GREENSBORO

WESTERN AREA
LAND USE & INFRASTRUCTURE PLAN

ENVISIONING A FUTURE

The Western Area Land Use and Infrastructure Plan envisions a future where the economy continues to grow and prosper and the lands valued for their agriculture or historical importance are conserved.

MAY 2013

GREENSBORO

WESTERN AREA

LAND USE & INFRASTRUCTURE PLAN

Greensboro Western Area Land Use and Infrastructure Plan

PREPARED FOR:

City of Greensboro Planning Department
300 West Washington Street
Melvin Municipal Office Building
Room 315
Greensboro, North Carolina

PREPARED BY:

LandDesign
223 North Graham Street
Charlotte, NC 28202

In Association with
Warren & Associates
Martin/Alexiou/Bryson
Simon Resources, Inc.

MAY 30, 2013

257-13

RESOLUTION ADOPTING THE WESTERN AREA LAND USE AND INFRASTRUCTURE PLAN

WHEREAS, the City of Greensboro has developed a plan in conjunction with the residents of Colfax and the Western Area Plan boundary to provide a general framework for land use decisions and improvements in the community; and

WHEREAS, community meetings were held in 2011, 2012 and 2013 to encourage citizen involvement in the planning process; and

WHEREAS, a Public Advisory Committee consisting of area residents and property owners and a Technical Advisory Committee consisting of staff from the City of Greensboro and adjacent jurisdictions were formed to help guide the process and develop the Plan; and

WHEREAS, a plan has been developed with a set of land use recommendations and goals coverings transportation, gateways and corridors, utilities, cultural and historic resources and governance; and

WHEREAS, the goals, strategies and priorities of this Plan were reviewed by the public at a public meeting on March 26, 2013 and the Plan was recommended for approval by the Greensboro Planning Board on June 19, 2013.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GREENSBORO:

That the Western Area Land Use and Infrastructure Plan is hereby adopted.

THE FOREGOING RESOLUTION WAS ADOPTED
BY THE CITY COUNCIL OF THE CITY OF GREENSBORO
ON THE 3rd DAY OF SEPTEMBER, 2013.

CITY CLERK

APPROVED AS TO FORM

CITY ATTORNEY

A Special Thanks to Members of the Technical Advisory Committee

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A Very Special Thanks to Members of the Public Advisory Committee

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GREENSBORO

WESTERN AREA
LAND USE & INFRASTRUCTURE PLAN

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Introduction

HISTORY OF PLANNING IN THE WESTERN AREA

The Western Area Land Use and Infrastructure Plan is the next step in implementing a vision for the area first introduced in Greensboro Connections 2025 and further reinforced in the Heart of the Triad (HOT) Study.

The City of Greensboro pro-actively engaged in this planning process as it has responsibility to continue to understand and prepare for changes in the Western Area primarily due to:

- being adjacent to an airport that is seen as a major driver for the region's economy.
- being adjacent to several major highway projects that have been completed and more that are planned for the future.
- large tracts of undeveloped land that are close to properties with significant investments.

By doing so, the City in cooperation with residents, businesses, investors and neighboring jurisdictions, can help ensure that the existing quality of life is preserved and pro-actively manage change to identified desired community outcomes. Furthermore the process enables the City to coordinate long-term public investments, such as water and sewer lines and road improvements, with land use and economic development goals.

The Western Area Land Use and Infrastructure Plan is the first community-based comprehensive plan generated for this study area (See Exhibit 1 Study Area Map). Several other planning efforts have addressed specific issues or geographies including and surrounding the study area but this plan specifies the direction and pattern of growth desired by existing residents from the Colfax community and greater Western Area. Previous planning efforts include:

- Greensboro Connections 2025
- Heart of the Triad Study, June 2010
- 2035 Long Range Transportation Plan
- Piedmont Triad International Airport Master Plan, May 2010
- City of Greensboro 2010 Water Supply Master Plan
- The Piedmont Triad Aerotropolis Plan, 2008
- City of Greensboro and Guilford County Consolidated Plan 2010-2014: Plan for a Resilient Community
- Sustainability Action Plan, Greensboro, North Carolina, April 2010

- Greensboro Urban Area, Bicycle, Pedestrian and Greenway Master Plan, October 2006
- High Point Northwest Area Plan
- High Point Airport Connector Feasibility Study
- Oak Ridge Land Use Plan
- Future 1-73 Connector Feasibility Study
- Guilford County Airport Area Plan
- Guilford County Northwest Area Plan
- Greensboro Airport Area Modeling Study

Role + Purpose of the Plan

The Western Area Land Use and Infrastructure Plan is being created through community collaboration to define a direction for future growth and development in and around western Greensboro and Guilford County. It is a policy document that conveys a future vision and the steps needed to achieve that vision. The Plan is intended to clearly reflect the community's expectations and desires and to guide decisions of Greensboro staff, Guilford County staff, appointed and elected officials, developers and others involved in local development-related activities. More importantly, the Plan will facilitate consistency in the decision making that affects this area, which is governed by two jurisdictions. Such decisions include those related to development proposals for properties within the study area, regulatory changes, and public infrastructure investments.

The Western Area Land Use and Infrastructure Plan anticipates change in the Western Area over a twenty year time period. The Plan and supporting findings are based on a detailed analysis of existing and future demographic and market trends (see Appendix D for the full Market Analysis Report), environmental features and constraints and existing and planned infrastructure improvements to the road network and water and sewer utility systems (see Appendix C for the full Existing Conditions Report). These finds are supplemented with feedback collected during an extensive public engagement process (see Appendix B for a summary of the public engagement process).

Guiding Principles

Individuals, families and employers continue to choose the Western Area for their homes and businesses. Elected officials, City planners and economic developers realize that in order to sustain and enhance the quality-of-life which attracts these groups this plan is necessary to balance development forces with the need to preserve the natural, agricultural and cultural assets of the region.

The Western Area Land Use and Infrastructure Plan is guided by a set of principles set by the City of Greensboro:

- To prepare a plan that will enhance economic development opportunities while protecting the integrity and heritage of western area communities;
- To identify infrastructure needs, market trends, regulatory needs, and any changes to the City's Connections 2025 Comprehensive Plan and / or the Generalized Future Land Use Map (GFLUM);
- To identify preferred locations for varying intensities of residential area and appropriate transitions between residential uses and non-residential areas.

Western Area Profile

PLANNING AREA

Located on the western edge of Guilford County, the study area encompasses the western fringe of the City of Greensboro and a unincorporated portion of Guilford County which includes the Colfax community. The major road corridors of the study area include West Market Street, Pleasant Ridge Road, Interstate 40, NC 68, and the future Interstate 73.

The study area's northernmost boundary is Reedy Fork Creek. The southern edge is the annexation agreement line, established in 2008 with the City of High Point, generally following I-40. The eastern boundary is the Piedmont Triad International Airport (not included in

the planning area) and NC-68. The western most boundary generally follows Bunker Hill Road.

The Western Area is divided between the industrial zone that has developed along the West Market Street and Pleasant Ridge Road and the agricultural and rural residential areas in the central and northern portions of the study area. Preserving and enhancing both of these areas is critical to the Western Area's future.

NATIONAL & REGIONAL CONTEXT

The history and development of Western Guilford County is closely tied to the land. Catawba Indians originally hunted the area for large game. The area's first settlers, English Quakers and a small band of Welsh immigrants, settled and quickly established successful homesteads with spacious fields of sustaining crops. (Stockard, Sallie, The History of Guilford County, 1902.) As populations grew, trade routes heading north to Virginia and south to the coastal plain developed. Guilford County quickly became a trade and distribution crossroads.

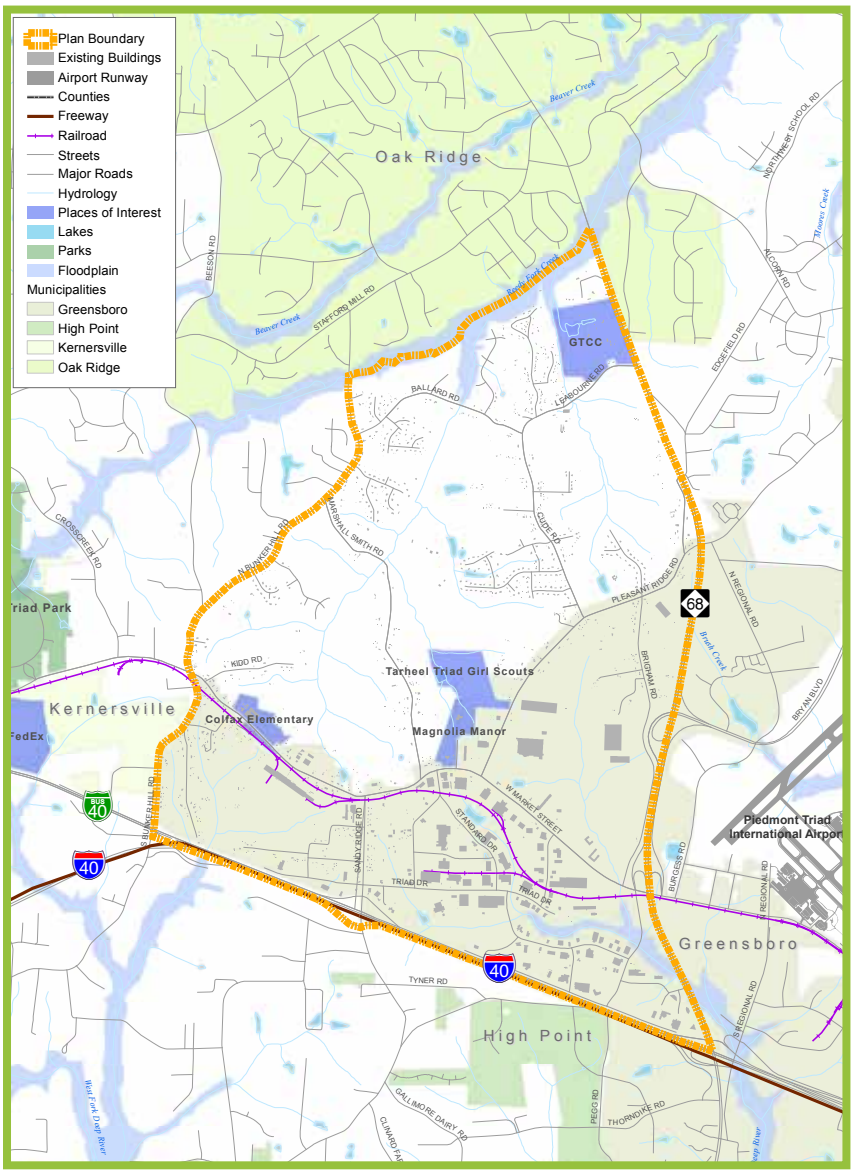


Exhibit 1: Study Area Map

Today, the Western Area of Greensboro and Guilford County continues to have a unique locational advantage in the Mid-Atlantic Region. The following is an excerpt from the Market Analysis found in Appendix D that details the robust transportation system that supports this competitive advantage.

Highway Infrastructure

Currently, two major interstate highways merge in Greensboro: I-85 (north-south) and I-40 (east-west). Additionally, Greensboro's central location in North Carolina provides easy access to I-95 and I-77, in addition to other major highways, including US-29, US-220, NC-68, and NC-421. Future I-73 and I-74 corridors will also intersect in Greensboro, near PTIA and the Western Area.

The I-73 corridor is planned to run from Michigan to Myrtle Beach, SC. Currently, the southwestern portion of the Greensboro Urban Loop is one of two sections of the corridor that is signed as I-73. The

proposed portion of I-73 running adjacent to PTIA, then north into Rockingham County is included in our analysis of this area. Closely related to the I-73 corridor, the I-74 extension is planned to run from Ohio to Myrtle Beach, SC. Several sections of this corridor will follow proposed I-73. This analysis also considers a connection between Winston-Salem's planned outer-belt and Greensboro, running east-west across the Western Area.

Existing and planned highway infrastructure will help further Greensboro's connections to surrounding regions. Additionally, the proposed I-73/I-74 corridor will provide more direct access to ports in South Carolina and Georgia.

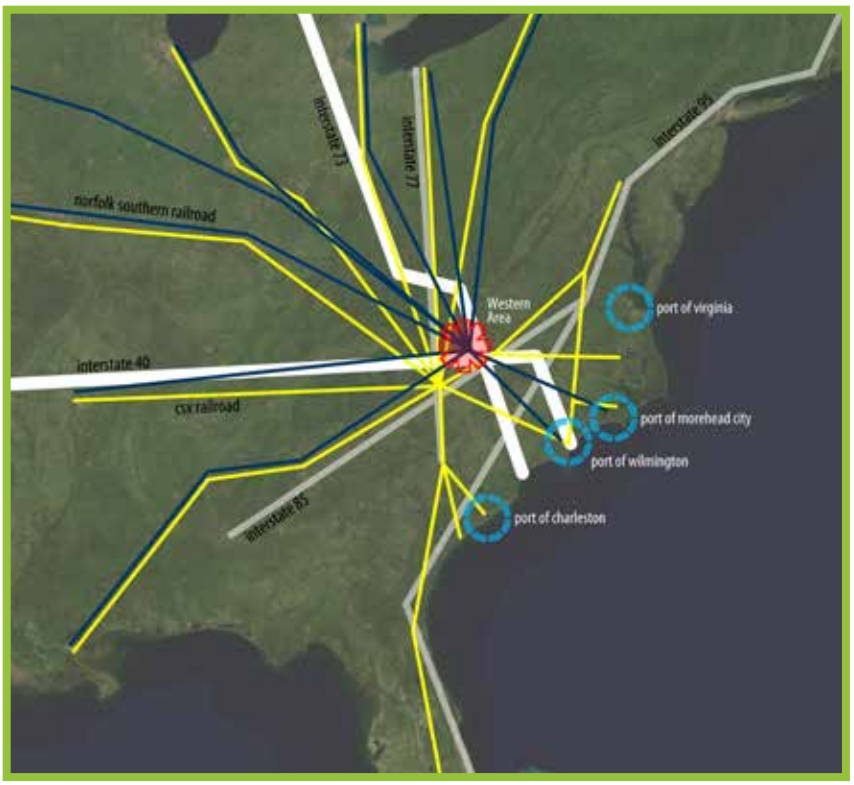


Exhibit 2: Infrastructure Connections
Both CSX and Norfolk Southern provide extensive rail service connecting to major seaports on the eastern seaboard. The central location of the Western Area and its proximity to major highway systems and an airport will continue to contribute to the growth of the logistics and transportation industry in the area.

