Introduction

Throughout history, investments in transportation have shaped land use and development patterns of cities. American cities of the eighteenth and nineteenth centuries were founded around ports, river fronts, and railroads. With the advent of cars and the construction of the interstate freeway system in the twentieth century, centralized and crowded cities had room to breathe. Suburbs grew up along highways, promoting a more dispersed development pattern.

Durham’s history mirrors the broader trend. Founded in 1869 as a railroad and industrial hub, the tobacco industry flourished. As population grew, streetcars brought mill and factory employees to work from nearby neighborhoods, while farm-to-market roads brought goods from rural areas to town. By the 1970s and 1980s, another population boom was underway. Aided by the completion of Interstate 85 and Interstate 40, farms and forests began to transform into subdivisions, suburban shopping malls, and office/industrial campuses.

The last fifteen years have brought tremendous population growth to the Triangle. The US Census Bureau released findings earlier this year showing the Durham-Chapel Hill-Carrboro metropolitan area as the 100th largest in the country. Of those top 100, the Durham-Chapel Hill region is the 15th fastest-growing since 2010, while the Raleigh metro area is in the top three. (Figure 1). With all indicators pointing toward fast-paced growth continuing, the status quo of the current transportation network will struggle to keep up. Already, congestion on roads is becoming a problem with some serious economic and environmental consequences.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Metropolitan Area</th>
<th>Percent Growth 2010-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Austin-Round Rock, TX Metro Area</td>
<td>12.5</td>
</tr>
<tr>
<td>2</td>
<td>Cape Coral-Fort Myers, FL Metro Area</td>
<td>9.5</td>
</tr>
<tr>
<td>3</td>
<td>Raleigh, NC Metro Area</td>
<td>9.3</td>
</tr>
<tr>
<td>4</td>
<td>Houston-The Woodlands-Sugar Land, TX Metro Area</td>
<td>9.1</td>
</tr>
<tr>
<td>5</td>
<td>Charleston-North Charleston, SC Metro Area</td>
<td>9.0</td>
</tr>
<tr>
<td>6</td>
<td>Orlando-Kissimmee-Sanford, FL Metro Area</td>
<td>8.5</td>
</tr>
<tr>
<td>7</td>
<td>San Antonio-New Braunfels, TX Metro Area</td>
<td>8.1</td>
</tr>
<tr>
<td>8</td>
<td>Provo-Orem, UT Metro Area</td>
<td>7.9</td>
</tr>
<tr>
<td>9</td>
<td>Denver-Aurora-Lakewood, CO Metro Area</td>
<td>7.8</td>
</tr>
<tr>
<td>10</td>
<td>Dallas-Fort Worth-Arlington, TX Metro Area</td>
<td>7.8</td>
</tr>
<tr>
<td>11</td>
<td>Boise City, ID Metro Area</td>
<td>7.5</td>
</tr>
<tr>
<td>12</td>
<td>Charlotte-Concord-Gastonia, NC-SC Metro Area</td>
<td>7.0</td>
</tr>
<tr>
<td>13</td>
<td>Nashville-Davidson--Murfreesboro--Franklin, TN Metro Area</td>
<td>7.0</td>
</tr>
<tr>
<td>14</td>
<td>Des Moines-West Des Moines, IA Metro Area</td>
<td>6.9</td>
</tr>
<tr>
<td>15</td>
<td>Durham-Chapel Hill, NC Metro Area</td>
<td>6.8</td>
</tr>
<tr>
<td>16</td>
<td>McAllen-Edinburg-Mission, TX Metro Area</td>
<td>6.7</td>
</tr>
<tr>
<td>17</td>
<td>Phoenix-Mesa-Scottsdale, AZ Metro Area</td>
<td>6.6</td>
</tr>
</tbody>
</table>
Like railroads and highways of the past, investments in mass transit systems not only respond to the needs of the city today, but also will help shape the city of the future. Across the country, cities like Denver, CO and those closer to Durham like Charlotte, NC have shown that growth oriented toward mass transit investments can pay off, protect the environment and create jobs. Guiding development that is higher density, mixed use and walkable to areas well served by mass transit not only helps to solve a transportation problem, it can also play a role in:

- **Improving public heath by increasing opportunities to walk or bike.** When homes, offices, stores, and civic buildings are near a transit station and close to each other, it is more convenient to walk, bicycle or use public transit. This expanded transportation choice makes it easier to incorporate physical activity into daily routines.

- **Decreasing household transportation costs.** Studies show that owning a car can cost an average of $8,876 annually.\(^4\) For those with modest incomes, the cost of transportation can be a substantial hardship. Locating jobs and housing within a short distance of a transit station can provide a cheaper transportation alternative.

- **Connecting people who do not have access to cars with jobs and other opportunities.** National trends point toward a declining number of people with access to cars, either out of necessity or choice.\(^6\) Allowing more compact neighborhoods with reliable access to transit can help connect people to jobs, education, health care, and other opportunities throughout the region.

- **Improving air quality and reducing greenhouse gas emissions.** According to the EPA, roughly 17 percent of US carbon dioxide emissions come from passenger vehicles.\(^7\) Developing compactly and investing in public transit and other transportation options makes it easier for people to drive less, lowering greenhouse gas emissions. These approaches can also help reduce carbon monoxide, sulfur dioxide, particulate matter, and other pollutants emitted by motor vehicles.

- **Promoting a fiscally responsible pattern of growth by reducing infrastructure costs.** According to a study by Smart Growth America,\(^8\) many cities have found that compact development, compared to “conventional suburban development,” can save money on upfront infrastructure costs, reduce the cost of ongoing community services like fire, police, and ambulance, and generate greater tax revenues.

Of course, unintended consequences can result from directing development towards investments in transit.

- **Rising land values can result in increased rents and home values and accelerated housing turnover/displacement.** Studies have shown that a new transit station can “set in motion a cycle of unintended consequences in which core transit users – such as renters and low income households – are priced out in favor of higher-income, car-owning residents who are less likely to use public transit for commuting.”\(^9\) Policies and tools should be put in place so that the benefits of transit investments are shared by all.
Development Tiers: A Framework for Managed Growth

When Durham elected officials adopted the 2005 Comprehensive Plan they endorsed a new framework for growth described as Development Tiers. Recognizing the variety of landscapes and urban forms across Durham, from farms and rural crossroads to urban neighborhoods and downtown, Development Tiers are a basis for context-appropriate policy and regulation (Figure 2).

The Compact Neighborhood Tier was created to promote “high density and intensity infill, redevelopment, and new development that integrates a mix of uses through an urban fabric,” and was applied on the Future Land Use Map to areas surrounding a proposed regional rail transit system (Durham Comprehensive Plan Policy 2.1.2e, Compact Neighborhood Tier Defined). An additional designation, called the Suburban Transit Area, was identified for later phases of the regional rail system, and provided the option of developing under Compact Neighborhood standards. As the location of transit stations becomes more certain, Suburban Transit Areas are intended to be re-designated to Compact Neighborhoods (Durham Comprehensive Plan Policy 2.4.1e, Newly Designated Transit Areas).

As opposed to traditional patterns of suburban growth, development within the Compact Neighborhood Tier is intended to support a range of transportation modes with higher densities and a mix of uses. Shown on the next page are several broad characteristics of a compact neighborhood.

Figure 2: Development Tiers

Inspired by the Rural-Urban Transect Model, elected officials adopted a framework of Development Tiers to describe the variety of landscapes and urban forms across Durham. In general, development intensity decreases with distance from the Downtown core.

Downtown Tier: The commercial, cultural and entertainment hub of Durham where high intensity development and pedestrian activity are encouraged.

Urban Tier: Land primarily developed prior to the 1960s with small lot sizes in traditional street grid patterns and differing land uses in proximity to one another.

Suburban Tier: Expected to accommodate a large proportion of future growth. Typical development patterns include residential subdivisions, shopping centers, and office parks.

Rural Tier: Established to preserve rural character, protect critical watersheds, and preserve agricultural land uses.
Urban densities. More households and jobs within walking distance of a transit station will support ridership and businesses in the area.

A mix of residential, retail, office, and other uses. The ability to live, shop, eat, work, and play within the same general area decreases the number of car trips and increases the liveliness of a place.

Street-oriented buildings. Appropriately scaled buildings built up to the sidewalk can slow traffic and make walking more interesting and inviting.

A connected street network. Shorter blocks can improve walkability by creating more direct routes for pedestrians, and slowing and dispersing traffic.

Appropriately scaled streets. Narrow streets slow traffic and can reduce the crash rate. Narrower streets leave more room for sidewalks and can improve the sense of comfort for pedestrians.

Transportation choices. Frequent transit service and a continuous network of sidewalks and bike facilities add viable alternatives to traveling by car.
The Durham-Orange Light Rail Transit and Station Area Planning

Planning for regional rail in the Triangle extends back several decades. A Regional Transit Plan was first adopted in 1995. The plan recommended two phases of regional rail: the first would connect Durham to Raleigh and other Wake County destinations, and the second would connect Chapel Hill and Durham. In 2011 and 2012 voters in Durham and Orange counties renewed their support with the passage of a 1/2 cent sales tax dedicated to expanding bus service and building regional rail. While bus service expansions are already underway, GoTriangle, the regional transit provider, is preparing environmental and engineering documents for the Durham-Orange Light Rail Transit (D-O LRT) corridor. The D-O LRT will travel 17 miles connecting an area east of Downtown Durham near Alston Avenue to the hospitals at the University of North Carolina-Chapel Hill (Figure 3).

The Durham-Orange corridor, which includes 17 stations, is a clear choice as a transit route, connecting major employers, universities, medical centers and many other destinations. In 2005, population along the corridor was 175,000 people. By 2035, projections from the Triangle Regional Model show population swelling to 231,000 – an increase of 32 percent over 20 years.

Figure 3: Proposed Durham-Orange Light Rail Transit Corridor
In addition to serving transportation needs, the D-O LRT has the potential to redirect growth and focus development in a more compact, walkable and mixed-use pattern. To do so effectively will require a multi-faceted approach to station area planning that includes land use planning, infrastructure planning and strategies to meet affordable housing objectives. As seen in Figure 4, under the larger framework of station area planning, the City and County are engaged in three major initiatives. More detail is provided in sections below.

Figure 4: Station Area Planning Framework

Figure 5: Land Use Planning Three Step Process
**Land Use Planning**

Through a three-step process establish appropriate land use policies and regulations that will enable higher density, walkable, and mixed use development (Figure 5).

**Step 1: Update the Comprehensive Plan. Re-assess with community input the Compact Neighborhood Tier and Suburban Transit Area boundaries established on the Future Land Use Map.**

Compact Neighborhoods and Suburban Transit Areas were established around proposed regional rail stations in the 2005 Comprehensive Plan, setting the broad policy basis for future development that supports transit by being designed with higher densities, a greater mix of uses, and multi-modal transportation options.

Thus, the policy in support of transit-oriented development is not new and remains in effect today. The proposed amendments to the Future Land Use Map described in these reports are intended as an update to the boundaries of the Compact Neighborhood Tiers and to convert Suburban Transit Areas to Compact Neighborhoods (per Policy 2.4.1.e.) to better align with the current rail transit proposal.

Updating the Compact Neighborhood Tiers now also provides an opportunity to re-engage with communities, many of which have seen growth and change in the ten years since the Comprehensive Plan was adopted. It allows opportunity to refine recommendations and assess potential issues that should be addressed in the years leading up to opening day of the light rail.

**Step 2: Update the Unified Development Ordinance (UDO). Revise, as needed, the Compact Design zoning district that is intended to be put in place in areas designated as Compact Neighborhoods.**

The UDO lays out the zoning rules for the physical development of property, and is crafted to result in a built environment that meets the goals of the Comprehensive Plan. The Compact Design (CD) zoning district was adopted in 2011, and was designed to encourage appropriate density and pedestrian activity by focusing on the form of development and how it shapes the streetscape in areas surrounding future transit stations.

Through a process referred to as a “text amendment,” the Planning Department will revise, as needed, standards in the Compact Design zoning district to be more appropriate for designated Compact Neighborhoods identified on the Future Land Use Map.

**Step 3: Zoning Map Changes. Apply, with community input, the updated Compact Design zoning district regulations in areas indicated on the Future Land Use Map to be Compact Neighborhoods. Engage the community in mapping specific sub-districts.**

Rezoning the Compact Neighborhoods will be a separate and involved public process that will go into great detail about specific regulations and where those regulations should apply. A common and on-going source of confusion is the distinction between future land use and zoning. For more information, reference Figure 6 on the following page.
Infrastructure Planning
Planning for improvements to sidewalks, bike facilities, streetscapes and underground utilities within future transit areas will be crucial to the long-term success of these neighborhoods as places to live, work, and play. The Planning Department is coordinating a multi-departmental planning process, the Station Area Strategic Infrastructure (SASI) study, to identify and prioritize public infrastructure projects that promote access to transit and enhance neighborhoods and businesses around regional rail stations.

Affordable Housing in Transit Areas
Following recommendations presented to the City Council by Enterprise Community Partners, the Planning Department will be exploring the possibility of incorporating an enhanced density bonus as part of the Compact Design zoning district update. If determined to be feasible, base densities in Compact Design zoning districts would be reduced, and significant bonuses would be granted to development projects that include affordable housing.
Compact Neighborhood Planning: Updating the Comprehensive Plan

Since the Comprehensive Plan was adopted in 2005, the light rail alignment has shifted and stations have been relocated, added or removed, causing boundaries on the Future Land Use Map to no longer align with the adopted transit plan. As part of the draft Environmental Impact Statement (EIS), GoTriangle has solidified the corridor and station locations. Based on these decisions, the existing Compact Neighborhood Tier and Suburban Transit Area boundaries need to be re-examined in the following areas: Leigh Village, Patterson Place, South Square/MLK Jr. Parkway, Erwin Road near Duke University/VA Hospital, and Alston Avenue (Figure 7).

Figure 7: Compact Neighborhood Study Areas
Beginning in late 2014/early 2015, Planning Department staff began work to reassess the Compact Neighborhood Tiers and Suburban Transit Areas along the Durham-Orange Light Rail corridor. In general, the project can be broken into three phases:

**Staff Background Work**
During this time staff developed a list of guidelines to determine new draft boundaries for the Compact Neighborhood Tier. These guidelines were applied and mapped uniformly across each study area and helped create a consistent foundation from which to begin conversations with the community (Appendices A-E). Below are the guidelines considered in the assessment of each Compact Neighborhood or Suburban Transit Area:

- Preservation of significant environmental features;
- Use of large rights-of-way (highways, railroad corridors, etc.) that preclude pedestrian connections as edges;
- Significant changes in the type and character of development (evidenced by different building scales, uses, etc.);
- Preservation of intact single-family residential (especially in historic districts);
- Avoidance of self-contained University-College development;
- A half-mile walking route from the station (not just as the bird flies);
- Locating boundaries mid-block to maintain similar character on both sides of a street;
- Inclusion of large undeveloped or underutilized tracts of land; and
- Inclusion of areas with particularly good access, visibility or prominence.

**Public Engagement**
Staff held a total of 10 public meetings to inform property owners and interested stakeholders about the project and process as well as seek input on proposed Compact Neighborhood Tier boundaries. Commonly asked questions are summarized in Appendix F.

**April Community Meetings.** Members from the public were invited to attend five public meetings to learn about Compact Neighborhoods, the planning process, and to weigh in on areas they believed should (or should not) be included in the Compact Neighborhood Tier. Over 250 people attended the series of five meetings which were held, one in each station area. In general, the meetings followed the same format: an introductory presentation, opportunity for question and answer, and a small group mapping activity. For the mapping activity, participants were asked to draw what they believed a suitable boundary for the Compact Neighborhood Tier would look like. Results from the mapping exercise were compiled and are summarized in Appendices G-J.

**June and August Community Meetings.** A second round of five public meetings was held in June and August to share results from April, gather additional input on the boundaries, and receive feedback on a draft of staff’s recommended boundaries. Meetings were held as open houses with over 210 people in attendance.

**October Public Information Sessions.** Following the release of a draft of these reports to the public, Planning staff hosted two public information sessions to answer questions and receive input prior to a formal public hearing setting. Over 120 people attended these sessions.
Public Hearing and Adoption Process
During late 2015 and early 2016, staff will give presentations to and attend public hearings of the Joint City-County Planning Committee, Planning Commission, City Council, and the Board of County Commissioners. More detail will be provided as it becomes available.

Conclusions
Durham is at a crossroads. With rapid population and employment growth expected to continue into the future, conventional patterns of development will eventually become unsustainable. Redirecting growth and focusing development in a more compact, walkable, and mixed use pattern will offer residents and businesses with a choice about how to live, work, and move around the region.

Updating the Future Land Use Map of the Durham Comprehensive Plan is only a first step. It renews the policy – the public expectation – that as areas around light rail stations develop in the future, they will do so in a way that is consistent with the goals of the Compact Neighborhood Tier. There is a lot of work still ahead: refining Compact Design zoning regulations, developing strategies for creating and maintaining affordable housing, and developing and funding infrastructure plans. For these Compact Neighborhoods to be successful, continued diligence and dedication from the community, staff and elected officials will be needed in the years to come.

