



# Town of Chapel Hill

## UNC Health Care Development Agreement Negotiation

October 15, 2019, 1 p.m. – 3 p.m.  
Chapel Hill Public Library Room B, 100 Library Drive, Chapel Hill, NC

### Draft Agenda

#### 1. Opening at 1 pm

- 1) Roll Call
- 2) Approval of Agenda

#### 2. Business

- 1) September 27, 2019 Committee Meeting Summary
- 2) Update from UNC Health Care
  - i. Urban Design Analysis
  - ii. Potential Stream Enhancement
  - iii. Design Schemes
  - iv. Scenario Analysis Update
- 3) BioHabitats Report – Kevin Nunnery
- 4) Next Steps
  - i. Upcoming Meeting Schedule
- 5) Public Comments

#### 3. Adjourn

### Agenda Packet Materials

1. September 27, 2019 Committee Meeting Minutes
2. Updated Schedule
3. UNC Health Care materials
4. BioHabitats report
5. Memo from Town of Chapel Hill Stormwater staff



**Town of Chapel Hill**  
**Eastowne Development Agreement**  
**Council Committee Draft Meeting Minutes**

Friday, September 27, 2019, 9:00 AM  
Chapel Hill Public Library Room B

**1. Opening at 9:00 AM**

**1) Roll Call**

Council Committee members: Mayor Pam Hemminger, Michael Parker, Hongbin Gu, Rachel Schaevitz

UNC Healthcare Team: Simon George, John Martin, Don Giard, Bill Derks, Jim Tully, Cameron Ebron, Karla Carson, Leigh Vancil, Jennifer Burdette

Town Staff: Maurice Jones, Ralph Karpinos, Judy Johnson, John Richardson, Becky McDonnell, Michael Sudol, Loryn Clark, Mary Jane Nirdlinger, Jim Huegerich, Kumar Neppalli, Ernest Odei-Larbi

Consultant Team: Craig Scheffler (HNTB), John Burriss (HNTB)

**2. Business**

**1) Group Discussion & Debrief**

The Council Committee summarized the recent site visit to the Duke Medical Campus and discussed the conversation with Duke staff and their impressions of the site. The group spoke about the siting of parking decks, green space, the mix of uses on the property, and other amenities. The group also discussed the Town Council meeting on September 25, the project schedule, and the possibility of phasing the agreement.

**2) Staff Updates**

Town Staff provided an overview of the Development Agreement process as compared to the typical development process, and provided information about the Carolina North Development Agreement as an example. The group agreed that phasing may be an effective strategy for the project.



### **3) Traffic Analysis Scope Review**

Craig Scheffler, HNTB, presented an update on the Traffic Impact Assessment. The group discussed the TIA scope, the relationship between the Eastowne site and UNC Health Care's main campus, and how to capture impacts through the local and regional models.

### **4) Update from UNC Health Care**

The UNC Health Care team presented an update on the proposed scenarios, including proposed street networks. It was clarified that the networks shown represented connections, not necessarily streets meant for vehicular traffic, and the group agreed that street design should prioritize pedestrians. The group also discussed the status of the pond and the possibility for restoring the stream.

### **5) Public Comments**

Members of the public commented on the TIA scope, traffic impacts on Old Sterling Road, the expectation for sustainable building practices, and preservation of the Natural Heritage Site.

## **3. Adjournment**

## Eastowne Development Agreement Timeline

Date/Location	Description
<b>Phase I – Visioning (continuation)</b>	
<b>June 3, 2019</b>	Council Committee Meeting <i>Conclude Phase I and provide final feedback</i>
<b>June 19, 2019</b> <b>7:00pm</b> <b>Council Chambers, Town Hall</b>	Town Council Meeting <i>Eastowne Team to provide a summary of Phase I and introduction to Phase II</i>
<b>Phase II – Plan Scenarios</b>	
<b>Tuesday, June 11, 2019</b> 7:00pm, 2 <sup>nd</sup> Floor Training Room	Environmental Stewardship Advisory Board <i>Provide feedback on Negotiation Framework</i>
<b>Tuesday, June 11, 2019</b> 6:30pm, 1 <sup>st</sup> Floor Conf. Room	Housing Advisory Board <i>Provide feedback on Negotiation Framework</i>
<b>Tuesday, June 18, 2019</b> 7:00pm, Council Chambers	Planning Commission <i>Provide feedback on Negotiation Framework</i>
<b>Tuesday, June 25, 2019</b> 6:30pm, Council Chambers	Community Design Commission <i>Provide feedback on Negotiation Framework</i>
<b>Tuesday, June 25, 2019</b> 6:00pm, Library Room B	Stormwater Management Utility Advisory Board <i>Provide feedback on Negotiation Framework</i>
<b>Tuesday, June 25, 2019</b> 7:00pm, 1 <sup>st</sup> Floor Conf. Room	Transportation and Connectivity Advisory Board <i>Provide feedback on Negotiation Framework</i>
<b>July 22, 2019</b> 2:30pm, Library Room B	Council Committee Meeting <i>Discuss scenario characteristics</i>
<b>August 16, 2019</b> 9:30am, Library Room B	Council Committee Meeting <i>Discuss possible scenarios with UNC Health Care</i>
<b>August 20, 2019</b> 2:00pm, 1 <sup>st</sup> Floor Conf. Room	Technical Review Team Meeting (Town Staff) <i>Provide initial feedback on possible scenarios</i>
<b>September 3, 2019</b> 5:00pm, Library Room B	Joint Advisory Board Meeting with UNC Health Care <i>Provide initial feedback on possible scenarios and framework</i>
<b>September 3, 2019</b> 6:30pm, Library Room B	Community Meeting / Open House
<b>September 4, 2019</b> 2:00pm, Library Room B	Council Committee Meeting <i>Continue discussion of possible scenarios with UNC Health Care</i>
<b>September 9, 2019</b> 2:00pm, Library Room A	Council Committee Meeting (without UNC Health Care) <i>Discuss scenarios with urban design consultant, Tony Sease</i>
<b>September 16, 2019</b> 9:00am, Library Room B	Council Committee Meeting <i>Eastowne Team to present preliminary scenario analysis</i>

<b>September 25, 2019</b> 7:00pm, Council Chambers	Town Council Meeting <i>Eastowne Team to present scenarios and preliminary analysis to Town Council</i>
<b>September 27, 2019</b> 9:00am, Library Room B	Council Committee Meeting <i>Discuss and describe preferred scenario</i>
<b>October 15, 2019</b> 1:00pm, Library Room B	Council Committee Meeting <i>Provide final feedback on preferred scenario</i>
<b>October 24, 2019</b> 11:15am, 1 <sup>st</sup> Floor Conf. Room	Technical Review Team Meeting (Town Staff) <i>Provide feedback on preferred scenario</i>
<b>November 11, 2019</b> 5:30pm, Library Room B	Joint Advisory Board Meeting <i>Provide feedback on preferred scenario</i>
<b>November 11, 2019</b> 6:30pm, Library Room B	Community Meeting / Open House
<b>November 13, 2019</b> 5:30pm, Town Hall	Preferred Scenario Public Presentation <i>Eastowne Team to present preferred scenario</i>
<b>November 14, 2019</b> 2:00pm, Library Room A	Council Committee Meeting
<b>November 20, 2019</b> 7:00pm, Council Chambers	Town Council Meeting <i>Conclude Phase II and provide final feedback</i>
<b>Phase III – Plan Refinement</b>	
<b>December 10, 2019</b> 9:00am, Library Room B	Council Committee Meeting
<b>Phase IV – Finalize Development Agreement</b>	
<b>TBD</b>	To be completed by June 2020

# **EASTOWNE MASTER PLAN**

Town Council Meeting

October 15, 2019

# Agenda

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- Urban Design Analysis
- Potential Stream Enhancement
- Design Schemes
- Biohabitats report
- Next Steps