Railroads

Norfolk Southern and CSX both provide extensive freight rail service in the Greensboro area. Norfolk Southern provides direct access to North Carolina's two deepwater ports in Morehead City and Wilmington. Access is also available through Charlotte to ports in South Carolina and Georgia.

Additionally, the Port of Virginia at Norfolk recently announced the expansion of a new double-stack rail service that will connect into central North Carolina. It was reported that the new rail capacity will serve Greensboro with a focus on the textile, furniture, retail, chemical, and agricultural industries. Completion of this connection will enhance this location for distribution and logistics companies.

The Southeast High Speed Rail Corridor is planned to run from Washington, DC to Charlotte, NC. The high-speed rail service will provide travelers a competitive alternative to air and automobile trips. The goal is for passenger service to begin over the preferred alternative between 2018 and 2022. Rail lines will be improved to handle high-speed rail and freight; this is a critical East Coast freight connection.

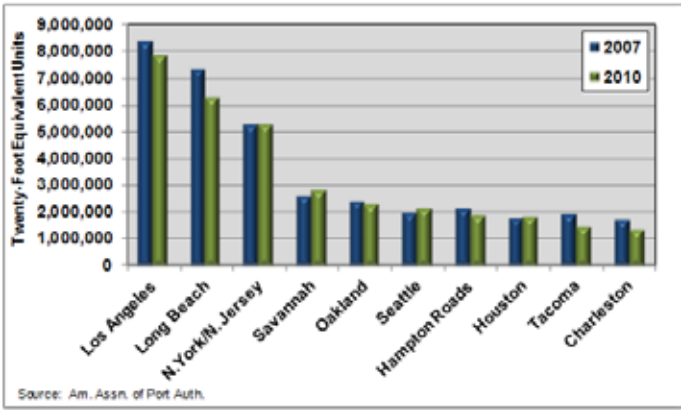
In addition, the City of Charlotte is constructing an intermodal facility with Norfolk-Southern Corporation on 200 airport acres. Norfolk-Southern plans to relocate operations from Brevard Street, north of downtown Charlotte, to the airport. The $90 million project will integrate thousands of containers transported by rail, as well as trucks from nearby I-85 and I-485. When completed in late 2012, the 280-employee facility is expected to be the site of 250,000 container lifts per year. Through Norfolk Southern, industries in the Western Area would have direct access to Charlotte and the new intermodal facility.

Ports

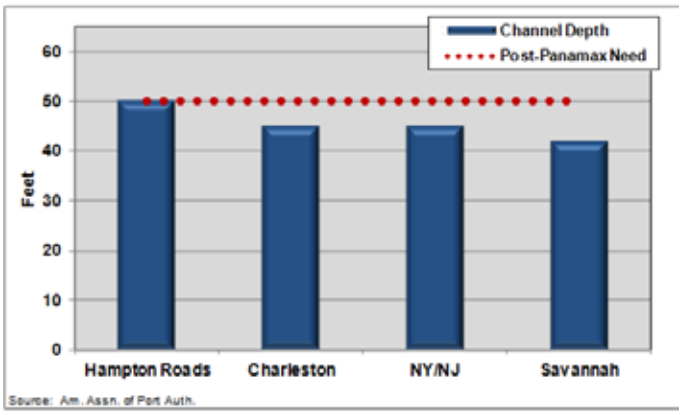
According to the American Association of Port Authorities, US Seaports are responsible for moving nearly all the country's overseas cargo volume: 99.4% by weight and 64.1% by volume. The completion of the Panamax project in 2014 will increase the dimension of ships able to pass through the locks of the Panama Canal. This will result in more trade funneling through fewer ports. The Panama Canal Authority estimates a 35% increase in cargo volume through 2025.

Graph 1 shows the top ten U.S. ports by twenty-foot equivalent units (TEU). The top ten ports currently have a 79% market share, which is likely to grow post-Panamax as they are capable of accommodating larger container ships (up to 12,000 TEUs). Wilmington falls lower on the list of major ports by TEU, making up only 20% of Charleston's volume.

Post-Panamax ships will require up to 50' of water depth to navigate when fully loaded. Only one East Coast seaport, Hampton Roads, is that deep (Graph 2). The Port of Charleston needs to deepen its shipping channel from 45 to 50 feet at an estimated cost of $350 million. Savannah will require more dredging, from 42 to 50 feet, with an estimated cost of $600 million. These ports are competing for federal funding to expand capacity by 2014.



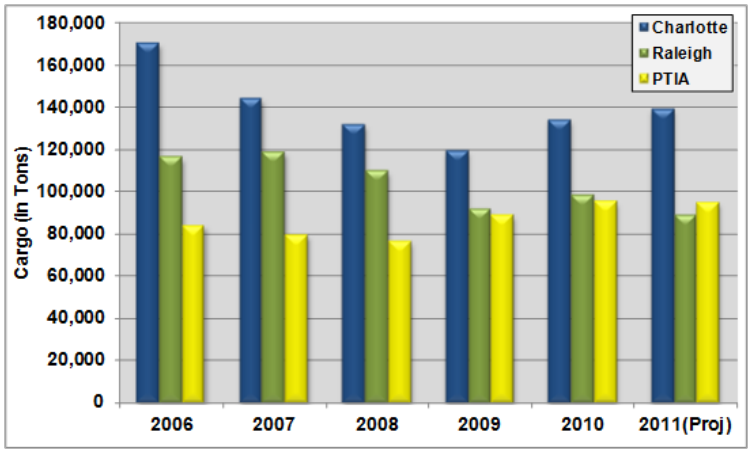
Graph 1: Top Ten United States Ports by TEU, *2011*



Graph 2: East Coast Port Channel Depths, 2011

Exhibit 3: Port Connections

Ports, like the one picture above in Savannah, are responsible for nearly all the country's overseas cargo volume. The Western Area's location at the intersection of three main interstates will continue to serve as a transition point for goods moving from the ports to the rest of the country.



Graph 3: Comparison of Cargo Tonnage, *2006-2011*

Piedmont Triad International Airport

The Western Area is adjacent to the Piedmont Triad International Airport (PTIA). Three runways currently operate at PTIA; the most recent opening in 2009. Passenger service, as well as the related parking, retailers, and restaurants continue to provide significant income for PTIA. The airport serves approximately 900,000 passengers a year on seven airlines. Currently, 61 flights depart daily from PTIA to 16 destinations.

Cargo airlines at PTIA (FedEx, Mountain Air, and UPS) are carrying approximately 13% more tonnage than in 2006, due in part to the completion of the new FedEx Mid-Atlantic Hub. Reported cargo shipments reached approximately 84,000 tons at the end of 2006, before declining in 2007 and 2008. Cargo shipments increased to 89,000 tons in 2009, followed by a projected 9% increase to 97,000 tons in 2010 and 2011.

It should be noted that while the Charlotte airport is a significantly larger cargo shipper, PTIA's total of 97,000 tons in 2010 was just slightly less than 98,000 tons for Raleigh. Based on cargo reports for the first eight months of 2011, PTIA could actually ship more cargo than Raleigh by year-end.

In addition, thhe new FedEx Mid-Atlantic Air Hub opened in 2009 at PTIA. The 500,000 square foot facility is the company's fifth major US air cargo hub. The facility is capable of sorting 24,000 packages in one hour. There are currently over 200 jobs at the new FedEx facility, with a potential of 600 positions when the facility reaches capacity.

Activity Centers

The Western Area is located within a short drive to several economic, residential and employment activity centers, namely Greensboro, Winston-Salem and High Point. Kernersville and Oak Ridge, which are immediately adjacent to the study area, are bedroom communities that lie within a short driving distance of the larger employment centers.

In addition, as illustrated in Exhibit 4, the Heart of North Carolina Mega Park, a joint collaboration between Moore and Montgomery county is located 50 minutes south of the Western Area. While build out is expected to take more than two decades the 3,000 acre park will have access to both

Exhibit 4: Activity Centers
The Western Area is connected to several economic, residential and employment activity centers through the extensive network of road, rail and air infrastructure.

the Norfolk Southern and CSX freight railways via the Aberdeen Carolina & Western Railway. When operational the park will have a significant impact on the amount and frequency of goods passing through Greensboro and Guilford County.

Existing and planned infrastructure, access to labor pools and proximity to urban centers positions the Western Area as a natural hub for the logistics and transportation industry.

LOCAL CONTEXT

While the previous section details macro-economic forces and national and regional infrastructure projects influencing growth and development in the Western Area, this section provides greater detail on the local economy and the local and regional infrastructure projects shaping development in the study area. These assumptions are explained in greater detail in the Existing Conditions Report and the Market Analysis provided in the Appendix of this document.

Local Market Factors

The following major findings from the Market Analysis provide a snapshot of the intensity of development forecasted over the next twenty years and the land needed to accommodate such development within the Western Area's study area boundaries.

- The population of the Western Area is expected to increase by 75% over the next twenty years.
- From 2010 to 2030 the housing stock in the Western Area will grow to include a mixture of single-family, townhouse and apartment units. The total incremental residential land use demand is a maximum of 298 acres. This includes one 200 unit apartment community and 70 townhomes.
- As a strategic location in North Carolina for employment, office square footage in the Western Area is expected to double by 2030. Assuming a floor area ration (FAR) of .25 the total amount of land demand for office development is 70 acres.

Table 1: Population Forecast Comparison, *2010-2030*

Scenario	2010	2030	2010 - 2030 Change #	2010 - 2030 Change %
(low) Scenario 1	1,760	2,840	1,080	61.4%
(high) Scenario 2	1,760	3,320	1,560	88.6%
(med) Scenario 3	1,760	3,090	1,330	75.6%
Average	**1,760**	**3,080**	**1,320**	**75.0%**

Source: ESRI, Warren & Associates

Table 2: Total Housing Units, Study Area, *2010-2030*

Land Use	Units 2010	Units 2020 - 2030	Units 2030	Shares in 2030 %
Single-Family	658	270	928	77.5%
Townhouse	0	70	70	5.8%
Apartment	0	200	200	16.7%
Total	**658**	**540**	**1,198**	**100.0%**
% of Total	**54.9%**	**45.1%**	**100.0%**	

Source: Guilford County, Warren & Associates

- This area will attract an additional two million square feet of industrial space over the next two decades. Applying a .20 FAR, the total amount of land demanded for industrial development is **233 acres**.

- Currently the Western Area has a very limited supply of retail. Retail land demand includes both a gap in the current supply of 37,620 square feet and growth in demand for an additional 66,761 square feet over the next twenty years. This equates to a land demand of approximately 10 acres through 2030.

The total amount of land demand for residential, office and industrial development in the Western Area is approximately 610 acres. The proposed land use plan suggests locations to absorb this acreage within the existing footprint of the Western Area.

Table 3: Office Demand Forecast, Study Area, *2010-2030*

	2010	2020	2030	2010 - 2030 Change #	2010 - 2030 Change %
Jobs	3,057	4,107	6,658	3,601	117.8%
Sq Ft	764,193	1,062,193	1,531,342	767,148	100.4%

**Capture rates: 2.5% in 2010; increasing to 3% in 2020 and 4.5% in 2030.*
Source: Woods & Poole, Warren & Associates

Table 4: Industrial Demand Forecast, Study Area, *2010-2030*

	2010	2020	2030	2010 - 2030 Change #	2010 - 2030 Change %
Jobs	3,934	4,779	6,483	2,548	64.8%
Sq Ft	3,554,299	4,179,850	5,581,223	2,026,924	57%

**Based on an increasing share of the County's forecast. Share begins with 5% in 2010, increasing to 6% in 2020 and 8% in 2030.*
Source: Woods & Poole, Warren & Associates

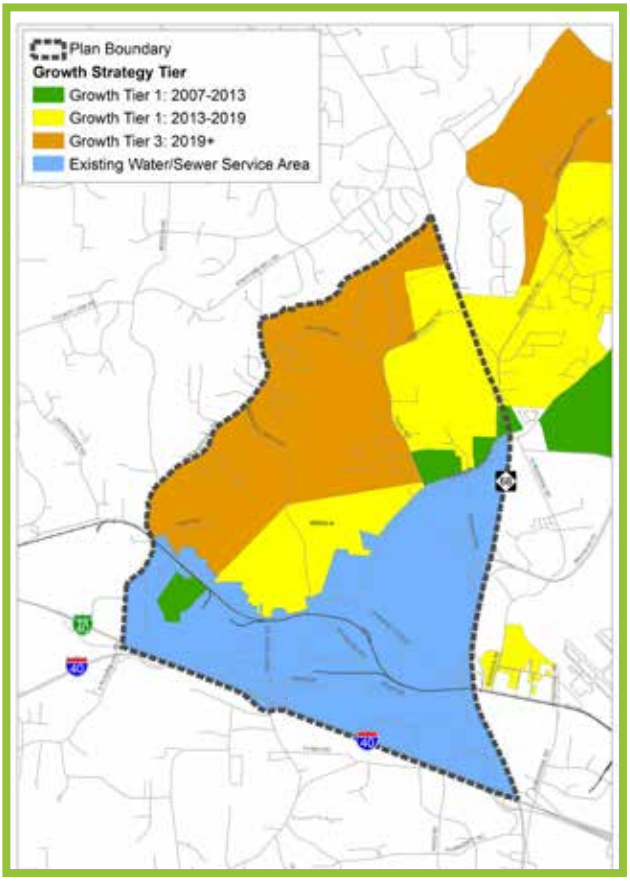


Exhibit 5: Water/Sewer Service Area Map

DEVELOPMENT CONSTRAINTS

The Western Area will continue to grow and develop due to the unique advantages provided by the network of infrastructure that runs through and adjacent to the area. However, as noted in the Existing Conditions Report found in Appendix C there are environmental and infrastructure constraints that will continue to shape the intensity and location of development in the Western Area.