Endnotes
Introduction

This section will describe in greater detail the proposed changes to the Future Land Use Map for the area around the proposed Leigh Village light rail station. Opportunities, challenges and potential impacts of the proposed Compact Neighborhood Tier will be evaluated.

Existing Land Use and Development

Despite its central location between the Research Triangle Park, the University of North Carolina at Chapel Hill, and rapidly growing populations in southern Durham, Wake and Chatham counties, the area immediately surrounding the proposed Leigh Village station has remained largely low density suburban development with a semi-rural character. Highway oriented commercial and office developments are located at the intersection of NC Highway 54 and Farrington Road, although traffic congestion has become so onerous that there is an approaching limit to the amount of development that can be accommodated in this area before major improvements to the roadways will be required. A significant amount of land remains undeveloped in the vicinity of the proposed LRT station, causing Leigh Village to be one of the last opportunities for greenfield development along the D-O LRT corridor. A map and description of existing land uses and development can be found in Figure 1.

Proposed Changes to the Future Land Use Map

The Future Land Use Map currently designates an area centered around the proposed Leigh Village station as a 356-acre Suburban Transit Area. Plans for a light rail station in this location have not dramatically changed since the Suburban Transit Area was established in 2005; however, additional transportation studies have been completed and conversion from a Suburban Transit Area to a Compact Neighborhood Tier needs to be considered, along with re-assessment of the boundaries.

Staff recommends five amendments to the Future Land Use Map: Development Tier, Future Land Use Designations, Eastwood Park, Villa Pinea, and Technical Updates. Each is explained in greater detail on the following pages.
Figure 1: Existing Land Use and Development Map

<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Acres</th>
<th>Percent of Half Mile Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacant</td>
<td>200.2</td>
<td>40%</td>
</tr>
<tr>
<td>Right-of-Way</td>
<td>80.7</td>
<td>16%</td>
</tr>
<tr>
<td>Rural Living</td>
<td>79.2</td>
<td>16%</td>
</tr>
<tr>
<td>Parks and Open Space</td>
<td>79.1</td>
<td>16%</td>
</tr>
<tr>
<td>Small Lot Residential Neighborhood</td>
<td>22.5</td>
<td>4%</td>
</tr>
<tr>
<td>Suburban Office Center</td>
<td>12.8</td>
<td>3%</td>
</tr>
<tr>
<td>Multi Family Residential Neighborhood</td>
<td>11.0</td>
<td>2%</td>
</tr>
<tr>
<td>Suburban Commercial Center</td>
<td>5.2</td>
<td>1%</td>
</tr>
<tr>
<td>Civic</td>
<td>5.0</td>
<td>1%</td>
</tr>
<tr>
<td>Neighborhood Commercial Center</td>
<td>4.4</td>
<td>1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>500</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Land Use descriptions are provided in Appendix K.
Proposed Change: Development Tier
As directed by Comprehensive Plan policy 2.4.1.e., convert the existing Suburban Transit Area into a Compact Neighborhood Tier with updated boundaries developed with community input. As shown in Figure 2, an approximately 53-acre area on the north side of NC Highway 54 (Eastwood Park and Chapel Creek neighborhoods) is recommended to be removed from the Suburban Transit Area, while approximately 115 acres is recommended to be added to the Compact Neighborhood Tier, located generally west of George King Road and south of the Culp Arbor neighborhood. The changes result in a Compact Neighborhood Tier of approximately 423 acres.

Figure 2: Proposed Development Tier Changes
Proposed Change: Future Land Use Designations
Amend the future land use designations shown in Figures 3 and 4 to Design District. This is the category on the Future Land Use Map that directs future zoning map changes to the Compact Design (CD) zoning district, a form-based district which encourages a mix of uses and emphasizes pedestrian-oriented design.

Figure 3: Current Future Land Use Map
This proposal would convert 53 acres of Commercial, 115 acres of Low Density Residential, 58 acres of Low-Medium Density Residential, 109 acres of Medium-High Density Residential, and 75 acres of Office to Design District.

Figure 4: Proposed Future Land Use Map
**Proposed Change: Eastwood Park**
Amend the future land use designation shown in Figure 5 from Commercial to Low Density Residential (4 DU/Ac. or Less). Eastwood Park/Celeste Circle is an established single-family neighborhood, mostly built in the 1960s. A commercial designation of the neighborhood could encourage strip development along NC Highway 54 and could detract from the core of the transit area. This action would implement a recommendation from the NC 54/I-40 Corridor Study, adopted by the DCHC Metropolitan Planning Organization in 2010.

**Figure 5: Eastwood Park Proposed Future Land Use Change**

**Proposed Change: Villa Pinea**
Amend the future land use designations shown in Figure 6 from Low-Medium Density Residential (4-8 dwelling units/acre) to Recreation and Open Space. The North Carolina Botanical Garden Foundation owns this property and holds a permanent conservation easement. Consistent with policy 2.1.3b. of the Durham Comprehensive Plan, privately-owned conservation lands held by local land trusts are defined as Recreation and Open Space.

**Figure 6: Villa Pinea Proposed Future Land Use Change**

**Proposed Change: Technical Updates**
Correct minor mapping errors that will result in small (approximately 1 acre or less) changes to the Future Land Use Map, mostly impacting the right-of-way.
Opportunities and Challenges for Compact Neighborhood Development

The transition of Leigh Village into a walkable mixed use neighborhood will not happen overnight, and will be dependent on the pace of private development interest. As a nearly greenfield site, there are numerous challenges and opportunities:

**Challenges:**

- **Traffic congestion and insufficient transportation infrastructure.** A rising level of traffic congestion along NC 54 is becoming increasingly problematic. With few viable alternate routes to access destinations like UNC-Chapel Hill from southern Durham, eastern Chatham and Wake counties, this corridor is one of the busiest in the state. The NC 54/I-40 Corridor Study presents a number of multi-modal recommendations to alleviate congestion and facilitate development around transit nodes, but many of these projects are not yet funded and several decades from construction.

- **Extending public utilities.** Most of the proposed Compact Neighborhood Tier is located outside of Durham city limits, and therefore, does not receive public utilities like water and sewer. Development consistent with the vision for a Compact Neighborhood would require annexation into the City of Durham and major extensions of public utilities to the area.

- **Coordinating and phasing development.** As previously mentioned, Leigh Village is perhaps the last greenfield site along the D-O LRT corridor. While this is an opportunity, encouraging coordination and proper phasing amongst multiple developers is crucial, but represents a significant challenge in the absence of a master development plan.

**Opportunities:**

- **Large, undeveloped parcels.** Especially near the proposed station, there are several large underused parcels. Larger parcels are easier to assemble for redevelopment than smaller parcels with varied owners.

- **Nearby natural areas.** The geographic extent of the Compact Neighborhood is limited by significant natural resources, in particular the Little Creek corridor. While it has been preserved as a sensitive habitat, nature trails wind throughout the bottomlands, creating a unique natural amenity along the D-O LRT corridor.

- **Highway access.** Transit-oriented development still benefits from decent access to the highway transportation network. In this area, Interstate 40 and NC Highway 54 provide good access.
Justification for the Compact Neighborhood Tier Boundary

The recommended Compact Neighborhood Tier boundary emerged as a result of community input and the adherence to the general boundary guidelines developed by staff at the onset of the project. While the boundary description is explained in detail in Figure 7, in general, it includes undeveloped and vacant land, as well as rural density residential, and already-built non-residential uses like offices and shopping centers. Important environmental areas and large single family neighborhoods are avoided. Where possible, property lines and recorded easements are followed.

Plan amendments are evaluated against criteria outlined in paragraph 3.4.7 of the Unified Development Ordinance:

Criteria 1: Whether the proposed change would be consistent with the intent, goals, objectives, policies, guiding principles and programs of any adopted plans.

Criteria 2: Whether the proposed change would be compatible with the existing land use pattern and/or designated future land uses.

Staff believes the proposed boundaries for the Leigh Village Compact Neighborhood Tier are consistent with numerous city and county goals and policies. For many of the reasons outlined in the introduction, the Durham Comprehensive Plan includes goals, objectives, and policies in support of Compact Neighborhoods surrounding regional rail stations (Policy 2.1.2e., Objective 2.2.4, Policy 2.4.1a.). Amending the Future Land Use Map to Compact Neighborhood is a step toward the vision of higher density, mixed use and walkable neighborhoods that are supported by transit.

Much of the area identified to be a part of the Compact Neighborhood Tier is already a part of the Suburban Transit Area and called out to be a mix of non-residential and higher density residential on the Future Land Use Map. While the proposed change is largely consistent with previously adopted policies for future growth, new development patterns (higher density, mix of uses) are likely to be dramatically different than what exists there today.

A consistent goal within both the City and County Strategic Plans recognizes the need to improve the quality of neighborhoods by improving transportation choice through increasing access to transit, walking and biking. Compact Neighborhoods encourage more density, mix of uses, and walkability around light rail stations, and thus aid the City and County in realizing those goals.
Figure 7: Compact Neighborhood Tier Proposed Boundary Explanation

Numbers shown on the map correspond with notes on the following page. Proposed boundaries are a result of community input and adherence to general boundary guidelines developed by staff at the onset of the project. These guidelines are described in the introductory chapter.
1. Meadowmont Farms Tract. The Meadowmont Farms tract is proposed to be the western boundary of the Compact Neighborhood Tier, and most of the site is within the 1/2 mile walk zone from the proposed light rail station. Facilitating development on this property will enhance vehicle and pedestrian connectivity between the station and neighborhoods to the west in the Town of Chapel Hill.

2. Northern Edge. The northern boundary of the proposed Compact Neighborhood Tier generally corresponds with the edge of the 1/2 mile walk zone and with input from a community meeting held in April 2015. The boundary excludes the Villas at Culp Arbor development, which is approved and built for a relatively low density, as well as the historic Patterson Mill Store.

3. Interstate 40. The Palladian Office Park is not included in the proposed Compact Neighborhood Tier because Interstate 40 and the NC 54/I-40 interchange create severe barriers for pedestrian access.

4. Falconbridge Shopping Center. The commercial area south of NC 54 is somewhat separated from the rest of the proposed Compact Neighborhood Tier, however, the proposed change to the Farrington Road and Falconbridge/Celeste Circle intersections with NC 54 will enhance pedestrian connectivity across the highway. This could make the area conducive to transit-supportive development.

5. North/South Collector Street. The easternmost portion of Celeste Circle is planned to be incorporated into a future collector street connecting the south side of NC 54 to the north side where the planned LRT station is located.

6. Eastwood Park. The Eastwood Park/Celeste Circle neighborhood is an established single-family neighborhood with single-family zoning but is within the current Suburban Transit Area boundary. There was strong consensus from the community to leave this area out of the Compact Neighborhood and to change the Future Land Use Designation to residential (as addressed in previous sections).

7. Little Creek Bottomlands. Public entities including the Army Corps of Engineers own and manage the Little Creek Bottomlands, an area identified as a Natural Heritage Area, important for its role in wildlife habitat and migration, flood control and water quality management. The proposed Compact Neighborhood Tier does not infringe into lands owned by the Army Corps. Preserving significant natural environments is vital, and stringent regulations will restrict development in floodplains.

8. Undeveloped Land. Particularly near the proposed light rail station, there are several large and underutilized parcels that offer tremendous opportunity for transit-supportive development consistent with the goals of the Compact Neighborhood Tier.
Criteria 3: Whether the proposed change would create substantial adverse impacts in the adjacent area or the City or County in general.

This section will evaluate and discuss what potential environmental, housing and property values, transportation, and community service impacts could arise as a result of implementing a policy in support of Compact Neighborhoods. While in many cases it is too early to determine specific impacts, broader issues are discussed and actions are proposed that are intended to alleviate potential negative impacts.

Environment (Figure 8)
Whenever proposals to increase density are on the table, a common concern is that it will negatively impact environmental systems. Many natural features of this area remain intact, including important protected areas like the Little Creek Bottomlands. Public entities including the Army Corps of Engineers own and manage the bottomlands, a significant natural resource preserved for wildlife habitat and migration, flood control and water quality management.

Natural Heritage Areas. The North Carolina Natural Heritage Program identifies sites that are of special biodiversity significance and assigns priority rankings that indicate the degree of their importance for conservation. A small portion of the natural heritage area associated with Little Creek Bottom Lands and Slopes has an overlapping boundary with the proposed Compact Neighborhood Tier. The Little Creek Bottomlands and Slopes, largely preserved by public entities, have been ranked as a moderately important natural community.

Impervious Surface Area. A relatively small percentage of the area has been converted to impervious surface (approximately 20%). Approximately 200 acres of land remain vacant. If this land redevelops, there is a limit to the amount of land that can be converted to impervious surface (70% in the Jordan Lake Protected Area).

Tree Coverage. Current UDO standards do not require tree coverage for development with Compact Neighborhood Tiers, but do require street trees and vehicular use landscaping.

Riparian Buffers. The entirety of the proposed Compact Neighborhood Tier is within the Falls/Jordan Watershed Overlay District. At the time current development ordinances were written, there was not an instance of a Compact Neighborhood Tier within a Watershed Protection Overlay. Therefore, there are no standards for riparian buffer width provided in the Unified Development Ordinance. However, state law requires a minimum buffer of 50 feet on either side of a stream. The Planning Department will work to clarify that standard in the Unified Development Ordinance.

Villa Pinea. The North Carolina Botanical Garden Foundation, the membership support organization of the North Carolina Botanical Garden of the University of North Carolina, owns and holds a conservation easement for a 12-acre property east of George King Road, known as Villa Pinea. As described in the conservation easement, the site contains a mixed deciduous mesic hardwood forest.

The property’s inclusion in the Compact Neighborhood Tier would not alter the NC Botanical Garden Foundation’s legal obligation to
preserve the land described in the conservation easement. The easement outlines appropriate activities to take place on the property, including “scenic enjoyment by the general public, specifically the use of the Property to educate the public about a variety of exotic and native species, to provide open space, to maintain existing tree and plant species, and to ensure a physical connection in perpetuity between the Property and adjacent government administered property known as the Little Creek Water Fowl Impoundment.”

Members of the Botanical Garden staff and Foundation Board have expressed concern that development of land within the proposed Compact Neighborhood Tier boundary could have a negative effect on the Foundation’s mission to, “ensure a physical connection” between Villa Pinea and the Little Creek Bottomlands. Planning staff understands these concerns; however, the properties are not immediately adjacent to each other and thus, the physical connection cannot be legally ensured under the auspices of the Villa Pinea conservation easement.

As previously noted, Planning staff recommends the Villa Pinea property be designated as Recreation and Open Space on the Future Land Use Map. This is consistent with Comprehensive Plan policies regarding permanent conservation easements (Policy 2.3.1b). A physical connection to the Little Creek Bottomlands is achievable through means outside of this planning process:

- State law and UDO standards already require the maintenance of a riparian buffer of 50 feet on either side of a stream that connects Villa Pinea to the Little Creek Bottomlands.

- Easement negotiations amongst private land owners.

### Housing and Property Values

Across the country, a common trend in areas near light rail transit is the increase of land values. While this can be beneficial to the broader tax base, there can be some unintended negative consequences for low income households and renters. In 2014 the City Council and Board of County Commissioners adopted a resolution that at least 15% of all housing within ½ mile of proposed transit stations should be affordable to those making 60% or less than Area Median Income. Housing is generally considered unaffordable if rent or mortgage payments plus utility costs exceed 30% of income.

The most recent Planning Department data (January 2015) shows that only 14.8% of occupied housing within a ½ mile of the Leigh Village Station is affordable to those earning 60% or less of Area Median Income. In order to meet the City Council’s goal that at least 15% of all housing units be affordable, before any city-initiated rezoning occurs, regulatory and financial tools should be in place to provide incentive for developers to meet those standards.

Through its Affordable Housing and Transit initiatives, the City is taking steps to create and preserve affordability. Enterprise Community Partners has presented recommendations to the City Council, including that the Planning Department evaluate the feasibility of an enhanced density bonus in Compact Design zoning districts near proposed light rail stations. This possibility will be fully explored prior to any city-initiated zoning of Compact Neighborhood Tiers.
Figure 8: Leigh Village Environmental Features
**Transportation**
The area around the Leigh Village station is sparsely developed, yet nearby is one of the most congested corridors in the state: NC Highway 54. In 2010 the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) completed a comprehensive study of the NC 54/I-40 Corridor that recommended a variety of intersection, roadway, transit, parking, bicycle and pedestrian improvements to make the corridor more efficient for commuters and to better serve destinations along the way. The ultimate success of Leigh Village as a Compact Neighborhood largely hinges on addressing congestion and building a network of streets, sidewalks, and bike facilities.

**Traffic.** Level of Service (LOS) is a common measure of traffic flow and density of vehicles. For city roads in Compact Neighborhoods, where increased activity is encouraged, Comprehensive Plan Policy 8.1.2a. indicates LOS E, with some congestion, is acceptable. The policy for state roads is to maintain LOS D, which allows for faster traffic flow.