# **URBAN DESIGN ANALYSIS**

# Introduction

## Chapel Hill Gateways



# BRT Map

## Proposed North-South Connection



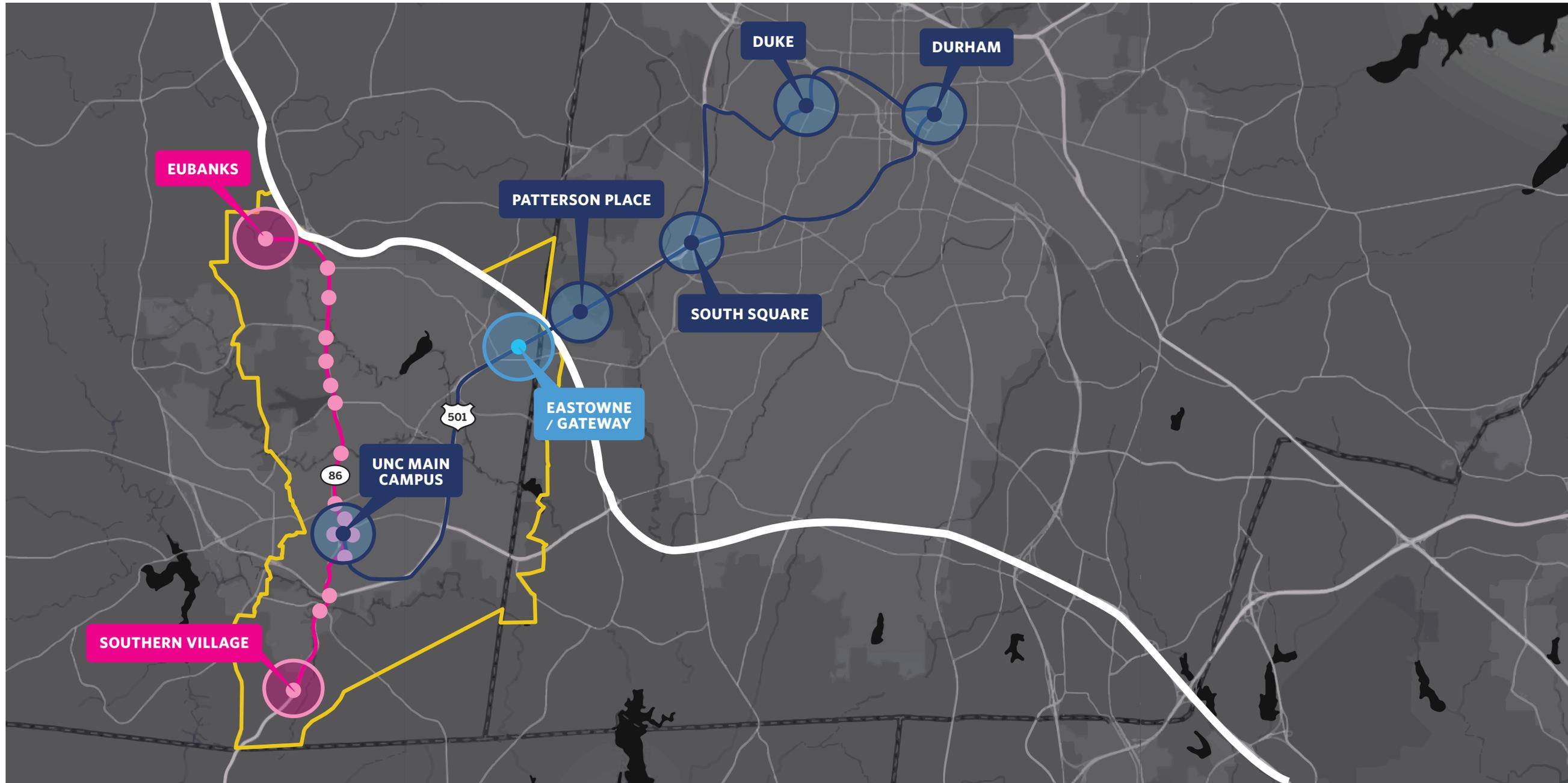
# BRT Map

## Proposed North-South Connection

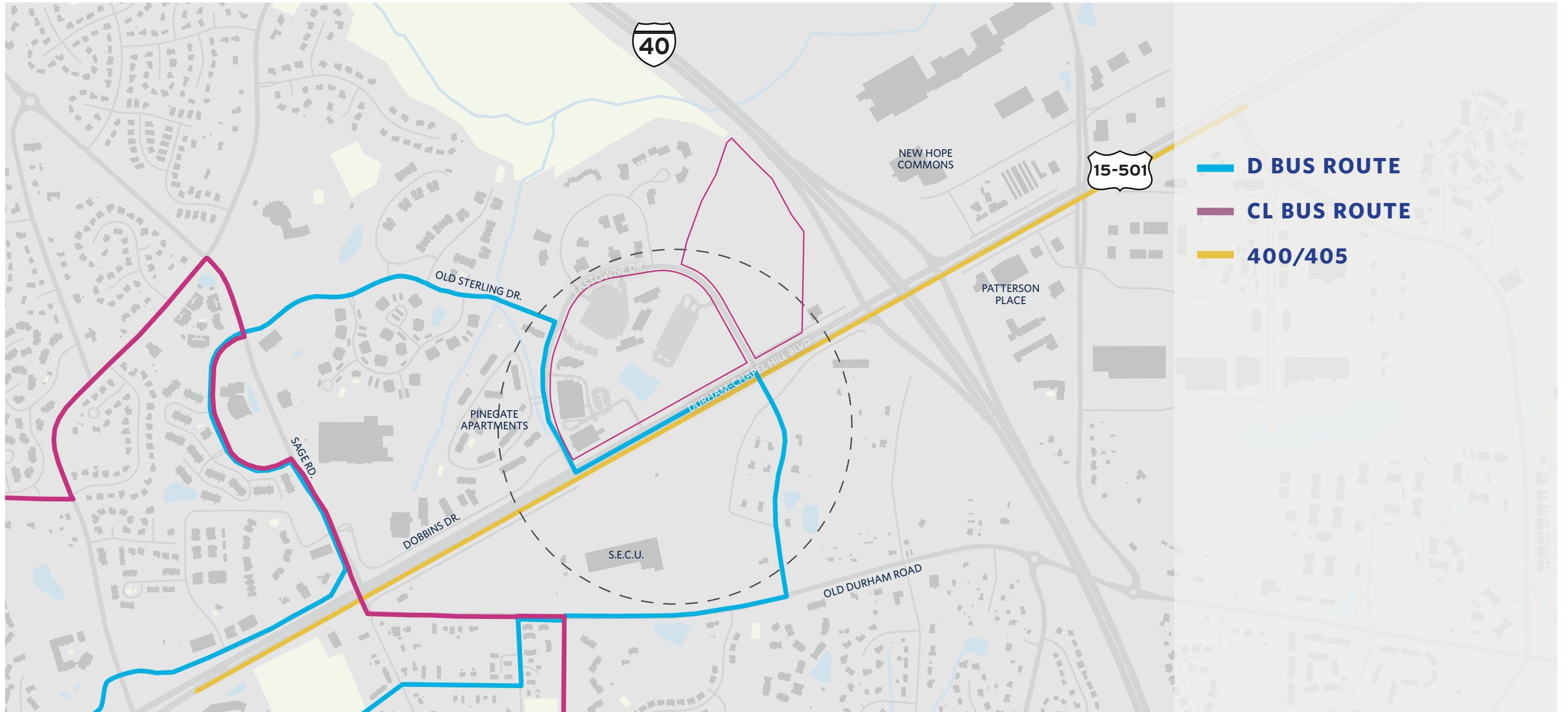


# BRT Map

## Potential East-West Connection



# Existing Bus Routes



# 5 Minute Walk

## Existing Conditions



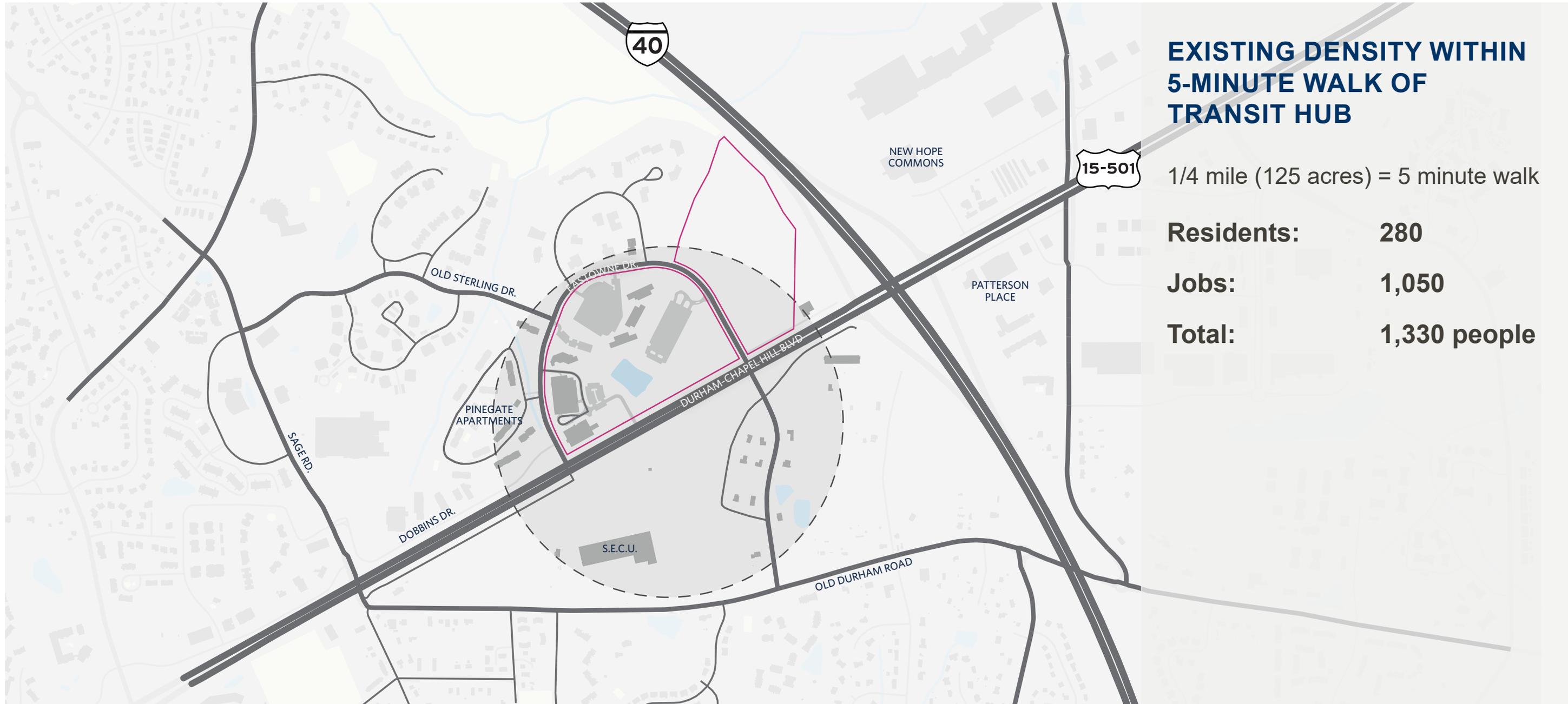
### DENSITY REQUIRED TO SUPPORT TRANSIT

Station Area = 1/4 mile radius  
(125 acres)

**A range of 3,750 to 6,250 people (jobs and residents) within 1/4 mile of transit station is needed for a cost effective system**