Environmental and Historical Features

Characteristic of the Piedmont region of North Carolina the area is generally flat or gentle rolling uplands with the steepest slopes along the banks of the areas numerous creeks and streams. The change in topography and hydrological features make development in certain parts of the central and western portion of the study area less desirable than in others. The majority of the area that is environmentally constrained is either currently undeveloped or in active agriculture use.

In addition to the environmental features there are a significant number of historical properties within or adjacent to the study area. A complete list of properties and their location can be found in the Existing Conditions Report in Appendix C. Areas with extreme environmental constraints or historical significance are less likely to develop over time.

Water and Sewer Infrastructure

A separate study commissioned by the City of Greensboro and completed by Malcolm Pirnie/ Arcadis evaluated existing and future water and sewer infrastructure needs in the Western Area. Exhibit 5 illustrates the water, sewer service areas that are currently served, partially served, or unserved by the City of Greensboro's system.

The study concluded that the water system will not serve all of the Western Area until well after 2019. The following list details scheduled extension dates for the service areas illustrated in the map provided:

- Growth Tier 1 (green): 2007-2013
- Growth Tier 2 (yellow) : 2013-2019
- Growth Tier 3 (orange): 2019+

In a separate but complimentary study evaluating the sewer system specifically, Malcolm Pirnie/Arcadis suggest that extension of sewer infrastructure into the unserved area (Growth Tier 3) will cost in excess of $33 million dollars (2011 dollars) and does not include the planned GTCC basin infrastructure improvements.

These findings suggest that major commercial and/or industrial development in the near term will be limited to the areas that are currently served by the City's water and sewer systems. The City of Greensboro will be updating its Growth Strategy, as contained within the Connections 2025 comprehensive plan, in the fall of 2013. In addition to a change in the time span for each tier, it is anticipated that there will be an expansion of the area contained within Growth Tier 1.

Road Projects

There are a number of road projects currently underway or planned for in the Greensboro Urban Area Long Range Transportation Plan (LRTP) in the vicinity of the study area. Exhibit 6 illustrates all of these improvements. Throughout the course of this project these road projects were reviewed and discussed with staff from Greensboro Department of Transportation and the Department of Planning and Community Development.

The following list details the road projects considered in development of the land use concept:

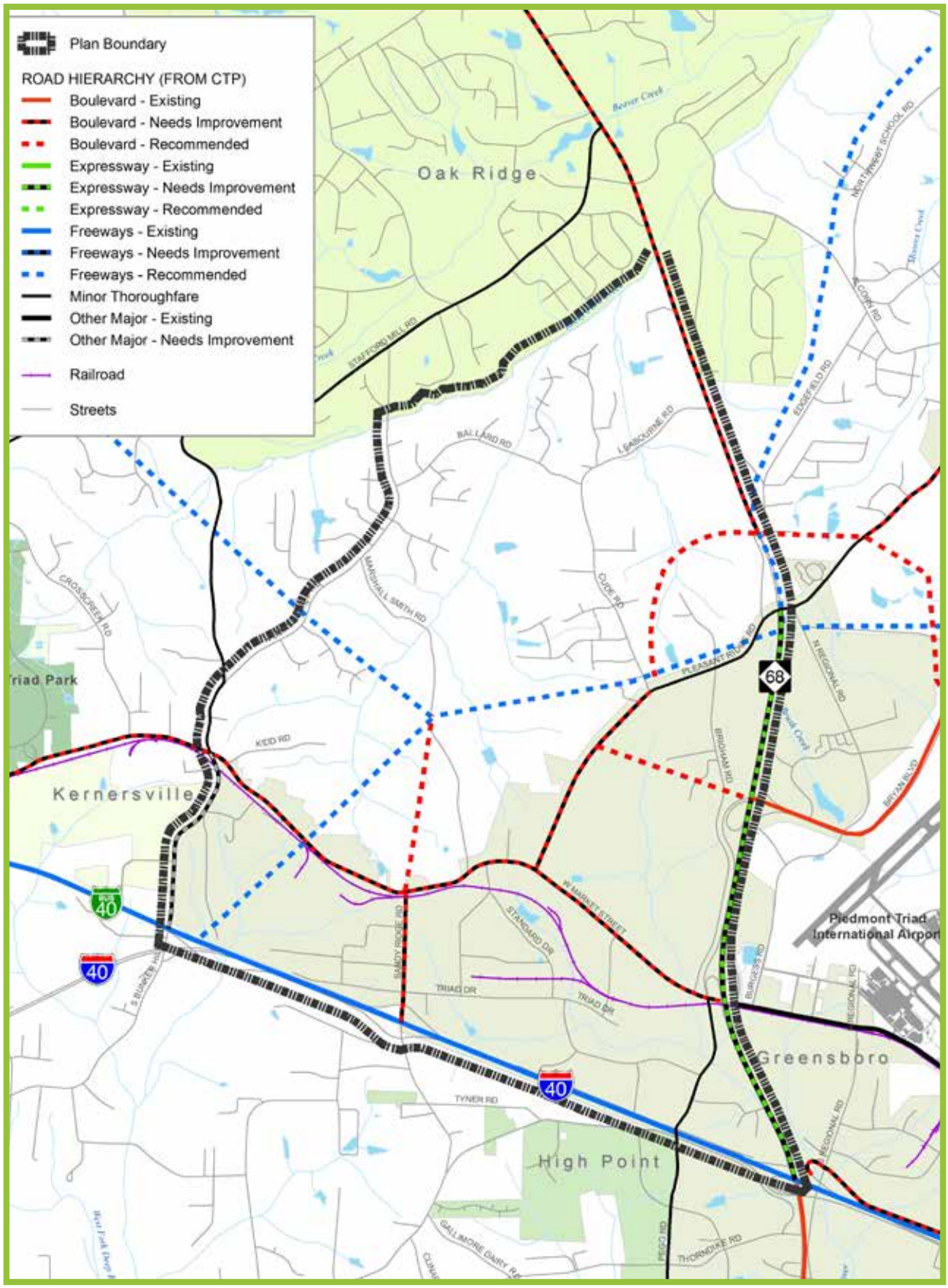
- West Market Street Widening
- I-73 Connector
- NC 68/US 220 Connector
- NC 68 Widening
- Pleasant Ridge Road Widening
- Pleasant Ridge Road Relocation at I-73
- Sandy Ridge Road Widening
- North-South Connector
- I-73/I-74 Connector
- Greensboro Western Urban Loop Extension

Over time, concern has been growing that the highway projects indicated in the latest LRTP (some of which were conceived decades ago) may no longer effectively address local and regional needs, and may have become less feasible to implement due to escalating costs, constructability concerns, and community and environmental impacts. The resolution of some critical interchange design decisions involving the I-73 and NC68/US 220 Connectors helped clarify a number of uncertainties by eliminating alignment alternatives for other projects, and fixing locations of key intersections.

Findings of the Western Area Land Use and Infrastructure Plan can, for the first time, introduce local goals and constraints into the LRTP process. This input extends beyond locating roadway corridors.

Future plans call for the widening of NC 68.

Exhibit 6: Greensboro Urban Area 2035 Long Range Transportation Plan proposed road alignments in the Western Area.



A Plan for the Western Area

ENVISIONING A FUTURE

The Western Area Land Use and Infrastructure Plan envisions a future where the economy continues to grow and prosper and lands valued for their agriculture or historical importance are conserved.

By directing growth to areas with existing infrastructure, the Western Area can continue to develop in a way that balances a variety of interests by providing the following:

- A place where residents and employees can spend their money with Western Area businesses;
- A college that becomes a part of the community and an airport that continues to grow and provide employment opportunities; and
- A place where farming is a viable way of life and residents continue to enjoy the lifestyle that originally drew them to the area.

Many iterations of the land use plan were developed, analyzed and discussed by members of the consultant team, Public Advisory Committee and Technical Advisory Committee. Each iteration of the plan can be viewed in Appendix B. As a result of the Community Workshop the land use plan pictured in Exhibit 7 is the preferred land use concept.

It is important to note that the preferred land use concept does not include the I-73/I-74 connector (also referred to the as the Airport Connector). A version of the land use concept with the Airport Connector is located in the Appendix B of this report. As previously mentioned, concern has been growing that the highway projects indicated in the latest LRTPs may no longer effectively address local and regional needs, and may have become less feasible to implement. Recommendations supporting the inclusion of this land use plan in future updates to the LRTP are detailed in the General Recommendations section of this report beginning on page 24.

In order to accomplish the vision set forth by the Public Advisory Committee, the Western Area Land Use and Infrastructure Plan suggests a series of recommendations that support the development of subareas within the Western Area. In addition, there are a set of general recommendations dealing with transportation, utilities, historic and cultural resources, gateways and corridors and governance that apply to the overall concept of the plan.

The Planning SubAreas

The following sections provide detailed descriptions of the character and quality of place envisioned for each planning subarea. The type and intensity of development in each subarea is informed by the findings of the Market Analysis and Existing Conditions Report. Following each description is a series of recommendations. In addition, a matrix summarizing all of these recommendations and strategies to support implementation can be found in Appendix A. The six planning subareas are as follows:

CAMPUS VILLAGE

The Campus Village is anchored by GTCC in the northeastern tip of the study area. The Village is envisioned as a place where students, residents and visitors come together as a community. Shops, restaurants and larger retailers concentrate in the mixed-use Village Center. An apartment community, town homes and some single-family units make up the residential zone in the southern portion of the Village.

WEST MARKET STREET VILLAGE

At the intersection of Sandy Ridge Road and West Market Street, the West Market Street Village is a mixed use area primarily designed to serve the growing employment base in the Western Area. Restaurants and limited services provide opportunities for employees of the Western Area to grab a quick lunch and take care of essential errands on their break. In addition, the West Market Village will have limited opportunities for new office space.

EMPLOYMENT AREA

A significant portion of the Western Area is designated as an area for employment uses. The majority of the demand for industrial and office land projected in the Market Analysis will be absorbed in the footprint of the Employment Area.

FUTURE EMPLOYMENT AREA

The area designated as the future employment area will grow as demand for additional industrial and office space grows.

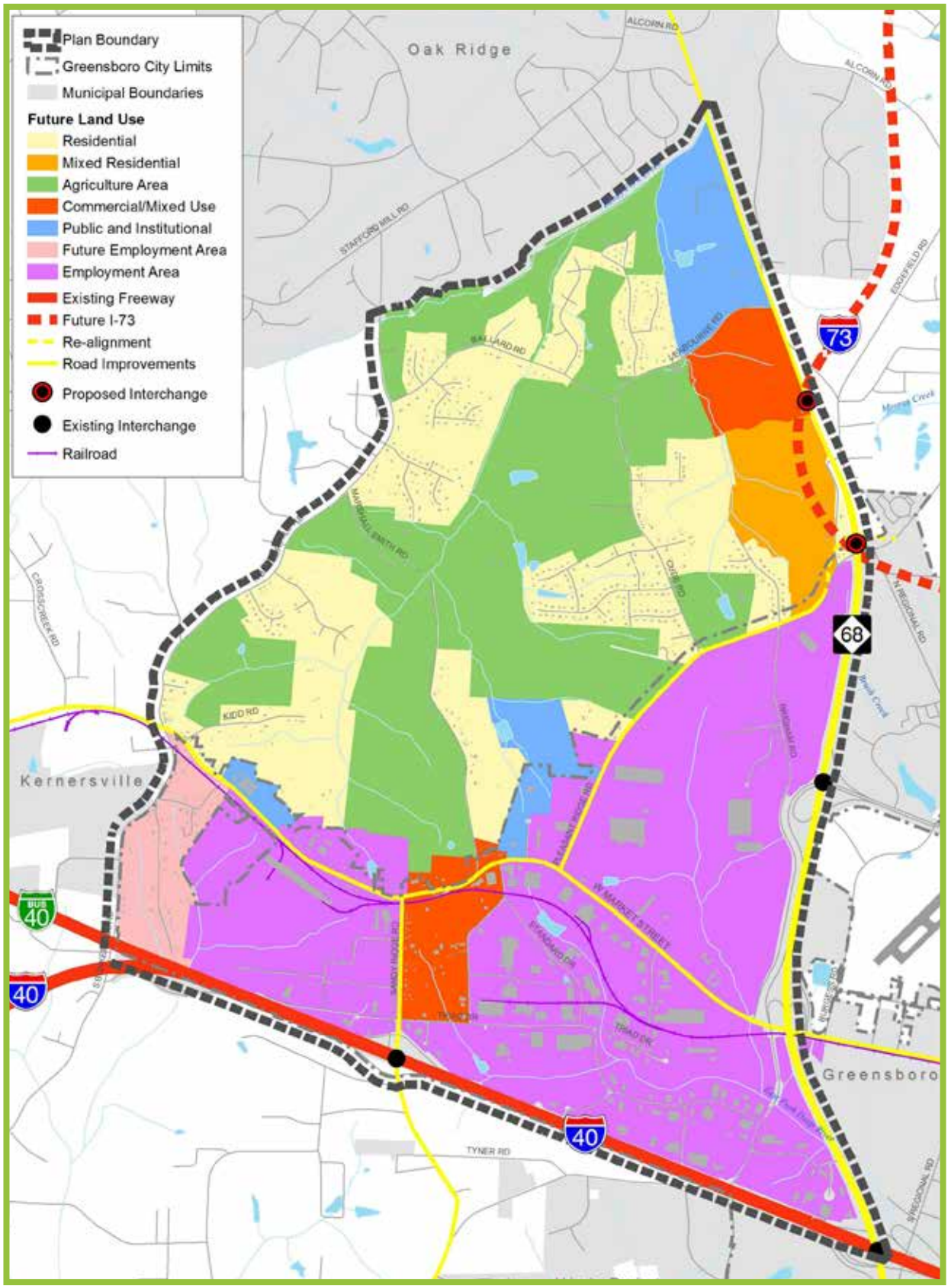
RESIDENTIAL AREA

Most of the 270 new single family residences projected to be built in the Western Area over the next twenty years will be accommodated in subdivisions adjacent to existing neighborhoods.

