for the 1-, 2-, 25-, and 50-year 24-hour storm event. 2-year volume control will be provided per Sec. 5.4.6 (b). Underground detention vaults are proposed to detain stormwater runoff from the development. Pre-development peak flow rates have been calculated including all existing impervious onsite.

TSS Removal

Beyond the requirements of Sec. 5.4.6 (a), the Eastowne project will provide TSS removal for the increase in impervious surface from existing to proposed development, as well as 50% of the existing impervious onsite, excluding MOB 1 which has already been addressed.

Nutrient Removal

Though nutrient mitigation is not required for the site, the proposed detention and TSS treatment facilities will reduce the total nitrogen and phosphorous loads generated by the development.

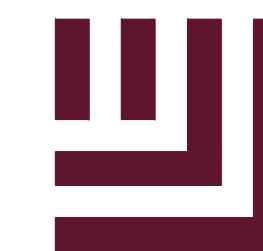
Sincerely,

MCADAMS

Josh Shinn, PE

Stormwater Design Support Practice Lead

PRE-DEVELOPMENT HYDROLOGY CALCULATIONS



McADAMS

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CLIENT

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DEVELOPMENT
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PHONE: 984.974.5388

**UNC HEALTH
EASTOWNE
CONCEPT PLAN
EASTOWNE DRIVE
CHAPEL HILL, NORTH CAROLINA**

REVISIONS

NO.	DATE	DESCRIPTION
1	11.21.2022	FIRST SUBMITTAL
2	12.19.2022	SECOND SUBMITTAL

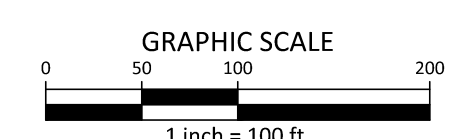
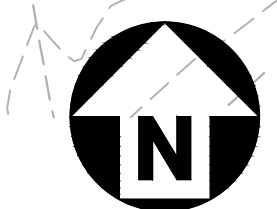
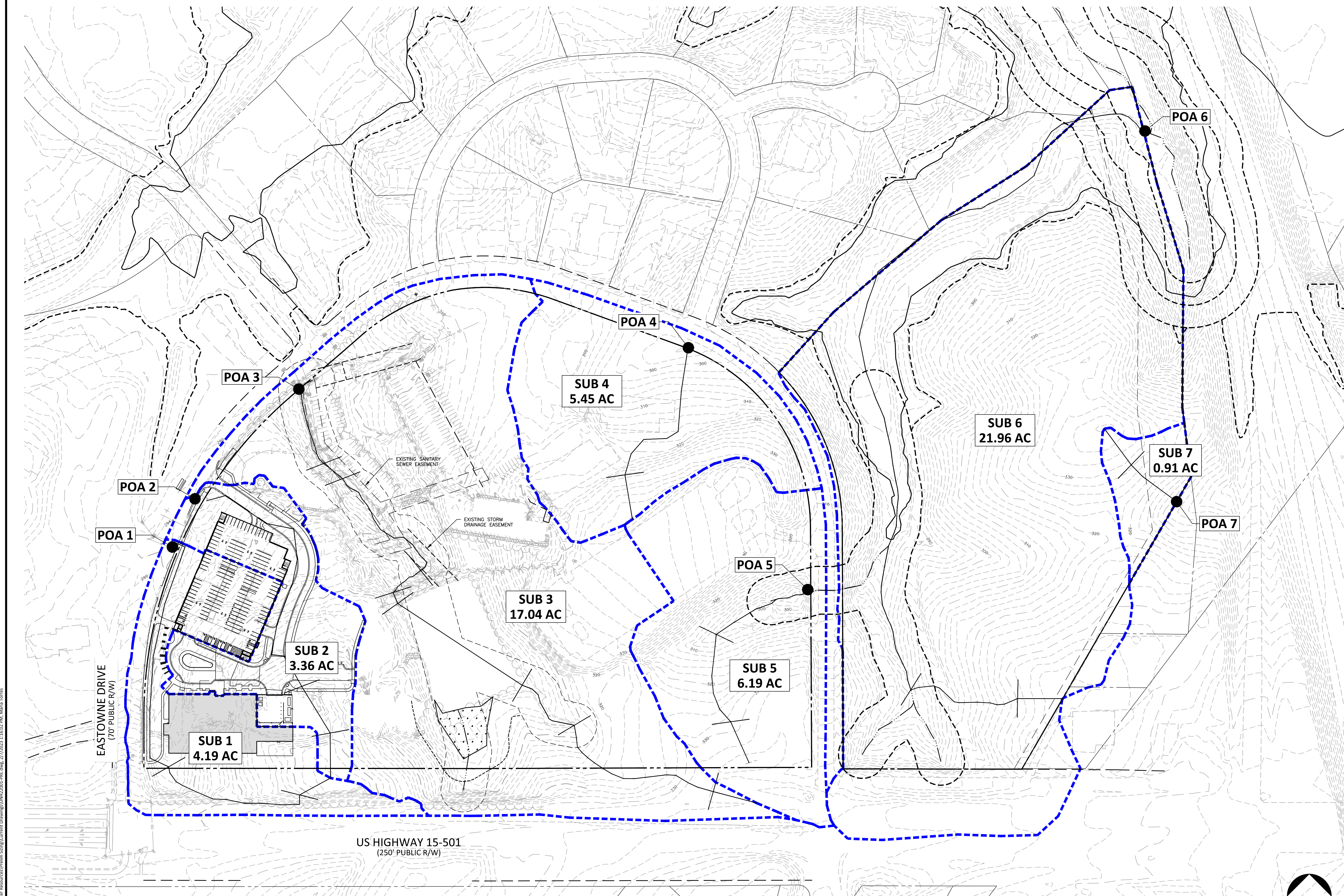
PLAN INFORMATION