# Network Grid

## Existing Conditions



# Urban Form - Roads



Franklin Street, Chapel Hill



Meadowmont, Chapel Hill



Southern Villiage, Chapel Hill



Eastowne, Chapel Hill

# Urban Form - Buildings



Franklin Street, Chapel Hill



Meadowmont, Chapel Hill



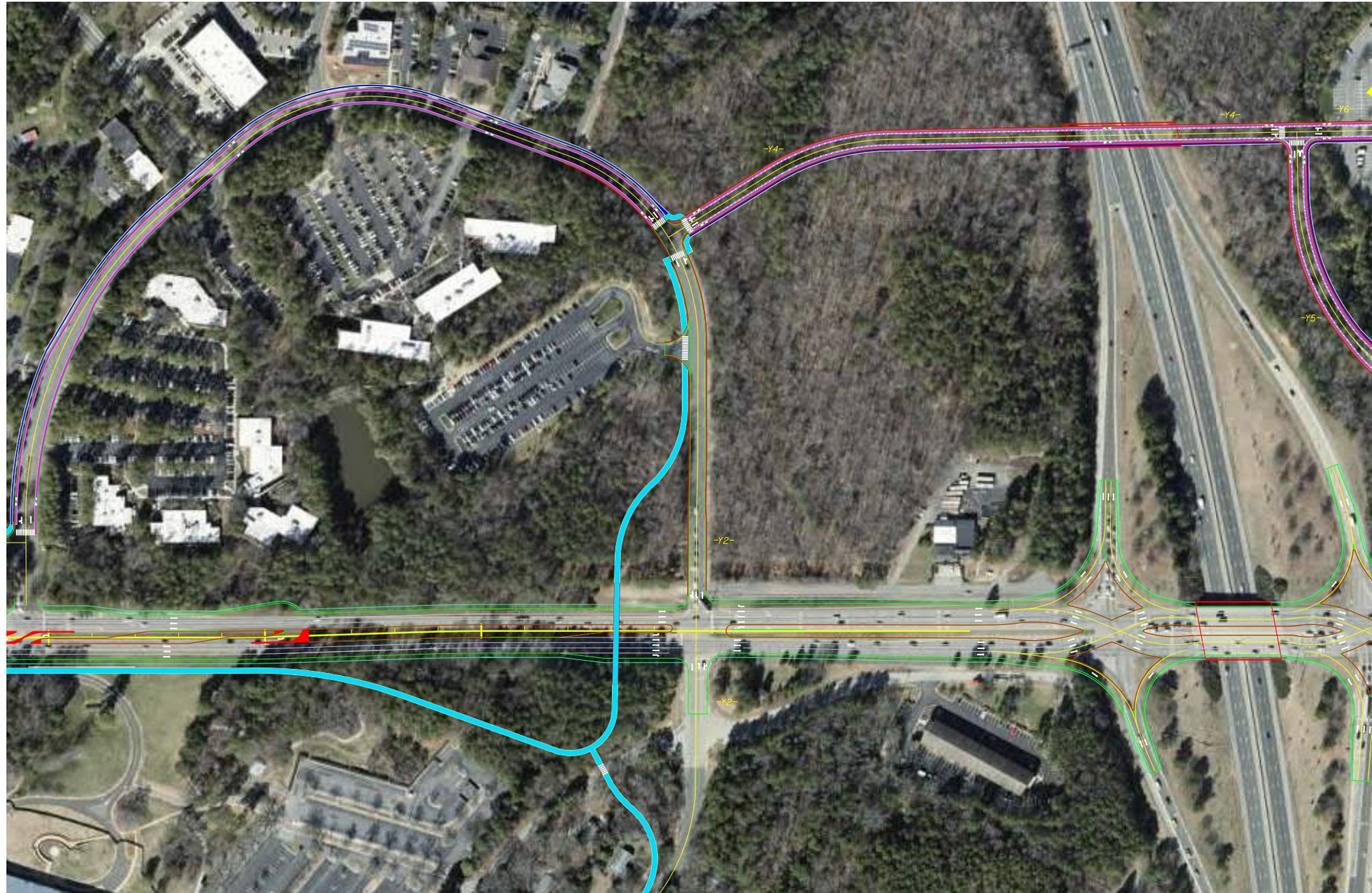
Southern Villiage, Chapel Hill



Eastowne, Chapel Hill

# Long Range Road Improvements

## Potential Interchange and I-40 Crossing



# Network Grid



# Network Grid



**POTENTIAL  
STREAM  
ENHANCEMENT**

# Potential Stream

## Existing Conditions



# Potential Stream

## Phase 1



# Potential Stream

## Phase 2



# Stream Enhancement

## Examples

Fawn Ridge, Knightdale, North Carolina



> Before



> Constructed

Bethpage, Durham, North Carolina



> Before



> After



> After

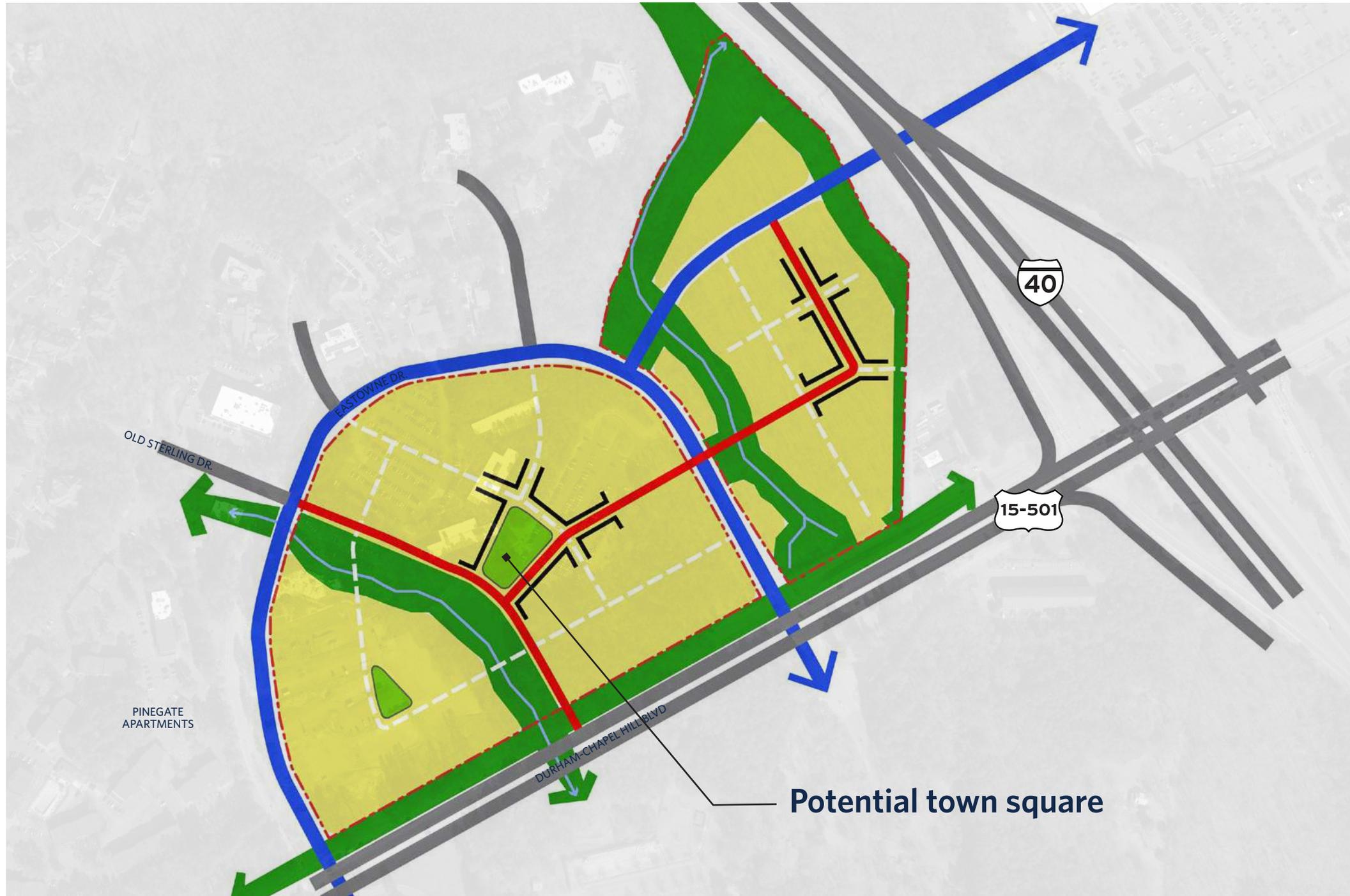
# DESIGN CONCEPTS

Town Square

Main Street

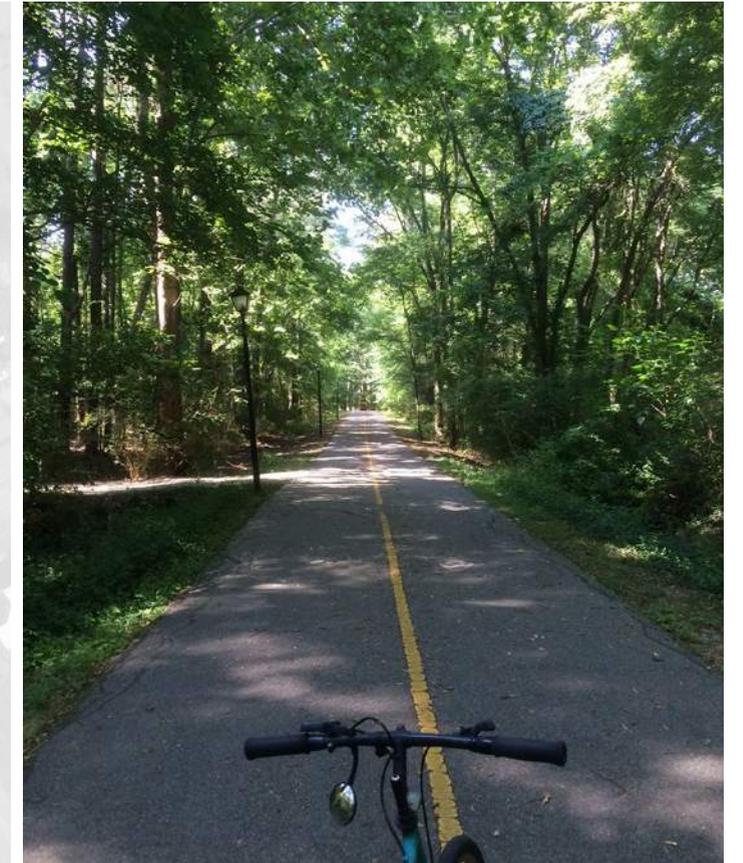
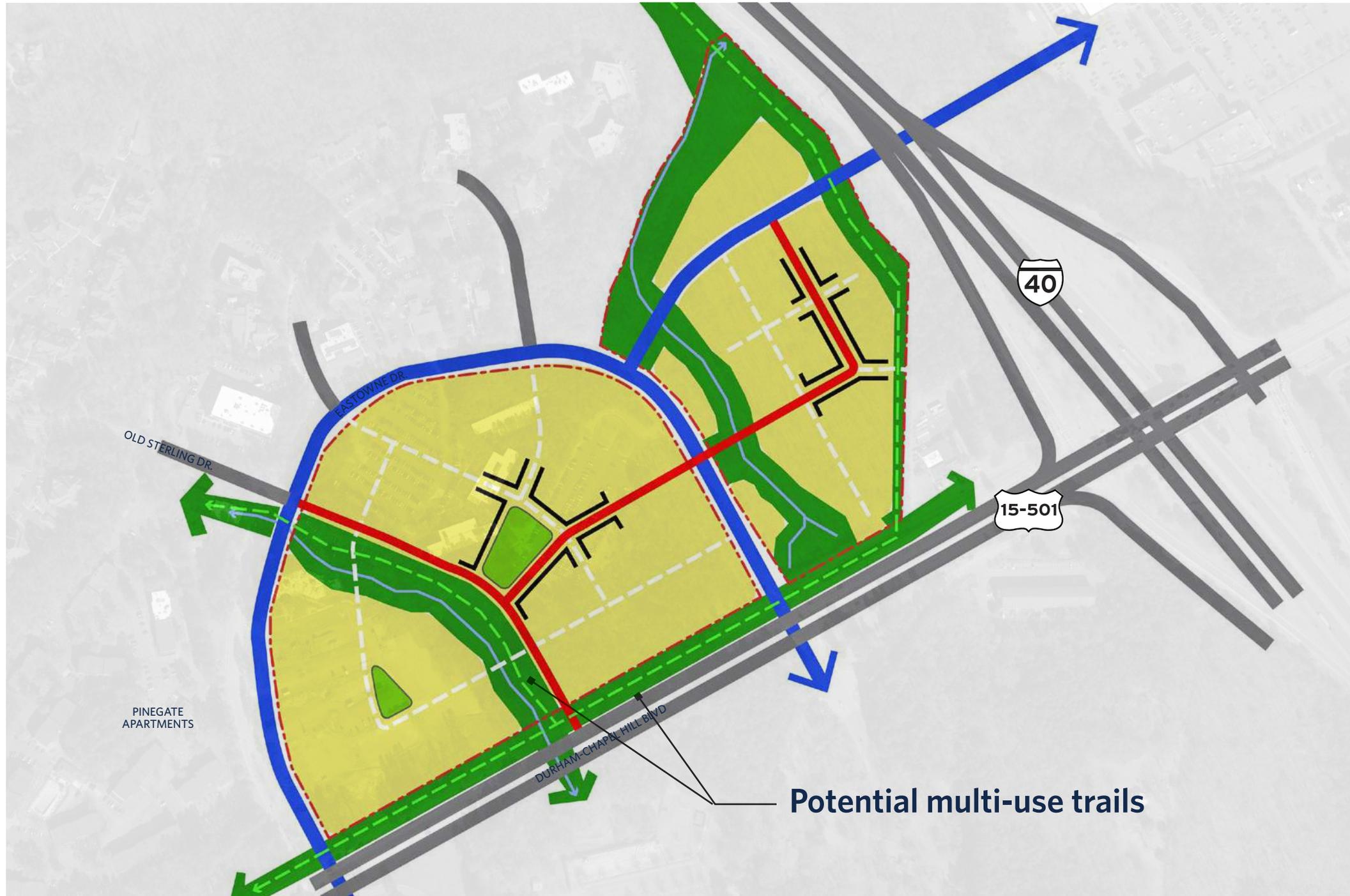
# Town Square