AGRICULTURE AREA

The heart of the Western Area is the Agriculture Area. The lack of infrastructure in this area coupled with the community's desire to keep active farms operational indicate no immediate reason for this land to transition to other uses and incentivizes protection of agricultural uses in the area.

Exhibit 7: Preferred Land Use Concept



Campus Village
PLANNING AREA

CAMPUS VILLAGE (CV) RECOMMENDATIONS

CV 1: Create a Campus Village by focusing future retail and commercial development on an internal street network at the proposed I-73 interchange with NC 68.

CV 2: Establish the desired character of the place.

CV 3: Partner with GTCC planners to ensure strong visual and physical linkage to the commercial Campus Village center.

CV 4: Promote a variety of housing options.

CV 5: Work with Guilford County Schools to find a high school site in close proximity to the Guilford Technical Community College.

The location of Guilford Technical Community College (GTCC) Donald W. Cameron Campus in the northeast portion of the study area provides a unique opportunity to leverage the energy and investment that typically surrounds a learning institution with the development potential that will be created with the completion of Interstate 73. This area has the unique locational advantage to become destination of choice- a village of shops, restaurants and services- nestled within the larger community college campus and existing and future residential areas.

The scenic quality of the countryside and the proximity to Reedy Fork Creek and Cabin Creek require a context and resource sensitive development pattern that preserves and enhances the landscape. In order to take advantage of both the economic opportunities and natural advantages of the site considerable attention must be paid to the scale, orientation, location and inter connectedness of development.

Exhibit 8: Campus Village:
The areas highlighted blue, red and orange collectively make up the Campus Village.

This area has the unique locational advantage to become a destination of choice- a village of shops, restaurants and services- nestled within the larger community college campus and existing and future residential areas.

During the community workshop, multiple sketches of how the Campus Village could develop were presented and refined. This image represents the final conceptual plan for the Campus Village.

By orienting small-scale, mixed-use development along an internal network of streets, instead of along NC 68, the Campus Village Center will provide a meeting place for the community and a walkable, pedestrian-friendly destination.

DONALD W. CAMERON CAMPUS OF GUILFORD TECHNICAL COMMUNITY COLLEGE (GTCC)

The GTCC campus anchors the northern portion of the site. Programmatically the campus will serve as a logistics and aviation technology center preparing students to enter the workforce generated by the Piedmont Triad International Airport (PTIA) and supporting industries.

If the college sites the main campus buildings along an internal network of streets, the college has an opportunity to evolve both as an institution of learning and a community amenity. Orientation away from NC-68 and towards a village center would create a walkable environment and enhances both the college and commercial experience.

In addition, buffers along Cabin Creek should be enhanced as a linear park system that serves a dual purpose. On the east bank of the creek, the linear park will be an attractive amenity for students, faculty and the general public. Dense vegetation on the west bank will serve as an additional buffer between GTCC and existing residential development located on the eastern side of Cabin Creek.

VILLAGE CENTER

Located at the future intersection of Interstate 73 and NC 68, directly south of the GTCC Campus, the village center will have superior access and visibility from two major thoroughfares. Given its location, the village center will serve both as a gateway into the Western Area and as a retail, restaurant and shopping destination for local residents and the greater regional community. As noted in the Market Analysis, "net growth of retail square footage between 2010 and 2030 is estimated at approximately 67,000 square feet." Some of this square footage will be absorbed in the

Given its location, the village center will serve both as a gateway into the Western Area and as a retail, restaurant and shopping destination for both local residents and the greater regional community. Baxter Village in Fort Mill, SC provides a good precedent for this type of development. Photo Location: Fort Mill, SC

Shifts in tenure and buyer preferences over time indicate a need to diversify housing options in the area to include a mixture of single-family detached, single-family attached and multi-family units. Photo Location: Greensboro, NC

As depicted in this image, high school ball fields can serve as an additional buffer between residential neighborhoods and school properties.

Campus Village Center by developing a supermarket and a variety of other service-oriented uses including restaurants, a pharmacy and small-scale retail.

By orienting small-scale, mixed-use development along an internal network of streets, instead of along NC 68, the village center will provide a meeting place for the community and a walkable, pedestrian-friendly shopping destination. Traditional strip developments, the type found in "anywhere USA", lack identity and often result in single-destination trips. Alternatively, a destination with a mixture of uses, including restaurants, retail and limited office creates a place where people want to visit and linger.

RESIDENTIAL

As noted in the Market Analysis, the Western Area will continue to be a location of choice for new residents. Shifts in tenure and buyer preferences over time indicate a need to diversify housing options in the area to include a mixture of single-family detached, single-family attached and multi-family units. As enrollment at GTCC grows there will be a need for student housing in close proximity to the campus. The design of the housing should be compatible with existing residential neighborhoods and be of appropriate density and scale for the area.

POTENTIAL SCHOOL SITE

Currently the Guilford County School District is in the process of selecting a site for a new high school to alleviate overcrowding at some of its northern campuses. During the community design workshop and stakeholder engagement process, Western Area residents recognized the opportunity to locate a high school within the vicinity of the GTCC campus and village center.

There are numerous benefits to co-locating a high school near GTCC including early/middle college opportunities. In addition, Guilford County Schools have a history of joint-use agreements which allow community partners use of school facilities such as gyms and ball fields. Extending this to the potential school site in the Western Area would fill the demand for community facilities currently lacking in the area.

In addition, the strategic location of ball field facilities provide a compatible edge and additional buffer between development and existing residential neighborhoods.

West Market Street Village
PLANNING AREA

WEST MARKET STREET VILLAGE (WMV) RECOMMENDATIONS

WMV 1: Create a West Market Street Village by focusing future retail and commercial development on an internal street network at the intersection of West Market Street and Sandy Ridge Road.

WMV 2: Establish the desired character of the place.

West Market Street serves as the primary commercial and industrial corridor through the Western Area. The existing character of West Market Street transitions from primarily an industrial and employment zone to a place with scattered rural residential and commercial sites. The commercial portion of West Market Street lacks identity and has developed over time like many industrial areas on urban fringes—a series of nondescript buildings with large setbacks, vast parking areas and little to no pedestrian connectivity.

West Market Street transitions from an industrial zone to a place with a more rural feel at the Sandy Ridge Road intersection. This intersection is significant a variety of reasons. Sandy Ridge is the primary access to areas south of West Market, including I-40 and High Point. Planned improvements to West Market Street, Sandy Ridge Road and the interchange with I-40 will eliminate some capacity bottlenecks and enhance traffic flow. The High Point MPO is considering plans to widen Sandy Ridge south of I-40. This project would substantially increase traffic volumes through the West Market Street intersection.

Exhibit 9: West Market Street Village:
The area highlighted red is the location of the West Market Street Village.

Proposals to extend Sandy Ridge Road north of West Market Street seem less likely in the near term, given the associated cultural, community, and environmental impacts. Furthermore, the resulting increase in traffic volumes, combined with the potential expansion of rail service, strongly suggests the need to grade-separate the Sandy Ridge Road railroad crossing. This would almost certainly require a structure spanning

both the railroad and West Market Street, with ramps on the north side providing access to Sandy Ridge Road. Although safety and capacity benefits could be substantial, such a major project would be very expensive and disruptive. Anticipated high volumes of truck traffic further complicate the design by increasing curve radii and grade lengths. Access points and building setbacks at this location should consider this long-term possibility.

Given the expense and uncertainty associated with this extension, the Greensboro Urban Area MPO has recommended widening Pleasant Ridge Road as a practical and cost-effective initial step in providing better mobility and access north of West Market Street. In conjunction with improvements to Sandy Ridge Road and West Market Street, this project will serve anticipated needs without precluding other projects.

Due to its central location, Sandy Ridge Road makes for an ideal location for a second gateway into the Western Area of Guilford County.

The West Market Street Village will be primarily a mix of office and support services, including restaurants and limited retail. Current and future employees who work in the Western Area will need easily accessible destinations for lunch and essential services such as banks and dry cleaning.

For the West Market Village to be a destination and gathering place for Western Area employees, residents and commuters it needs to be an easily accessible and inviting place. An internal network of streets are needed to draw traffic and interest from both West Market and Sandy Ridge Road. Strong streetscaping including landscaping elements, pedestrian infrastructure and street furniture can create a place people want to get out of the car and enjoy. In addition, shallow building setbacks and a variety of parking options (both on street and in rear surface lots) provide an accessible, and inviting location.

Development in the West Market Street Village should be 'transit-ready.' This plan acknowledges West Market Street and the adjacent active rail line may overtime evolve as a transit corridor for bus rapid transit, high-speed rail or other mass commuter transit options. Development in the West Market Street Village should incorporate the likelyhood of these trainsit options.

During the community workshop, multiple sketches of how the West Market Village could develop were presented and refined. This image represents the final conceptual plan for the West Market Village.

The West Market Village will accommodate a variety of uses. Ground floor restaurants, services and small retailers will offer amenities to area workers. Second and third floor office space will provide small businesses and service firms options for work space.

Employment
PLANNING AREA

EMPLOYMENT AREA (EA) RECOMMENDATIONS

EA 1: Preserve and market sties for economic development within the Employment Area.

EA 2: Market the Western Area as logistics hub.

EA 3: Support efforts to attract aviation-related industry.

EA 4: Improve the local transportation network within the Employment Area.

While the Western Area is a preferred residential destination it is also an employer's location of choice due to the existing and planned highway infrastructure, rail and air access and proximity to a large skilled workforce. Preservation and preparation of lands contiguous to existing industrial is critical to ensuring that the Western Area continues to grow as an employment center. In addition, quality-of-life factors, such as walkability and access to amenities, are increasingly important to employer location decisions. While the Western Area has great access and infrastructure, additional improvements are needed to ensure continued employment growth in the area.

The employment area will grow through a combination of expansion of existing businesses, redevelopment, infill and new development projects. As noted in the Market Analysis, there will be significant demand for land for both office and industrial use over the next twenty years. While some of the 767,000 square feet of office demanded in the area will be met by development within the West Market Village Center and to a lesser extent the Campus Village Center, the majority will occur in the main employment areas noted on the plan. The type of office uses projected for the area include strong growth in the services, retail trade and F.I.R.E. (financial, insurance and real estate) sectors.

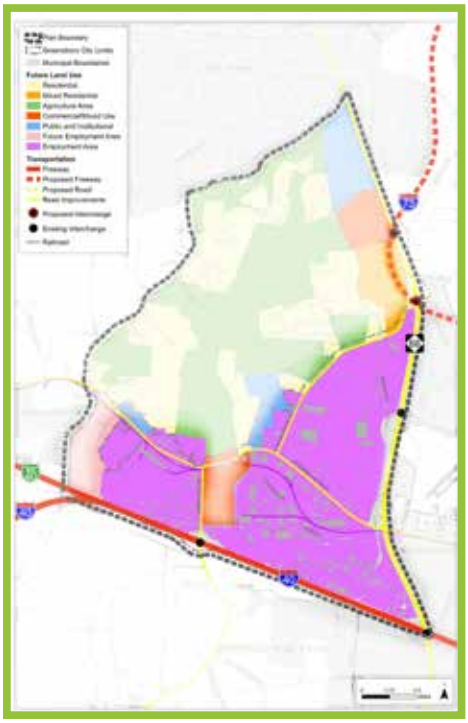


Exhibit 10: Employment Area: *This area highlighted in purple is the main the Employment Area of the Western Area.*

Industrial forecasts suggests that there will be demand for nearly two million square feet of industrial space through 2030. Growth in the construction and information technology industries will drive most of this demand.

This area will attract an additional two million square feet of industrial space over the next two decades. Applying a .20 FAR, the total amount of land demanded for industrial development is 233 acres.

The Western Area is also a prime location for employers to look for assemblages of land to accommodate a large footprint facility. Similar to the FedEx Ground Facility in the neighboring Triad Business Park, the Western Area has the potential to attract an employer of similar size if contiguous industrial lands are preserved for future employment use. Ensuring a "drop-in" ready site is available in the Western Area will significantly contribute to the economic vitality of the area.