As part of a long range transportation planning effort, the DCHC MPO conducts a Deficiency Analysis to demonstrate which roadways will exceed LOS standards given future growth projections. Because it is premature to estimate with any accuracy the amount of traffic generated by future development and redevelopment in the Leigh Village Compact Neighborhood Tier, the Deficiency Analysis is the best proxy.

The Deficiency Analysis assumes population and employment figures from the year 2040 on the current transportation network in order to highlight what roads will need future improvements. While the volume of traffic is expected to increase to some degree on every roadway, listed below are roads where traffic volume is expected to exceed roadway capacity when operating at a LOS D.

- NC Highway 54 (Friday Center Drive to Interstate 40)
- Farrington Road (NC 54 to I-40)

**Collector Street Plan.** One of the primary reasons NC 54 experiences congestion is because it serves both regional trips traveling through the corridor and local trips destined within the corridor. The NC 54/I-40 Corridor Study suggests that “providing more connections between local streets will help provide more route choices for local trips, reducing the need to travel on NC 54.” The Southwest Durham County and Southeast Chapel Hill Collector Street Plan proposes a network of streets crossing through the proposed Leigh Village Compact Neighborhood, shown in Figure 9.

The platting and eventual build-out of the collector street network will form the foundation of a local street grid and will help to define future development tracts. Currently, the Collector Street Plan is implemented incrementally by private development. For example, when the Chapel Creek project east of George King Road was seeking development approvals, the developer was required to reserve right-of-way for the proposed new alignment of George King Road.
Figure 9: Southwest Durham and Southeast Chapel Hill Collector Street Plan
NC Highway 54/I-40 Corridor Study. Four major roadway proposals emerged from the NC 54/I-40 Corridor Study to help address congestion, safety and land use access on NC 54 in the vicinity of the proposed Leigh Village Compact Neighborhood (Figure 10):

- **Upgrading the roadway corridor.** Widen NC 54 from four-lanes to six-lanes from I-40 to Barbee Chapel Road. This project is included in the State Transportation Improvement Program and expected to start in 2023.

- **Farrington Road Overpass.** Convert the at-grade (i.e. on ground) intersection to a grade-separated (i.e. bridge) with Farrington Road flying over NC 54. This project is included in the State Transportation Improvement Program and is expected to start in 2023.

- **Falconbridge Interchange.** Convert the intersection to an overpass with ramps onto eastbound and westbound NC 54. Extending Falconbridge to the north would create a direct connection with the Leigh Village Station. This project was not included in the State Transportation Improvement Program; however, it is included in the DCHC MPO’s Metropolitan Transportation Plan, with an expected 2030 time-horizon.

- **Upgrading the 54-40 interchange.** A variety of measures including a slip ramp from Farrington Road to eastbound I-40, a partial cloverleaf at the I-40 eastbound off-ramp, and widening the westbound I-40 off-ramp to two lanes. These projects are included in the State Transportation Improvement Program and are expected to start in 2023.

Figure 10: Conceptual Roadway Designs from the NC54/I-40 Corridor Study
Street Cross-Section Design Guidelines. As part of a larger revision to the Unified Development Ordinance, the Planning Department is working to develop standard cross-sections for new streets within Compact Neighborhoods. These will largely follow complete streets principles: minimizing unnecessary pavement width, and encouraging on-street parking, bike lanes, and sidewalks. These street cross-sections are envisioned to be applied to new collector streets and new local streets. The UDO already includes requirements to improve connectivity (a maximum 400 foot block length) and requirements for streetscape features, including landscaping and street furniture.

Pedestrian and Bicycle. The proposed Leigh Village Compact Neighborhood is almost completely lacking sidewalks and bike facilities. There are a few fragmented sections along the NC 54 frontage road, Farrington Road, and Cleora Drive. The Durham Walks! Pedestrian Plan and the Durham Comprehensive Bicycle Plan recommend additional segments of sidewalks and bike facilities, as can be seen in Figure 11 and 12; however, most future sidewalks and bike lanes will be built as a result of implementation of the Collector Street Plan. All collector streets are expected to have sidewalks and bike accommodations.

In addition to pedestrian and bicycle infrastructure, the Little Creek Connector Trail is included in the Durham Trails and Greenways Master Plan (Figure 12). GoTriangle has also committed to constructing a multi-use path running parallel to the LRT corridor.

As mentioned previously, if redevelopment occurs under Compact Neighborhood standards, there would be opportunities to create an additional street network. Sidewalks with enhanced streetscape features, such as benches, trash receptacles, and trees/planter boxes would be required. Enhancing the network of streets and adding amenities will help this area, over time, become more pedestrian oriented.

Under the broad umbrella of Station Area Planning, the Planning Department is collaborating with other departments on the Station Area Strategic Infrastructure (SASI) study. This study is intended to identify and prioritize bicycle and pedestrian projects that will enable safe and convenient access to the light rail stations.
Figure 11: Existing and Proposed Pedestrian Network

Figure 12: Existing and Proposed Bicycle and Trail Network
Services and Infrastructure
A majority of the proposed Compact Neighborhood Tier is located in Durham County, and therefore, does not receive City of Durham services such as water and sewer or solid waste collection. To facilitate the type of development typical of a Compact Neighborhood, annexation into the City will likely need to occur over time. Future development that increases density will cause an influx in demand in the following areas:

Schools. Students from the proposed Leigh Village Compact Neighborhood are in the attendance zones of three schools: Creekside Elementary, Githens Middle School, and Jordan High School. Figure 13 summarizes information on school capacity and projected student enrollment from the Durham Public School’s 2013 Long Range Facility Study.

The Durham Comprehensive Plan specifies a system wide level of service standard of 110% capacity. Once that level is reached, policy 11.1.1b. directs the Planning Department to consider mitigation commitments from private developers or recommend denial of zoning map changes that cause student generation to increase above the rate of current zoning. While the policy is applied at a system wide basis because of liberal magnet and transfer policies, it should be noted that Creekside Elementary already exceeds 110% capacity and Githens Middle School is expected to exceed 110% capacity by the year 2020. There are currently no scheduled renovations to expand capacity at either school, though a new elementary school is expected to be built in the near future to serve southwest Durham which will relieve pressure on Creekside Elementary.

Amending the Future Land Use Map to Compact Neighborhood could lead to additional student enrollment overtime. While it is premature to determine with any certainty what the impact will be, Durham Public Schools has been made aware of these potential impacts. The Planning Department is committed to working with the school system to reflect changes to the Future Land Use Map in the next iteration of the Long Range Facility Study, which is updated every two to four years.

Figure 13: Projected Student Enrollment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Creekside</td>
<td>764</td>
<td>876</td>
<td>920</td>
<td>962</td>
<td>1029</td>
<td>1040</td>
<td>1044</td>
<td>1042</td>
<td>1025</td>
<td>1032</td>
<td>1084</td>
<td>1161</td>
</tr>
<tr>
<td>Githens Middle</td>
<td>852</td>
<td>999</td>
<td>934</td>
<td>912</td>
<td>913</td>
<td>915</td>
<td>916</td>
<td>1015</td>
<td>1093</td>
<td>1129</td>
<td>1130</td>
<td>1131</td>
</tr>
<tr>
<td>Jordan High</td>
<td>1810</td>
<td>1715</td>
<td>1719</td>
<td>1761</td>
<td>1766</td>
<td>1798</td>
<td>1846</td>
<td>1762</td>
<td>1754</td>
<td>1758</td>
<td>1779</td>
<td>1836</td>
</tr>
</tbody>
</table>

Capacity Legend
- <95%
- 95% - 100%
- 100% - 105%
- 105% - 110%
- >110%
Water and Wastewater. A majority of the proposed Leigh Village Compact Neighborhood Tier is outside of Durham city limits and is not served by water or sanitary sewer infrastructure. Instead, existing land uses receive water from ground wells and treat wastewater through on-site septic systems.

While it is feasible to extend water and sewer to the proposed Leigh Village Compact Neighborhood, there are a number of complicating factors.

- Estimating demand for Compact Neighborhoods. Typical system expansion and capacity planning relies on the assumption of a specific land use (residential or commercial) or building type (single family house or multi-family structure). In Compact Neighborhoods, which do not specify an exact mix of land uses, estimating demand is difficult and will require continued coordination and planning with the City Department of Water Management and Public Works Department.

- Pump Station Capacity. As low intensity development is replaced by mixed use developments over time, the increased demand for water and sewer will be considerable. Already, the Celeste Circle Pump Station is approaching capacity limits. A long term master planning effort is likely needed.

- Water Transmission Line Easement. There are long term plans for a major water transmission line to connect the planned Jordan Lake Plant to areas in Durham that would need to traverse the proposed Leigh Village Compact Neighborhood. Coordinating the planning of the water transmission line with a future collector street will be necessary.
Criteria 4: Whether the subject site is of adequate shape and size to accommodate the proposed change.

The proposed Leigh Village Compact Neighborhood Tier is 423 acres, and is of adequate shape and size to accommodate the proposed change.

Amendments to Tier Boundaries are evaluated against additional criteria outlined in paragraph 3.4.8 of the Unified Development Ordinance:

Criteria A: The site is contiguous to the proposed Tier: The proposed Compact Neighborhood Tier forms a contiguous area and does not leave an isolated pocket of Suburban Tier.

Criteria B: The site is not in the drainage basin for Lake Michie or Little River or in the one-mile critical area around Jordan or Falls Reservoirs: The proposed Compact Neighborhood Tier is not located in the drainage basin for Lake Michie or Little River and is not within a watershed protection critical area.

Criteria C: The extension does not violate any agreements with neighboring jurisdictions: The proposed Compact Neighborhood Tier is entirely within the City of Durham and Durham County jurisdiction and does not violate agreements with neighboring jurisdictions. The proposed boundary does fall within the Chapel Hill-Durham Joint Review Area. The Town of Chapel Hill will be allowed opportunity to review and comment on these plan amendments.

Criteria D: If the proposal is to expand the Suburban Tier, extending utilities to service the site is determined to be technically feasible by the Public Works Director or designee and will not result in inordinate cost to the City: This evaluation criterion does not apply; the proposal does not expand the Suburban Tier.

Endnotes


This page is intentionally blank.
Introduction

This section will describe in greater detail the proposed changes to the Future Land Use Map for the area around the proposed Patterson Place light rail station. Opportunities, challenges and potential impacts of the proposed Compact Neighborhood Tier will be evaluated.

Existing Land Use and Development

Situated at the intersection of Interstate 40 and US Highway 15-501, the area around the proposed Patterson Place station has developed over the last 20 years as an auto-oriented commercial district, zoned primarily commercial, mixed use, and medium density residential. The Patterson Place Shopping Center forms the nucleus around the proposed station, and while current tenants are big-box retailers, the streets and infrastructure were developed to transition over time into a transit-oriented development. More traditional shopping centers, such as New Hope Commons, and highway-oriented businesses line the north side of Durham-Chapel Hill Boulevard (US Highway 15-501). Apartment complexes and vacant or underdeveloped land surround the shopping nodes to the east and south before transitioning to single family neighborhoods and the New Hope Creek Bottomlands. A map and description of existing land uses and development can be found in Figure 1.

Proposed Changes to the Future Land Use Map

The Future Land Use Map currently designates an area centered around the Patterson Place Shopping Center as a Suburban Transit Area (450 acres). Plans for a light rail station in this location have not dramatically changed since the Suburban Transit Area was established in 2005. However, since 2005 the area has developed significantly and floodplain boundaries have been remapped. In light of these changes, conversion from a Suburban Transit Area to a Compact Neighborhood Tier needs to be considered, along with re-assessment of the boundaries.

Staff recommends three-part amendments to the Future Land Use Map: Development Tier, Future Land Use Designations, Technical Updates. Each is explained in greater detail on the following pages.
Figure 1: Existing Land Use and Development Map

<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Acres</th>
<th>Percent of Half Mile Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vacant</td>
<td>141.4</td>
<td>28%</td>
</tr>
<tr>
<td>Suburban Commercial Center</td>
<td>101.1</td>
<td>20%</td>
</tr>
<tr>
<td>Multi Family Residential neighborhood</td>
<td>96.6</td>
<td>19%</td>
</tr>
<tr>
<td>Right-of-Way</td>
<td>72.0</td>
<td>14%</td>
</tr>
<tr>
<td>Rural Living</td>
<td>40.4</td>
<td>8%</td>
</tr>
<tr>
<td>Parks and Open Space</td>
<td>18.9</td>
<td>4%</td>
</tr>
<tr>
<td>Suburban Hotel</td>
<td>10.5</td>
<td>2%</td>
</tr>
<tr>
<td>Civic</td>
<td>7.4</td>
<td>1%</td>
</tr>
<tr>
<td>Suburban office Center</td>
<td>4.7</td>
<td>1%</td>
</tr>
<tr>
<td>Small Lot Residential Neighborhood</td>
<td>4.2</td>
<td>1%</td>
</tr>
<tr>
<td>Utility</td>
<td>2.8</td>
<td>1%</td>
</tr>
</tbody>
</table>
| Total                                | 500.0 | 100%                     

*Land Use descriptions are provided in Appendix K.*
**Proposed Change: Development Tier**
As directed by Comprehensive Plan policy 2.4.1.e., convert the existing Suburban Transit Area into a Compact Neighborhood Tier with updated boundaries developed with community input. As shown in Figure 2, approximately 130 acres is recommended to be added to the Compact Neighborhood Tier, generally south of Danziger Drive and north of Old Chapel Hill Road. The boundaries have been adjusted on the north and east to follow recorded sewer and trail easements. The changes result in a Compact Neighborhood Tier of approximately 602 acres.

**Figure 2: Proposed Development Tier Changes**
**Proposed Change: Future Land Use Designations**

Amend the future land use designations shown in Figures 3 and 4 to Design District. This is the category on the Future Land Use Map that directs future zoning map changes to the Compact Design (CD) zoning district, a form-based district which encourages a mix of uses and emphasizes pedestrian-oriented design.

Figure 3: Current Future Land Use Map
This proposal would convert 343 acres of Commercial, 189 acres of Medium Density Residential, and 55 acres of Medium-High Density to Design District.

Figure 4: Proposed Future Land Use Map

Proposed Change: Technical Updates
Correct minor mapping errors that will result in small (approximately 1 acre or less) changes to the Future Land Use Map, mostly impacting the Right-of-Way. Change an access driveway to Githens Middle School from Medium Density Residential (6-12 DU/Ac.) to Institutional.
Opportunities and Challenges for Compact Neighborhood Development

The transition of Patterson Place into a walkable mixed use neighborhood will not happen overnight, and will, in fact, be dependent on the pace of private development interest. Already developed in a suburban pattern, there are numerous challenges and opportunities:

Challenges:

- The planned conversion of US Highway 15-501 into a limited access freeway. A 1994 Corridor Master Plan for US Highway 15-501 calls for its conversion into a limited access freeway (i.e. similar to the Durham Freeway with on/off ramps and no traffic signals). While funding for such a project is still decades away, the project remains “on the books” as part of the 2040 Metropolitan Transportation Plan. Converting the boulevard into a freeway would effectively divide the north side of US Highway 15-501 from the proposed Patterson Place station.

- Large roads carry significant traffic volume. Roads that are multiple lanes across with fast moving traffic are difficult for people on bikes and people on foot to navigate safely and comfortably. In order to become a walkable and bikeable destination, building off of the network of smaller streets may be necessary.

- Commercial strip development still has a market. Durham-Chapel Hill Boulevard cuts through the Patterson Place station area. For several decades this area has been a center for auto-oriented commercial development. Assembling parcels for transit oriented development with good visibility and highway access might be challenging while the market for strip commercial development still exists.

Opportunities:

- Many shopping center buildings are reaching the end of their functional “lifespan”. Shopping center buildings are typically designed to last about 20-30 years, meaning that the potential for redevelopment or infill may be realized in the foreseeable future.

- Large parcels. Especially near the proposed station, there are several large underused parcels. Larger parcels are easier to assemble for redevelopment than smaller parcels with varied owners.

- Nearby natural areas. The geographic extent of the Compact Neighborhood is limited by significant natural resources, in particular the New Hope Creek corridor. It has been preserved as a sensitive habitat, nature trails wind throughout the bottomlands, creating a unique natural amenity along the D-O LRT corridor.

- Highway access. Transit-oriented development still benefits from decent access to the highway transportation network. In this area, Interstate 40 and US Highway 15-501 provide excellent access and visibility.

- Halfway there. The central location of Patterson Place along the D-O LRT Corridor means that destinations on both ends of the line – Duke and Downtown Durham to the east and UNC Hospitals to the west – are easily accessed.
Justification for the Compact Neighborhood Tier Boundary

The recommended Compact Neighborhood Tier boundary emerged as a result of community input and the adherence to the general boundary guidelines developed by staff at the onset of the project. While the boundary description is explained in detail in Figure 5, in general, it includes non-residential uses like shopping centers and offices, as well as already-built higher density apartment complexes. Important environmental areas and single family neighborhoods are avoided. Where possible, property lines and recorded easements are followed.