## Concept Diagram



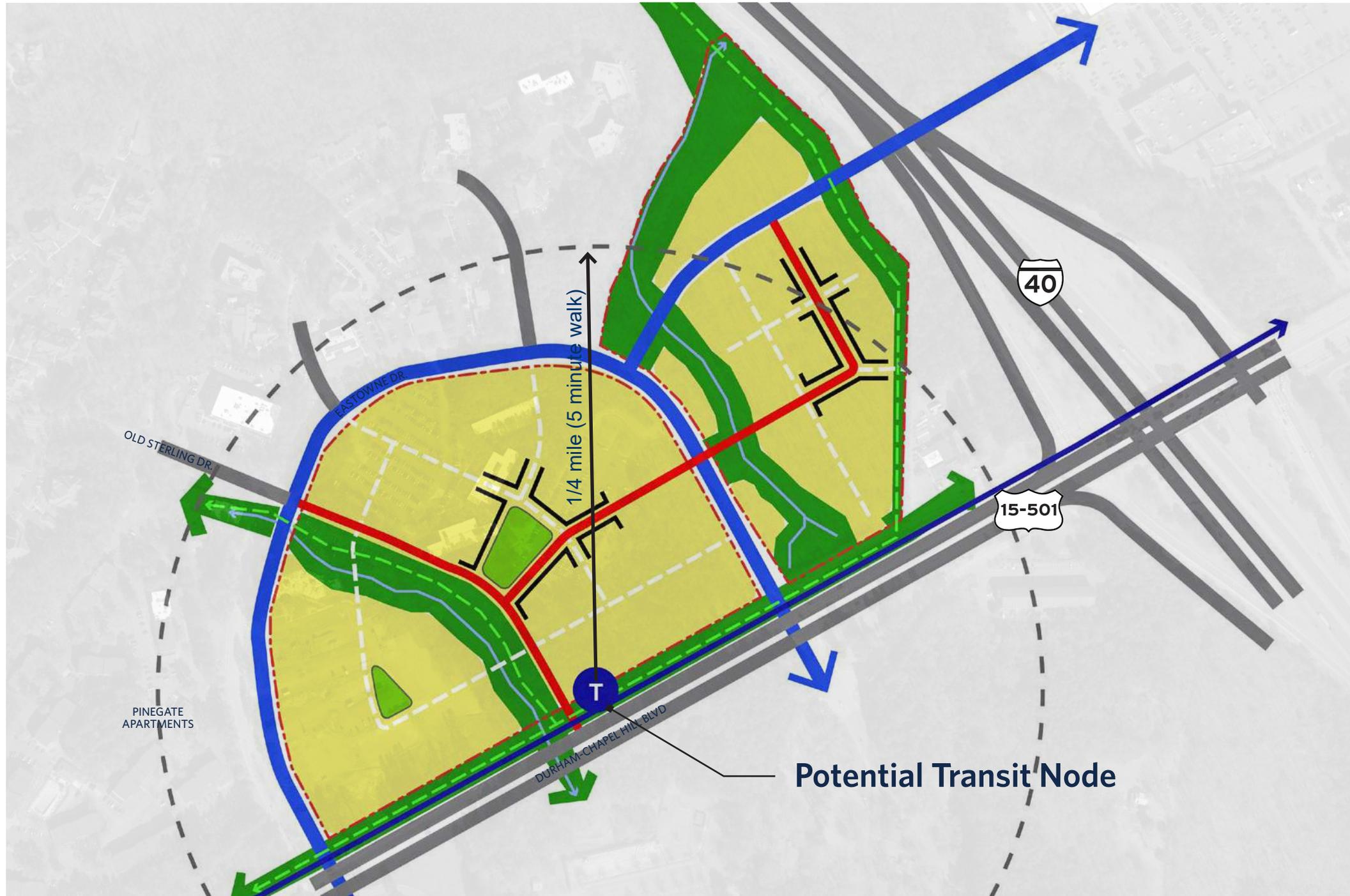
# Town Square

## Concept Diagram 1



# Town Square

## Concept 1 with Transit Node



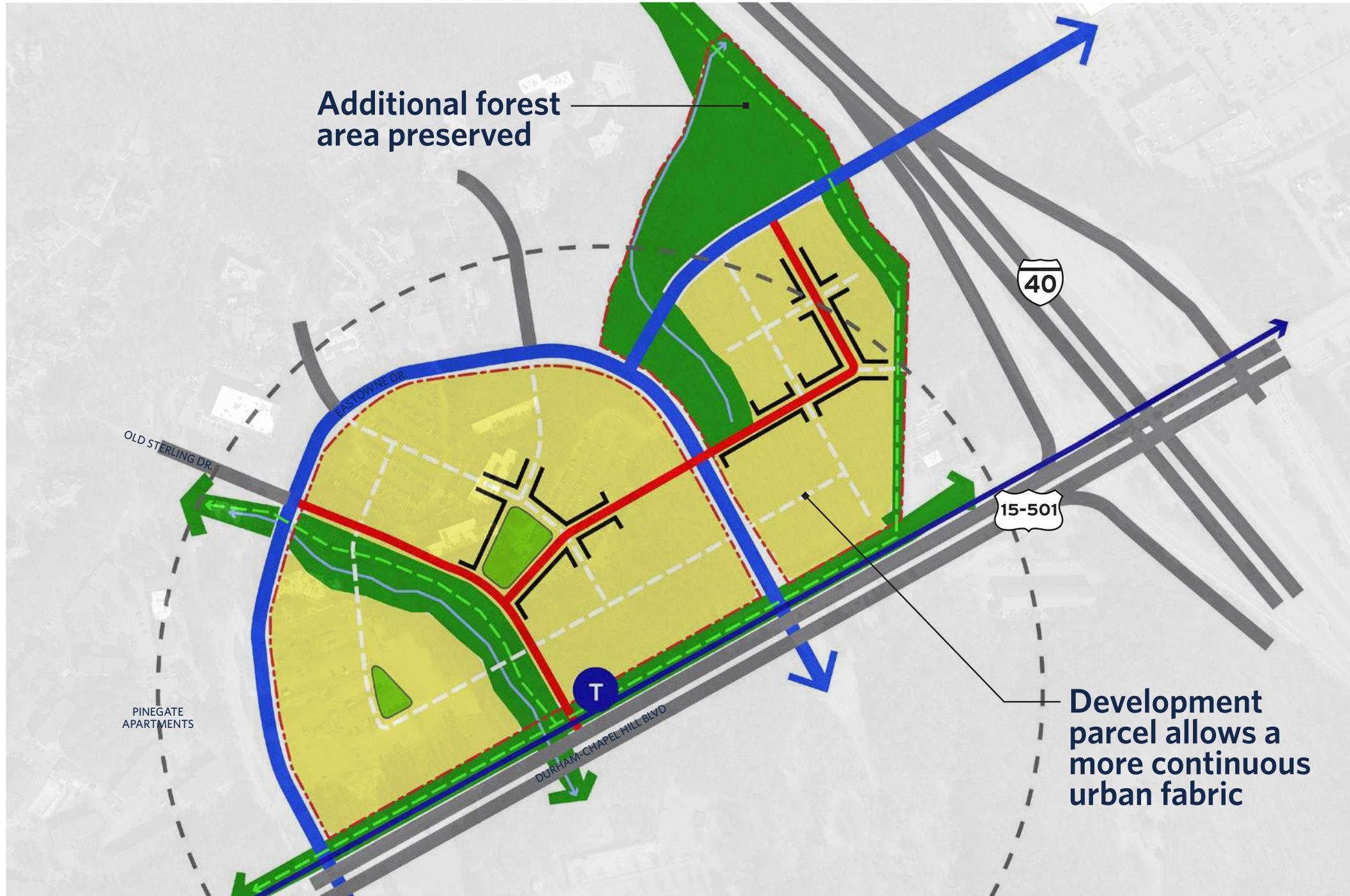
### POTENTIAL TRANSIT NODE

Potential transit station - could be located along 15-501 corridor. This node could include a shelter, wayfinding, and other transit amenities.