In order to accommodate this growth a strong network of streets are needed to promote connectivity internal and external to the area. Consideration of future connections and improvements, such as the Pegg-Thatcher connector and extension of Bryan Boulevard will be reviewed to determine their feasibility and benefits to the suggested future land use pattern. Future streets employ a context sensitive design to ensure the roads meet safety, mobility and aesthetic requirements.

Pedestrian infrastructure such as sidewalks and crosswalks create places where employees can exercise on breaks or walk to the West Market Street Village for lunch. Street lighting and wayfinding systems provide additional safety and convenience for both day and night shift employees.

As a strategic location in North Carolina for employment, office square footage in the Western Area will double by 2030.

Two FedEx facilities, the hub at PTIA and the ground facility in Triad Business Park, are located in areas adjacent to the study area. Truck traffic between the two facilities will increase congestion along Western Area roads.

Future Employment Expansion
PLANNING AREA

FUTURE EMPLOYMENT AREA (FEA) RECOMMENDATIONS

FEA 1: Facilitate infrastructure improvements to support the redevelopment of the area in the long term to employment consistent with adjacent land uses.

FEA 2: Ensure adequate water and sewer service capacity by extending services lines to the future employment expansion area.

Land uses along South Bunker Hill Road and Gray-Wilson Road will transition over time from their present uses to a employment uses. Currently scattered rural residential sites are flanked on either side by larger industrial developments. The Triad Business Park lies directly west of this area and is home to the recently opened FedEx Ground sorting facility. As recommended, significant infrastructure investments including local road connections and sewer service lines are needed for this area to support future employment uses.

Exhibit 11: Future Employment Expansion Area

Residential
PLANNING AREA

RESIDENTIAL AREA (R) RECOMMENDATIONS

R 1: New housing development should continue in a development pattern that is respectful of existing neighborhoods as well as natural, agricultural, historic, and cultural resources.

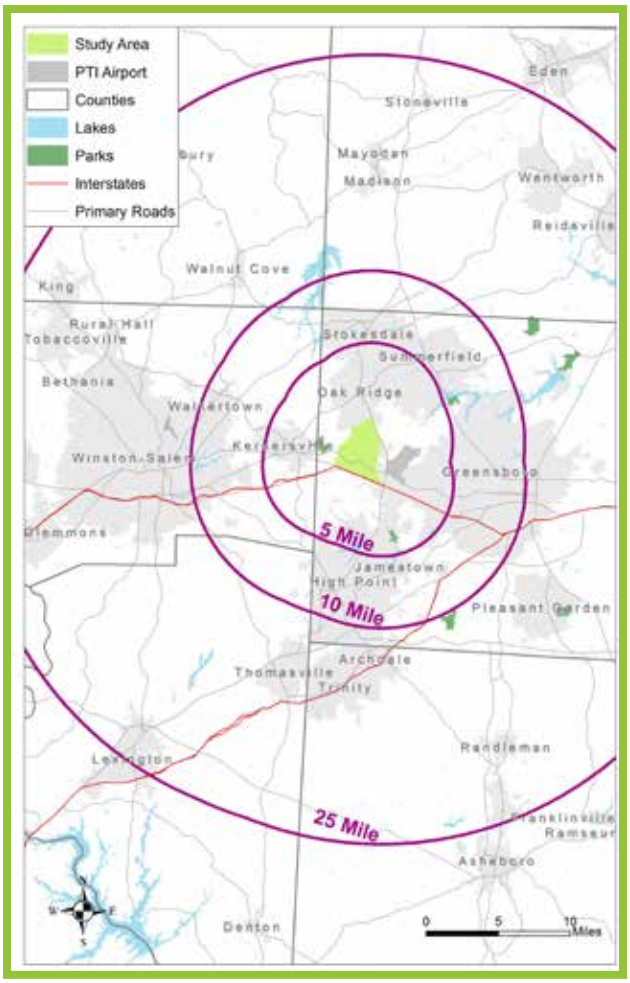
R 2: Continue a less intense development pattern in the rural areas.

The Western Area has long been a place people call home. Early settlers chose this area for its rich soils, scenic landscape and central location along critical trade routes. Some of the same reasons people originally chose the Western Area remain true today.

As illustrated in Exhibit 13, the Western Area is located in a 15-minute drive-time "sweet spot" to many of the largest employment centers in the region, including downtown Winston-Salem, downtown Greensboro and High Point. The rolling Piedmont landscape and sinuous roads create a scenic quality that attracts home buyers looking for a bit more land and privacy than what is readily available in existing urban neighborhoods.

The convenience of location coupled with the rural feel of the area continues to draw new residents. As detailed in the Existing Conditions Report and the Market Analysis, the Western Area population will continue

Exhibit 12: Residential Area: *The areas highlighted in yellow are the main residential areas of the Western Area.*



TOP LEFT
Exhibit 13: *The Western Area is located in a 15-minute drive-time "sweet spot" to many of the largest employment centers in the region, namely downtown Winston-Salem, downtown Greensboro and High Point.*

TOP RIGHT
Conservation Subdivision
Source: River Valley Subdivision

to grow at modest rates over the next twenty years. With this population growth, demand for new housing will also increase. As noted in the Market Analysis, the Western Area is expected to add 540 new units between 2010 and 2030, with single-family detached units expected to make up approximately 50% of new residential housing. While some of the demand for new housing will be absorbed in the Campus Village, most of the single family development will occur in existing rural residential areas.

New development should be compatible to existing residential neighborhoods and respectful of existing agricultural and historic properties. Less intense development patterns, similar to what exists today in the Western Area, are appropriate in the rural residential areas of the plan. Conservation subdivisions are one common method developers can use to preserve critical resources while providing a home product demanded by the market.

The rolling Piedmont landscape and sinuous roads create a scenic quality that attracts home buyers looking for a bit more land and privacy than what is readily available in existing urban neighborhoods.

TOP
New residential development in the Western Area should be consistent in character to existing neighborhoods. Location: Pheasant Ridge Drive

MIDDLE
Conservation subdivisions take many shapes and forms. For example, this subdivision was built adjacent to a farming and hotel operation. The Sanford's Creek subdivision was certified as a Green Subdivision by the National Association of Home Builders in 2009. Photo Location: Fearrington Village, NC

BOTTOM
Less intense development patterns are recommended in the areas without water and sewer service. Photo Location: Sandy Ridge Road

Agriculture
PLANNING AREA

AGRICULTURE AREA (AG) RECOMMENDATIONS

AG 1: Preserve existing farm lands for active agriculture use.

AG 2: Promote farming as a viable occupation and way of life for current and future generations.

AG 3: Expand market for locally-grown and locally-produced goods.

The development and growth of the Western Area is rooted in its history as an agricultural and farming community. Original settlers in the region chose the Western Area for its rich soils, fertile land and access to water. However, suburban growth, increasing land values and declining farm revenues have led to the conversion of large tracts of productive agricultural lands to other uses. In addition, the lack of a cash crop, such as tobacco, and the aging population of farmers contribute to the perception of farming as a declining industry.

While there are many drivers of land conversion, there are numerous benefits to land remaining in active agriculture use. As noted in the 2020 Guilford County Farmland Protection Plan there is growing evidence that farming in Guilford County will experience a renaissance as the local food economy grows. Shifts in consumer trends suggest greater demand for locally-grown, locally-produced products. The North Carolina Cost of Community Services (COCS) study notes that for Guilford County, "The residential sector costs the County more in services than it brings in from tax revenue. For each dollar's worth of services that it receives, the County spends $1.35 servicing residential tax payers. Despite being taxed on the basis of current land uses, property in agricultural use is found to be a net contributor to the local budget, generating 1.62 in revenues for every dollar of public service it receives.

Exhibit 14: Agriculture Area: *The areas highlighted in green are the main agriculture areas of the Western Area.*

Beyond the economic benefits, preserving active farming operations provides an important link to the history and culture of the Western Area. Many families

in the Western Area have been farming the land for decades. For these families, farming is not just an occupation, but a way of life. Preserving the connection to this history is accomplished by conservation of the land and the promotion of farming as a viable occupation for existing and future generations.

Given the history of agriculture in the area and the desire of stakeholders to preserve and promote this way of life, lands should be preserved for active farming operations.

"According to the North Carolina Agricultural Development and Farmland Preservation Trust Fund, agriculture and related business is valued at over $70 billion annually, making it the top industry in North Carolina.

In Guilford County, the impact of agriculture and agribusiness is $2.27 billion."

TOP
Demonstration farms, like the one pictured, are one way to educate the general public about the value and necessity of protecting viable, local agricultural operations. Location: Windy Knoll, Guilford County

MIDDLE
Hay farming and livestock operations are just one of the current farming operations currently active in the Western Area. Photo courtesy: Jimmy and Joanne Morgan

BOTTOM
As the local food movement grows, outdoor farmer's markets are increasingly becoming many households primary food shopping destination. Photo location: Piedmont Triad Farmer's Market

Transportation

GENERAL RECOMMENDATIONS

TRANSPORTATION (T) RECOMMENDATIONS

T 1: Integrate the Western Area Land Use and Infrastructure Plan into the Long Range Transportation Plan.

T 2: Conduct a detailed analysis of additional proposed major roads and road widening beyond the current construction program.

T 3: Enhance the internal network of local streets.

T 4: Encourage transportation improvements that will respect and support the rural ambiance and character of the Western Area.

T 5: Support plans for transit along West Market Street.

The aforementioned recommendations support the development of specific zones in the Western Area Plan. The following set of governance, infrastructure and preservation recommendations are not specific to one zone and should be implemented in support of the overall vision of the Western Area Land Use and Infrastructure Plan.

TRANSPORTATION

As both the Western Area and the Triad Region grow and change, so do the demands placed on the transportation system. Successfully addressing these needs requires balancing immediate and long-range community goals (including access to jobs, services, and workers), while satisfying regional mobility demands. The convenient, centralized location of the Western Area relative to major urban areas, employment centers, and transportation facilities brings with it the challenge of dealing with external traffic. Satisfying these frequently competing objectives requires sustained planning and systematic implementation. This can be accomplished through a coordinated and cooperative process of community involvement.

The existing metropolitan planning process provides a framework for proceeding. As the Triad region and its metropolitan areas grew, the travel demand model and long-range transportation plans expanded to include the Western Area. Although the metropolitan areas of Greensboro, High Point and Winston Salem maintain their own planning agencies, serious effort is made to coordinate transportation plans, projects, and priorities. As the place where all three MPOs converge, the Western Area is the location where most of this coordination –and, therefore, much of the conflict– occurs.

The Western Area falls within the jurisdiction of the Greensboro Urban Area MPO, though its current freeway-focused transportation plans have also been heavily influenced over many years by the Winston-Salem/Forsyth County MPO (including Kernersville), the High Point MPO, the Piedmont Triad Airport and the North Carolina Departmetn of Transportation. The identification and location of the future I-73 and

I-74 corridors have been especially significant in this regard. Over time, concern has been growing that the highway projects indicated in the latest long range transportation plans may no longer effectively address local and regional needs, and may have become less feasible to implement due to escalating costs, constructability concerns, and community and environmental impacts. The resolution of some critical interchange design decisions involving the I-73 and NC68/US 220 Connectors helped clarify a number of important uncertainties by eliminating alignment alternatives and fixing locations of key intersections. Given the magnitude of changes that have occurred since these projects were originally planned, it seems prudent to revisit the needs and purposes behind the existing plans, identifying anticipated deficiencies and confirming whether these projects still offer the best solution.

The comprehensive land use and infrastructure plan for the Western Area provides a framework for influencing and guiding both local transportation decisions and regional planning efforts. The timing could not be better; all three MPOs have begun updating LRTPs, using a revised regional travel demand model. Findings of the Western Area Land Use and Infrastructure Plan can introduce local goals and constraints into LRTP process. This input extends beyond locating roadway corridors. The land use recommendations inform the socioeconomic forecasts used to generate and distribute future year trips, and identify potential transit markets, nodes, and corridors. The Western Area Plan can also guide local development plans and designs to help support transportation goals by managing congestion, enhancing safety, protecting resources, minimizing environmental/community impacts, and encouraging travel by alternative modes.

TRANSPORTATION (T) RECOMMENDATIONS

T 6: Develop and implement ongoing, coordinated regional congestion management and operations process (including Intelligent Transportation Systems and Demand Management Strategies) to maximize the efficient use of existing and planned infrastructure.

T 7: Maintain close coordination with the planning activities of the Piedmont Triad International Airport Authority for the airport and ancillary development.

Gateways & Corridors

GENERAL RECOMMENDATIONS

GATEWAYS & CORRIDORS (GC) RECOMMENDATIONS

GC 1: Create a southern gateway into the Western Area.

GC 2: Enhance the appearance of West Market Street.

GC 3: Preserve and enhance the appearance and operation of NC 68 north of Pleasant Ridge Road.

Today, traveling from central Greensboro west along Market Street is a trip similar to many experiences on urban fringes. Strip malls lead to an industrial landscape that can be found in "Anywhere, USA." There is no sense of arrival that welcomes residents home or departure as employees leave their jobs. However, one right turn off West Market Street, up Marshall Smith or Bunker Hill Road leads to an authentic experience. The scene is dotted by idyllic farmhouses scattered on rolling lands intersected by creeks and streams. Vestiges of Guilford County's agricultural past coupled with current agriculture operations mark the landscape.

As the Western Area continues to grow special attention is needed to create a sense of entry and exit to the area. In doing so, the area's character as both an employment and residential destination will be defined and reinforced. Existing corridors need to be preserved and enhanced to sustain the mobility and appearance of the area.

West Market Street serves as the main east/west connection from downtown Greensboro and Kernersville to the Western Area.