PROJECT NO.	UNH-22001
FILENAME	UNH-22001-PRE
CHECKED BY	JES
DRAWN BY	MCT
SCALE	1" = 100'
DATE	02.07.2023

SHEET

**PRE- DEVELOPMENT
HYDROLOGY MAP**

PRE-DA



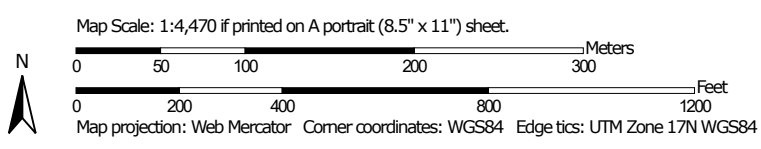
I:\Projects\UNH\UNH22001\04-Production\Water Resources\Current Drawings\UNH22001-PRE.dwg, 2/7/2023, 1:16:02 PM, Maria Torres

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION
































Hydrologic Soil Group—Orange County, North Carolina
(PL)



Soil Map may not be valid at this scale.



MAP LEGEND

Area of Interest (AOI)		 C
Area of Interest (AOI)		 C/D
		 D
		 Not rated or not available
Soils		
Soil Rating Polygons		
 A		
 A/D		
 B		
 B/D		
 C		
 C/D		
 D		
 Not rated or not available		
Soil Rating Lines		
 A		
 A/D		
 B		
 B/D		
 C		
 C/D		
 D		
 Not rated or not available		
Soil Rating Points		
 A		
 A/D		
 B		
 B/D		
Water Features		
 Streams and Canals		
Transportation		
 Rails		
 Interstate Highways		
 US Routes		
 Major Roads		
 Local Roads		
Background		
 Aerial Photography		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Orange County, North Carolina
Survey Area Data: Version 23, Sep 12, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 23, 2022—Apr 27, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
Ch	Chewacla loam, 0 to 2 percent slopes, frequently flooded	B/D	0.0	0.0%
GIF	Goldston channery silt loam, 15 to 45 percent slopes	D	2.7	5.4%
W	Water		1.1	2.2%
WsB	White Store loam, 2 to 6 percent slopes	D	13.4	26.6%
WtC2	White Store clay loam, 6 to 15 percent slopes, moderately eroded	D	33.2	65.8%
Totals for Area of Interest			50.5	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