# Town Square

## Concept 2

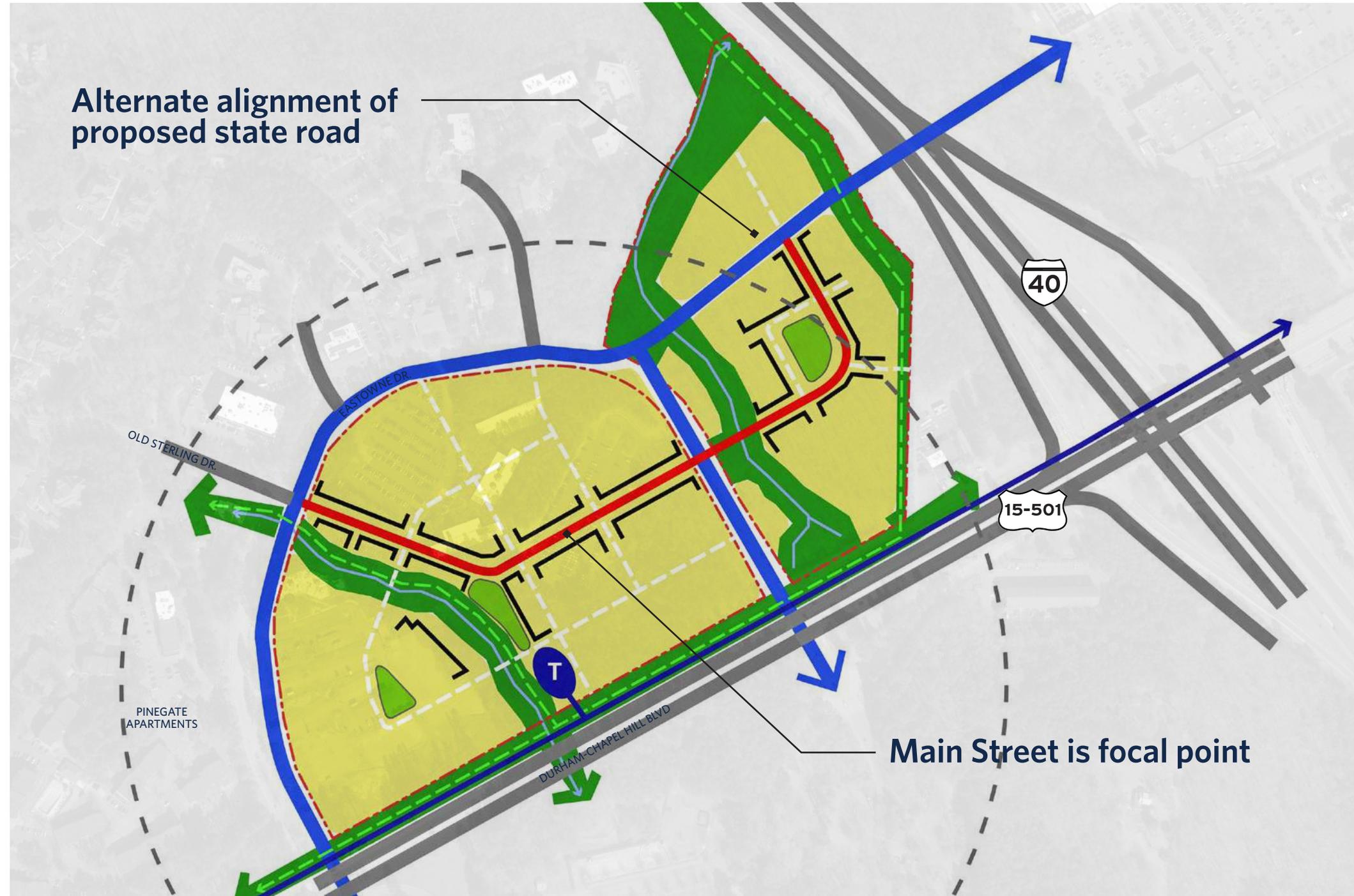


Additional forest  
area preserved

Development  
parcel allows a  
more continuous  
urban fabric

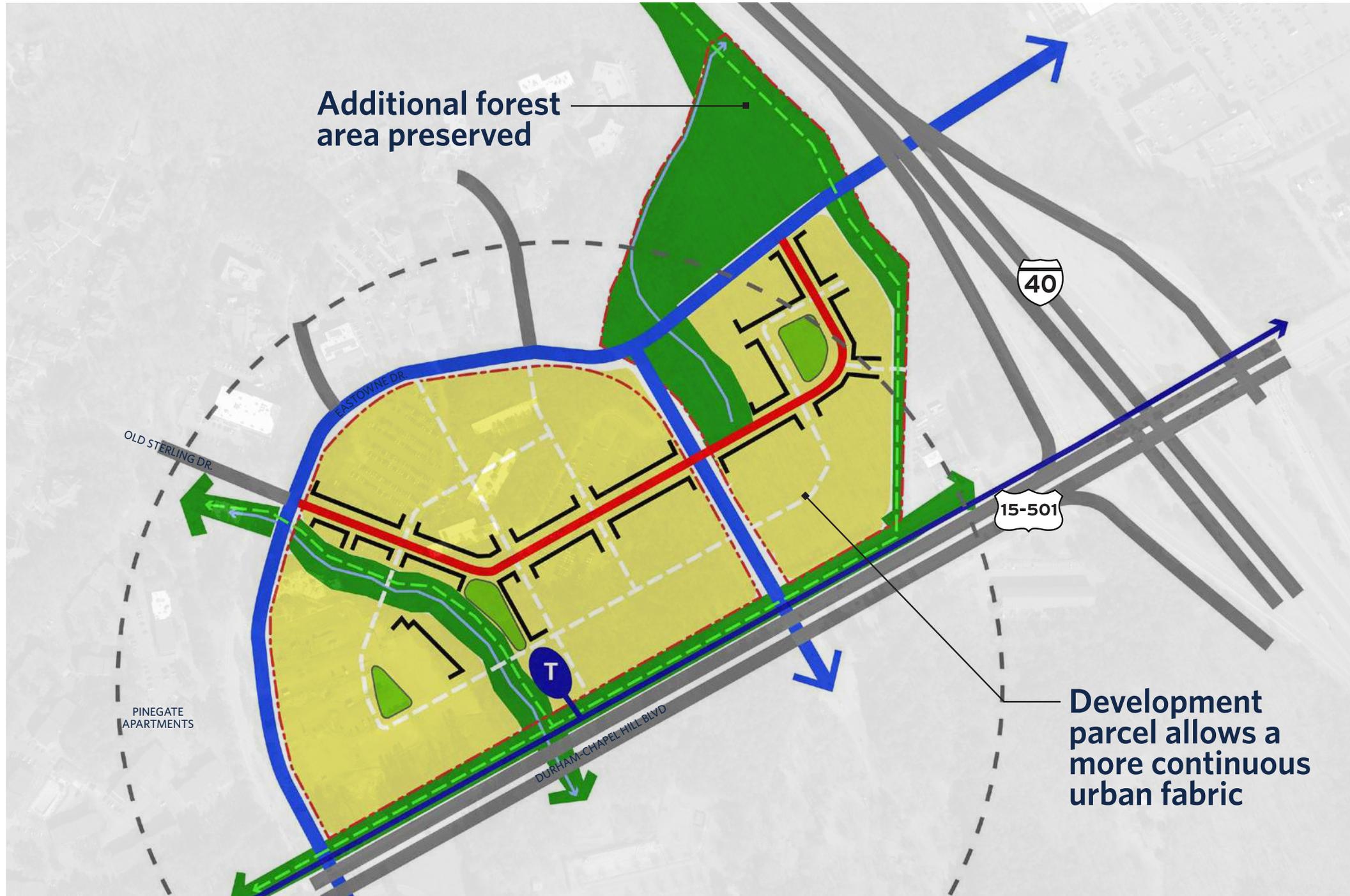
# Main Street

## Concept 1



# Main Street

## Concept 2



# Next Steps

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- **Upcoming Meetings**
  - 11/14 Town Council Committee
  - 11/20 Town Council
- **TIA - data and analysis**
- **Select Preferred Scenario**

**MEMORANDUM**

Date: October 10, 2019

To: John Richardson, Community Resilience Officer, Town of Chapel Hill, NC

From: Kevin Nunnery, Biohabitats, Inc.

**RE: Eastowne Development Agreement**

**Subject: Site Ecological Documentation Review**

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**Summary:**

Biohabitats has reviewed the Eastowne sites in the field, historic NC Natural Heritage Program (NHP) information on the site, the McAdams Natural Resources Report and Preliminary Assessment Document (July 2019) and documents produced after the McAdams Report was produced, the Site Survey Report (NHP, August 2019) and the Memorandum to Eastowne Council Committee (October 2019). The purpose of the review was to assess the McAdams document for appropriateness and comprehensiveness, and to comment on the content contained in the remaining documents.

The McAdams document includes information pertinent to a natural resources characterization of the site, including physical characteristics such as soils and topography, vegetative community descriptions, wildlife habitat, and documentation of jurisdictional wetland, stream and stream buffer attributes. The comprehensiveness of the information is considered good.

Biohabitats submits the following observations and comments for additional consideration.

1. Interior forest habitat, present on the undeveloped tract (Figure 8 McAdams), is becoming increasingly rare throughout the State due to disturbance and habitat fragmentation, and could be threatened if the site is developed.
2. More information from NHP has become available since the McAdams document was produced in July, that is important ecologically and deserves consideration.
3. Based on the Site Survey Report (NHP, August 2019), there is one additional and important Natural Community Element Occurrence on the undeveloped tract not contained in the NHP Database Report generated on June 12, 2019, in the McAdams document. It is the Dry-Mesic Basic Oak-Hickory Forest (Piedmont Subtype).  
Other Natural Communities noted in the survey include:
  - Basic Mesic Forest (Piedmont Subtype)
  - Piedmont Headwater Stream Forest
  - Piedmont Alluvial Forest
4. The new Element Occurrence of the Dry-Mesic Basic Oak-Hickory Forest is notable, ranked S3 or Vulnerable to extinction in NC state rankings. The area located on the site is ranked 17<sup>th</sup> out of the 66 known sites in NC, which

puts it in the 74<sup>th</sup> percentile state-wide. This community addition, along with the Piedmont Swamp Forest previously listed (State Rank S2, Imperiled) elevates the ecological sensitivity of the site.

5. The other newly identified communities are not as rare, but nonetheless contribute to the site's ecological diversity.
6. The combined site attributes of the maturity of the forest, rarity of interior forest habitat, quality of wildlife habitat and connectedness to the Dry Creek/Mount Moriah Bottomland Forest also contribute to the its ecological value and sensitivity.
7. The Site Survey Report states "This tract is worthy of protection in its natural condition, through whatever means are feasible. The tract adjoins conservation lands owned by the Town of Chapel Hill and is connected through them to Durham County lands and to a larger network of conservation lands."

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Biohabitats was retained to review and assess the Eastowne site currently under consideration for development, and the ecological characterization and documentation information for the site produced thus far. The intent being to assess the comprehensiveness of the information with respect to the proposal of development on the site, and to provide explanation/clarification of that information. Documents reviewed in this process include:

1. John R. McAdams, July 2019, Natural Resources Report and Preliminary Assessment
2. NC Natural Heritage Program, Orange County Environment and Resource Conservation Department, 2005, Executive Summary, Inventory of Natural Areas and Wildlife Habitats for Orange County, North Carolina
3. Mike Schafale, August 2019, Site Survey Report, Dry Creek/Mount Moriah Bottomland-Eastown Tract. NC Natural Heritage Program
4. Allison Weakley, October 8, 2019, Memorandum to Eastowne Council Committee

The **McAdams Natural Resources and Preliminary Assessment** document contains the most lengthy collection of data of any of the documents reviewed. The data includes:

- A. Topography
- B. Soil series mapping and descriptions
- C. US Fish and Wildlife Service (USFWS) Project Area Protected Species (that could occur) and Critical Habitat locations
- D. NHP Natural Areas and Managed Areas mapping and descriptions
- E. Vegetation community-types mapping and descriptions
- F. Forest stand descriptions and estimated forest ages mapping and descriptions
- G. Forest canopy and interior forest mapping
- H. Wildlife Habitat
- I. Jurisdictional waters, wetlands and riparian buffer mapping
- J. Jurisdictional wetland delineation information
- K. Town of Chapel Hill buffer determinations
- L. NC Stream Assessment forms
- M. NC Wetland Assessment forms



N. Site photographs

Assessment of Data Included in Document

A. & B.- Topography and soil series descriptions and mapping are basic site descriptive information.

C.- The on-site visual surveys did not find any occurrences of the three USFWS rare, threatened or endangered species that could occur in the area, and USFWS mapping indicates that there are no Critical Habitat Areas located within the project boundary.

D.- The undeveloped tract of the Eastowne site and its ecological value are unusual and consequently elevated based on its classification by the NHP. It contains an Element Occurrence of Piedmont Swamp Forest, with an Element Occurrence Rank of CD, an Accuracy of 3-Medium, a Global Rank of G3G4, and a State Rank of S2, by a report McAdams generated using the NHP Natural Heritage Data Explorer web tool on June 12, 2019, located in Appendix B.

As the NHP definitions explain, Natural Heritage Element Occurrences identify occurrences of rare plants and animals, exemplary or unique natural communities, and important animal assemblages. Collectively, these plants, animals, natural communities, and animal assemblages are referred to as "elements of natural diversity" or simply as "elements". Specific occurrences of these elements are referred to as "element occurrences".

The Element Occurrence Rank is an estimate of the viability of the occurrence. Possible values are as follows:

*EO Rank Definitions*

A The occurrence has excellent estimated viability/ecological integrity.

B The occurrence has good estimated viability/ecological integrity.

C The occurrence has fair estimated viability/ecological integrity.

D The occurrence has poor estimated viability/ecological integrity.

The site's Element Occurrence Rank is CD, meaning that it's viability/ecological integrity is assessed to be between fair and poor. This is likely the result of the site's location in a developed area, and the likelihood of future development on and surrounding it.

Accuracy of 3-Medium means that between 20% and 80% of the site is comprised of the Element Occurrence. Accuracy takes into account survey inaccuracy and the inaccuracy of GIS mapping data.

Global Rank is a measure of the relative imperilment of both species and ecological communities globally. Global ranks are assigned by NatureServe staff and contract biologists, based on a consensus of scientific experts, individual natural heritage programs, and the Natural Heritage Network. This system is widely used by other agencies and organizations, as the best available scientific and objective assessment of a species' rarity throughout its range.

G1 Critically Imperiled- Critically imperiled globally because of extreme rarity or because of some factor(s) making it especially vulnerable to extinction. Typically five or fewer occurrences or very few remaining individuals (<1,000), acres (<2,000), or linear miles (<10).

G2 Imperiled- Imperiled globally because of rarity or because of some factor(s) making it very vulnerable to extinction. Typically 6 to 20 occurrences, or few remaining individuals (1,000 to 3,000), acres (2,000 to 10,000), or linear miles (10 to 50).



G3 Vulnerable- Vulnerable globally either because very rare throughout its range found only in a restricted range (even if abundant at some locations), or because of other factors making it vulnerable to extinction. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.

G4 Apparently Secure- Uncommon but not rare (although it may be rare in parts of its range, particularly on the periphery) and usually widespread. Apparently not vulnerable in most of its range, but possibly cause for long-term concern. Typically more than 100 occurrences and more than 10,000 individuals.

The undeveloped tract's Global Rank of G3G4 means that it falls between Vulnerable and Apparently Secure, on a global scale.

State Rank is a measure of the relative imperilment of both species and ecological communities in the State of North Carolina. For plant and animal species these ranks provide an estimate of extinction risk. This information has been developed by the NC Natural Heritage Program, NatureServe, and many collaborators in government agencies, universities, natural history museums and botanical gardens, and other conservation organizations. State ranks have been developed primarily to help in guiding conservation and to inform environmental planning and management. State ranks are based on a one to five scale, ranging from critically imperiled (S1) to demonstrably secure (S5).

S1 Critically Imperiled- Critically imperiled in North Carolina due to extreme rarity or some factor(s) making it especially vulnerable to extirpation (local extinction) from the state. Typically 5 or fewer occurrences or very few remaining individuals (<1,000).

S2 Imperiled- Imperiled in North Carolina due to rarity or some factor(s) making it very vulnerable to extirpation from the state. Typically 6 to 20 occurrences or few remaining individuals (1,000 to 3,000).

S3 Vulnerable- Vulnerable to extinction in North Carolina either because rare or uncommon, or found only in a restricted range (even if abundant at some locations), or due to other factors making it vulnerable to extirpation. Typically 21 to 100 occurrences or between 3,000 and 10,000 individuals.

S4 Apparently Secure- Apparently secure and widespread in North Carolina, usually with more than 100 occurrences and more than 10,000 individuals.

S5 Secure- Common, widespread, and abundant in North Carolina. Essentially ineradicable under present conditions. Typically with considerably more than 100 occurrences and more than 10,000 individuals.

The State Rank of S2 indicates that using the best information currently available, Piedmont Swamp Forest is Imperiled.

Although the site is dominated by upland areas, the presence of Piedmont Swamp Forest is important due to its proximity and ecological contribution to the larger Dry Creek/Mount Moriah Bottomland NHP Natural Area to the North.

The site is also identified as being within the Dry Creek/Mount Moriah Bottomland NHP Natural Area, with a Representational Rating of R5 (General) and a Collective Rating of C4 (Moderate).

Representational Rating of R5 means the site contains between the 11<sup>th</sup> and 30<sup>th</sup> best examples in the State of Elements within it.