Plan amendments are evaluated against criteria outlined in paragraph 3.4.7 of the Unified Development Ordinance:

Criteria 1: Whether the proposed change would be consistent with the intent, goals, objectives, policies, guiding principles and programs of any adopted plans.

Staff believes the proposed boundaries for the Patterson Place Compact Neighborhood Tier are consistent with numerous city and county goals and policies. For many of the reasons outlined in the introduction, the Durham Comprehensive Plan includes goals, objectives, and policies in support of Compact Neighborhoods surrounding regional rail stations (Policy 2.1.2e., Objective 2.2.4, Policy 2.4.1a.). Amending the Future Land Use Map to Compact Neighborhood is a step toward the vision of higher density, mixed use and walkable neighborhoods that are supported by transit.

A consistent goal within both the City and County Strategic Plans recognizes the need to improve the quality of neighborhoods by improving transportation choice through increasing access to transit, walking and biking. Compact Neighborhoods encourage more density, mix of uses, and walkability around light rail stations, and thus aid the City and County in realizing those goals.

Criteria 2: Whether the proposed change would be compatible with the existing land use pattern and/or designated future land uses.

Areas identified to be a part of the Compact Neighborhood Tier are largely already developed as either commercial, office, or multi-family residential, and do not infringe on protected open spaces or single-family residential neighborhoods. As a general rule, the most intense development is desired closest to the light rail stations, with densities tapering off toward the edges of the Tier.
Figure 5: Compact Neighborhood Tier Proposed Boundary Explanation

Numbers shown on the map correspond with notes on the following page. Proposed boundaries are a result of community input and adherence to general boundary guidelines developed by staff at the onset of the project. These guidelines are described in the introductory chapter.
1. **New Hope Commons Shopping Center.** The New Hope Commons Shopping Center is 20 years old and will likely redevelop within coming decades. Proximity to highways and planned light rail make this a prime site for higher density and mixed use development that can also act as a gateway into Durham. Long term plans to convert US 15-501 (Durham-Chapel Hill Boulevard) into a limited access freeway could prevent direct access to the light rail station; therefore, promoting a multi-modal connection is important.

2. **North of US 15-501.** The plan to extend Southwest Durham Drive to the north side of the boulevard means better access to the light rail station for parcels north of US 15-501. East of Mt. Moriah Road, the proposed Compact Neighborhood Tier boundary follows a recorded sewer easement. Staff does have reservations about including an area with environmental sensitivity. There are steep slopes leading to the Dry Creek and Mount Moriah Bottomlands that should not be disturbed. However, restricting the boundary to parcels fronting onto US 15-501 could create an incentive for continued strip commercial development and would leave the developable acreage to the north virtually inaccessible and undevelopable. Including a larger area provides greater design flexibility for transit-oriented development.

3. **New Hope Creek Bottomlands.** Staff’s proposed boundary follows the New Hope Creek Preserve Trail. Preserving significant natural environments is vital, and stringent regulations will restrict development in floodplains.

4. **Githens Middle School.** Githens Middle School is designed in a suburban one-story layout with large playing fields and parking lots. It is a long-term civic use that would not fit the intent of the Compact Neighborhood Tier.

5. **Multi-family Residential.** With access to two planned light rail stations, existing apartment complexes and underdeveloped areas north of Old Chapel Hill Road will be well-served by transit. Planned bicycle and pedestrian improvements along Old Chapel Hill Road, as well as the completion of a collector street plan mean that this will be an important transition zone from the high density core to established residential neighborhoods to the south.

6. **Patterson Place Shopping Center.** Patterson Place Shopping Center forms the nucleus of the Compact Neighborhood Tier. The transformation of this suburban shopping center into a transit-oriented district will be reliant on completing the grid network of streets, infill development on surface parking lots, and the eventual redevelopment of big box retail stores.

7. **Highway-oriented businesses.** Located between two planned light rail stations (Gateway and Patterson Place), this area which is currently developed as auto-oriented commercial businesses and hotels, is a good candidate for high density, mixed use redevelopment. With access to highways, this is a highly visible location that could act as a gateway into Durham.

8. **Interstate 40.** The interchange of US 15-501 Bypass and Business routes creates an pedestrian barrier, and a concise boundary for the Compact Neighborhood Tier. Areas to the west are in Town of Chapel Hill jurisdiction.
Criteria 3: Whether the proposed change would create substantial adverse impacts in the adjacent area or the City or County in general.

This section will evaluate and discuss what potential environmental, housing and property values, transportation, and community service impacts could arise as a result of implementing a policy in support of Compact Neighborhoods. While in many cases it is too early to determine specific impacts, broader issues are discussed and actions are proposed that are intended to alleviate potential negative impacts.

Environment (Figure 6)
Whenever proposals to increase density are on the table, a common concern is that it will negatively impact environmental systems. The 1991 New Hope Creek Corridor Open Space Master Plan provides a solid basis to begin evaluating environmental issues in this area. While land has been cleared and graded for development during the last 20 years, there are still important protected areas including the New Hope Creek Bottomlands and the Dry Creek floodplains. Public entities including Durham County, the Army Corps of Engineers and the NC Wildlife Resources Commission own and manage the New Hope Creek Bottomlands, a significant natural resource preserved for wildlife habitat and migration, flood control and water quality management.

Natural Heritage Areas. The North Carolina Natural Heritage Program identifies sites that are of special biodiversity significance and assigns priority rankings that indicate the degree of their importance for conservation. Two identified natural heritage areas have overlapping boundaries with the proposed Compact Neighborhood Tier. The Dry Creek/ Mount Moriah Bottomlands are north of the proposed Tier, and have been ranked as a moderately important natural community. The New Hope Creek Bottomland Forest, largely preserved by public entities, has been ranked as an exceptionally important natural community.

Steep Slopes. According to the Unified Development Ordinance, steep slopes are defined as areas that have a grade (rise over run) of 25% or more, have an area of 5,000 square feet or greater, and are located within 200 feet of any floodway fringe or perennial stream or within 100 feet of an intermittent stream. While land disturbing activity is discouraged in these areas, the ordinance does specify that no more than 15% of the slope can be graded.

The proposed boundary of the Compact Neighborhood Tier includes steep slopes on the north side of US Highway 15-501; however staff feels strongly these should not be disturbed by development activity. They are included because the sewer easement to the north provides a legally recorded boundary for the Compact Neighborhood Tier to follow. In updating the Unified Development Ordinance, staff should take into consideration stricter steep slope regulations in Compact Neighborhoods.

Riparian Buffers. Areas generally south of Danziger Drive fall within the Falls/Jordan Watershed Overlay District. At the time current development ordinances were written, there was not an instance of a Compact Neighborhood Tier within a Watershed Protection Overlay. Therefore, there are no standards for riparian buffer width provided in the Unified Development Ordinance. However, state law requires a minimum buffer of 50 feet on either side of a stream. The Planning Department will work to clarify that standard in the Unified Development Ordinance.
Impervious Surface Area. A large percentage of the area has already been converted to impervious surface (approximately 45%). One hundred and seventy-eight acres of land within the proposed boundary remain vacant. If this land redevelops, there is a limit to the amount that can be converted to impervious surface (70% in the Jordan Lake Protected Area).

Tree Coverage. Current UDO standards do not require tree coverage for development with Compact Neighborhood Tiers, but do require street tree and vehicular use area landscaping.

Figure 6: Patterson Place Environmental Features
Housing and Property Values
Across the country, a common trend in areas near light rail transit is the increase of land values. While this can be beneficial to the broader tax base, there can be some unintended negative consequences for low income households and renters. In 2014 the City Council and Board of County Commissioners adopted a resolution that at least 15% of all housing within ½ mile of proposed transit stations should be affordable to those making 60% or less than Area Median Income. Housing is generally considered unaffordable if rent or mortgage payments plus utility costs exceed 30% of income.

The most recent Planning Department data (January 2015) shows that 31.2% of occupied housing within a ½ mile of the Patterson Place Station is affordable to those earning 60% or less of Area Median Income. While this proposed Compact Neighborhood offers affordable living options today, preserving that affordability is of significant importance in the future as light rail and increased development interest come to the area.

Through its Affordable Housing and Transit initiatives, the City is taking steps to create and preserve affordability. Enterprise Community Partners has presented recommendations to the City Council, including that the Planning Department evaluate the feasibility of an enhanced density bonus in Compact Design zoning districts near proposed light rail stations. This possibility will be fully explored prior to to any city-initiated zoning of Compact Neighborhood Tiers.
Transportation
Despite increased transit service and enhanced sidewalks and bike facilities, the automobile is likely to remain the dominant mode of transportation for the foreseeable future. The area around the Patterson Place station is already developed as an auto-oriented center with highway (Interstate 40 and US Highway 15-501) and major thoroughfare (Southwest Durham Drive) access. While some bicycle and pedestrian infrastructure exists, future redevelopment presents opportunities to expand the network and create a multi-modal district.

Traffic. Level of Service (LOS) is a common measure of traffic flow and density of vehicles. For city roads in Compact Neighborhoods, where increased activity is encouraged, Comprehensive Plan Policy 8.1.2a. indicates Level of Service E, which allows for some congestion, is acceptable. The policy for state roads is to maintain Level of Service D, which allows for faster traffic flow.

As part of a long range transportation planning effort, the DCHC Metropolitan Planning Organization conducts a Deficiency Analysis to demonstrate which roadways will exceed Level of Service (LOS) standards given future growth projections. Because it is premature to estimate with any accuracy the amount of traffic generated by future development and redevelopment in the Patterson Place Compact Neighborhood Tier, the Deficiency Analysis is the best proxy. The Deficiency Analysis assumes population and employment figures from the year 2040 on the current transportation network in order to highlight what roads will need future improvements. While the volume of traffic is expected to increase to some degree on every roadway, listed below are roads where traffic volume is expected to exceed roadway capacity when operating at a Level of Service D.

- Durham Chapel Hill Boulevard (Interstate 40 to Garrett Road) – State Road
- Mt. Moriah Road (Erwin Road to Durham Chapel Hill Boulevard) – State Road
- Mt. Moriah Road (Durham Chapel Hill Boulevard to Old Chapel Hill Road) – City Road
- Old Chapel Hill Road (Sage Road to Southwest Durham Drive) – State Road
- Old Chapel Hill Road (Southwest Durham Drive to Garrett Road) – State Road
US 15-501 Corridor Transportation Master Plan. In 1994 a study was completed examining the future of the US 15-501 Corridor in Chapel Hill and Durham. Based on projected future growth and traffic volumes, it was recommended that US 15-501 should be converted to a limited-access freeway (with on-and-off ramps as opposed to intersections with traffic signals) from Interstate 40 to the US 15-501 Bypass. Accompanying the freeway conversion were recommendations for a network of frontage roads and circulator streets to promote movement between development quadrants. Figure 7 shows the conceptual plans for the area adjacent to the proposed Patterson Place Compact Neighborhood.

The freeway conversion is now listed in the Metropolitan Transportation Plan, a long range transportation planning document prepared by the DCHC MPO, but is not expected to be built prior to the 2040 time horizon. While the freeway conversion continues to be promoted in long-range transportation plans, changing factors bring into question its necessity:

- **Traffic forecasts.** Projected traffic volumes used in the 1994 Corridor Study to justify the freeway conversion have not materialized.

- **Parallel Transit Route.** Plans for the D-O LRT have progressed, offering an opportunity to travel along the corridor unimpeded by traffic. Travel patterns should be re-studied only after the LRT is in place to determine if the freeway conversion is still necessary.

- **Changing Land Use Pattern.** When the plan was created in 1994, the area near Patterson Place was sparsely developed. Of principal concern was the ability for cars to travel through the corridor quickly. Land uses in place today, including shopping centers, hotels and apartment complexes rely on visibility and access – which would be jeopardized by the freeway conversion, particularly with the closure of the intersection with Mt. Moriah Road.

Figure 7: Master Plan from the 1994 US 15-501 Corridor Transportation Master Plan
Collector Street Plan. One of the primary reasons US 15-501 experiences congestion is because it serves both regional trips traveling through the corridor and local trips destined within the corridor. Providing more connections between local streets will help offer more route choices for local trips, reducing the need to travel on US 15-501. The Southwest Durham County and Southeast Chapel Hill Collector Street Plan proposes a network of streets crossing through the proposed Patterson Place Compact Neighborhood, shown in Figure 8.

The platting and eventual build-out of the collector street network will complete the local street grid and help to define future development tracts. Currently, the collector street plan is implemented incrementally by private development.

Figure 8: Southwest Durham and Southeast Chapel Hill Collector Street Plan
Street Cross-Section Design Guidelines. As part of a larger revision to the Unified Development Ordinance, the Planning Department is working with the Transportation and Public Works departments in developing standard cross-sections for new streets within Compact Neighborhoods. These will largely follow complete streets principles: minimizing unnecessary pavement width, and encouraging on-street parking, bike lanes, and sidewalks. These street cross-sections are envisioned to be applied to new collector streets and new local streets. The UDO already includes requirements to improve connectivity (a maximum 400 foot block length) and requirements for streetscape features, including landscaping and street furniture.

If redevelopment occurs in the Compact Neighborhood, there are opportunities to construct additional streets through large parcels. The Compact Design district provides standards for block lengths. Constructing a grid network of streets will help to alleviate the pressure on many of these major roads.

Pedestrian and Bicycle. The existing networks of sidewalks and bike lanes in the proposed Patterson Place Compact Neighborhood area are limited. The exception is the Patterson Place Shopping Center, which was developed with sidewalk infrastructure that could easily transition from a suburban center to a transit oriented district. Sidewalk, bicycle and transit improvements on Old Chapel Hill/Old Durham Roads (from Sage Road to Garrett Road) are funded and expected to begin construction in 2016. The Durham Walks! Pedestrian Plan and the Durham Comprehensive Bicycle Plan recommend additional segments of sidewalks and bike facilities, as can be seen in Figures 9 and 10. In addition to pedestrian and bicycle infrastructure, there are a number of trails planned (Durham Trails and Greenways Master Plan) through natural areas that would build off of the existing New Hope Creek Preserve Trails. These can be seen in Figure 10.

As mentioned previously, if redevelopment occurs under Compact Neighborhood standards, there would be opportunities to create an additional street network. Sidewalks with enhanced streetscape features, such as benches, trash receptacles, and trees/planter boxes would be required. Enhancing the network or streets and adding amenities will help this area, over time, become more pedestrian oriented.

Under the broad umbrella of Station Area Planning, the Planning Department is collaborating with other departments on the Station Area Strategic Infrastructure (SASI) study. This study is intended to identify and prioritize bicycle and pedestrian projects that will enable safe and convenient access to the light rail stations.
Figure 9: Existing and Proposed Pedestrian Network

Figure 10: Existing and Proposed Bicycle and Trail Network
Services and Infrastructure
The proposed Compact Neighborhood Tier is already within the city limits of Durham. Future development that increases density may cause an influx in demand in the following areas:

Schools. Students from the proposed South Square/MLK Jr. Compact Neighborhood are in the attendance zones of three schools: Creekside Elementary, Githens Middle School, and Jordan High School. Figure 11 summarizes information on school capacity and projected student enrollment from the Durham Public School’s 2013 Long Range Facility Study.

The Durham Comprehensive Plan specifies a system wide level of service standard of 110% capacity. Once that level is reached, policy 11.1.1b. directs the Planning Department to consider mitigation commitments from private developers or recommend denial of zoning map changes that cause student generation to increase above the rate of current zoning. While the policy is applied at a system wide basis because of liberal magnet and transfer policies, it should be noted that Creekside Elementary already exceeds 110% capacity and Githens Middle School is expected to exceed 110% capacity by the year 2020. There are currently no scheduled renovations to expand capacity at either school, though a new elementary school is expected to be built in a few years to serve southwest Durham which will relieve pressure on Creekside Elementary.

Amending the Future Land Use Map to Compact Neighborhood could lead to additional student enrollment over time. While it is premature to determine with any certainty what the impact will be, Durham Public Schools has been made aware of these potential impacts. The Planning Department is committed to working with the school system to reflect changes to the Future Land Use Map in the next iteration of the Long Range Facility Study, which is updated every two to four years.

Figure 11: Projected Student Enrollment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Creekside</td>
<td>764</td>
<td>876</td>
<td>920</td>
<td>962</td>
<td>1029</td>
<td>1040</td>
<td>1044</td>
<td>1042</td>
<td>1025</td>
<td>1032</td>
<td>1084</td>
<td>1161</td>
</tr>
<tr>
<td>Githens Middle</td>
<td>852</td>
<td>999</td>
<td>934</td>
<td>912</td>
<td>913</td>
<td>915</td>
<td>916</td>
<td>1015</td>
<td>1093</td>
<td>1129</td>
<td>1130</td>
<td>1131</td>
</tr>
<tr>
<td>Jordan High</td>
<td>1810</td>
<td>1715</td>
<td>1719</td>
<td>1761</td>
<td>1766</td>
<td>1798</td>
<td>1846</td>
<td>1762</td>
<td>1754</td>
<td>1758</td>
<td>1779</td>
<td>1836</td>
</tr>
</tbody>
</table>

Capacity Legend

- <95%
- 95% - 100%
- 100% - 105%
- 105% - 110%
- >110%
Water and Sewer. Water main distribution systems serve to supply potable water and to support fire suppression throughout the community. A well-designed system can maintain adequate pressure to support demand of individual properties and provide high flow rates to fire hydrants/fire suppression systems in emergency situations. The material and age of the system’s water mains can be factors in system breaks, leaks, and pressure and flow degradations.