PRE-DEVELOPMENT HYDROLOGY
Summary of Results

HYDROLOGY INPUT SUMMARY

Sub-basin ID	Onsite Area [acres]					Offsite Area [acres]					Total Area [acres]	SCS CN	Tc [min]
	Impervious	Open	Wooded	Pond	Total	Impervious	Open	Wooded	Pond	Total			
1	1.66	0.29	0.48	0.00	2.42	0.74	0.54	0.48	0.00	1.76	4.19	90	14.52
2	1.58	1.64	0.00	0.00	3.22	0.09	0.03	0.01	0.00	0.14	3.36	89	12.12
3	3.68	4.07	5.82	0.75	14.31	0.83	0.55	1.36	0.00	2.73	17.04	84	22.60
4	1.28	0.50	3.03	0.00	4.81	0.33	0.07	0.25	0.00	0.65	5.45	83	10.62
5	1.12	1.01	3.07	0.00	5.20	0.41	0.58	0.00	0.00	0.99	6.19	83	13.76
6	0.00	0.36	19.24	0.00	19.59	1.05	1.10	0.21	0.00	2.36	21.96	78	18.82
7	0.00	0.00	0.91	0.00	0.91	0.00	0.00	0.00	0.00	0.00	0.91	77	12.12
Totals =	9.31	7.86	32.54	0.75	50.46	3.44	2.89	2.31	0.00	8.63	59.10		

PRE-DEVELOPMENT HYDROLOGY
Subbasin 1

I. SCS CURVE NUMBERS

HSG	Impervious	Open	Wooded
A	98	39	30
B	98	61	55
C	98	74	70
D	98	80	77

Assume:
 HSG 'A' = 0.0%
 HSG 'B' = 0.0%
 HSG 'C' = 0.0%
 HSG 'D' = 100.0%

Cover Condition	SCS CN	Comments
Impervious	98	-
Open	80	Assume good condition
Wooded	77	Assume good condition

II. PRE-DEVELOPMENT

Watershed Land Use Breakdown

Contributing Area	SCS CN	Area [sf]	Area [acres]	Comments
Onsite impervious	98	72,198	1.66	-
Onsite open	80	12,457	0.29	Assume good condition
Onsite wooded	77	20,961	0.48	Assume good condition
Onsite pond	100	0	0.00	-
Offsite impervious	98	32,105	0.74	-
Offsite open	80	23,669	0.54	Assume good condition
Offsite wooded	77	20,961	0.48	Assume good condition
Offsite pond	100	0	0.00	-

Total area = 4.19 acres
182,351 sf

Composite SCS CN = 90

% Impervious = 57.2%

III. TIME OF CONCENTRATION INFORMATION

Time of concentration is calculated using the SCS Segmental Approach (TR-55).

Segment 1: Overland Flow

Length =	79	ft
Top Elev =	337.50	ft
Bot Elev =	334.00	ft
Height =	3.5	ft
Slope =	0.0446	ft/ft
Manning's n =	0.40	wooded
P (2-year/24-hour) =	3.5	inches (Durham, NC)
Segment Time =	12.28	minutes

Segment 2: Concentrated Flow

Length =	343	ft
Top Elev =	334.00	ft
Bot Elev =	309.50	ft
Height =	25	ft
Slope =	0.0715	ft/ft
Paved ? =	No	
Velocity =	4.32	ft/sec
Segment Time =	1.32	minutes

Segment 3: Pipe Flow

Length =	546	ft
Top Elev =	306.00	ft
Bot Elev =	291.01	ft
Height =	14.99	ft
Slope =	0.0275	ft/ft
Manning's n =	0.013	concrete pipe
Pipe Diameter =	1.50	ft
Flow Area =	1.77	sf
Wetted Perimeter =	4.71	lf (1.5 ft ID pipe)
Channel Velocity =	9.88	ft/sec
Segment Time =	0.92	minutes

Time of Concentration =	14.52	minutes
SCS Lag Time =	8.71	minutes (SCS Lag = 0.6* Tc)
Time Increment =	2.53	minutes (= 0.29*SCS Lag)

PRE-DEVELOPMENT HYDROLOGY
Subbasin 2

I. SCS CURVE NUMBERS

HSG	Impervious	Open	Wooded
A	98	39	30
B	98	61	55
C	98	74	70
D	98	80	77

Assume:
 HSG 'A' = 0.0%
 HSG 'B' = 0.0%
 HSG 'C' = 0.0%
 HSG 'D' = 100.0%

Cover Condition	SCS CN	Comments
Impervious	98	-
Open	80	Assume good condition
Wooded	77	Assume good condition

II. PRE-DEVELOPMENT

Watershed Land Use Breakdown

Contributing Area	SCS CN	Area [sf]	Area [acres]	Comments
Onsite impervious	98	69,001	1.58	-
Onsite open	80	71,309	1.64	Assume good condition
Onsite wooded	77	0	0.00	Assume good condition
Onsite pond	100	0	0.00	-
Offsite impervious	98	3,990	0.09	-
Offsite open	80	1,470	0.03	Assume good condition
Offsite wooded	77	554	0.01	Assume good condition
Offsite pond	100	0	0.00	-

Total IC area = 3.36 acres
 146,324 sf

Composite SCS CN = 89

% Impervious = 49.9%

III. TIME OF CONCENTRATION INFORMATION

Time of concentration is calculated using the SCS Segmental Approach (TR-55).