Collective Ratings provide a score to a natural area based on both the number of Elements at a natural area, and the rarity – both global and state – of each Element in the natural area. Thus, the Global Rank (G-Rank) and State Rank (S-Rank) of Elements are used in the scoring. The combination of the site's relatively high Global and State Rank's, combined with the low number of Element Occurrences (1), results in a Collective Rating of C4 (Moderate). This Collective Rating, while relatively low on the overall scale, needs to be considered based on the site's size,



surroundings and a broader regional perspective. It is noteworthy that a Natural Area of this quality exists in such a highly developed area.

E., F., G. & H.- Vegetation community-types, forest stands, canopy and interior forest and wildlife information provided is consistent with site conditions. Notable in this information is the maturity of the forest, the presence of interior forest habitat, suitable for a specialized array of wildlife, and the ecological importance of connectivity between habitats and the need to maintain those connections. What is not mentioned in this section is that interior forest habitat is diminishing at a rapid rate due to disturbance and forest fragmentation, becoming more and more rare.

I., J., K., L. & M.- Jurisdictional waters, wetlands and riparian buffer mapping, jurisdictional wetland delineation information, Town of Chapel Hill buffer determinations and stream and wetland assessment form information characterizes aquatic attributes of the site, and all is consistent with typical information presented in a site assessment. This information does not include anything unusually distinctive or notable about the site ecology that would warrant further discussion, except that Stream X, on the undeveloped tract, is rated as High based on the stream functional assessment (there are two NC SAM forms for Stream X in Appendix I, and lengths assessed to not match the stream length listed in Figure 9, but the rating is consistently High for this intermittent stream).

The **Executive Summary, Inventory of Natural Areas and Wildlife Habitats for Orange County, North Carolina** document maps the site as being a part of the New Hope Creek Floodplain Macrosite.

The **Site Survey Report, Dry Creek/Mount Moriah Bottomland-Eastown Tract** document was produced in August, by Mike Schafale, of the NHP. It contains the history of how the site area was identified and included in the Dry Creek/Mount Moriah Bottomlands. It also contains information, based on the NHP review, that is different from the NHP report information downloaded by McAdams in June from the NHP website. The August 2019 Site Survey produced information on the site's geology, hydrology and vegetation, resulting in a revision of the site's Natural Communities. One new Natural Community is now an Element Occurrence, the Dry-Mesic Basic Oak-Hickory Forest (Piedmont Subtype). Other important Natural Communities identified on the site, but not qualifying for an Element Occurrence status are:

- Basic Mesic Forest
- Piedmont Headwater Stream Forest
- Piedmont Alluvial Forest

The Global and State Ranks for each of these Natural Communities is listed in Table 1 below.

<b>Table 1. New Natural Community Rankings and Descriptors</b>				
<b>Natural Community</b>	<b>Global Rank</b>	<b>Rank Descriptors</b>	<b>State Rank</b>	<b>Rank Descriptors</b>
Dry-Mesic Basic Oak-Hickory Forest (Piedmont Subtype) <sup>1</sup>	G3/G4	Vulnerable/Apparently Secure	S3	Vulnerable
Basic Mesic Forest <sup>2</sup>	G3/G4	Vulnerable/Apparently Secure	S3/S4	Vulnerable/Apparently Secure
Piedmont Headwater Stream Forest	G3/G4	Vulnerable/Apparently Secure	S3/S4	Vulnerable/Apparently Secure
Piedmont Alluvial Forest	G4	Apparently Secure	S4	Apparently Secure

<sup>1</sup> This Natural Community is an Element Occurrence on the Eastowne site

<sup>2</sup> This Natural Community and those below are not Element Occurrences on the site, rankings provided for background information



In the Recommendations for Protection section of the report, it states “This tract is worthy of protection in its natural condition, through whatever means are feasible. The tract adjoins conservation lands owned by the Town of Chapel Hill and is connected through them to Durham County lands and to a larger network of conservation lands.”

The **Memorandum to Eastowne Council Committee (October 8, 2019)** document was also written after the McAdams Natural Resources and Preliminary Assessment document. It summarizes information contained in the Site Survey Report document, and presents some additional information not contained in the McAdams document.

New information includes the rank of the Dry-Mesic Basic Oak-Hickory Forest area of the site, 17<sup>th</sup> best out of 66 total occurrences tracked by the State (74<sup>th</sup> percentile). This community type is considered vulnerable to extinction on both global and state levels. The EO on the Eastowne tract is ranked B-Good, indicating good ecological integrity, higher than the other two occurrences documented in Orange County, which are ranked C for Fair ecological integrity. Two maps showing the regional distribution of Dry-Mesic Basic Oak-Hickory Forest and Piedmont Swamp Forest communities are also included in the memo and give added context to the number and locations of similar community types in the region.





**PUBLIC WORKS DEPARTMENT  
STORMWATER MANAGEMENT DIVISION**

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Fax (919) 969-7276  
www.townofchapelhill.org

**MEMORANDUM**

**DATE:** October 8, 2019

**TO:** Eastowne Council Committee (Mayor Pam Hemminger, Michael Parker, Hongbin Gu, Rachel Schaevitz)

**FROM:** Allison Weakley, Stormwater Analyst *Allison Weakley*

**SUBJECT: Natural Communities and Natural Area on the Eastowne Tract owned by UNC Heath Care (PIN 9890-91-1209)**

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This memo is to provide additional information on the ratings assigned by the North Carolina Natural Heritage Program (NCNHP) to the undeveloped Eastowne tract owned by Health Systems, LLC (UNC Health Care), as requested by the Council Committee on September 16, 2019.

The undeveloped Eastowne tract, approximately 20 acres, is part of the larger **Dry Creek/Mt. Moriah Bottomland Forest Natural Area** delineated by NCNHP, and contains the following high-quality natural communities:

- **Dry-Mesic Basic Oak Hickory (DMBOH) Forest**, and
- **Piedmont Swamp Forest**.

The Eastowne tract includes the majority of the **Dry-Mesic Basic Oak Hickory Forest** (16 acres total) that's been documented within this natural area. The NCNHP considers the occurrence of the community on the Eastowne tract to have good ecological integrity, and the **17th best occurrence out of 66 total occurrences currently tracked in the state**. (emphasis added) This importance considers various factors, including the condition, size and landscape context of the natural community.

A portion of a **Piedmont Swamp Forest** (16 acres total) tracked by the NCNHP also occurs within the Eastowne tract, and is **one of 27 high-quality occurrences documented statewide**. (emphasis added) The majority of this community is located on land owned by the Town of Chapel Hill and is under conservation easement.

*See attached map that shows the Eastowne tract relative to the natural communities and natural area documented and tracked by the NCNHP that occur within the Town's jurisdiction.*

Based on the Site Survey of the undeveloped Eastowne tract conducted on August 7, 2019, the NCNHP has recommended protection of this tract in its natural condition through whatever means feasible.

## NATURAL AREAS

Natural Areas are areas of land or water that contain the best documented occurrences of rare species and their habitats and exemplary natural communities in North Carolina, and are important for the conservation of the state's biodiversity. The NCNHP identifies natural areas based on field surveys, often through county-wide inventories for natural areas. An [Inventory of Natural Areas and Wildlife Habitats for Orange County, NC](#) was initially completed by NCNHP in 1988, with an update in 2004 (Sather and Hall, 1988; Sorrie and Shaw 2004). The undeveloped Eastowne tract was first identified in the Orange County inventory as part of the Cedar Terrace Bottoms Natural Area, which later was merged with other nearby natural areas to form the **Dry Creek/Mt. Moriah Bottomland Forest Natural Area**. However, a comprehensive survey had not been conducted on the undeveloped Eastowne tract until the recent Site Survey by Michael Schafale (NCNHP) on August 7, 2019.

NCNHP assigns a rating for each natural area based on the potential of the natural area to have the best locations for each rare species or natural community occurrence in the state (Representative Rating), and the number and rarity of these occurrences (Collective Rating) within the natural area. A Natural Area may have an overall rating of Exceptional, Very High, High, Moderate or General.

The overall rating assigned to the **Dry Creek/Mt. Moriah Bottomland Forest Natural Area** (ca. 486 acres) is "Moderate," based on the rarity and individual ranks of the natural communities occurrences documented. This rating is relative to the rating of the more than 2,400 natural areas statewide, which may be much larger or contain a greater number of rare species or natural communities that are more rare and imperiled, and surrounded by intact landscapes (e.g., Grandfather Mountain).

The five high-quality natural communities now documented by NCNHP within the Dry Creek/Mt. Moriah Bottomland Forest Natural Area are: Piedmont Bottomland Forest (High and Typic Low Subtypes), Piedmont Semi-permanent Impoundment (Piedmont Marsh Forest), Dry-Mesic Basic Oak Hickory Forest (Piedmont Subtype), and Piedmont Swamp Forest. The latter two occur mostly or partially within the Eastowne tract, respectively, and occurrences for both the DMBOH and Piedmont Marsh Forest were added to this natural area as a result of the August 7, 2019 Site Survey by NCNHP.

## NATURAL COMMUNITIES

A natural community is defined as any area with a recognizable and reoccurring assemblage of plants, animals, bacteria, and fungal species naturally associated with each other and their physical environment. NCNHP identifies and tracks high-quality, exemplary natural communities, and each occurrence is assigned an occurrence rank (EO rank) for ecological integrity that reflects the size, condition, and landscape context of the occurrence.

The Eastowne tract includes the majority of the **Dry-Mesic Basic Oak Hickory Forest (Piedmont Subtype)** occurrence (16 acres total) that's been documented within this natural area. This DMBOH Forest natural community has the following attributes:

- This community type is considered vulnerable to extinction at both the global and state levels - it is rare or uncommon (both globally and statewide) and only found only in a restricted range, or there are other factors make it vulnerable.
- The occurrence of this community on the Eastowne tract has an EO Rank = B, or good ecological integrity. (EO Rank A = excellent, EO Rank C = fair, EO Rank D = poor). An EO Rank of B is significant for a forest surrounded by high development threat.

- There are only 66 high-quality occurrences of this natural community (DMBOH) documented across the state; the occurrence on the Eastowne tract is one of three documented in Orange County, and one of 12 located within Orange, Durham, and Chatham counties. The other two occurrences of these communities in Orange County are ranked lower (EO Rank C). *See attached map showing the distribution of occurrences for the DMBOH community statewide, by EO Rank.*
- This occurrence is the 17<sup>th</sup> most important of the 66 DMBOH natural communities documented statewide, based on its condition (such as maturity, composition & structure), size, and landscape context.
- It is the only remaining undeveloped upland hardwood forest along Dry Creek, and is directly connected to Town-owned properties under conservation easement along Dry Creek.
- It is connected to the Dry Creek floodplain and to the rest of the Dry Creek/Mt. Moriah Bottomland Natural Area, the New Hope Creek Corridor, Duke Forest and Jordan Lake. This is an important wildlife corridor in the developing Triangle area that is critical for conservation of wildlife habitat and landscape connectivity. *See attached map showing this natural area and its connections to other natural areas.*

A portion of a **Piedmont Swamp Forest** (16 acres total) tracked by the NCNHP also occurs within the Eastowne tract, and is one of 27 high-quality occurrences documented statewide. The majority of this community is located on land owned by the Town of Chapel Hill and is under conservation easement. *See attached map showing the distribution of occurrences for this community statewide, by EO Rank.*

Other communities documented on the Eastowne tract by Michael Schafale (NCNHP) in the August 7, 2019 Site Survey Report include those largely imbedded within the DMBOH Forest, and include Piedmont Alluvial Forest, Piedmont Headwater Stream Forest, Basic Mesic Forest, and Successional Pine Forest. Though these communities were documented and mapped, and are all mature forests with large trees, they did not qualify as occurrences tracked by NCNHP due to their size or other factors.

## **CONCLUSION**

Based on the Site Survey of the undeveloped Eastowne tract conducted on August 7, 2019, the NCNHP has recommended protection of this tract in its natural condition through whatever means feasible.