Wastewater or sanitary sewer infrastructure consists of a collection of gravity flow sewer mains, lift stations, and pressurized force mains that transport sewage to a wastewater treatment plant. An efficient collection system has the capacity to accommodate all of the existing land uses within its particular sewer basin. Beyond capacity, the material and age of pipes within a system can also impact its effectiveness.

The City of Durham maintains water and sanitary sewer infrastructure within the proposed Patterson Place Compact Neighborhood Tier. Wastewater from the station area is treated by the South Durham Water Reclamation Facility. Based on communication with the City of Durham’s Water Management Department, because the area is already heavily developed, the system appears to be adequate in size and extent to accommodate proposed changes to land use.

Criteria 4: Whether the subject site is of adequate shape and size to accommodate the proposed change.

The proposed Patterson Place Compact Neighborhood Tier is 555 acres, and is of adequate shape and size to accommodate the proposed change.

Amendments to Tier Boundaries are evaluated against additional criteria outlined in paragraph 3.4.8 of the Unified Development Ordinance:

Criteria A: The site is contiguous to the proposed Tier: The proposed Compact Neighborhood Tier forms a contiguous area and does not leave an isolated pocket of Suburban Tier.

Criteria B: The site is not in the drainage basin for Lake Michie or Little River or in the one-mile critical area around Jordan or Falls Reservoirs: The proposed Compact Neighborhood Tier is not located in the drainage basin for Lake Michie or Little River and is not within a watershed protection critical area.

Criteria C: The extension does not violate any agreements with neighboring jurisdictions: The proposed Compact Neighborhood Tier is entirely within the City of Durham and Durham County jurisdiction and does not violate agreements with neighboring jurisdictions. The proposed boundary does fall within the Chapel Hill-Durham Joint Review Area. The Town of Chapel Hill will be allowed opportunity to review and comment on these plan amendments.

Criteria D: If the proposal is to expand the Suburban Tier, extending utilities to service the site is determined to be technically feasible by the Public Works Director or designee and will not result in inordinate cost to the City: This evaluation criterion does not apply; the proposal does not expand the Suburban Tier.

Endnotes

Introduction

This section will describe in greater detail the proposed changes to the Future Land Use Map for the area around the proposed South Square and Martin Luther King Jr. light rail stations. Opportunities, challenges and potential impacts of the proposed Compact Neighborhood Tier will be evaluated.

Existing Land Use and Development

Formerly the site of South Square Mall, development around the proposed South Square and MLK Jr. Stations has remained an auto-oriented commercial destination. Big box retailers such as Target and Sam’s Club anchor the shopping centers; however, vacancy of outparcels and supporting retail appears to be a rising issue. Suburban style office buildings, including the recognizable 17-story University Tower, and medium density garden apartments surround the shopping nodes before transitioning to single family neighborhoods. The area has built out according to current zoning designations, which are primarily commercial, office and medium density residential. A map and description of existing land uses and development can be found in Figure 1.

Proposed Changes to the Future Land Use Map

The Future Land Use Map currently designates an area centered around the South Square shopping center as a 366-acre Suburban Transit Area. This original boundary made sense in 2005 when plans for the regional rail corridor included a rail station on Pickett Road and a South Square station site option on Westgate Drive. However, current light rail transit plans include a new station location near the intersection of MLK Jr. Parkway and University Drive and a South Square station location on Shannon Road between Durham-Chapel Hill Boulevard and University Drive. As plans for the Durham-Orange Light Rail station locations have changed over time conversion from a Suburban Transit Area to a Compact Neighborhood Tier needs to be considered, along with re-assessment of the boundaries. Staff recommends three-part amendments to the Future Land Use Map: Development Tier, Future Land Use Designations, Technical Updates. Each is explained in greater detail on the following pages.
Figure 1: Existing Land Use and Development Map

<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Acres</th>
<th>Percent of Half Mile Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi Family Residential Neighborhood</td>
<td>284.2</td>
<td>31.5%</td>
</tr>
<tr>
<td>Suburban Commercial Center</td>
<td>198.6</td>
<td>22.0%</td>
</tr>
<tr>
<td>Right-of-Way</td>
<td>173.1</td>
<td>19.2%</td>
</tr>
<tr>
<td>Suburban Office Center</td>
<td>133.6</td>
<td>14.8%</td>
</tr>
<tr>
<td>Small Lot Residential Neighborhood</td>
<td>44.0</td>
<td>4.9%</td>
</tr>
<tr>
<td>Vacant</td>
<td>25.9</td>
<td>2.9%</td>
</tr>
<tr>
<td>Parks and Open Space</td>
<td>19.1</td>
<td>2.1%</td>
</tr>
<tr>
<td>Civic</td>
<td>14.8</td>
<td>1.6%</td>
</tr>
<tr>
<td>Suburban Hotel</td>
<td>7.3</td>
<td>0.8%</td>
</tr>
<tr>
<td>Neighborhood Commercial Center</td>
<td>2.5</td>
<td>0.3%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>903.0</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

*Land Use descriptions are provided in Appendix K.*
Proposed Change: Development Tier
As directed by Comprehensive Plan policy 2.4.1.e., convert the existing Suburban Transit Area into a Compact Neighborhood Tier with updated boundaries developed with community input. As shown in Figure 2, a 64 acre area on the northwest side of US Highway 15-501 is recommended to be removed from the Suburban Transit Area, while approximately 333 acres is recommended to be added to the Compact Neighborhood Tier generally south of MLK Jr. Parkway and west of Shannon Road. The changes result in a Compact Neighborhood Tier of approximately 708 acres.

Figure 2: Proposed Development Tier Changes
Proposed Change: Future Land Use Designations
Amend the future land use designations shown in Figures 3 and 4 to Design District. This is the category on the future land use map that directs future zoning map changes to the Compact Design (CD) zoning district, a form-based district which encourages a mix of uses and emphasizes pedestrian-oriented design.

Figure 3: Current Future Land Use Map
This proposal would convert 345 acres of Commercial, 189 acres of Medium Density Residential, 114 acres of Office, and 40 acres of Low Medium Density Residential to Design District.

Figure 4: Proposed Future Land Use Map

**Proposed Change: Technical Updates**
Correct minor mapping errors that will result in small (approximately 1 acre or less) changes to the Future Land Use Map, mostly impacting the Right-of-Way.
Opportunities and Challenges for Compact Neighborhood Development

The transition of South Square/MLK Jr. Parkway into a walkable mixed use neighborhood will not happen overnight, but will be dependent on the pace of private development interest. Already developed in a suburban pattern (only 3 percent of land within a half-mile of the stations is currently identified as vacant), there are numerous challenges and opportunities:

Challenges:

• **The existing roadway network is limited.** This area lacks a grid network of streets to encourage a dispersal of traffic and provide more alternate routes for people on bikes and people walking. The result is large, congested roadways.

• **Large roads that carry significant traffic volume.** Roads that are multiple lanes with fast moving traffic are difficult for people on bikes and pedestrians to navigate safely and comfortably. In order to become a walkable and bikeable destination, a new network of smaller streets may be necessary.

• **Commercial strip development is economically viable.** Durham-Chapel Hill Boulevard (US Highway 15-501 Business) cuts through the South Square station area. For several decades this area has been a center for auto-oriented commercial development. Assembling parcels with good visibility and highway access might be challenging while the market for strip commercial development still exists.

Opportunities:

• **Many shopping center buildings are reaching the end of their functional “lifespan”.** Shopping center buildings are typically designed to last between 20-30 years, meaning that the potential for redevelopment or infill may be approaching in the foreseeable future.

• **Large parcels.** Especially near the proposed stations, there are several large underused parcels. Larger parcels are easier to assemble for redevelopment than smaller parcels with varied owners.

• **Build a new network of streets.** If redevelopment occurs, there are opportunities to construct additional streets through large parcels, which will alleviate pressure on existing roadway network.

• **Highway access.** Transit-oriented development benefits from decent access to the highway transportation network. In this area, US Highway 15-501 Bypass and Business routes provide good access and visibility to these station areas.

• **Next stop: Duke.** With few affordable opportunities to develop near Duke University, South Square station will be only one transit stop away from a major education and employment center.
Justification for the Compact Neighborhood Tier Boundary

The recommended Compact Neighborhood Tier boundary emerged as a result of community input and the adherence to the general boundary guidelines developed by staff at the onset of the project. While the boundary description is explained in detail in Figure 5, in general, it includes non-residential uses like shopping centers and office, as well as already-built higher density apartment complexes. Important environmental areas and single family neighborhoods are avoided. Where possible, property lines and recorded easements are followed.

Plan amendments are evaluated against criteria outlined in paragraph 3.4.7 of the Unified Development Ordinance:

Criteria 1: Whether the proposed change would be consistent with the intent, goals, objectives, policies, guiding principles and programs of any adopted plans.

Staff believes the proposed boundaries for the South Square/MLK Jr. Compact Neighborhood Tier are consistent with numerous city and county goals and policies. For many of the reasons outlined in the introduction, the Durham Comprehensive Plan includes goals, objectives, and policies in support of Compact Neighborhoods surrounding regional rail stations (Policy 2.1.2e., Objective 2.2.4, Policy 2.4.1a.). Amending the Future Land Use Map to Compact Neighborhood is a step toward the vision of higher density, mixed use and walkable neighborhoods that are supported by transit.

A consistent goal within both the City and County Strategic Plans recognizes the need to improve the quality of neighborhoods by improving transportation choice through increasing access to transit, walking and biking. Compact Neighborhoods encourage more density, mix of uses, and walkability around light rail stations, and thus aid the City and County in realizing those goals.

Criteria 2: Whether the proposed change would be compatible with the existing land use pattern and/or designated future land uses.

Areas identified to be a part of the Compact Neighborhood Tier are largely already developed as either commercial, office, or multi-family residential, and do not infringe on protected open spaces or single-family residential neighborhoods. As a general rule, the most intense development is desired closest to the light rail stations, with densities tapering off toward the edges of the Tier.
Numbers shown on the map correspond with notes on the following page. Proposed boundaries are a result of community input and adherence to general boundary guidelines developed by staff at the onset of the project. These guidelines are described in the introductory chapter.
1. **Existing Apartment and Townhome Complexes.** North of University Drive, and to the west of Martin Luther King Jr. Parkway, is a quadrant of apartment and townhome communities generally built around 1990 (Alden Place was built later in 2001). These are moderately dense (two to four stories) complexes that are generally consistent with densities desired on the edges of Compact Neighborhoods. While redevelopment of these apartment complexes is not foreseeable in the near-term future, the proximity of the Martin Luther King Jr. Station may someday prompt a denser development pattern. To avoid including sensitive environmental land, the Compact Neighborhood Tier’s western boundary follows an existing sewer easement rather than a property line.

2. **US 15-501.** The interchange of US 15-501 Bypass and Business routes creates an impenetrable pedestrian barrier, and a concise boundary for the Compact Neighborhood Tier. Areas to the north and west are primarily parks/open space and single family residential.

3. **North of Durham-Chapel Hill Boulevard.** The Durham-Chapel Hill Boulevard cuts through the proposed Compact Neighborhood Tier. While it is a barrier to accessing the South Square Station from the north, there are long-term opportunities to rethink the boulevard’s design. Promoting better connections between the station and areas to the north would connect existing employment (University Tower) and create opportunities to redevelop a strip commercial thoroughfare. Pickett Road and the Forest at Duke form the northern boundary of the proposed Compact Neighborhood Tier.

4. **Durham Academy.** Durham Academy is not included in the proposed Compact Neighborhood Tier because of the nature and location of the site. It is beyond the 1/2 mile walk zone and is currently a suburban style school campus that would not provide or receive benefit if included in the Tier.

5. **East of Shannon Road.** Redevelopment and infill opportunities are available immediately east of the South Square Station, especially north of University Drive. Large, underutilized parcels in such proximity to a light rail station provide good opportunities for transit oriented development.

6. **Single Family Neighborhoods.** Single family neighborhoods, such as Valley Run, were not included in the proposed Compact Neighborhood Tier boundary. As established neighborhoods unlikely to change in character in the coming years, maintaining current land use and zoning is advised.

7. **Shopping Centers.** A significant amount of land in the proposed Compact Neighborhood Tier is developed as big box shopping centers, such as Parkway Plaza, South Square, and West Gate. By the time the light rail is in operation (estimated 2026), many of these buildings may be reaching the end of their functional lifespan, meaning they will either need significant rehabilitation or could pose as opportunities for more dense, mixed use, and walkable redevelopment.

8. **Blue Cross Blue Shield NC.** Blue Cross Blue Shield of North Carolina is in the process of consolidating its operations to a Durham campus, located southwest of the proposed Martin Luther King Jr. Parkway Station. The campus is undergoing major new construction and renovation to accommodate all employees, so it is not expected that it will redevelop again in the near term future. However, because it is such an employment destination and in such proximity to the LRT station, a portion of the campus was included in the proposed Compact Neighborhood Tier.
Criteria 3: Whether the proposed change would create substantial adverse impacts in the adjacent area or the City or County in general.

This section will evaluate and discuss what potential environmental, housing and property values, transportation, and community service impacts could arise as a result of implementing a policy in support of Compact Neighborhoods. While in many cases it is too early to determine specific impacts, broader issues are discussed and actions are proposed that are intended to alleviate potential negative impacts.

Environment
Whenever proposals to increase density are on the table, a common concern is that it will negatively impact environmental systems. As an almost fully developed suburban commercial center, many of the natural characteristics of this area are no longer present. A tributary of Sandy Creek does extend along the south side of University Drive beginning at Martin Luther King Jr. Parkway. Vegetation and a network of private trails protect the stream from surrounding development and infrastructure.

Natural Heritage Areas. There are no documented Natural Heritage Areas within the boundaries of the proposed Compact Neighborhood Tier.

Tree Coverage. Current UDO standards do not require tree coverage for development with Compact Neighborhood Tiers, but do require street trees and vehicular use are landscaping.

Riparian Buffers. Because the South Square/MLK Jr. Boulevard Compact Neighborhood Tier is not within a Watershed Protection Overlay, the width of stream buffers would not be impacted (50 feet is required regardless).

Impervious Surface Area. A large percentage of the area has already been converted to impervious surface (approximately 65%). It is unlikely that increasing density through redevelopment and infill of surface parking lots will result in significant land cover conversion.

Housing and Property Values
Across the country, a common trend in areas near light rail transit is the increase of land values. While this can be beneficial to the broader tax base, there can be some unintended negative consequences for low income households and renters. In 2014 the City Council and Board of County Commissioners adopted a resolution that at least 15% of all housing within ½ mile of proposed transit stations should be affordable to those making 60% or less than Area Median Income. Housing is generally considered unaffordable if rent or mortgage payments plus utility costs exceed 30% of income.

The most recent Planning Department data (January 2015) shows that 47.6% of occupied housing within a ½ mile of the South Square Station is affordable to those earning 60% or less of Area Median Income. The figures for the MLK Jr. Station are somewhat higher, with 64.8% of housing qualifying as affordable. While this proposed Compact Neighborhood offers affordable living options today, preserving that affordability is of significant importance in the future as light rail and increased development interest come to the area.

Through its Affordable Housing and Transit initiatives, the City is taking steps to create and preserve affordability. Enterprise Community Partners has presented recommendations to the City Council, including that the Planning Department evaluate the feasibility of an enhanced density bonus in Compact Design zoning districts near proposed light rail stations. This possibility will be fully explored prior to to any city-initiated zoning of Compact Neighborhood Tiers.
Transportation

Despite increased transit service and enhanced sidewalks and bike facilities, the automobile is likely to remain the dominant mode of transportation for the foreseeable future. The area around the South Square and MLK Jr. stations is already developed as an auto-oriented center with highway (US Highway 15-501) and major thoroughfare (Martin Luther King Jr. and University Drive) access. While some bicycle and pedestrian infrastructure exists, future redevelopment presents opportunities to expand the network and create a multi-modal district.

Traffic. Level of Service (LOS) is a common measure of traffic flow and density of vehicles. For city roads in Compact Neighborhoods, where increased “street-life” is encouraged, Comprehensive Plan Policy 8.1.2a. indicates Level of Service E, which allows for some congestion, is acceptable. The policy for state roads is to maintain Level of Service D, which allows for faster traffic flow.

As part of a long range transportation planning effort, the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) conducts a Deficiency Analysis to demonstrate which roadways will exceed Level of Service (LOS) standards given future growth projections. Because it is premature to estimate with any accuracy the amount of traffic generated by future development and redevelopment in the South Square/MLK Jr. Compact Neighborhood Tier, the Deficiency Analysis is the best proxy.