Segment 1: Overland Flow

Length = 100 ft
 Top Elev = 337.50 ft
 Bot Elev = 334.00 ft
 Height = 3.5 ft
 Slope = 0.0350 ft/ft
 Manning's n = 0.24 dense grasses
 P (2-year/24-hour) = 3.5 inches (Durham, NC)
Segment Time = 10.91 minutes

Segment 2: Concentrated Flow

Length = 121 ft
 Top Elev = 334.00 ft
 Bot Elev = 318.50 ft
 Height = 16 ft
 Slope = 0.1277 ft/ft
 Paved ? = No
 Velocity = 5.77 ft/sec
Segment Time = 0.35 minutes

Segment 3: Pipe Flow

Length = 611 ft
 Top Elev = 311.00 ft
 Bot Elev = 286.80 ft
 Height = 24.2 ft
 Slope = 0.0396 ft/ft
 Manning's n = 0.013 concrete pipe
 Pipe Diameter = 1.50 ft
 Flow Area = 1.77 sf
 Wetted Perimeter = 4.71 lf (1.5 ft ID pipe)
 Channel Velocity = 11.86 ft/sec
Segment Time = 0.86 minutes

Time of Concentration =	12.12	minutes
SCS Lag Time =	7.27	minutes (SCS Lag = 0.6* Tc)
Time Increment =	2.11	minutes (= 0.29*SCS Lag)

I. SCS CURVE NUMBERS

HSG	Impervious	Open	Wooded
A	98	39	30
B	98	61	55
C	98	74	70
D	98	80	77

Assume:
 HSG 'A' = 0.0%
 HSG 'B' = 0.0%
 HSG 'C' = 0.0%
 HSG 'D' = 100.0%

Cover Condition	SCS CN	Comments
Impervious	98	-
Open	80	Assume good condition
Wooded	77	Assume good condition

II. PRE-DEVELOPMENT

Watershed Land Use Breakdown

Contributing Area	SCS CN	Area [sf]	Area [acres]	Comments
Onsite impervious	98	160,226	3.68	-
Onsite open	80	177,291	4.07	Assume good condition
Onsite wooded	77	253,335	5.82	Assume good condition
Onsite pond	100	32,521	0.75	-
Offsite impervious	98	35,957	0.83	-
Offsite open	80	23,852	0.55	Assume good condition
Offsite wooded	77	59,093	1.36	Assume good condition
Offsite pond	100	0	0.00	-

Total IC area = 17.04 acres
 742,275 sf

Composite SCS CN = 84

% Impervious = 26.4%

III. TIME OF CONCENTRATION INFORMATION

Time of concentration is calculated using the SCS Segmental Approach (TR-55).

Segment 1: Overland Flow

Length =	100	ft
Top Elev =	335.00	ft
Bot Elev =	334.00	ft
Height =	1	ft
Slope =	0.0100	ft/ft
Manning's n =	0.24	dense grasses
P (2-year/24-hour) =	3.5	inches (Durham, NC)
Segment Time =	17.98	minutes

Segment 2: Concentrated Flow

Length =	383	ft
Top Elev =	334.00	ft
Bot Elev =	311.00	ft
Height =	23	ft
Slope =	0.0601	ft/ft
Paved ? =	No	
Velocity =	3.95	ft/sec
Segment Time =	1.61	minutes

Segment 3: Channel Flow

Length =	160	ft
Top Elev =	311.00	ft
Bot Elev =	306.50	ft
Height =	4.5	ft
Slope =	0.0282	ft/ft
Manning's n =	0.045	natural channel
Flow Area =	8.00	sf (assume 8' x 1' channel)
Wetted Perimeter =	10.00	lf (assume 8' x 1' channel)
Channel Velocity =	4.79	ft/sec
Segment Time =	0.56	minutes