I hope this information is helpful to you. I am available to answer questions or provide additional information.

## **Attachments:**

1. Summary of NCNHP Natural Area & Natural Community Ratings
  2. Maps:
    - a. Natural Communities within Dry Creek/Mt. Moriah Bottomland Natural Area (Orange County portion)
    - b. Distribution of Dry-Mesic Basic Oak-Hickory Forest Occurrences by EO Rank
    - c. Distribution of Piedmont Swamp Forest Occurrences by EO Rank
    - d. Dry Creek/Mt. Moriah Bottomland and the New Hope Creek Natural Areas
- c:** Maurice Jones, Mary Jane Nirdlinger, Ralph Karpinos, Judy Johnson, John Richardson, Becky McDonnell, Michael Sudol, Loryn Clark, Chris Roberts, Ernest Odei-Larbi

# Summary of NCNHP Natural Area & Natural Community Ratings

By Allison Weakley, Town of Chapel Hill Stormwater Management Division

October 8, 2019

## BACKGROUND

The [North Carolina Natural Heritage Program \(NCNHP\)](#) is charged under the [Nature Preserves Act](#) (G.S. 143B-135.250 to 135.272) with compiling and maintaining information relevant to the protection of North Carolina's most significant natural areas. Since its establishment in 1976, the NCNHP has focused on measures related to biodiversity, giving special attention to areas important for the protection of the state's native plants and animals at the population, community, and ecosystem levels of biological organization.

The NCNHP identifies and delineates natural areas important to the conservation of the state's biodiversity, and follows a standard Natural Heritage methodology designed to address plant and animal species and their habitats, and natural communities. The species and communities tracked by the NCNHP are referred to collectively as "**Elements**" of biodiversity. This standard methodology is used to define the rarity of particular Natural Heritage Elements and to delineate individual occurrences of these Elements across the landscape ("**Element Occurrences**"). In assigning priorities for conservation, NCNHP gives special emphasis to natural areas that support populations of rare species or rare or high-quality natural communities. A key product resulting from this information is the assessment of conservation priorities for the natural areas that have been identified in North Carolina.

There are more than 80 programs in the United States, Canada and Latin America that use natural heritage methodology to conserve biodiversity, and most states in the United States have a natural heritage program.

## EXPLANATION OF TERMS

A [NCNHP Natural Area](#) is an area of land or water that is important for the conservation of the natural biodiversity of North Carolina. These natural areas are irreplaceable as laboratories for scientific research, as reservoirs of natural materials for uses that may not now be known, as habitats for plant and animal species and biotic communities, as living museums where people may observe natural biotic and environmental systems and the interdependence of all forms of life, and as reminders of the vital dependence of the health of the human community on the health of the other natural communities (G.S. 143B-135.252(a)).

As of July 2019, there are more than 2,400 terrestrial and aquatic natural areas that have been identified and documented by the NCNHP statewide. These natural areas are identified through field investigations, and each is assigned a conservation priority based on Elements, Element Ranks, Element Occurrences (EOs) and the ranks of those EOs the natural area contains.

**Elements** are plants, animals, exemplary or unique natural communities, and animal assemblages that are important to the conservation of the state's biodiversity. Each Element is assigned a **Global Rank (or G Rank)** that refers to global rarity and is a measure of imperilment for that element (G1= Critically imperiled, G2=Imperiled, G3=Vulnerable, G4=Apparently secure, G5=Secure). Each Element is also assigned a **State Rank (or S Rank)** that is a measure of relative imperilment within the State of North Carolina (S1= Critically imperiled, S2=Imperiled, S3=Vulnerable, S4=Apparently secure, S5=Secure). G Ranks and S Ranks are based on a variety of factors, such as abundance, distribution, and threats.

**Element Occurrences (EOs)** are individual occurrences of Elements across the landscape; EOs are assigned an **EO Rank**, which indicates its viability/ecological integrity (A=Excellent, B=Good, C=Fair, D=Poor, and E=Extant, surviving but viability not assessed). EO Ranks consider the condition, size and landscape context for an individual element occurrence of a rare species or natural community.

A “**natural community**” is defined as any area with a recognizable and reoccurring assemblage of plants, animals, bacteria, and fungal species naturally associated with each other and their physical environment. More than 340 natural community types have been described in North Carolina. The NCNHP documents the best examples of these natural communities throughout the state with site reports, element occurrence records and map. A classification of all natural communities was developed by NCNHP staff and was first published in 1990 ([Schafale and Weakley 1990](#)); an updated classification guide was updated in 2012 ([Schafale 2012](#)), and a complete classification update is underway ([Schafale, in prep.](#)).

## NATURAL AREA RATING SYSTEM

Natural Areas are rated to establish conservation priorities for the state. NCNHP assigns a rating for each natural area based on the potential of the natural area to have the best locations for each rare species or natural community occurrence in the state (Representative Rating), and the number and rarity of these occurrences (Collective Rating) within the natural area.

Each natural area is assigned two values, a Representation Rating (R1-R5) and a Collective Value Rating (C1-C5), with R1 (Exceptional) or C1 (Exceptional) indicating the highest rating values, respectively.

- **Representational (R) Rating** evaluates the potential for a natural area to contribute to a collection of the best locations for each tracked element in the state, and rates the natural area on its importance in protecting the best occurrences in the state.
- **Collective (C) Rating** evaluates the conservation value of a natural area based on the number and rarity of the elements it contains, weighted in terms of both global and statewide imperilment of the element. A natural area is scored by summing the weighted scores of all elements in the natural area.

The two indices measure different and complementary qualities of each natural area, and the ultimate rating for a natural area is the highest value of the two ratings. In other words, a Natural Area is assigned have an overall rating of Exceptional, Very High, High, Moderate or General based on the individual R and C Ratings for the site.

In order to assign conservation priority for each natural area, the two rating systems (described above) use Elements, Element Ranks (e.g., G Rank), Element Occurrences (EOs), and EO Ranks to assign conservation priority. Thus each overall natural area rating is relative to the rating of other natural areas statewide, based on the number of and quality, rarity and imperilment of the rare species or natural communities documented within each natural area.

NCNHP data are updated quarterly, and ratings for natural areas are comprehensively assessed every year. The last NCNHP data update was July 2019, and the next update is expected in October 2019.

For more information, visit the NCNHP website at [www.ncnhp.org](http://www.ncnhp.org).

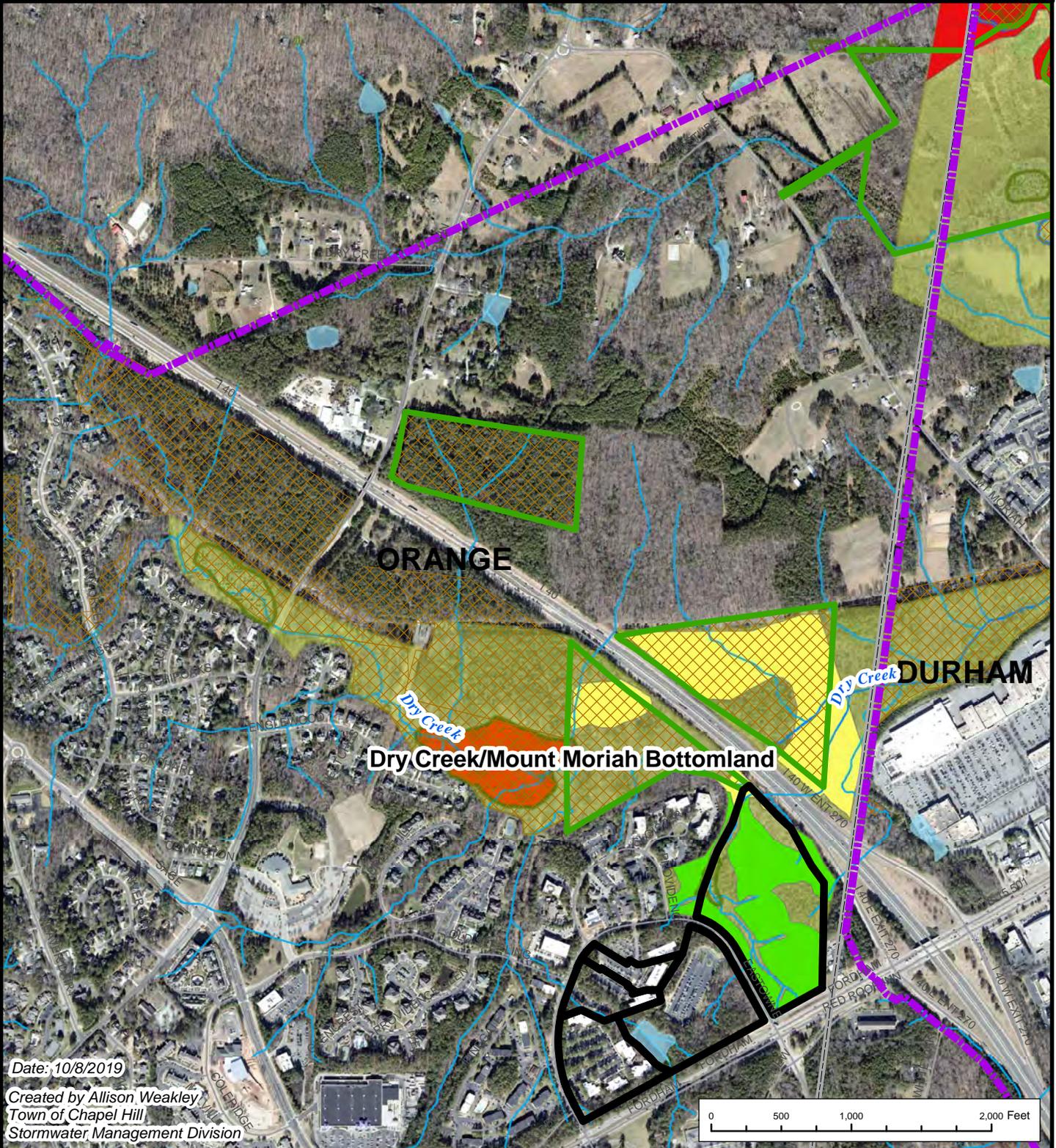
# Natural Communities within Dry Creek/Mt. Moriah Bottomland Natural Area (Orange County portion)

County Boundaries	Eastowne Tracts	<b>NCNHP Natural Communities (August 2019 update)</b>
Chapel Hill Zoning Jurisdiction	<b>Managed Areas</b>	Dry-Mesic Basic Oak-Hickory Forest (Piedmont Subtype)
Streams	Conservation Easement	Piedmont Swamp Forest
Non-regulated Waterbody	Local Government Ownership	Piedmont/Mountain Semipermanent Impoundment (Piedmont Marsh Subtype)
Lake/Pond	<b>NCNHP Natural Areas</b>	Piedmont Bottomland Forest (High Subtype)
Large Stream/River	Moderate	Piedmont Bottomland Forest (Typic Low Subtype)
Swamp/Marsh		