The Deficiency Analysis assumes population and employment figures from the year 2040 on the current transportation network in order to highlight what roads will need future improvements. While the volume of traffic is expected to increase to some degree on every roadway, listed below are roads where traffic volume is expected to exceed roadway capacity when operating at a Level of Service D.

- Tower Boulevard (US 15-501 entrance ramp to Durham Chapel Hill Boulevard)
- University Drive (Garrett Road to Martin Luther King Jr. Parkway)
- Martin Luther King Jr. Parkway (Shannon Road to Old Chapel Hill Road)

As part of a larger revision to the Unified Development Ordinance, the Planning Department is working with the Transportation and Public Works departments in developing standard cross-sections for new streets within Compact Neighborhoods. These will largely follow complete streets principles: minimizing unnecessary pavement width, and encouraging on-street parking, bike lanes, and sidewalks. These street cross-sections are envisioned to be applied to new collector streets and new local streets. The UDO already includes requirements to improve connectivity (a maximum 400 foot block length) and requirements for streetscape features, including landscaping and street furniture.
Pedestrian and Bicycle. The existing networks of sidewalks and bike lanes in the South Square/MLK Jr. Compact Neighborhood area are limited. While major roads, like Martin Luther King Jr. Parkway and University Drive do have sidewalks, they form a limited network. The Durham Walks! Pedestrian Plan and the Durham Comprehensive Bicycle Plan recommend additional segments of sidewalks and bike facilities, as can be seen in Figure 6 and 7. In addition to pedestrian and bicycle infrastructure, there are a number of trails planned (Durham Trails and Greenways Master Plan) through Sandy Creek Park and other natural areas. These can be seen in Figure 7.

As mentioned previously, if redevelopment occurs under Compact Neighborhood standards, there would be opportunities to create an additional street network. Sidewalks with enhanced streetscape features, such as benches, trash receptacles, and trees/planter boxes would be required. Enhancing the network of streets and adding amenities will help this area, over time, become more pedestrian oriented.

Under the broad umbrella of Station Area Planning, the Planning Department is collaborating with other departments on the Station Area Strategic Infrastructure (SASI) study. This study is intended to identify and prioritize bicycle and pedestrian projects that will enable safe and convenient access to the light rail stations.

Services and Infrastructure
The proposed South Square/MLK Jr. Compact Neighborhood Tier is already within the city limits of Durham. Future development that increases density may cause an influx in demand in the following areas:

Water and Wastewater. Water main distribution systems serve to supply potable water and to support fire suppression throughout the community. A well-designed system can maintain adequate pressure to support demand of individual properties and provide high flow rates to fire hydrants/fire suppression systems in emergency situations. The material and age of the system’s water mains can be factors in system breaks, leaks, and pressure and flow degradations.

Wastewater or sanitary sewer infrastructure consists of a collection of gravity flow sewer mains, lift stations, and pressurized force mains that transport sewage to a wastewater treatment plant. An efficient collection system has the capacity to accommodate all of the existing land uses within its particular sewer basin. Beyond capacity, the material and age of pipes within a system can also impact its effectiveness.

The City of Durham maintains water and sanitary sewer infrastructure within the proposed South Square/MLK Jr. Compact Neighborhood Tier. Wastewater from the station area is treated by the South Durham Reclamation Facility. Based on communication with the City of Durham’s Water Management Department, because the area is already heavily developed, the system appears to be adequate in size and extent to accommodate proposed changes to land use.
Figure 6: Existing and Proposed Pedestrian Network

Figure 7: Existing and Proposed Bicycle and Trail Network
Schools. Students from the proposed South Square/MLK Jr. Compact Neighborhood are in the attendance zones of four schools: Forest View Elementary, Hope Valley Elementary, Githens Middle School, and Jordan High School. Figure 8 summarizes information on school capacity and projected student enrollment from the Durham Public School’s 2013 Long Range Facility Study.

The Durham Comprehensive Plan specifies a system wide level of service standard of 110% capacity. Once that level is reached, policy 11.1.1b. directs the Planning Department to consider mitigation commitments from private developers or recommend denial of zoning map changes that cause student generation to increase above the rate of current zoning. While the policy is applied at a system wide basis because of liberal magnet and transfer policies, it should be noted that Githens Middle School is expected to exceed 110% capacity by the year 2020. There are currently no scheduled renovations to expand capacity.

Amending the Future Land Use Map to Compact Neighborhood could lead to additional student enrollment over time. While it is premature to determine with any certainty what the impact will be, Durham Public Schools has been made aware of these potential impacts. The Planning Department is committed to working with the school system to reflect changes to the Future Land Use Map in the next iteration of the Long Range Facility Study, which is updated every two to four years.

Figure 8: Projected Student Enrollment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest View</td>
<td>659</td>
<td>658</td>
<td>664</td>
<td>670</td>
<td>679</td>
<td>680</td>
<td>681</td>
<td>680</td>
<td>678</td>
<td>679</td>
<td>686</td>
<td>697</td>
</tr>
<tr>
<td>Hope Valley</td>
<td>628</td>
<td>653</td>
<td>656</td>
<td>659</td>
<td>664</td>
<td>665</td>
<td>665</td>
<td>664</td>
<td>664</td>
<td>668</td>
<td>674</td>
<td></td>
</tr>
<tr>
<td>Githens Middle</td>
<td>852</td>
<td>999</td>
<td>934</td>
<td>912</td>
<td>913</td>
<td>915</td>
<td>916</td>
<td>1015</td>
<td>1093</td>
<td>1129</td>
<td>1130</td>
<td>1131</td>
</tr>
<tr>
<td>Jordan High</td>
<td>1810</td>
<td>1715</td>
<td>1719</td>
<td>1761</td>
<td>1766</td>
<td>1798</td>
<td>1846</td>
<td>1762</td>
<td>1754</td>
<td>1758</td>
<td>1779</td>
<td>1836</td>
</tr>
</tbody>
</table>

Criteria 4: Whether the subject site is of adequate shape and size to accommodate the proposed change.

The proposed South Square Compact Neighborhood Tier is 708 acres, and is of adequate shape and size to accommodate the proposed change.
Amendments to Tier Boundaries are also evaluated against additional criteria outlined in paragraph 3.4.8 of the Unified Development Ordinance:

**Criteria A: The site is contiguous to the proposed Tier.**

The proposed Compact Neighborhood Tier forms a contiguous area and does not leave an isolated pocket of Suburban Tier.

**Criteria B: The site is not in the drainage basin for Lake Michie or Little River or in the one-mile critical area around Jordan or Falls Reservoirs.**

The proposed Compact Neighborhood Tier is not located in the drainage basin for Lake Michie or Little River and is not within a watershed protection critical area.

**Criteria C: The extension does not violate any agreements with neighboring jurisdictions.**

The proposed Compact Neighborhood Tier is entirely within the City of Durham jurisdiction and does not violate agreements with neighboring jurisdictions.

**Criteria D: If the proposal is to expand the Suburban Tier, extending utilities to service the site is determined to be technically feasible by the Public Works Director or designee and will not result in inordinate cost to the City.**

This evaluation criterion does not apply; the proposal does not expand the Suburban Tier.

---

**Endnotes**


Erwin Road Compact Neighborhood

Introduction

This section will describe in greater detail the proposed changes to the Future Land Use Map for the area around the proposed LaSalle Street and Medical Center light rail stations. Opportunities, challenges and potential impacts of the proposed Compact Neighborhood Tier will be evaluated.

Existing Land Use and Development

At the door step of the Duke University Medical Center and the Veterans Affairs (VA) Medical Center, the area along Erwin Road has developed in a dense, mixed use pattern. While the main university and hospital campuses are largely contained south of Erwin Road, the north side has developed as a blend of office buildings, mixed use projects and the health care centers, including the VA Medical Center. Further north are large multi-family apartment complexes, mostly built between the 1970s and 2000s. A pocket of single-family houses, known as the Crest Street neighborhood, is surrounded by more intense land uses. A map and description of existing land uses and development can be found in Figure 1.

Proposed Changes to the Future Land Use Map

The Future Land Use Map currently designates an area centered around the Duke and Veterans Affairs medical centers as a 475-acre Compact Neighborhood Tier. This original boundary made sense in 2005; however, with changes to the development character of Erwin Road and a new LRT station introduced at LaSalle Street, boundaries for the Compact Neighborhood Tier ought to be reconsidered.

Staff recommends four-part amendments to the Future Land Use Map: Development Tier, Future Land Use Designations, Duke University, and Technical Updates. Each is explained in greater detail on the following pages.
Figure 1: Existing Land Use and Development Map

Land Use descriptions are provided in Appendix K.

<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Acres</th>
<th>Percent of Half Mile Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>University Campus</td>
<td>274</td>
<td>28%</td>
</tr>
<tr>
<td>Health Care Campus</td>
<td>173</td>
<td>18%</td>
</tr>
<tr>
<td>Multi-Family Residential Neighborhood</td>
<td>168</td>
<td>17%</td>
</tr>
<tr>
<td>Right of Way</td>
<td>159</td>
<td>16%</td>
</tr>
<tr>
<td>Mixed Use Center</td>
<td>50</td>
<td>5%</td>
</tr>
<tr>
<td>Urban Neighborhood</td>
<td>28</td>
<td>3%</td>
</tr>
<tr>
<td>Neighborhood Commercial Center</td>
<td>24</td>
<td>2%</td>
</tr>
<tr>
<td>Small Lot Residential Neighborhood</td>
<td>23</td>
<td>2%</td>
</tr>
<tr>
<td>Civic</td>
<td>19</td>
<td>2%</td>
</tr>
<tr>
<td>Suburban Hotel</td>
<td>12</td>
<td>1%</td>
</tr>
<tr>
<td>Vacant</td>
<td>9</td>
<td>1%</td>
</tr>
<tr>
<td>Suburban Office Center</td>
<td>8</td>
<td>1%</td>
</tr>
<tr>
<td>Parks and Open Space</td>
<td>7</td>
<td>1%</td>
</tr>
<tr>
<td>Light Industrial Center</td>
<td>6</td>
<td>1%</td>
</tr>
<tr>
<td>Utility</td>
<td>4</td>
<td>0%</td>
</tr>
</tbody>
</table>

Total 964 100%
**Proposed Change: Development Tier**
Update the Compact Neighborhood Tier with boundaries developed with community input. As shown in Figure 2, an approximately 48-acre area west of Fulton Street and north of Erwin Road is recommended to be removed from the Compact Neighborhood Tier. This area is Crest Street, a predominantly single-family neighborhood with an important history. All properties zoned University College on either side of Erwin Road are also proposed to be removed from the Compact Neighborhood Tier, as well as a small block of single family homes on Alabama Avenue. A 220-acre area west of LaSalle, east of US 15-501 and south of NC 147 is recommended to be included. The changes result in a Compact Neighborhood Tier of approximately 412 acres.

**Figure 2: Proposed Development Tier Changes**
**Proposed Change: Future Land Use Designations**
Amend the future land use designations shown in Figures 3 and 4 to Design District. This is the category on the future land use map that directs future zoning map changes to the Compact Design (CD) zoning district, a form-based district which encourages a mix of uses and emphasizes pedestrian-oriented design.

**Figure 3: Current Future Land Use Map**
This proposal would convert 86 acres of Commercial, 38 acres of Industrial, 23 acres of Institutional, 226 acres of Medium-High Density Residential, and 38 acres of Office to Design District.

Figure 4: Proposed Future Land Use Map
**Proposed Change: Duke University** Amend the future land use designation shown in Figure 5 from Commercial to Institutional. The intent for this area, according to Duke University Master Plans is to expand the Medical Center campus at densities and intensities that are transit supportive. These properties are owned by Duke University and are zoned University-College (UC). The University-College zoning designation allows Duke University and the Medical Center to plan at a campus-wide level for things like parking, sidewalks and stormwater management. According to Facilities Management staff with the University and Medical Center, they are opposed to amending their zoning district to Compact Design; and therefore, the Future Land Use Designation to Design District. This proposed change to Institutional would make the Future Land Land Use Map consistent with the existing zoning.

**Figure 5: Duke University University College Land Use Map Changes**

**Proposed Change: Technical Updates**

Correct minor mapping errors that will result in small (approximately 1 acre or less) changes to the Future Land Use Map, mostly impacting the Right-of-Way.
Removing Duke University from the Compact Neighborhood Tier results in an area north of the Durham Freeway centered along Main Street and Hillsborough Street that is more closely associated with the Ninth Street Compact Neighborhood than the proposed Erwin Road Compact Neighborhood. Figures 6 and 7 show the area in relationship to the Ninth Street Compact Neighborhood Tier and planned LRT station. The proposed (but on-hold) West Durham Commuter Rail Station would be located along the freight rail tracks, across from the existing Food Lion. This area of West Durham has been designated as a Compact Neighborhood Tier since the 2005 Comprehensive Plan, and staff feels it is still appropriately designated because of the proximity to future transit and potential for infill and redevelopment. On the northern edge, the boundary is drawn mid-block so that properties facing Hillsborough are included, but those fronting on Alabama Avenue are not.

Figure 6: Current Future Land Use Map
Figure 7: Proposed Future Land Use Map

Future Land Use Designation

- Commercial
- Industrial
- Institutional
- Office
- Medium Density Residential (6 - 12 DU/Acre)
- Medium-High Density Residential (8 - 20 DU/Acre)
- Design District
Opportunities and Challenges for Compact Neighborhood Development

The area centered around the LaSalle Street and Medical Center stations already exhibit some characteristics of a Compact Neighborhood: urban densities and a mix of uses. Still, there are numerous challenges and opportunities:

**Challenges:**

- **The existing roadway network is limited.** This area lacks a grid network of streets to encourage a dispersal of traffic and provide more alternate routes for people on bikes and people walking. The result is that Erwin Road has become a large, congested roadway.

- **Large roads that carry significant traffic volume.** Roads, like Erwin, that are multiple lanes across with fast moving traffic are difficult for people on bikes and people on foot to navigate safely and comfortably. In order to become a walkable and bikeable destination, a new network of smaller streets may be necessary.

- **Vacant land is scarce.** According to recent survey, only 9 acres (1%) of the area within a half-mile of the proposed transit stations along Erwin Road is vacant. Redevelopment of existing land uses is often more difficult and costly than developing a vacant site.

**Opportunities:**

- **Apartment complexes are reaching the end of their “lifespan”.** Many of the apartment complexes and townhome communities north of Erwin Road are aging. Duke Manor, for instance, is now over 40 years old. Increased demand for housing in this location may mean that the potential for redevelopment could be approaching in the foreseeable future.

- **Build a new network of streets.** If redevelopment occurs, there are opportunities to construct additional streets through large parcels, which will alleviate pressure on the existing roadway network.

- **Highway access.** Transit-oriented development benefits from access to the highway transportation network. In this area, US 15-501 Bypass and the Durham Freeway provide good access and visibility to these station areas.

- **Major Employment Center.** Duke University and Health System is a powerhouse in the region, employing nearly 35,000 people. While not all jobs are located at the main campuses, there are a significant number of employees who commute to this area. Expanding housing options in proximity of the university and hospital campus presents a considerable opportunity.
Justification for the Compact Neighborhood Tier Boundary

The recommended Compact Neighborhood Tier boundary emerged as a result of community input and the adherence to the general boundary guidelines developed by staff at the onset of the project. While the boundary description is explained in detail in Figure 8, in general, it includes multifamily and non-residential uses north of Erwin Road, east of US 15-501 Bypass and south of NC 147. The exception is several blocks west of the Ninth Street Compact Neighborhood Tier along Hillsborough Road and Main Street. Intact blocks of single-family housing and historic districts are avoided. Where possible, property lines, major transportation corridors and recorded easements are followed. Plan amendments are evaluated against criteria outlined in paragraph 3.4.7 of the Unified Development Ordinance:

Criteria 1: Whether the proposed change would be consistent with the intent, goals, objectives, policies, guiding principles and programs of any adopted plans.

Staff believes the proposed boundaries for the Erwin Road Compact Neighborhood Tier are consistent with numerous city and county goals and policies. For many of the reasons outlined in the introduction, the Durham Comprehensive Plan includes goals, objectives, and policies in support of Compact Neighborhoods surrounding regional rail stations (Policy 2.1.2e., Objective 2.2.4, Policy 2.4.1a.). Amending the Future Land Use Map to Compact Neighborhood is a step toward the vision of higher density, mixed use and walkable neighborhoods that are supported by transit.

A consistent goal within both the City and County Strategic Plans recognizes the need to improve the quality of neighborhoods by improving transportation choice through increasing access to transit, walking and biking. Compact Neighborhoods encourage more density, mix of uses, and walkability around light rail stations, and thus aid the City and County in realizing those goals.

Criteria 2: Whether the proposed change would be compatible with the existing land use pattern and/or designated future land uses.