Portions of NC 68 are currently protected in a Scenic Overlay District. Recommendations suggest extending the district north of Pleasant Ridge Road.

Sandy Ridge Road serves as the main southern gateway from I-40 into the Western Area.

Utilities

GENERAL RECOMMENDATIONS

UTILITIES (U) RECOMMENDATIONS

U 1: Support water extension into Service Tiers 2 and 3.

U 2: Upgrade water pumps due to challenges in peak periods.

U 3: Delay sewer service to basin north of West Market Street and west of Pleasant Ridge Road to preserve rural and agricultural character.

U 4: Encourage coordination among neighboring jurisdictions in the timing and provision of infrastructure.

U 5: Continue to track infrastructure upgrades, existing and proposed distribution lines and available capacities for water and wastewater facilities.

As noted in the Existing Conditions Report and shown on page 10 of this section, the Western Area is divided into three main water and sewer service areas. The parcels south and directly adjacent to West Market Street and east of Pleasant Ridge Road are currently served by City of Greensboro Water Services. As a result, these are the areas with the most intense development. The future employment area is scheduled for service in the near term while the central portion of the study area will remain largely unserved over the next 10 to 15 years.

This plan recommends extending water service only into the entire study area. Supporting water extension mitigates concerns with well and septic failure and provides additional capacity to meet current water service challenges in peak periods. By supplying water but delaying sewer extensions the existing character of the agriculture and residential areas can be preserved while providing a service to existing residents.

Cultural & Historic Resources

GENERAL RECOMMENDATIONS

CULTURAL & HISTORIC RESOURCES (CHR) RECOMMENDATIONS

CHR 1: Raise awareness of existing historic and cultural resources and encourage the preservation of such resources that contribute to the character of the area.

CHR 2: Consider creating a Preservation Plan for the Western Area that takes into consideration important cultural, historic and natural resources worthy or preservation.

The Western Area is a place rich in history. There are a few identified historic structures including the Shaw-Cude House and the Dillon House in the study area. There is one Century Farm located at the intersectin of Bunker Hill Road and Marshall Smith Road. Many of the families that currently reside in the Colfax area can trace their roots back to the original settlers of Guilford County. For these residents, their individual and community history is closely tied to farming the land. Raising awareness of this past as both a cultural and historical link to the growth and development of the Western Area is an important step in ensuring its preservation as a way of life for future generations. This plan serves as the starting point for a greater effort to document, promote and preserve the Western Area's cultural and historic resources.

Governance

GENERAL RECOMMENDATIONS

GOVERNANCE (G) RECOMMENDATIONS

G 1: Work closely and cooperatively with the municipalities in and jurisdictions of Guilford and Forsyth Counties so that development can be guided towards areas planned for urban and suburban services and away from areas with valued environmental or rural qualities.

G 2: Establish a Western Area Community Group to shepherd the Western Area Plan through the adoption process at both the City and County level.

G 3: Continually engage surrounding jurisdictions in discussions of growth and development.

Success of this plan depends largely on close coordination between the City of Greensboro, Guilford County and surrounding jurisdictions. The following recommendations and implementation strategies support this goal.

GREENSBORO

WESTERN AREA
LAND USE & INFRASTRUCTURE PLAN

Appendix A:
IMPLEMENTATION MATRIX

Implementation Matrix

	Milestones	Lead Group	Other Partners	Timeline
Campus Village	**CV1: Create a Campus Village by focusing future retail and commercial development on an internal street network at the proposed I-73 interchange.**			
	CV1.1: Initiate Activity Center Overlay District proceedings for the area designated as the Campus Village in the Plan.	City of Greensboro Planning and Community Development (PCD)		short-term
	CV2: Establish the desired character of the place.			
	CV 2.1: Promote a compact form of development in the Campus Village.	PCD		short-term
	CV2.2: Develop design guidelines that provide a palette of architectural features and landscape materials including plants, walls and fences consistent with the character described in the Plan.	PCD		short-term
	CV3: Partner with GTCC planners to ensure strong visual and physical linkage to the commercial Campus Village Center.			
	CV3.1 Partner with representatives from GTCC to review and comment on plans within the Campus Village in order to ensure physical connectivity and linkages between individual developments.	PCD	Guilford Technical Community College (GTCC)	ongoing
	CV4: Promote a variety of housing options.			
	CV4.1: Allow for greater density of housing where utility service and transportation infrastructure support it.	PCD		ongoing
	CV4.2: Support small lot single-family, townhouse and apartment developments as transition from the commercial/mixed-use area and the lower-density single-family to the west.	PCD		ongoing
	CV5: Work with Guilford County Schools to find a high school site in close proximity to the Guilford Technical Community College.			
	CV5.1: Site the high school so that ball fields provide an additional buffer between existing residential communities and new development.	Guilford County Schools	PCD	mid-term
	CV5.2: Extend joint use agreements for shared facility and recreational field use by community-at-large and school district.	Guilford County Schools	PCD	mid-term
	CV5.3: Encourage partnership between GTCC and Guilford County School District to establish early college program.	GTCC	Guilford County Schools	mid-term
West Market Street Village	**WMV1: Create a West Market Street Village by focusing future retail and commercial development on an internal street network at the intersection of West Market Street and Sandy Ridge Road.**			
	WMV1.1: Initiate Activity Center Overlay District proceedings for the area designated as the West Market Village in the Plan.	PCD		short-term
	WMV2: Establish the desired character of the place.			
	WMV2.1: Promote a compact form of development in the West Market Village.	PCD		mid-term
	WMV2.2: Develop design guidelines that provide a palette of architectural features and landscape materials including plants, walls and fences consistent with the character described in the Plan.	PCD		mid-term
Main Employment Area	**EA1: Preserve and market sties for economic development within the Employment Area.**			
	EA1.1: Inventory the Western Area to determine current supply and distribution of sites by size to accommodate a variety of office- and industrial-occupying employers.	PCD	Greensboro Economic Development Alliance (EDA)	short-term
	EA1.2: Build a geo-coded map database of sites to be hosted on EDA's website.	PCD	EDA	short-term
	EA1.3: Identify key sites that have access, visibility, and public utilities; partner with EDA to market the sites.	PCD	EDA	short-term
	EA1.4: Where appropriate, certify sites through N.C. Department of Commerce's Certified Sites Program.	PCD	EDA, Department of Commerce (DOC)	short-term

	Milestones	Lead Agency	Other Partners	Timeline
Main Employment Area	EA1.5: Consider Special Assessment Improvement District to fund utility extensions, roads, and other infrastructure to serve designated sites.	PCD	GDOT, City of Greensboro Water Resources	short-term
	EA1.6: Establish an Industrial Conservation District to protect those sites with existing infrastructure critical to future economic growth.	PCD		short-term
	EA2: Continue to Market the Western Area as logistics hub.			
	EA2.1: Partner with Greensboro Economic Development Alliance (EDA) to highlight the Western Area's superior labor force access and leverage the area's close proximity to four interstate highways, the Piedmont Triad International Airport (PTIA), and rail connections to east coast ports.	PCD	EDA, PTIA	ongoing
	EA2.2 Investigate potential for an intermodal hub that would leverage the area's close proximity to four interstate highways, the Piedmont Triad International Airport (PTIA), and rail connections to east coast ports.	Piedmont Triad International Airport Authority(PTIA)	EDA, PCD	
	EA3: Support efforts to attract aviation-related industry.			
	EA3.1: Promote the creation of a collaborative workgroup made up of representatives from the City, County, neighboring jurisdictions, EDA, Department of Commerce and PTIA to promote efforts to attract and retain employers at the airport and in the Western Area.	PCD	EDA, PTIA, DOC, County, High Point, Kernersville	short-term
	EA3.2: Encourage GTCC's development of aviation-related education tracts, promoting job training and placement in the Western Area.	GTCC	PTIA	ongoing
	EA4: Improve transportation network within the Employment Area.			
	EA4.1: Manage access along new and existing roadways to preserve capacity and minimize conflict points, balanced against the need for convenient access for employees, suppliers, and customers.	Greensboro Division of Transportation (GDOT)		ongoing
	EA4.2: Review justification and feasibility of previously proposed Pegg-Thatcher Connection across I-40, to determine whether it provides sufficient mobility and access benefits (including congestion-relieving capacity as an alternative to Sandy Ridge Road and NC 68) to justify its cost.	GDOT		short-term
	EA4.3: Review need for previously proposed westward extension of existing Bryan Boulevard from NC 68, and determine its feasibility in terms of potential costs and benefits.	GDOT		short-term
	EA4.4: Employ context sensitive design practices to address impacts of heavy vehicle demands on geometric, pavement, and structural design.	GDOT		ongoing
Future Employment Expansion Area	**FE1: Facilitate infrastructure improvements to support the redevelopment of this area in the long term to employment consistent with existing adjacent land uses.**			
	FE1.1: Consider the following transportation improvements to support redevelopment.			
	FE1.1.1: Improve Bunker Hill Road south of Market Street	GDOT		long-term
	FE1.1.2: Improve the existing rail crossing on Bunker Hill Road for trucks and heavy load capacity vehicles.	GDOT		long-term
	FE1.1.3: Create a parallel road connection south of West Market Street to connect the employment area in shown on the Western Area Plan to the Triad Business Park in Kernersville.	GDOT		long-term
	FE2: Ensure adequate water and sewer service/capacity by extending service lines to the future employment expansion area.			
	FE2.1: Consider partnering with Kernersville on future water and sewer infrastructure projects in the future employment area.	Water Resources	Kernersville , Guilford County	long-term
	FE2.2: Study deficiencies in the existing infrastructure system and define projects for CIP.	Water Resources		long-term

	Milestones	Lead Agency	Other Partners	Timeline
Residential Area	**R1: New housing development should continue in a pattern that is respectful of existing neighborhoods as well as natural, agricultural, historic and cultural resources.**			
	R 1.1: Create a district similar to the Guilford County Resource Preservation District ordinance to promote rural residential development that preserves sensitive areas.	PCD	Guilford County	short-term
	R2: Continue a less intense development pattern in rural areas.			
	R2.1: Support new neighborhoods of equal or less density between or adjacent to existing neighborhoods.	PCD		ongoing
Agricultural Area	**AG1: Preserve existing farm lands for active agriculture use.**			
	AG1.1: Expand efforts to recruit farm owners to apply for Voluntary Agricultural Districts (VAD) and Enhanced Voluntary Agricultural Districts (EVAD) designation.	Guilford County	VAD Board, Soil & Water Conservation District, Piedmont Conservation Council, Cooperative Extension	short-term
	AG1.2: Raise awareness of benefits of the benefits of alternative land protection instruments such as conservation easements, transfer/purchase of development rights, deed restrictions, “less-than-fee simple” transactions and life estates to promote land stewardship and private land dedication and/or preservation.	Guilford County	Piedmont Conservation Council, Cooperative Extension	short-term
	AG1.3: Create a database of active bona fide farming operations.	Guilford County	PCD	
	AG1.4: Identify eligible farms and assist with Century Farm designation through the North Carolina Department of Agriculture and Consumer Services.	Guilford County	Piedmont Conservation Council, Department of Agriculture	short-term
	AG1.5: Support retention of viable agriculture areas by encouraging traditional and nontraditional farm uses, including for example agri-tourism, organic farming and viniculture; provide technical assistance in conjunction with Cooperative Extension, state and federal programs, and conservation organizations.	Piedmont Conservation Council	Piedmont Grown, NC Cooperative Extension	ongoing
	AG1.6: Establish utility service agreements between Guilford County, Forsyth County and High Point not to extend public utilities into priority agriculture areas.	PCD	Guilford & Forsyth County	short-term
	AG1.7: Incorporate buffering requirements into development codes for new projects/ subdivisions located adjacent to bona fide farms to reduce conflicts between neighborhood residents and common agricultural practices.	PCD	Guilford County	short-term
	AG2: Promote farming as a viable occupation and way of life for current and future generations			
	AG2.1: Educate residents on legal instruments, such as deed restrictions, conservation easements and voluntary districts, to protect farmland in perpetuity as working farms/ productive land.	Guilford County	Piedmont Conservation Council, Cooperative Extension	ongoing
	AG2.2: Partner with the NC Cooperative Extension to develop a farm-link program matching retiring farmers with current farmers or potential new farmers.	Guilford County	Piedmont Conservation Council, Cooperative Extension	mid-term
	AG2.3: Work with Colfax Elementary to establish a demonstration farm on school property.	Guilford County	Guilford County Schools	short-term
	AG2.4: Host a Western Area Heritage Farm Tour Day.	Piedmont Conservation Council		short-term
	AG2.5: Organize a group of stakeholders to promote Western Area farming operations through existing and new channels. (i.e., Booth at Persimmon Festival, Partnership with Cooperative Extension, Western Area Facebook page)	Piedmont Conservation Council		short-term
	AG3: Expand market for locally-grown and locally-produced goods.			
	AG3.1: Partner with existing organizations, such as Piedmont Grown, to communicate the value of local agriculture.	Guilford County	Piedmont Grown, Piedmont Conservation Council	ongoing
	AG3.2: Partner with the NC Cooperative Extension to investigate need for value-add processing facility in the Western Area.	Guilford County	Cooperative Extension	mid-term
	AG3.3: Promote “farm-to-fork” program with area restaurants.	Piedmont Grown	Piedmont Conservation Council	short-term
	AG3.4: Promote a local Community Supported Agriculture program.	Piedmont Grown	Piedmont Conservation Council	short-term