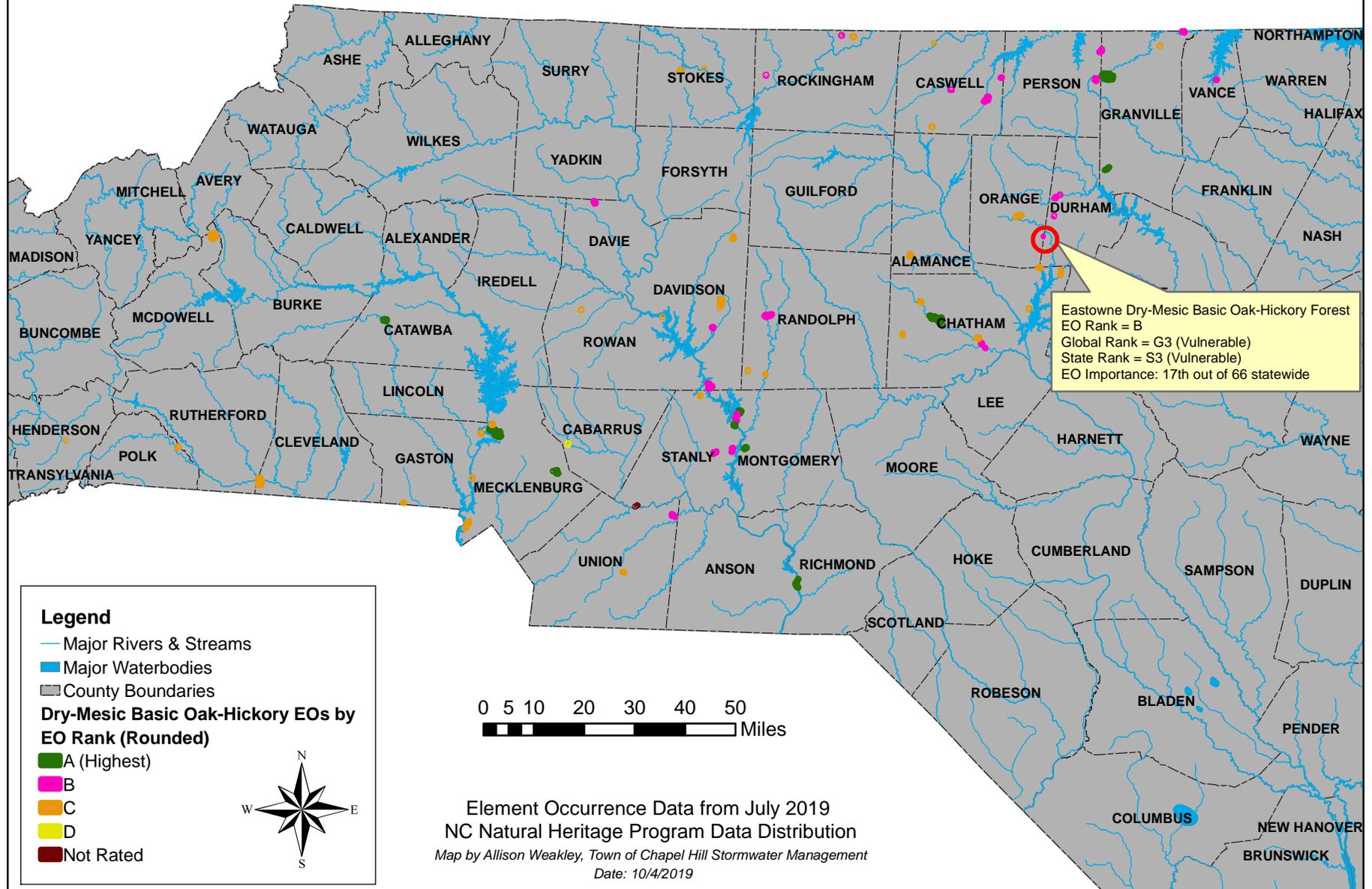
1 inch = 1,000 feet



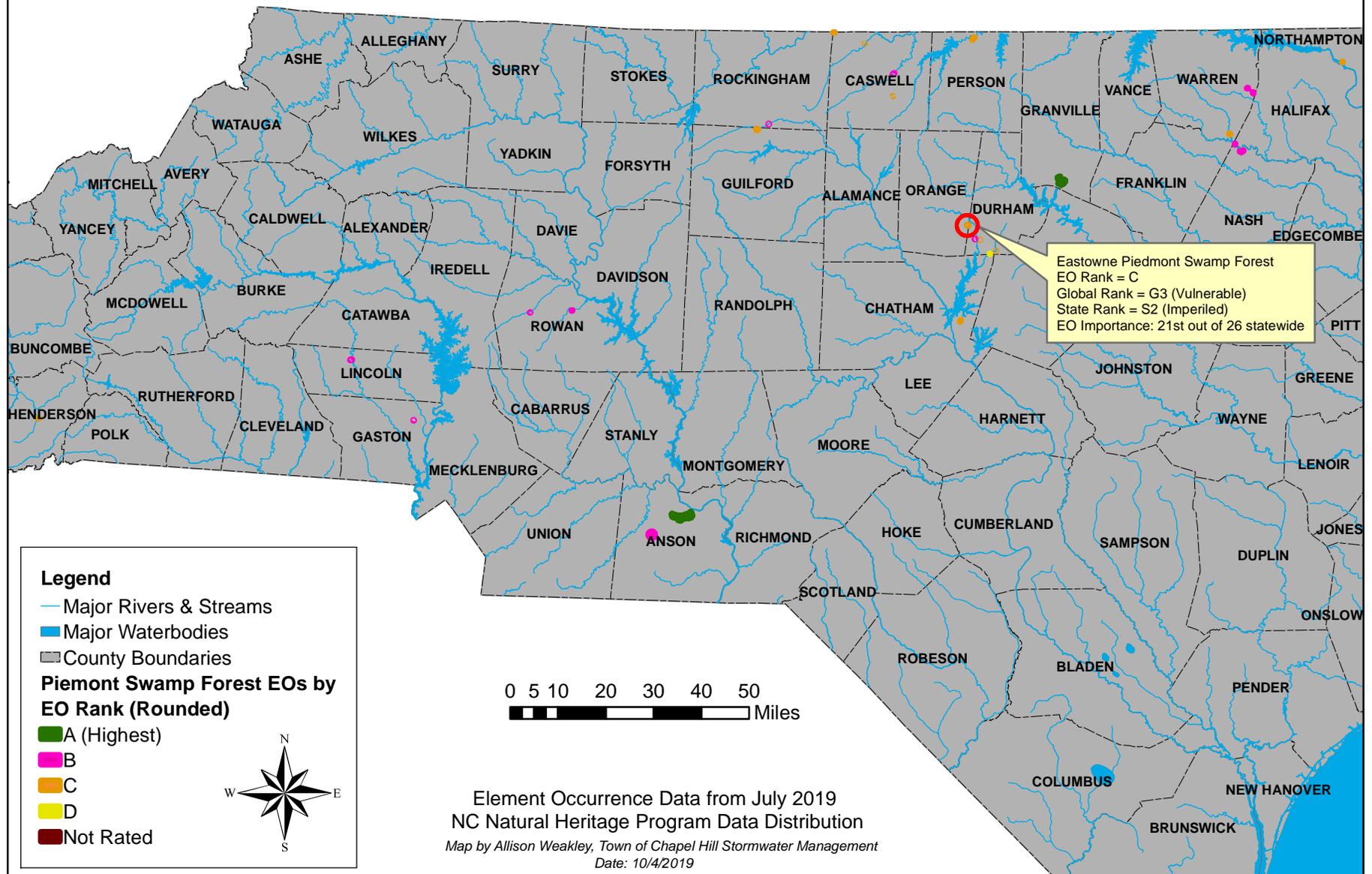
Natural Areas, Managed Areas and Natural Communities data from July 2019 NC Natural Heritage Program data distribution unless otherwise noted



# Distribution of Dry-Mesic Basic Oak-Hickory Forest (Piedmont Subtype) Element Occurrences by EO Rank



# Distribution of Piedmont Swamp Forest Element Occurrences by EO Rank



# Dry Creek/Mt. Moriah Bottomland and New Hope Creek Natural Areas

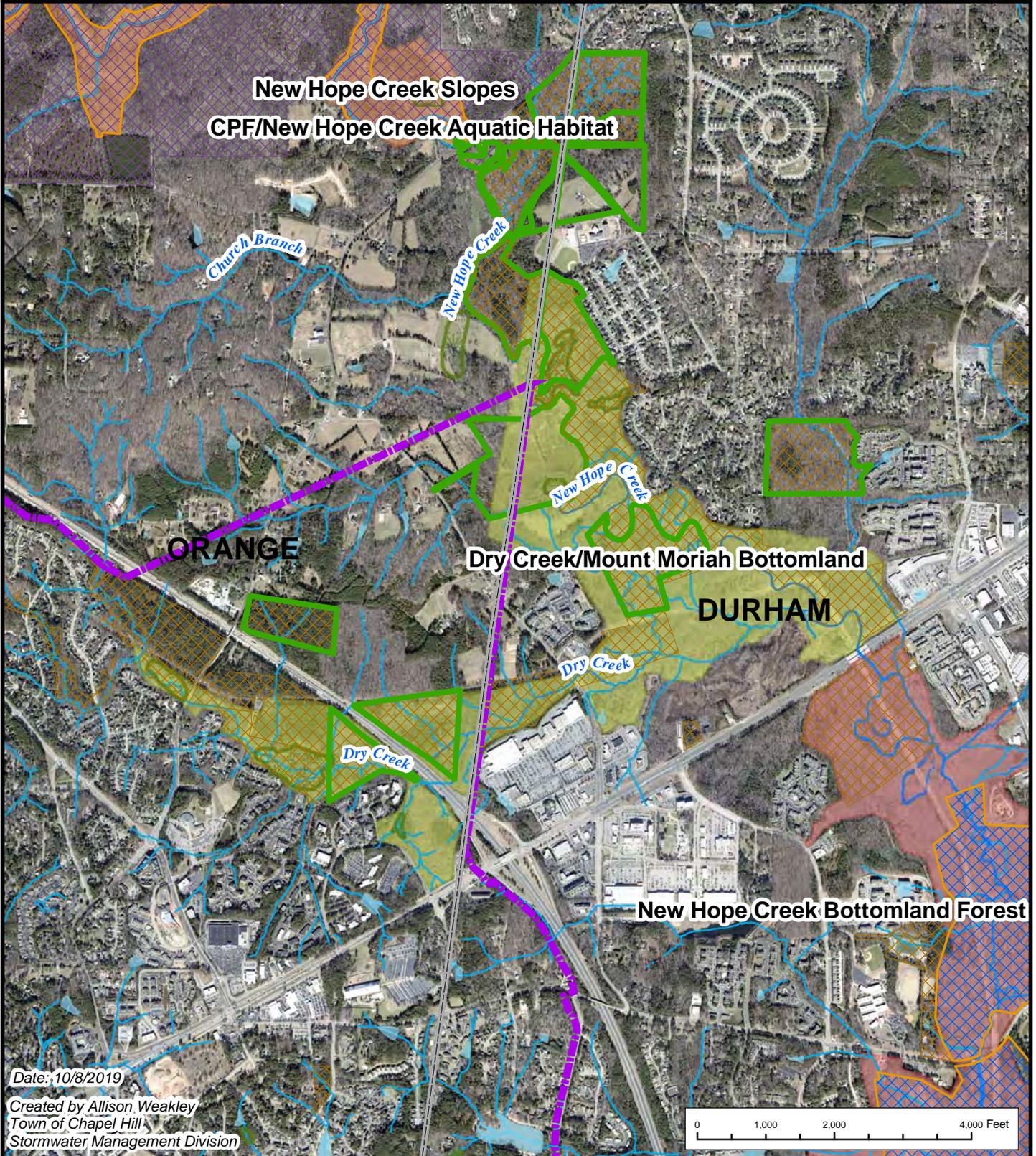
- |                                 |                            |                            |
|---------------------------------|----------------------------|----------------------------|
| County Boundaries               | <b>Managed Areas</b>       | <b>NCNHP Natural Areas</b> |
| Chapel Hill Zoning Jurisdiction | Registered Heritage Area   | Exceptional                |
| Streams                         | Conservation Easement      | Very High                  |
| Large Stream/River              | Federal Ownership          | High                       |
| Lake/Pond                       | Local Government Ownership | Moderate                   |
| Swamp/Marsh                     | Private                    | General                    |
|                                 |                            | Unranked                   |

\*Natural Areas and Managed Areas data from July 2019 NC Natural Heritage Program data distribution

\*\*Streams and waterbodies data from TOCH GIS Oct 2019



1 inch = 2,000 feet



Date: 10/8/2019

Created by Allison Weakley  
Town of Chapel Hill  
Stormwater Management Division