Much of the area identified to be a part of the updated Compact Neighborhood Tier has been included in the Comprehensive Plan since its adoption. Therefore, the proposed change is largely consistent with previously adopted policies for future growth and will not dramatically impact the existing land use pattern.
Numbers shown on the map correspond with notes on the following page. Proposed boundaries are a result of community input and adherence to general boundary guidelines developed by staff at the onset of the project. These guidelines are described in the introductory chapter.
1. **US Highway 15-501.** US Highway 15-501 provides a clear western boundary for the Compact Neighborhood Tier. While improved bicycle and pedestrian facilities are planned along Morreene Road, the highway provides a distinct dividing line between lower intensity development to the northwest and higher intensity development closer to Erwin Road.

2. **NC 147 (Durham Freeway).** The Durham Freeway provides a logical northern boundary for the Compact Neighborhood Tier because it limits pedestrian connectivity and signals a shift in development character.

3. **Crest Street Neighborhood.** In recognition of the historical and cultural significance of the Crest Street Neighborhood, staff recommends that the neighborhood should not be included within the Compact Neighborhood at this time. This recommendation signifies staff’s belief that the neighborhood should remain intact as a single-family neighborhood, though it does not prevent a private entity from pursuing development options in the neighborhood.

4. **West Durham.** Centered around the proposed (but on-hold) West Durham Commuter Rail Station, this area along Main Street and Hillsborough Road is connected to the Ninth Street Compact Neighborhood. The boundary is drawn midblock so that the businesses and houses facing Hillsborough Street are included, but those along Alabama Avenue are not.

5. **Duke University and Medical Center.** Most properties owned by Duke University are under a special zoning district called “University College” that is governed by a development plan. The zoning district allows Duke flexibility to plan on a campus-wide basis for stormwater, parking and sidewalks. A precedent was set in the Ninth Street area to exclude from the Compact Neighborhood areas zoned “University and College,” and it is Duke University staff’s preference that that policy continue.

6. **Mixed Use Development.** Recently developed mixed use developments, such as Erwin Terrace, now line the north side of Erwin Road, and are already consistent with the principles of a Compact Neighborhood: higher density, mixed use, and pedestrian scale design.

7. **Apartment Complexes and Townhome Communities.** Many of the large apartment complexes and townhome communities north of Erwin Road are aging. Duke Manor, for instance, is now over 40 years old. Increased demand for housing in this location may mean that the potential for redevelopment could be approaching in the foreseeable future.
Criteria 3: Whether the proposed change would create substantial adverse impacts in the adjacent area or the City or County in general.

This section will evaluate and discuss what potential environmental, housing and property values, transportation, and community service impacts could arise as a result of implementing a policy in support of Compact Neighborhoods. While in many cases it is too early to determine specific impacts, broader issues are discussed and actions are proposed that are intended to alleviate potential negative impacts.

Environment
Whenever proposals to increase density are on the table, a common concern is that it will negatively impact environmental systems. As an almost fully developed urban area, many of the natural characteristics of this area are no longer present.

Natural Heritage Areas. There are no documented Natural Heritage Areas within the boundaries of the proposed Compact Neighborhood Tier.

Tree Coverage. Because Erwin Road is already designated as a Compact Neighborhood, the ordinance does not require a minimum tree coverage. Instead, to promote a more urban environment, street trees and landscaping in vehicle use areas are required.

Riparian Buffers. Because the proposed Alston Avenue Compact Neighborhood Tier is not within a Watershed Protection Overlay, the width of stream buffers would not be impacted (50 feet is required regardless).

Impervious Surface Area. A large percentage of the area has already been converted to impervious surface (approximately 63%). It is unlikely that increasing density through redevelopment and infill of vacant lots will result in significant land cover conversion.

Housing and Property Values
Across the country, a common trend in areas near light rail transit is the increase of land values. While this can be beneficial to the broader tax base, there can be some unintended negative consequences for low income households and renters. In 2014 the City Council and Board of County Commissioners adopted a resolution that at least 15% of all housing within ½ mile of proposed transit stations should be affordable to those making 60% or less than Area Median Income. Housing is generally considered unaffordable if rent or mortgage payments plus utility costs exceed 30% of income.

The most recent Planning Department data (January 2015) shows that 51.3% of occupied housing within a ½ mile of the Alston Avenue Station is affordable to those earning 60% or less of Area Median Income. While this proposed Compact Neighborhood offers affordable living options today, preserving that affordability is of significant importance in the future as light rail and increased development interest come to the area.

Through its Affordable Housing and Transit initiatives, the City is taking steps to create and preserve affordability. Enterprise Community Partners has presented recommendations to the City Council, including that the Planning Department evaluate the feasibility of an enhanced density bonus in Compact Design zoning districts near proposed light rail stations. This possibility will be fully explored prior to any city-initiated zoning of Compact Neighborhood Tiers.
Transportation

As a major employment center, university and mixed use neighborhood, the proposed Erwin Road Compact Neighborhood is already a multi-modal destination. Students and employees arrive to campus and their jobs via bus, bike, on foot and by car. Erwin Road forms the backbone of all of this transportation activity. With few alternative routes, Erwin is becoming congested and not a safe or pleasant environment to walk or bike. The continued success of Erwin Road as a Compact Neighborhood largely hinges on addressing congestion and building a more complete network of streets, sidewalks, and bike facilities.

Traffic. Level of Service (LOS) is a common measure of traffic flow and density of vehicles. For city roads in Compact Neighborhoods, where increased activity is encouraged, Comprehensive Plan Policy 8.1.2a. indicates LOS E, which allows for some congestion, is acceptable. The policy for state roads is to maintain LOS D, which allows for faster traffic flow.

As part of a long range transportation planning effort, the DCHC Metropolitan Planning Organization conducts a Deficiency Analysis to demonstrate which roadways will exceed LOS standards given future growth projections. Because it is premature to estimate with any accuracy the amount of traffic generated by future development and redevelopment in the Patterson Place Compact Neighborhood Tier, the Deficiency Analysis is the best proxy.

The Deficiency Analysis assumes population and employment figures from the year 2040 on the current transportation network in order to highlight what roads will need future improvements. While the volume of traffic is expected to increase to some degree on every roadway, listed below are roads where traffic volume is expected to exceed roadway capacity when operating at a LOS D.

Crest Street Neighborhood. Special consideration needs to be paid to the Crest Street (Hickstown) Neighborhood. This largely single-family neighborhood was relocated as part of an environmental justice lawsuit over the construction of the Durham Freeway in the early 1980s. It remains a cohesive African American community today, with a large proportion of residents who own their homes. Due to the desirable proximity of Duke University and the medical centers, many in the neighborhood report pressure from developers to sell their property, presumably for its use as a lucrative rental or for denser redevelopment.

The 2005 version of the Future Land Use Map included the neighborhood in the Compact Neighborhood Tier. After meeting with the neighborhood, many residents expressed a desire to be removed from the Tier to signalize that the neighborhood should be preserved as single family. Others were equally interested in staying within the Tier designation. Based upon staff’s guidelines for boundaries generated at the onset of this project and the input received from the residents, staff proposes to leave this single-family neighborhood out of the Compact Neighborhood Tier at this time, and recognizes that the City Council can consider including it in the future if it deems it appropriate.
• Erwin Road (LaSalle Street to Fulton Street)
• Morreene Road (Campus Walk to US 15-501)

Pedestrian and Bicycle. The existing networks of sidewalks and bike lanes in the proposed Erwin Road Compact Neighborhood area are limited. While major roads, like LaSalle Street and Erwin Road do have sidewalks, they form a limited network. The Durham Walks! Pedestrian Plan and the Durham Comprehensive Bicycle Plan recommend additional segments of sidewalks and bike facilities, as can be seen in Figure 9 and 10. Planning, design and construction of sidewalks on Campus Drive and LaSalle Street are in progress (TIP C-5178). Sidewalks and bike lanes on Morreene Road are funded (TIP C-4928) and expected to begin construction in 2016.

As mentioned previously, if redevelopment occurs under Compact Neighborhood standards, there would be opportunities to create an additional street network. Sidewalks with enhanced streetscape features, such as benches, trash receptacles, and trees/planter boxes would be required. Enhancing the network of streets and adding amenities will help this area, over time, become more pedestrian oriented.

Under the broad umbrella of Station Area Planning, the Planning Department is collaborating with other departments on the Station Area Strategic Infrastructure (SASI) study. This study is intended to identify and prioritize bicycle and pedestrian projects that will enable safe and convenient access to the light rail stations.

Services and Infrastructure. The proposed Compact Neighborhood Tier is already within the city limits of Durham. Future development that increases density may cause an influx in demand in the following areas:

Water and Wastewater. Water main distribution systems serve to supply potable water and to support fire suppression throughout the community. A well-designed system can maintain adequate pressure to support demand of individual properties and provide high flow rates to fire hydrants/fire suppression systems in emergency situations. The material and age of the system’s water mains can be factors in system breaks, leaks, and pressure and flow degradations.

Wastewater or sanitary sewer infrastructure consists of a collection of gravity flow sewer mains, lift stations, and pressurized force mains that transport sewage to a wastewater treatment plant. An efficient collection system has the capacity to accommodate all of the existing land uses within its particular sewer basin. Beyond capacity, the material and age of pipes within a system can also impact its effectiveness.

The City of Durham maintains water and sanitary sewer infrastructure within the proposed Erwin Road Compact Neighborhood Tier. Based on communication with the City of Durham’s Water Management Department, because the area is already heavily urbanized, the system appears to be adequate in size and extent to accommodate proposed changes to land use.
Figure 9: Existing and Proposed Pedestrian Network

Figure 10: Existing and Proposed Bicycle and Trail Network
Schools. Students from the proposed Erwin Road Compact Neighborhood are in the attendance zones of four public schools. Figure 11 summarizes information on school capacity and projected student enrollment from the Durham Public School’s 2013 Long Range Facility Study.

The Durham Comprehensive Plan specifies a system wide level of service standard of 110% capacity. Once that level is reached, policy 11.1.1b. directs the Planning Department to consider mitigation commitments from private developers or recommend denial of zoning map changes that cause student generation to increase above the rate of current zoning. While the policy is applied at a system wide basis because of liberal magnet and transfer policies, it should be noted that Riverside High School is already operating over 110% capacity levels. There are currently no scheduled renovations to expand capacity.

Amending the Future Land Use Map to Compact Neighborhood could lead to additional student enrollment overtime. While it is premature to determine with any certainty what the impact will be, Durham Public Schools has been made aware of these potential impacts. The Planning Department is committed to working with the school system to reflect changes to the Future Land Use Map in the next iteration of the Long Range Facility Study, which is updated every two to four years.

Figure 11: Projected Student Enrollment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Forest View</td>
<td>659</td>
<td>658</td>
<td>664</td>
<td>670</td>
<td>679</td>
<td>680</td>
<td>681</td>
<td>680</td>
<td>678</td>
<td>679</td>
<td>686</td>
<td>697</td>
</tr>
<tr>
<td>E.K. Powe</td>
<td>404</td>
<td>402</td>
<td>404</td>
<td>406</td>
<td>408</td>
<td>409</td>
<td>409</td>
<td>409</td>
<td>408</td>
<td>408</td>
<td>411</td>
<td>414</td>
</tr>
<tr>
<td>Brogden Middle</td>
<td>872</td>
<td>683</td>
<td>704</td>
<td>684</td>
<td>668</td>
<td>652</td>
<td>645</td>
<td>666</td>
<td>683</td>
<td>691</td>
<td>688</td>
<td>670</td>
</tr>
<tr>
<td>Riverside High</td>
<td>1540</td>
<td>1759</td>
<td>1737</td>
<td>1740</td>
<td>1730</td>
<td>1730</td>
<td>1748</td>
<td>1716</td>
<td>1713</td>
<td>1715</td>
<td>1723</td>
<td>1745</td>
</tr>
</tbody>
</table>

Criteria 4: Whether the subject site is of adequate shape and size to accommodate the proposed change.

The proposed Erwin Road Compact Neighborhood Tier is 480 acres, and is of adequate shape and size to accommodate the proposed change.
Amendments to Tier Boundaries are also evaluated against additional criteria outlined in paragraph 3.4.8 of the Unified Development Ordinance:

**Criteria A: The site is contiguous to the proposed Tier.**

The proposed Compact Neighborhood Tier forms a contiguous area and does not leave an isolated pocket of Urban Tier.

**Cribertia B: The site is not in the drainage basin for Lake Michie or Little River or in the one-mile critical area around Jordan or Falls Reservoirs.**

The proposed Compact Neighborhood Tier is not located in the drainage basin for Lake Michie or Little River and is not within a watershed protection critical area.

**Criteria C: The extension does not violate any agreements with neighboring jurisdictions.**

The proposed Compact Neighborhood Tier is entirely within the City of Durham and does not violate agreements with neighboring jurisdictions.

**Criteria D: If the proposal is to expand the Suburban Tier, extending utilities to service the site is determined to be technically feasible by the Public Works Director or designee and will not result in inordinate cost to the City.**

This evaluation criterion does not apply; the proposal does not expand the Suburban Tier.

---

**Endnotes**


Alston Avenue Compact Neighborhood

Introduction

This section will describe in greater detail the proposed changes to the Future Land Use Map for the area around the proposed Alston Avenue light rail station. Opportunities, challenges and potential impacts of the proposed Compact Neighborhood Tier will be evaluated.

Existing Land Use and Development

As one of the oldest parts of Durham, the area around the proposed Alston Avenue station consists of active and abandoned industrial businesses located along or near the freight rail corridor, along with single-family houses, vacant lots, and civic uses. Several former industrial textile mill buildings, Golden Belt and the Hosiery Mill, have been adaptively re-used and are now residences, offices, and commercial spaces. A number of National Register Historic Districts, including Golden Belt, East Durham, Stokesdale, and the Cotton Mills Village, significant as single-family neighborhoods, are also in the vicinity. A map and description of existing land uses and development can be found in Figure 1.

Proposed Changes to the Future Land Use Map

The Future Land Use Map already designates an area centered around the proposed Alston Avenue station as a 302-acre Compact Neighborhood. The original boundary adopted in 2005 extended south of the Durham Freeway and north to Taylor Street. In 2006, the boundary was amended to exclude areas south of the Durham Freeway. In light of a significant development opportunity immediately south of the freeway and the presence of intact and historic neighborhoods, re-evaluation of the Compact Neighborhood Tier boundaries ought to be considered.

Staff recommends three-part amendments to the Future Land Use Map: Development Tier, Future Land Use Designations and Technical Updates. Each is explained in greater detail on the following pages.
Figure 1: Existing Land Use and Development Map

Land Use descriptions are provided in Appendix K.

<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>Acres</th>
<th>Percent of Half Mile Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right-Of-Way</td>
<td>154.7</td>
<td>31%</td>
</tr>
<tr>
<td>Urban Neighborhood</td>
<td>106.9</td>
<td>21%</td>
</tr>
<tr>
<td>Vacant</td>
<td>78.6</td>
<td>16%</td>
</tr>
<tr>
<td>Civic</td>
<td>39.1</td>
<td>8%</td>
</tr>
<tr>
<td>Light Industrial Center</td>
<td>30.6</td>
<td>6%</td>
</tr>
<tr>
<td>Multi-Family Residential</td>
<td>26.9</td>
<td>5%</td>
</tr>
<tr>
<td>Neighborhood Commercial Center</td>
<td>17.6</td>
<td>4%</td>
</tr>
<tr>
<td>Suburban Commercial Center</td>
<td>14.5</td>
<td>3%</td>
</tr>
<tr>
<td>Heavy Industrial Center</td>
<td>12.9</td>
<td>3%</td>
</tr>
<tr>
<td>Mixed Use Center</td>
<td>5.4</td>
<td>1%</td>
</tr>
<tr>
<td>Small Lot Residential Neighborhood</td>
<td>4.0</td>
<td>1%</td>
</tr>
<tr>
<td>Utility</td>
<td>3.4</td>
<td>1%</td>
</tr>
<tr>
<td>Parks and Open Space</td>
<td>3.2</td>
<td>1%</td>
</tr>
<tr>
<td>Suburban Office Center</td>
<td>1.8</td>
<td>0%</td>
</tr>
<tr>
<td>Mixed Use Neighborhood</td>
<td>0.4</td>
<td>0%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>500.0</td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>
Proposed Change: Development Tier
Update the Compact Neighborhood Tier with boundaries developed with community input. As shown in Figure 2, an approximately 85 acre area that encompasses portions of the Golden Belt and East Durham National Register Historic Districts and Eastway Village is recommended to be removed from the Compact Neighborhood Tier. Approximately 38 acres is recommended to be added to the Compact Neighborhood Tier south of the Durham Freeway, including the former Fayette Place parcel. The changes result in a Compact Neighborhood Tier of approximately 255 acres.

Figure 2: Proposed Development Tier Changes
Proposed Change: Future Land Use Designations
Amend the future land use designations shown in Figures 3 and 4 to Design District. This is the category on the future land use map that directs future zoning map changes to the Compact Design (CD) zoning district, a form-based district which encourages a mix of uses and emphasizes pedestrian-oriented design.

Figure 3: Current Future Land Use Map
This proposal would convert 49 acres of Commercial, 59 acres of Industrial, 120 acres of Medium-High Density Residential, and 27 acres of Office to Design District.