Segment 4: Surface Water Flow

Length =	330	ft
Segment Time =	0.00	minutes

Segment 5: Pipe Flow

Length =	26	ft
Top Elev =	306.50	ft
Bot Elev =	305.00	ft
Height =	1.5	ft
Slope =	0.0568	ft/ft
Manning's n =	0.024	CMP Pipe
Pipe Diameter =	1.50	ft
Flow Area =	1.77	sf
Wetted Perimeter =	4.71	lf (1.5 ft ID pipe)
Channel Velocity =	7.70	ft/sec
Segment Time =	0.06	minutes

Segment 6: Channel Flow

Length =	160	ft
Top Elev =	305.00	ft
Bot Elev =	293.00	ft
Height =	12	ft
Slope =	0.0751	ft/ft
Manning's n =	0.045	natural channel
Flow Area =	1.00	sf (assume 2' x 0.5' channel)
Wetted Perimeter =	3.00	lf (assume 2' x 0.5' channel)
Channel Velocity =	4.36	ft/sec
Segment Time =	0.61	minutes

Segment 7: Channel Flow

Length =	302	ft
Top Elev =	293.00	ft
Bot Elev =	288.31	ft
Height =	4.69	ft
Slope =	0.0155	ft/ft
Manning's n =	0.045	natural channel
Flow Area =	15.00	sf (assume 10' x 1.5' channel)
Wetted Perimeter =	13.00	lf (assume 10' x 1.5' channel)
Channel Velocity =	4.54	ft/sec
Segment Time =	1.11	minutes

Segment 8: Pipe Flow

Length =	26	ft
Top Elev =	288.31	ft
Bot Elev =	287.82	ft
Height =	0.49	ft
Slope =	0.0186	ft/ft
Manning's n =	0.012	Concrete Pipe
Pipe Diameter =	2.50	ft
Flow Area =	4.91	sf
Wetted Perimeter =	7.85	lf (2 ft ID pipe)
Channel Velocity =	12.37	ft/sec
Segment Time =	0.04	minutes

Segment 9: Channel Flow

Length =	188	ft
Top Elev =	287.82	ft
Bot Elev =	285.21	ft
Height =	2.61	ft
Slope =	0.0139	ft/ft
Manning's n =	0.045	natural channel
Flow Area =	20.00	sf (assume 10' x 2' channel)
Wetted Perimeter =	14.00	lf (assume 10' x 2' channel)
Channel Velocity =	4.94	ft/sec
Segment Time =	0.64	minutes

Time of Concentration =	22.60	minutes
SCS Lag Time =	13.56	minutes (SCS Lag = 0.6* Tc)
Time Increment =	3.93	minutes (= 0.29*SCS Lag)

PRE-DEVELOPMENT HYDROLOGY
Subbasin 4

I. SCS CURVE NUMBERS

HSG	Impervious	Open	Wooded
A	98	39	30
B	98	61	55
C	98	74	70
D	98	80	77

Assume:
 HSG 'A' = 0.0%
 HSG 'B' = 0.0%
 HSG 'C' = 0.0%
 HSG 'D' = 100.0%

Cover Condition	SCS CN	Comments
Impervious	98	-
Open	80	Assume good condition
Wooded	77	Assume good condition

II. PRE-DEVELOPMENT

Watershed Land Use Breakdown

Contributing Area	SCS CN	Area [sf]	Area [acres]	Comments
Onsite impervious	98	55,545	1.28	-
Onsite open	80	21,775	0.50	Assume good condition
Onsite wooded	77	132,041	3.03	Assume good condition
Onsite pond	100	0	0.00	-
Offsite impervious	98	14,186	0.33	-
Offsite open	80	3,249	0.07	Assume good condition
Offsite wooded	77	10,801	0.25	Assume good condition
Offsite pond	100	0	0.00	-

Total IC area = 5.45 acres
237,597 sf

Composite SCS CN = 83

% Impervious = 29.3%

III. TIME OF CONCENTRATION INFORMATION

Time of concentration is calculated using the SCS Segmental Approach (TR-55).