	Milestones	Lead Agency	Other Partners	Timeline
Transportation	**T1: Integrate the Western Area Land Use and Infrastructure Plan into the Long Range Transportation Plan.**	GDOT		short-term
	T2: Conduct a detailed analysis of any additional proposed major roads and road widenings beyond the current construction program.			
	T2.1: Reevaluate need for an east-west connection through the Western Area, considering changes to regional and surrounding local plans, especially the western segment in the Kernersville/Forsyth County planning area. Determine the most appropriate facility type, corridor location, and implementation plan for any recommendation.	GDOT		short-term
	T2.2: Review and access impacts of other proposed revisions to the regional road network, including elimination of the I-40 Connector and widening of Sandy Ridge Road south of I-40.	GDOT		short-term
	T2.3: Carefully consider the impacts on accessibility and connectivity associated with the final design and phasing of the NC 68/US 220 Connector (I-73) and its interchanges with existing NC 68 and its planned upgrades; the planned I-73 Connector and its potential westward extension and realigned Pleasant Ridge Road	GDOT		short-term
	T2.4: Include appropriate pedestrian, bicycle, and transit accommodations in all project planning and design.	GDOT		ongoing
	T3: Enhance the internal network of streets.			
	T3.1: Investigate widening and/or other improvements to existing roads in lieu of new road construction, giving appropriate consideration to the full range of potential multi-modal transportation and non-transportation impacts.	GDOT		short-term
	T3.2: Require an internal, connected street network in all new developments.	PCD	GDOT	ongoing
	T3.3: Require roadway extensions in the Campus and West Market Street Villages and Employment Area to support connectivity in future development pattern.	PCD	GDOT	ongoing
	T3.4: Require 'complete street elements' on future roadways that connect major activity centers.	PCD	GDOT	ongoing
	T4: Encourage transportation improvements that will respect and support the rural ambiance and character of the Western Area.			
	T4.1: Promote context sensitive roadway design standards, speed limits and signage.	GDOT	PCD	ongoing
	T4.2: Review roadway design standards and revise as needed to ensure that the standards are the best match for the different types of development proposed in this plan, including support for pedestrian and bicycle travel, where appropriate and desired.	GDOT	PCD, PART	ongoing
	T5: Support plans for transit along West Market Street.			
	T5.1: Partner with surrounding jurisdictions, especially Kernersville and High Point to investigate potential for transit along West Market Street.	GDOT	PART, Kernersivlle, High Point	short-term
	T5.2: Seek input from Piedmont Authority Regional Transportation (PART) in regular agency review of development plans to ensure development along West Market Street does not preclude future transit options.	PCD	PART	ongoing
	T6: Develop and implement ongoing, coordinated regional congestion management and operations processes (including Intelligent Transportation System elements and Transportation Demand Management strategies) to maximize the efficient use of existing and planned infrastructure.	GDOT		ongoing
	T7: Maintain close coordination with the planning activities of the Piedmont Triad International Airport Authority for the airport and ancillary development.	GDOT	PTIA	ongoing

	Milestones	Lead Agency	Other Partners	Timeline
Gateways & Corridors	**GC1: Create a southern gateway into the Western Area.**			
	GC1.1: Consider applying a Visual Corridor Overlay to Sandy Ridge Road as it serves as a main gateway into the Western Area.	PCD	GDOT	short-term
	GC1.2: Develop a streetscape plan for Sandy Ridge Road to be implemented with widening and interchange projects.	PCD	GDOT	short-term
	GC2: Enhance the appearance of West Market Street.			
	GC2.1: Develop a streetscape plan for West Market Street to be implemented with widening and interchange projects.	PCD	GDOT	short-term
	GC2.2: Consider applying a Pedestrian Scale Overlay on West Market Street west of the Pleasant Ridge Road interchange.	PCD	GDOT	short-term
	GC3: Preserve and enhance the appearance and operation of NC 68 north of Pleasant Ridge Road.			
	GC3.1: Extend the Highway NC 68 Scenic Corridor Overlay and Design Standards which includes standards for the following: Landscaping and Screening, Parking and Loading Areas, Signage and Architecture.	PCD		short-term
Utilities	**U1: Support water extension into Service Area C.**	Water Resources		long-term
	U2: Upgrade water pumps due to challenges in peak periods.	Water Resources		short-term
	U3: Delay sewer service to basin north of West Market Street and west of Pleasant Ridge Road (Service Area C) to preserve rural and agricultural character.	Water Resources		long-term
	U4: Encourage coordination among neighboring jurisdictions in the timing and provision of infrastructure.			
	U4.1: Establish agreements between Guilford County, Kernersville and High Point not to extend public utilities into priority agriculture areas.	Water Resources	Guilford County, High Point and Kernersville	short-term
	U 5: Work closely with Guilford County, High Point and Kernersville to track infrastructure upgrades, existing and proposed distribution lines and available capacities for water and wastewater facilities.	Water Resources	Guilford County, High Point and Kernersville	ongoing
Governance	**G1: Work closely and cooperatively with the municipalities in and jurisdictions of Guilford and Forsyth Counties so that development can be guided towards areas planned for urban and suburban development and away from areas with valued environmental or rural qualities.**	PCD	Guilford County, Forsyth County, High Point and Kernersville	ongoing
	G3: Establish a Western Area Plan community support committee to shepherd the Western Area Plan through the adoption process at both the City and County level.	PCD		short-term
	G4: Continually engage surrounding jurisdictions discussions of growth and development.	PCD	Guilford County, Forsyth County, High Point and Kernersville	ongoing
Cultural And Historic Resources Preservation	**CHR1: Raise awareness of existing historic and cultural resources and encourage the preservation of such resources that contribute to the character of the area.**			
	CHR1.1: Conduct a formal survey of existing structures and properties that, locally, have historic value to create an inventory of such assets.	PCD	Guilford County Historic Preservation Commission	short-term
	CHR1.2: Map scenic rural routes, such as Bunker Hill Road, and find tools to preserve their value.	PCD		short-term
	CHR1.2.1: Create a modified Scenic Corridor District to establish regulations which enhance and protect the assets along and attractiveness of the Marshall Smith/Bunker Hill Road corridor.	PCD		short-term
	CHR1.3: Evaluate the desire for a Scenic Heritage Trail to “celebrate” historically and culturally significant sites throughout the Western Area.	PCD		short-term

	Milestones	Lead Agency	Other Partners	Timeline
Cultural And Historic Resources Preservation	CHR1.4: Critical to the success of preservation tools is education. Enlist Colfax Elementary, neighborhood and civic groups, and other community stakeholders to highlight the value of culturally and naturally significant landscapes to the Western Area.	PCD	Guilford County Historic Preservation Commission, Guilford County School District	short-term
	CHR2: Consider creating a Preservation Plan for the Western Area that takes into consideration the important cultural and environmental resources worthy of preservation.			
	CHR2.1: Define the types of features to preserve and define a methodology for identifying priorities.	PCD		mid-term
	CH2.1.1: Designate specific roadway segments that are potential scenic corridors, which have been preliminarily identified based on citizen input reflected in the products of the workshop.	PCD		mid-term
	CH2.1.2: Address features and landscapes with the following characteristics and values: • Cultural significance (e.g., archaeological sites, cemeteries, and burial grounds); • Historic value; • Scenic beauty (e.g., landscapes with tree lines, field borders, and meadows, especially as seen from public land or right-of-way); • Semi-rural character; • Healthy native forests covering several acres; • Lands with agricultural use, value, and or capacity (e.g., 5 or more acres, a quarter of which is covered by prime farmland soils); • Land for active and passive recreation; • Lands that are not naturally suited for development (e.g., large area sloping 25% or more); • Ecologically sensitive lands, including floodplains and wetlands; • Habitat for birds, fishes, and other wildlife, especially that for federally listed endangered or threatened species; • Lands critical to support natural processes and balances; • Defined landscape elements such as buffers, greens, planted medians, greenways, trails, and conserved open space; • A landmark tree; and • Lands strategically located to provide relief from an otherwise continuous developed suburban condition.	PCD	Guilford County Historic Preservation Commission, Guilford College Friends Center	mid-term

Appendix B:
PROCESS TO DEVELOP THE PLAN

Appendix B

PROCESS TO DEVELOP THE PLAN

The Western Area land Use and Infrastructure Plan was developed through a collaborative process, engaging with a variety of stakeholders across a 16-month period. The following sections describe the process used to develop the plan and the public participation and engagement activities.

PREPARATION OF THE PLAN

Data Inventory and Assessment

The primary purpose of the detailed inventory and assessment of the characteristics of the Western Area is to gain an understanding of the potential impacts of various factors on future development and redevelopment. By documenting the inventory and assessment in the Existing Conditions report (Appendix C), those involved in the process can identify the potential issues and opportunities, which will be the basis for the Western Area Land Use and Infrastructure Plan.

Information in the report was gathered through review of plans, reports, policies and regulations. Mapping and analysis was performed to further the team's understanding of existing conditions. Elements examined are further described herein and include demographic, housing and economic conditions, land use, urban design, transportation, environment and natural resources, cultural and historic resources, community facilities and utilities.

Data Collection and Research

In addition to data collected for mapping purposes, data was also collected to gain a better understanding of the conditions reflected in the data depicted on maps. Much of this additional data was gathered through a review of relevant documents, interviews of key stakeholders, a study area tour, the first community meeting and meetings with the Advisory Committee, and online communication tools.

Documents Reviewed

In the first phase of the planning effort, various documents were gathered from a variety of sources. Plans, reports, policies and regulations were reviewed to further our understanding of existing conditions. Other documents related to prior or ongoing planning efforts were provided and those documents also were reviewed for pertinent information. The following were among those reviewed prior to the development of the plan:

- Greensboro Connections 2025
- Heart of the Triad Study, June 2010
- 2035 Long Range Transportation Plan
- Piedmont Triad International Airport Master Plan, May 2010
- City of Greensboro 2010 Water Supply Master Plan
- The Piedmont Triad Aerotropolis Plan, 2008
- City of Greensboro and Guilford County Consolidated Plan 2010-2014: Plan for a Resilient Community
- Sustainability Action Plan, Greensboro, North Carolina, April 2010
- Greensboro Urban Area, Bicycle, Pedestrian and Greenway Master Plan, October 2006
- High Point Northwest Area Plan
- High Point Airport Connector Feasibility Study
- Oak Ridge Land Use Plan
- Future 1-73 Connector Feasibility Study
- Guilford County Airport Area Plan
- Guilford County Northwest Area Plan
- Greensboro Airport Area Modeling Study

Stakeholder Interviews

Stakeholder interviews were conducted to verify and supplement and the data gathered and mapped, to explain the conditions observed and to further the understanding of issues and opportunities that affect the study area and, ultimately, will affect the plan. Their input supplements the input received directly from citizens and property owners participating in the process.

The stakeholders, interviewed in August 2011, include key personnel from City, county, regional and state organizations and agencies as well as representatives of interest groups who can address questions about the following topics: schools, utilities, transportation, real estate, local businesses, government, economic development, and the airport.

Study Area Tour

The consulting team performed a study area tour in November 2010. The purpose was to make observations and gather photos throughout the study area. Also, data gathered and information shown on preliminary mapping was verified. Observations made were intended to document the established character of the built environment, including the development pattern and scale of existing buildings.

PUBLIC PARTICIPATION

Key to the success of the Plan is an inclusive and extensive public engagement process that looks to balance the interests of citizens, residents, neighbors, investors and businesses in western Guilford County.

Advisory Committees

Ongoing coordination was a key element in shaping both the technical and citizen involvement in the study. A Technical Advisory Committee which was made up of representatives of municipal and county departments (planning departments, public works, Greensboro Department of Transportation (GDOT) and state agencies) provided valuable technical information required for the planning process. In addition, a Public Advisory Committee comprised of residents, landowners, and other interested stakeholders offered guidance and critique to the project. The

Public Advisory Committee also served as a conduit through which the City of Greensboro can provide project information and received feedback to and from the larger Western Area community.

Community Meeting #1

Three community meetings occurred during the planning process: March 17, 2011; October 26, 2011; and one soon to be scheduled. The first of these meetings offered citizens and other stakeholders the opportunity to learn about the project, the process, and the related schedule and to provide input. The meeting was very well attended and a significant amount of comments were provided to the City and project planners to consider during the development of the plan. A complete summary of the meeting can be found at the end of this appendix.

Community Workshop

The second community meeting was the highlight of a two-day on-site workshop conducted by project planners and designers October 25-26, 2011. The purpose of the workshop was an intensive exercise to develop key aspects of the Western Area Land Use and Infrastructure Plan in a transparent, accessible setting that maximized input from community stakeholders. With the help of Greensboro staff, project planners engaged Public Advisory Committee members throughout the two days to help develop the plan.

The public attended a "drop-in" session the first evening of the workshop, during which attendees viewed maps and drawings as works in progress and discussed ideas and concerns with project planners. Important concepts communicated by citizens included identifying important historic sites, the scenic beauty, especially in the central portion of the planning area, the proposed east/west connector, the viability of remaining agricultural lands, and the extent of residential land development. Illustrations to develop some of these concepts for public inspection are located in the workshop summary at the end of this appendix.

Community Meeting #3

The third community meeting, which has not yet been scheduled, will provide an opportunity for the public to comment on the final Western Area Land Use and Infrastructure plan and the accompanying narrative (this report).

Internet-Based Communication

To augment the input gathered through meetings, a Web site (http://www.greensboro-nc.gov/index.aspx?page=1730)was created so citizens and other stakeholders could submit comments, ideas, concerns, and questions in response to information posted to the Web site. Such input was recorded and, like the input shared at the community meeting, was used to clarify the issues and desires of the community.

Key to the success of the Plan is an inclusive and extensive public engagement process that looks to balance the interests of citizens, residents, neighbors, investors and businesses in western Guilford County.