Figure 4: Proposed Future Land Use Map

Proposed Change: Technical Updates
Correct minor mapping errors that will result in small (approximately 1 acre or less) changes to the Future Land Use Map, mostly impacting the Right-of-Way.
Opportunities and Challenges for Compact Neighborhood Development

The area around Alston Avenue already exhibits some characteristics of a Compact Neighborhood: a grid pattern of streets, urban densities, and a mix of uses. Still, there are numerous challenges and opportunities:

**Challenges:**

- **Equitable Neighborhood Change.** This neighborhood’s proximity to Downtown Durham and access to the proposed Alston Avenue Station will likely mean increased development interest. Rising land values can result in increased rents and home values which can accelerate housing turnover and the displacement of long term owners and renters. Striving for neighborhood change that is equitable and benefits all is a significant challenge.

- **Freight-oriented development.** A number of existing businesses located along the railroad corridor rely on freight spur connections. These are likely to be viable businesses even with the introduction of light rail. While heavy industrial development is not necessarily consistent with the vision of a Compact Neighborhood, there are limited sites for these businesses to relocate in Durham.

- **Contamination and brownfield clean-up.** Industrial uses can leave pollution and hazardous materials behind, contaminating the soil. These are known as brownfield sites and are often difficult and expensive to clean up. The expense of rehabilitation may make redevelopment cost-prohibitive.

- **Small parcels with varied ownership.** Especially near the station, land has been subdivided into small lots. Smaller parcels with varied owners are harder to assemble for redevelopment than larger parcels with a singular owner.

- **Station Access.** The proposed Alston Avenue Station is located on Pettigrew Street, between the Durham Freeway and the North Carolina Railroad Company corridor. While there are ongoing efforts to improve accessibility (Station Area Strategic Infrastructure study), vehicular, pedestrian and bicycle access to this site is a challenge.

**Opportunities:**

- **Next stop: Downtown.** With fewer and fewer affordable opportunities to develop in Downtown Durham, the Alston Avenue station will be only one short transit stop away from a major employment, service, and entertainment center.

- **Infill Opportunities.** Recent data shows that nearly 80 acres of land within a half-mile of the Alston Avenue station is undeveloped. These vacancies provide a range of opportunities for infill development that would not displace existing residents or businesses.

- **Highway access.** Transit-oriented development still benefits from decent access to the highway transportation network. In this area, the Durham Freeway (NC Highway 147) provides good access.
Justification for the Compact Neighborhood Tier Boundary

The recommended Compact Neighborhood Tier boundary emerged as a result of community input and the adherence to the general boundary guidelines developed by staff at the onset of the project. While the boundary description is explained in detail in Figure 5, in general, it includes undeveloped land and non-residential uses generally east of Fayetteville Street and south of Morning Glory Avenue. Intact blocks of single-family housing and historic districts are avoided. Where possible, property lines and recorded easements are followed.

Plan amendments are evaluated against criteria outlined in paragraph 3.4.7 of the Unified Development Ordinance:

Criteria 1: Whether the proposed change would be consistent with the intent, goals, objectives, policies, guiding principles and programs of any adopted plans.

Staff believes the proposed boundaries for the Alston Avenue Compact Neighborhood Tier are consistent with numerous city and county goals and policies. For many of the reasons outlined in the introduction, the Durham Comprehensive Plan includes goals, objectives, and policies in support of Compact Neighborhoods surrounding regional rail stations (Policy 2.1.2e., Objective 2.2.4, Policy 2.4.1a.). Amending the Future Land Use Map to Compact Neighborhood is a step toward the vision of higher density, mixed use and walkable neighborhoods that are supported by transit.

A consistent goal within both the City and County Strategic Plans recognizes the need to improve the quality of neighborhoods by improving transportation choice through increasing access to transit, walking and biking. Compact Neighborhoods encourage more density, mix of uses, and walkability around light rail stations, and thus aid the City and County in realizing those goals.

Criteria 2: Whether the proposed change would be compatible with the existing land use pattern and/or designated future land uses.

Much of the area identified to be a part of the updated Compact Neighborhood Tier has been included in the Comprehensive Plan since its adoption. Therefore, the proposed change is largely consistent with previously adopted policies for future growth and will not dramatically impact the existing land use pattern.
Figure 5: Compact Neighborhood Tier Proposed Boundary Explanation

Numbers shown on the map correspond with notes on the following page. Proposed boundaries are a result of community input and adherence to general boundary guidelines developed by staff at the onset of the project. These guidelines are described in the introductory chapter.
1. Fayetteville Street. Fayetteville Street as the western boundary aligns with the Downtown Tier to promote continuity in the urban environment.

2. Golden Belt. Residential blocks of the Golden Belt National Register Historic District informed the proposed Compact Neighborhood Tier boundary to preserve its single-family residential character. This is consistent with input heard from the community. Included in the proposed boundary is the non-residential block between Main Street and Morning Glory Avenue. This block includes commercial buildings and vacant properties. Inclusion in the Compact Neighborhood Tier may enable more businesses to use the existing building stock or to develop on the vacant properties.

3. Eastway Village. The proposed Compact Neighborhood Tier avoids intact blocks of single-family homes and Eastway Village. It follows mid-block boundaries so that both sides of the street are of similar character.

4. East Durham National Register Historic District. The East Durham National Register Historic District informs the proposed Compact Neighborhood Tier boundary. Recognized as a historic single-family neighborhood, land use and zoning regulations should be maintained to preserve that character. This is consistent with input heard from the community.

5. Angier Driver. Angier-Driver, a commercial node located just off of the map, was not included in the proposed Compact Neighborhood Tier boundary; however, updating zoning regulations to enable more businesses to use the existing building stock should be examined in the future.

6. Industrial Uses. Industrial uses on either side of the North Carolina Railroad Company’s corridor are included in the proposed Compact Neighborhood Tier boundary to discourage uses that are incompatible with residential areas and to encourage environmental clean-up.

7. South of NC 147. With the exception of the former Fayette Place, the proposed Compact Neighborhood Tier boundary does not include neighborhoods south of NC 147 (the Durham Freeway). As established neighborhoods, current land use and zoning regulations should be maintained so that the character of the neighborhood does not change. This echoes the strong consensus heard from the community.

8. Former Fayette Place. The Former Fayette Place offers an opportunity for large-scale mixed use and potentially mixed income development with great access to both the Alston Avenue station and NC 147. The proposed Compact Neighborhood Tier boundary aligns with the Downtown Tier to the west.
Criteria 3: Whether the proposed change would create substantial adverse impacts in the adjacent area or the City or County in general.

This section will evaluate and discuss what potential environmental, housing and property values, transportation, and community service impacts could arise as a result of implementing a policy in support of Compact Neighborhoods. While in many cases it is too early to determine specific impacts, broader issues are discussed and actions are proposed that are intended to alleviate potential negative impacts.

Environment
Whenever proposals to increase density are on the table, a common concern is that it will negatively impact environmental systems. As an almost fully developed urban area, many of the natural characteristics of this area are no longer present.

Natural Heritage Areas. There are no documented Natural Heritage Areas within the boundaries of the proposed Compact Neighborhood Tier.

Tree Coverage. Because Alston Avenue is already designated as a Compact Neighborhood, the ordinance does not require a minimum tree coverage, and very limited tree coverage requirements in the Urban Tier. Instead, to promote a more urban environment, street trees and landscaping in vehicle use areas are required.

Riparian Buffers. Because the proposed Alston Avenue Compact Neighborhood Tier is not within a Watershed Protection Overlay, the width of stream buffers would not be impacted (50 feet is required regardless).

Impervious Surface Area. A large percentage of the area has already been converted to impervious surface (approximately 56%). It is unlikely that increasing density through redevelopment and infill of vacant lots will result in significant land cover conversion.

Housing and Property Values
Across the country, a common trend in areas near light rail transit is the increase of land values.\(^1\)\(^2\) While this can be beneficial to the broader tax base, there can be some unintended negative consequences for low income households and renters. In 2014 the City Council and Board of County Commissioners adopted a resolution that at least 15% of all housing within ½ mile of proposed transit stations should be affordable to those making 60% or less than Area Median Income. Housing is generally considered unaffordable if rent or mortgage payments plus utility costs exceed 30% of income.

The most recent Planning Department data (January 2015) shows that 55.8% of occupied housing within a ½ mile of the Alston Avenue Station is affordable to those earning 60% or less of Area Median Income. While this proposed Compact Neighborhood offers affordable living options today, preserving that affordability is of significant importance in the future as light rail and increased development interest come to the area.

Through its Affordable Housing and Transit initiatives, the City is taking steps to create and preserve affordability. Enterprise Community Partners has presented recommendations to the City Council, including that the Planning Department evaluate the feasibility of an enhanced density bonus in Compact Design zoning districts near proposed light rail stations. This possibility will be fully explored prior to any city-initiated zoning of Compact Neighborhood Tiers.
Transportation
As an urban neighborhood, the area near the Alston Avenue station has a dense network of local streets and major thoroughfares. The light rail corridor parallels the Durham Freeway and freight railroad corridor, which split the station area into a northern half and a southern half causing some difficulty for station accessibility. Within a ½ mile of the station sidewalks form a relatively complete network in residential neighborhoods, though gaps do exist. Plans to widen Alston Avenue, the principal north-south street will help ease congestion and build improved sidewalks.

Traffic. Level of Service (LOS) is a common measure of traffic flow and density of vehicles. For city roads in Compact Neighborhoods, where increased activity is encouraged, Comprehensive Plan Policy 8.1.2a. indicates LOS E, which allows for some congestion, is acceptable. The policy for state roads is to maintain LOS D, which allows for faster traffic flow.

As part of a long range transportation planning effort, the DCHC Metropolitan Planning Organization conducts a Deficiency Analysis to demonstrate which roadways will exceed LOS standards given future growth projections. Because it is premature to estimate with any accuracy the amount of traffic generated by future development and redevelopment in the Alston Avenue Compact Neighborhood Tier, the Deficiency Analysis is the best proxy.

The Deficiency Analysis assumes population and employment figures from the year 2040 on the current transportation network in order to highlight what roads will need future improvements. While the volume of traffic is expected to increase to some degree on every roadway, listed below are roads where traffic volume is expected to exceed roadway capacity when operating at a LOS D.

- S Alston Avenue (E Main Street to NC 147)
- Durham Freeway (S Alston Avenue to Fayetteville Street)
- Durham Freeway (S Alston Avenue to S Briggs Avenue

Alston Avenue Widening Project. The North Carolina Department of Transportation is pursuing a project to widen Alston Avenue from two lanes to four from the Durham Freeway north to Holloway Street. The widening project will provide sidewalks and temporary bike lanes (north of Main Street). The project is already funded and planned to be bid out for construction in 2015, with construction expected to take a number of years.
Pedestrian and Bicycle. Within the proposed Compact Neighborhood Tier, sidewalks form a relatively complete network in residential neighborhoods, though gaps do exist. The Durham Walks! Pedestrian Plan and the Durham Comprehensive Bicycle Plan recommend additional segments of sidewalks and bike facilities, as can be seen in Figure 6 and 7. In addition to pedestrian and bicycle infrastructure, there are a number of trails planned (Durham Trails and Greenways Master Plan) through natural areas that would build off of the Bryant Bridge and connect through City parks. These can be seen in Figure 7.

Under the broad umbrella of Station Area Planning, the Planning Department is collaborating with other departments on the Station Area Strategic Infrastructure (SASI) study. This study is intended to identify and prioritize bicycle and pedestrian projects that will enable safe and convenient access to the light rail stations.

Services and Infrastructure
The proposed Compact Neighborhood Tier is already within the city limits of Durham. Future development that increases density may cause an influx in demand in the following areas:

Water and Wastewater. Water main distribution systems serve to supply potable water and to support fire suppression throughout the community. A well-designed system can maintain adequate pressure to support demand of individual properties and provide high flow rates to fire hydrants/fire suppression systems in emergency situations. The material and age of the system’s water mains can be factors in system breaks, leaks, and pressure and flow degradations.

Wastewater or sanitary sewer infrastructure consists of a collection of gravity flow sewer mains, lift stations, and pressurized force mains that transport sewage to a wastewater treatment plant. An efficient collection system has the capacity to accommodate all of the existing land uses within its particular sewer basin. Beyond capacity, the material and age of pipes within a system can also impact its effectiveness.

The City of Durham maintains water and sanitary sewer infrastructure within the proposed Alston Avenue Compact Neighborhood Tier. While there is an extensive network in place, the age and condition of pipes can impair flow. Rehabilitation of aging infrastructure will likely be needed in the foreseeable future (5 years).
Figure 6: Existing and Proposed Pedestrian Network

Figure 7: Existing and Proposed Bicycle and Trail Network
Schools. Students from the proposed Alston Avenue Compact Neighborhood are in the attendance zones of seven public schools. Figure 8 summarizes information on school capacity and projected student enrollment from the Durham Public School’s 2013 Long Range Facility Study.

The Durham Comprehensive Plan specifies a system wide level of service standard of 110% capacity. Once that level is reached, policy 11.1.1b. directs the Planning Department to consider mitigation commitments from private developers or recommend denial of zoning map changes that cause student generation to increase above the rate of current zoning. While the policy is applied at a system wide basis because of liberal magnet and transfer policies, it should be noted that Eastway Elementary is projected to exceed 110% capacity by 2021. There are currently no scheduled renovations to expand capacity.

Amending the Future Land Use Map to Compact Neighborhood could lead to additional student enrollment overtime. While it is premature to determine with any certainty what the impact will be, Durham Public Schools has been made aware of these potential impacts. The Planning Department is committed to working with the school system to reflect changes to the Future Land Use Map in the next iteration of the Long Range Facility Study, which is updated every two to four years.

Figure 8: Projected Student Enrollment

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>W.G. Pearson</td>
<td>586</td>
<td>541</td>
<td>541</td>
<td>541</td>
<td>541</td>
<td>541</td>
<td>541</td>
<td>541</td>
<td>541</td>
<td>541</td>
<td>541</td>
<td>541</td>
</tr>
<tr>
<td>Y.E. Smith</td>
<td>374</td>
<td>358</td>
<td>361</td>
<td>364</td>
<td>368</td>
<td>369</td>
<td>369</td>
<td>368</td>
<td>369</td>
<td>372</td>
<td>377</td>
<td></td>
</tr>
<tr>
<td>Eastway</td>
<td>544</td>
<td>585</td>
<td>588</td>
<td>592</td>
<td>597</td>
<td>598</td>
<td>598</td>
<td>597</td>
<td>597</td>
<td>602</td>
<td>608</td>
<td></td>
</tr>
<tr>
<td>Neal Middle</td>
<td>810</td>
<td>780</td>
<td>785</td>
<td>762</td>
<td>710</td>
<td>657</td>
<td>632</td>
<td>742</td>
<td>829</td>
<td>869</td>
<td>859</td>
<td>800</td>
</tr>
<tr>
<td>Northern High</td>
<td>1790</td>
<td>1399</td>
<td>1374</td>
<td>1404</td>
<td>1404</td>
<td>1427</td>
<td>1465</td>
<td>1397</td>
<td>1391</td>
<td>1395</td>
<td>1411</td>
<td>1457</td>
</tr>
<tr>
<td>Southern High</td>
<td>1540</td>
<td>1138</td>
<td>1110</td>
<td>1169</td>
<td>1181</td>
<td>1228</td>
<td>1289</td>
<td>1182</td>
<td>1171</td>
<td>1177</td>
<td>1204</td>
<td>1277</td>
</tr>
<tr>
<td>Jordan High</td>
<td>1810</td>
<td>1715</td>
<td>1719</td>
<td>1761</td>
<td>1766</td>
<td>1798</td>
<td>1846</td>
<td>1762</td>
<td>1754</td>
<td>1758</td>
<td>1779</td>
<td>1836</td>
</tr>
</tbody>
</table>

Criteria 4: Whether the subject site is of adequate shape and size to accommodate the proposed change.

The proposed Alston Avenue Compact Neighborhood Tier is 255 acres, and is of adequate shape and size to accommodate the proposed change.
Amendments to Tier Boundaries are also evaluated against additional criteria outlined in paragraph 3.4.8 of the Unified Development Ordinance:

**Criteria A: The site is contiguous to the proposed Tier.**

The proposed Compact Neighborhood Tier forms a contiguous area and does not leave an isolated pocket of Urban Tier.

**Criteria B: The site is not in the drainage basin for Lake Michie or Little River or in the one-mile critical area around Jordan or Falls Reservoirs.**

The proposed Compact Neighborhood Tier is not located in the drainage basin for Lake Michie or Little River and is not within a watershed protection critical area.

**Criteria C: The extension does not violate any agreements with neighboring jurisdictions.**

The proposed Compact Neighborhood Tier is entirely within the City of Durham and does not violate agreements with neighboring jurisdictions.

**Criteria D: If the proposal is to expand the Suburban Tier, extending utilities to service the site is determined to be technically feasible by the Public Works Director or designee and will not result in inordinate cost to the City.**

This evaluation criterion does not apply; the proposal does not expand the Suburban Tier.

**Endnotes**