Segment 1: Overland Flow

Length =	100	ft
Top Elev =	344.00	ft
Bot Elev =	330.00	ft
Height =	14	ft
Slope =	0.1401	ft/ft
Manning's n =	0.40	wooded
P (2-year/24-hour) =	3.5	inches (Durham, NC)
Segment Time =	9.42	minutes

Segment 2: Concentrated Flow

Length =	359	ft
Top Elev =	330.00	ft
Bot Elev =	296.00	ft
Height =	34	ft
Slope =	0.0947	ft/ft
Paved ? =	No	
Velocity =	4.97	ft/sec
Segment Time =	1.21	minutes

Time of Concentration =	10.62	minutes
SCS Lag Time =	6.37	minutes (SCS Lag = 0.6* Tc)
Time Increment =	1.85	minutes (= 0.29*SCS Lag)

PRE-DEVELOPMENT HYDROLOGY
Subbasin 5

I. SCS CURVE NUMBERS

HSG	Impervious	Open	Wooded
A	98	39	30
B	98	61	55
C	98	74	70
D	98	80	77

Assume:
 HSG 'A' = 0.0%
 HSG 'B' = 0.0%
 HSG 'C' = 0.0%
 HSG 'D' = 100.0%

Cover Condition	SCS CN	Comments
Impervious	98	-
Open	80	Assume good condition
Wooded	77	Assume good condition

II. PRE-DEVELOPMENT

Watershed Land Use Breakdown

Contributing Area	SCS CN	Area [sf]	Area [acres]	Comments
Onsite impervious	98	48,675	1.12	-
Onsite open	80	44,072	1.01	Assume good condition
Onsite wooded	77	133,587	3.07	Assume good condition
Onsite pond	100	0	0.00	-
Offsite impervious	98	17,962	0.41	-
Offsite open	80	25,376	0.58	Assume good condition
Offsite wooded	77	0	0.00	Assume good condition
Offsite pond	100	0	0.00	-

Total IC area = 6.19 acres
 269,672 sf

Composite SCS CN = 83

% Impervious = 24.7%

III. TIME OF CONCENTRATION INFORMATION

Time of concentration is calculated using the SCS Segmental Approach (TR-55).

Segment 1: Overland Flow

Length = 100 ft
 Top Elev = 336.00 ft
 Bot Elev = 329.00 ft
 Height = 7 ft
 Slope = 0.0701 ft/ft
 Manning's n = 0.40 wooded
 P (2-year/24-hour) = 3.5 inches (Durham, NC)
Segment Time = 12.43 minutes

Segment 2: Concentrated Flow

Length = 207 ft
 Top Elev = 329.00 ft
 Bot Elev = 304.00 ft
 Height = 25 ft
 Slope = 0.1208 ft/ft
 Paved ? = No
 Velocity = 5.61 ft/sec
Segment Time = 0.61 minutes

Segment 3: Channel Flow

Length = 212 ft
 Top Elev = 304.00 ft
 Bot Elev = 296.00 ft
 Height = 8 ft
 Slope = 0.0378 ft/ft
 Manning's n = 0.045 natural channel
 Flow Area = 4.00 sf (assume 4'w x 1'h channel)
 Wetted Perimeter = 6.00 lf (assume 4' x 1' channel)
 Channel Velocity = 4.91 ft/sec
Segment Time = 0.72 minutes

Time of Concentration =	13.76	minutes
SCS Lag Time =	8.25	minutes (SCS Lag = 0.6* Tc)
Time Increment =	2.39	minutes (= 0.29*SCS Lag)

PRE-DEVELOPMENT HYDROLOGY
Subbasin 6

I. SCS CURVE NUMBERS

HSG	Impervious	Open	Wooded
A	98	39	30
B	98	61	55
C	98	74	70
D	98	80	77

Assume:
 HSG 'A' = 0.0%
 HSG 'B' = 0.0%
 HSG 'C' = 0.0%
 HSG 'D' = 100.0%

Cover Condition	SCS CN	Comments
Impervious	98	-
Open	80	Assume good condition
Wooded	77	Assume good condition

II. PRE-DEVELOPMENT

Watershed Land Use Breakdown

Contributing Area	SCS CN	Area [sf]	Area [acres]	Comments
Onsite impervious	98	0	0.00	-
Onsite open	80	15,546	0.36	Assume good condition
Onsite wooded	77	838,010	19.24	Assume good condition
Onsite pond	100	0	0.00	-
Offsite impervious	98	45,618	1.05	-
Offsite open	80	48,125	1.10	Assume good condition
Offsite wooded	77	9,099	0.21	Assume good condition
Offsite pond	100	0	0.00	-

Total IC area = 21.96 acres
 956,398 sf

Composite SCS CN = 78

% Impervious = 4.8%

III. TIME OF CONCENTRATION INFORMATION

Time of concentration is calculated using the SCS Segmental Approach (TR-55).

Segment 1: Overland Flow

Length =	100	ft
Top Elev =	336.50	ft
Bot Elev =	330.00	ft
Height =	6.5	ft
Slope =	0.0651	ft/ft
Manning's n =	0.40	wooded
P (2-year/24-hour) =	3.5	inches (Durham, NC)
Segment Time =	12.80	minutes

Segment 2: Concentrated Flow

Length =	255	ft
Top Elev =	330.00	ft
Bot Elev =	300.00	ft
Height =	30	ft
Slope =	0.1177	ft/ft
Paved ? =	No	
Velocity =	5.54	ft/sec
Segment Time =	0.77	minutes

Segment 3: Channel Flow

Length =	1712	ft
Top Elev =	300.00	ft
Bot Elev =	262.00	ft
Height =	38	ft
Slope =	0.0222	ft/ft
Manning's n =	0.045	natural channel
Flow Area =	15.00	sf (assume 10'w x 1.5'h channel)
Wetted Perimeter =	13.00	lf (assume 10' x 1.5' channel)
Channel Velocity =	5.43	ft/sec
Segment Time =	5.26	minutes

Time of Concentration =	18.82	minutes
SCS Lag Time =	11.29	minutes (SCS Lag = 0.6* Tc)
Time Increment =	3.27	minutes (= 0.29*SCS Lag)

PRE-DEVELOPMENT HYDROLOGY
Subbasin 7

I. SCS CURVE NUMBERS

HSG	Impervious	Open	Wooded
A	98	39	30
B	98	61	55
C	98	74	70
D	98	80	77

Assume:
 HSG 'A' = 0.0%
 HSG 'B' = 0.0%
 HSG 'C' = 0.0%
 HSG 'D' = 100.0%

Cover Condition	SCS CN	Comments
Impervious	98	-
Open	80	Assume good condition
Wooded	77	Assume good condition

II. PRE-DEVELOPMENT

Watershed Land Use Breakdown

Contributing Area	SCS CN	Area [sf]	Area [acres]	Comments
Onsite impervious	98	0	0.00	-
Onsite open	80	0	0.00	Assume good condition
Onsite wooded	77	39,679	0.91	Assume good condition
Onsite pond	100	0	0.00	-
Offsite impervious	98	0	0.00	-
Offsite open	80	0	0.00	Assume good condition
Offsite wooded	77	0	0.00	Assume good condition
Offsite pond	100	0	0.00	-

Total IC area = 0.91 acres
39,679 sf

Composite SCS CN = 77

% Impervious = 0.0%

III. TIME OF CONCENTRATION INFORMATION

Time of concentration is calculated using the SCS Segmental Approach (TR-55).

Segment 1: Overland Flow

Length = 100 ft
 Top Elev = 336.00 ft
 Bot Elev = 328.00 ft
 Height = 8 ft
 Slope = 0.0801 ft/ft
 Manning's n = 0.40 wooded
 P (2-year/24-hour) = 3.5 inches (Durham, NC)
Segment Time = 11.78 minutes

Segment 2: Concentrated Flow

Length = 130 ft
 Top Elev = 328.00 ft
 Bot Elev = 308.00 ft
 Height = 20 ft
 Slope = 0.1538 ft/ft
 Paved ? = No
 Velocity = 6.33 ft/sec
Segment Time = 0.34 minutes

Time of Concentration =	12.12	minutes
SCS Lag Time =	7.27	minutes (SCS Lag = 0.6* Tc)
Time Increment =	2.11	minutes (= 0.29*SCS Lag)

UNC Health Eastowne

Subsection: Master Network Summary

Catchments Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (min)	Peak Flow (ft ³ /s)
SUB 1	Pre-Dev 1 yr	1	0.677	727.90	9.77
SUB 1	Pre-Dev 2 yr	2	0.874	727.90	12.30
SUB 1	Pre-Dev 25 yr	25	1.717	727.90	19.55
SUB 1	Pre-Dev 100 yr	100	2.225	727.90	22.67
SUB 2	Pre-Dev 1 yr	1	0.520	725.60	8.15
SUB 2	Pre-Dev 2 yr	2	0.676	725.60	10.34
SUB 2	Pre-Dev 25 yr	25	1.347	725.60	16.67
SUB 2	Pre-Dev 100 yr	100	1.753	725.60	19.38
SUB 3	Pre-Dev 1 yr	1	2.094	732.30	23.76
SUB 3	Pre-Dev 2 yr	2	2.819	732.30	31.75
SUB 3	Pre-Dev 25 yr	25	6.051	732.20	57.86
SUB 3	Pre-Dev 100 yr	100	8.054	732.20	70.03
SUB 4	Pre-Dev 1 yr	1	0.641	725.00	10.55
SUB 4	Pre-Dev 2 yr	2	0.869	725.00	14.13
SUB 4	Pre-Dev 25 yr	25	1.893	725.00	25.29
SUB 4	Pre-Dev 100 yr	100	2.531	725.00	30.26
SUB 5	Pre-Dev 1 yr	1	0.727	726.60	10.63
SUB 5	Pre-Dev 2 yr	2	0.986	726.60	14.29
SUB 5	Pre-Dev 25 yr	25	2.148	726.50	25.88
SUB 5	Pre-Dev 100 yr	100	2.871	726.50	31.10
SUB 6	Pre-Dev 1 yr	1	2.002	730.20	24.29
SUB 6	Pre-Dev 2 yr	2	2.822	730.20	34.61
SUB 6	Pre-Dev 25 yr	25	6.666	730.20	70.58
SUB 6	Pre-Dev 100 yr	100	9.126	730.20	87.88
SUB 7	Pre-Dev 1 yr	1	0.079	727.20	1.17
SUB 7	Pre-Dev 2 yr	2	0.112	727.20	1.68
SUB 7	Pre-Dev 25 yr	25	0.269	725.60	3.43
SUB 7	Pre-Dev 100 yr	100	0.370	725.60	4.27

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (min)	Peak Flow (ft ³ /s)
POA 3	Pre-Dev 1 yr	1	2.094	732.30	23.76
POA 3	Pre-Dev 2 yr	2	2.819	732.30	31.75
POA 3	Pre-Dev 25 yr	25	6.051	732.20	57.86
POA 3	Pre-Dev 100 yr	100	8.054	732.20	70.03
POA 4	Pre-Dev 1 yr	1	0.641	725.00	10.55
POA 4	Pre-Dev 2 yr	2	0.869	725.00	14.13
POA 4	Pre-Dev 25 yr	25	1.893	725.00	25.29
POA 4	Pre-Dev 100 yr	100	2.531	725.00	30.26
POA 5	Pre-Dev 1 yr	1	0.727	726.60	10.63

UNC Health Eastowne

Subsection: Master Network Summary

Node Summary

Label	Scenario	Return Event (years)	Hydrograph Volume (ac-ft)	Time to Peak (min)	Peak Flow (ft ³ /s)
POA 5	Pre-Dev 2 yr	2	0.986	726.60	14.29
POA 5	Pre-Dev 25 yr	25	2.148	726.50	25.88
POA 5	Pre-Dev 100 yr	100	2.871	726.50	31.10
POA 6	Pre-Dev 1 yr	1	2.002	730.20	24.29
POA 6	Pre-Dev 2 yr	2	2.822	730.20	34.61
POA 6	Pre-Dev 25 yr	25	6.666	730.20	70.58
POA 6	Pre-Dev 100 yr	100	9.126	730.20	87.88
POA 7	Pre-Dev 1 yr	1	0.079	727.20	1.17
POA 7	Pre-Dev 2 yr	2	0.112	727.20	1.68
POA 7	Pre-Dev 25 yr	25	0.269	725.60	3.43
POA 7	Pre-Dev 100 yr	100	0.370	725.60	4.27
1-2	Pre-Dev 1 yr	1	1.197	727.40	17.75
1-2	Pre-Dev 2 yr	2	1.550	726.10	22.46
1-2	Pre-Dev 25 yr	25	3.063	726.10	36.07
1-2	Pre-Dev 100 yr	100	3.979	726.10	41.95
POA 1	Pre-Dev 1 yr	1	0.677	727.90	9.77
POA 1	Pre-Dev 2 yr	2	0.874	727.90	12.30
POA 1	Pre-Dev 25 yr	25	1.717	727.90	19.55
POA 1	Pre-Dev 100 yr	100	2.225	727.90	22.67
POA 2	Pre-Dev 1 yr	1	0.520	725.60	8.15
POA 2	Pre-Dev 2 yr	2	0.676	725.60	10.34
POA 2	Pre-Dev 25 yr	25	1.347	725.60	16.67
POA 2	Pre-Dev 100 yr	100	1.753	725.60	19.38