GREENSBORO

WESTERN AREA
LAND USE & INFRASTRUCTURE PLAN

Appendix C:
EXISTING CONDITIONS REPORT

GREENSBORO

WESTERN AREA

LAND USE & INFRASTRUCTURE PLAN

Existing Conditions Report

Submitted by: **LandDesign**
In association with: Martin/Alexiou/Bryson
Warren & Associates
Simons Resources
December 15, 2011

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Introduction

The western fringe of Greensboro and unincorporated western Guilford County, including the Colfax community, is an area that has undergone significant changes in recent years. The area has developed from primarily an agriculture and farming community to a diverse region with a variety of land uses. Existing and new residents choose the Western Area of Guilford County for its idyllic country setting while businesses locate in the area to take advantage of the valuable transportation and utility infrastructure.

The Greensboro Western Area Land Use and Infrastructure Plan is the next step in implementing a vision for the area first introduced in Greensboro Connections 2025 and further reinforced in the Heart of the Triad (HOT) Study. The City of Greensboro has proactively engaged in a planning process as it has responsibility to continue to understand and prepare for changes in the Western Area primarily due to:

- being adjacent to an airport that is seen as a major driver for the region's economy.
- being adjacent to several major highway projects that have been completed and more than are planned for the future.
- large tracks of undeveloped land that are close to properties with significant investments.

By doing so, the City in cooperation with residents, businesses, investors and neighboring jurisdictions, can help ensure that the existing quality of life is preserved and proactively manage change to identified desired community outcomes. Furthermore the process enables the City to coordinate long-term investments, such as water and sewer lines and road improvements, with land use and economic development goals.

Objectives of the Western Area Land Use and Infrastructure Plan

To prepare a plan that will enhance economic development opportunities while protecting the integrity and heritage of western area communities.

To identify infrastructure needs, market trends, regulatory needs and any changes to the City's Connections 2025 Comprehensive Plan and/or the Generalized Future Land Use Map (GFLUM).

To identify preferred locations for varying intensities of residential areas and appropriate transitions between residential and non-residential areas.

The Piedmont Triad International Airport (PTIA) is a major economic driver in the region's economy. Image courtesy of PTIA.

Current and future residents continue to choose the Western Area for its idyllic setting.

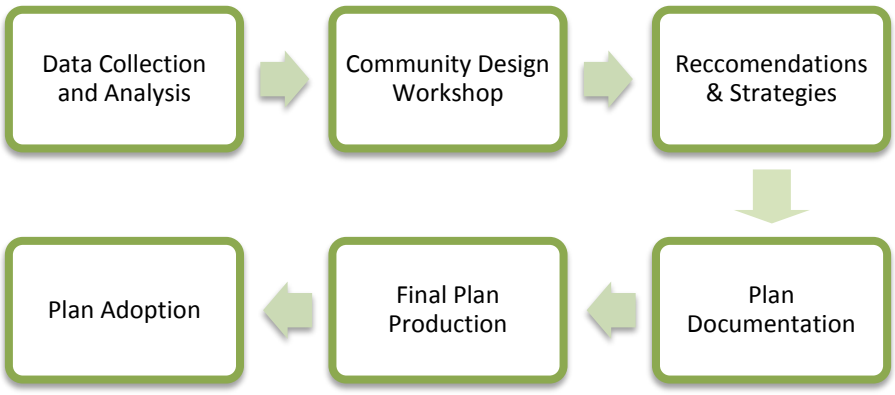
Process

Key to the success of the Plan is an inclusive and extensive public engagement process that looks to balance the interests of citizens, residents, neighbors, investors and businesses in western Guilford County. A Technical Advisory Committee made up of representatives of municipal and county departments (planning departments, public works, Greensboro Department of Transportation (GDOT) and state agencies) provides valuable technical information required for the planning process. In addition, a Public Advisory Committee made up of residents, landowners, and other interested stakeholders offers guidance and critique to the project. The Public Advisory Committee also serves as a conduit through which the City of Greensboro can provide and receive feedback to and from the larger Western Area community.

Colfax community members gathered on March 17, 2011 for the first public meeting for the Western Area Land Use and Infrastructure Plan.

> Key to the success of the plan is an inclusive and extensive **public engagement strategy** that looks to balance the interests of citizens, residents, neighbors, investors and businesses in Western Guilford County.

Stakeholder and public participation provide the input and guidance for the development of the Western Area Land Use and Infrastructure Plan process illustrated below:

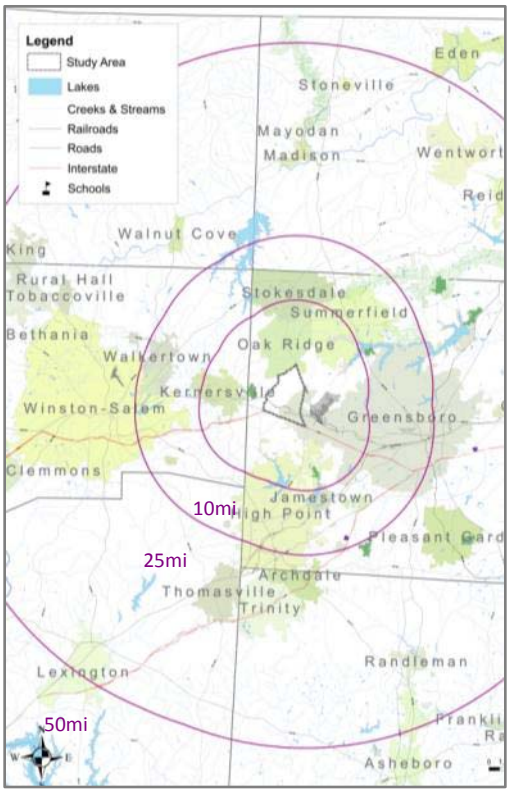


Defining the Study Area

Generally the study area encompasses the western fringe area of the City of Greensboro and a portion of unincorporated Western Guilford County including the Colfax community. The major road corridors of the study area include West Market Street, Interstate 40, NC 68, and the future Interstate 73.

The study area's northernmost boundary is Reedy Fork Creek and Leabourne Road. The southern edge is the annexation agreement line, established in 2008, with the City of High Point. The annexation agreement line begins at the intersection of Business-40 and the Guilford/Forsyth county line and generally follows I-40. The eastern boundary is the Piedmont Triad International Airport (not included in the planning area) and NC-68 and the westernmost boundary is generally Bunker Hill Road.

The Western Area lies in the Piedmont region of North Carolina. Located on the western edge of Guilford County, the study area is surrounded by several economic, residential and employment centers, namely Greensboro, Winston-Salem and High Point. Kernersville and Oak Ridge, which are immediately adjacent to the study area, are bedroom communities that lie within a short driving distance of the larger employment centers. In addition, there are two significant commercial enterprises of note adjacent to the study area. The Piedmont Triad International Airport to the east and the newly constructed FedEx Ground warehouse and shipping facility to the west are large employment centers and activity hubs that will have a substantial impact on the future development of western Guilford County. Figure 1, on the following page, illustrates the study area of the Western Area Land Use and Infrastructure Plan.

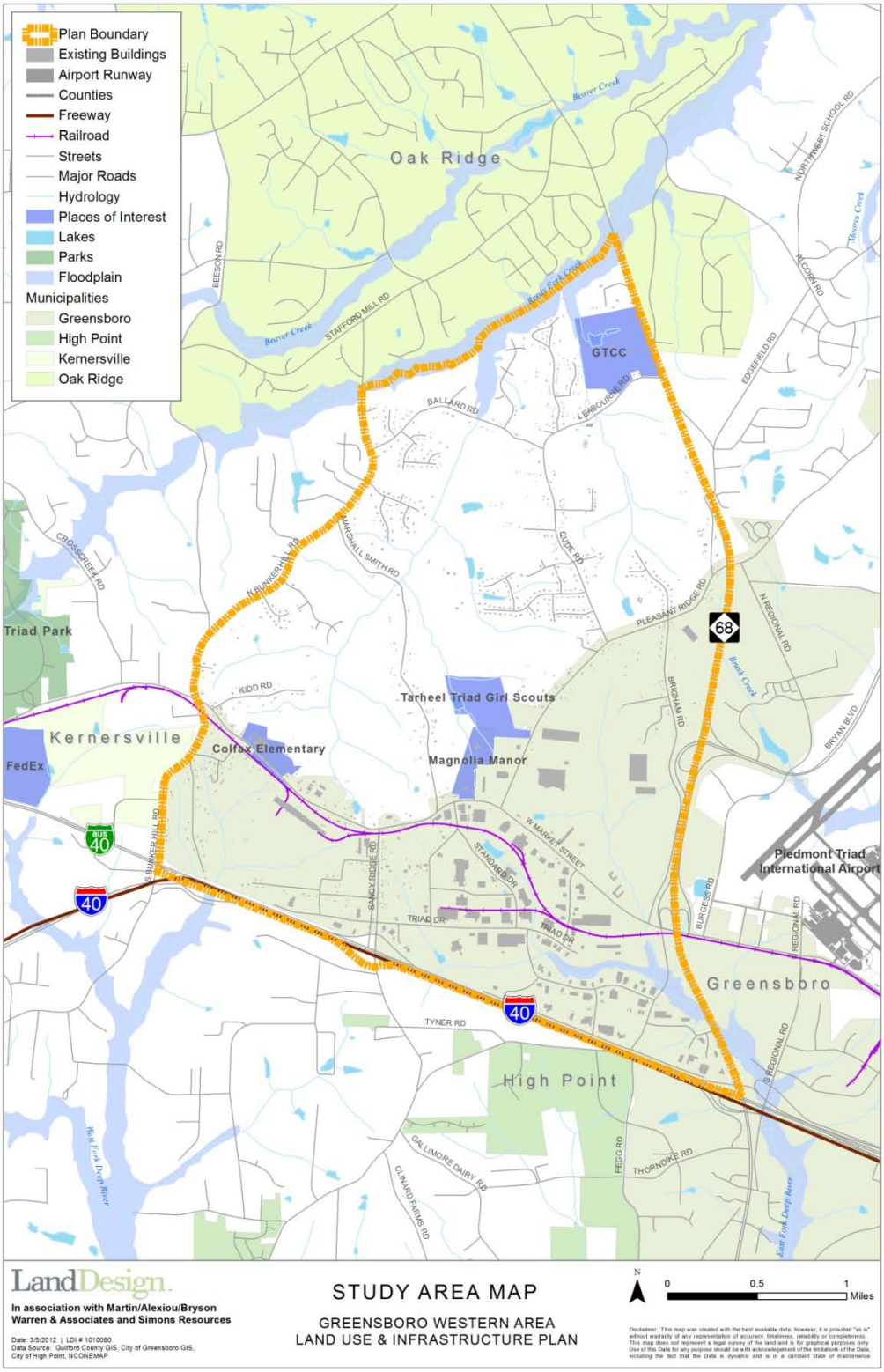


The Western Area is located in close proximity to several large employment center and bedroom communities.

Downtown Greensboro is less than 10 miles from the Western Area.

Activity generated from the FedEx Ground facility, located adjacent to the western boundary of the study area, will have a significant impact on the Western Area's roads and future development.

Figure 1: Study Area Map



Understanding the Western Area

The first phase of the Greensboro Western Area Land Use and Infrastructure Plan is designed to collect and analyze information about the conditions that exist today and identify potential future opportunities and issues. The LandDesign team performed a series of inquiries into the existing condition of the Western Area including land use, transportation, economic, utility and natural resources assessments. Through site visits, GIS mapping analysis, review of existing plans and other documents, meetings with local stakeholders and other forms of research the team collected and analyzed a broad spectrum of information to help build an understanding of the issues and opportunities that exist in the Western Area. The following documents were reviewed for pertinent information:

- Greensboro Connections 2025
- Heart of the Triad Study, June 2010
- 2035 Long Range Transportation Plan
- Piedmont Triad International Airport Master Plan, May 2010
- City of Greensboro 2010 Water Supply Master Plan
- The Piedmont Triad Aerotropolis Plan, 2008
- City of Greensboro and Guilford County Consolidated Plan 2010-2014: Plan for a Resilient Community
- Sustainability Action Plan, Greensboro, North Carolina, April 2010
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- High Point Northwest Area Plan
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- Future 1-73 Connector Feasibility Study
- Guilford County Airport Area Plan
- Guilford County Northwest Area Plan
- Greensboro Airport Area Modeling Study

Greensboro Connections 2025

Greensboro Connections 2025 outlined a set of policies that inform and provide a basis for the Western Area Land Use and Infrastructure Plan:

Growth at the Fringe Goal: *Provide a development framework for the fringe that guides sound, sustainable patterns of land use, limits sprawl, protects rural character, evidences sound stewardship of the environment, and provides for efficient provision of public services and facilities as the City expands. Development will increase density and mix land uses at a pedestrian scale with sidewalks, bikeways, and where possible, public transit.*

Economic Development Goal*: Promote a healthy, diversified economy with a strong tax base and opportunities for employment, entrepreneurship and for-profit and non-profit economic development for all segments of the community, including under-served areas such as East Greensboro.*

Community Facilities Goal: *Provide community facilities, services, and infrastructure in a cost effective manner to meet citizens' needs, contribute to quality of life, and support desired land use patterns.*

A common theme expressed in many of the aforementioned reports and studies is that the Triad, Guilford County, Greensboro and particularly the Western Area will continue to be an area of choice for residents and industries looking to relocate. As illustrated in the following map, the 2010 Heart of the Triad Study noted that due to these factors the Western Area needed further study and recommended the boundaries of the study area in their draft land use plan.

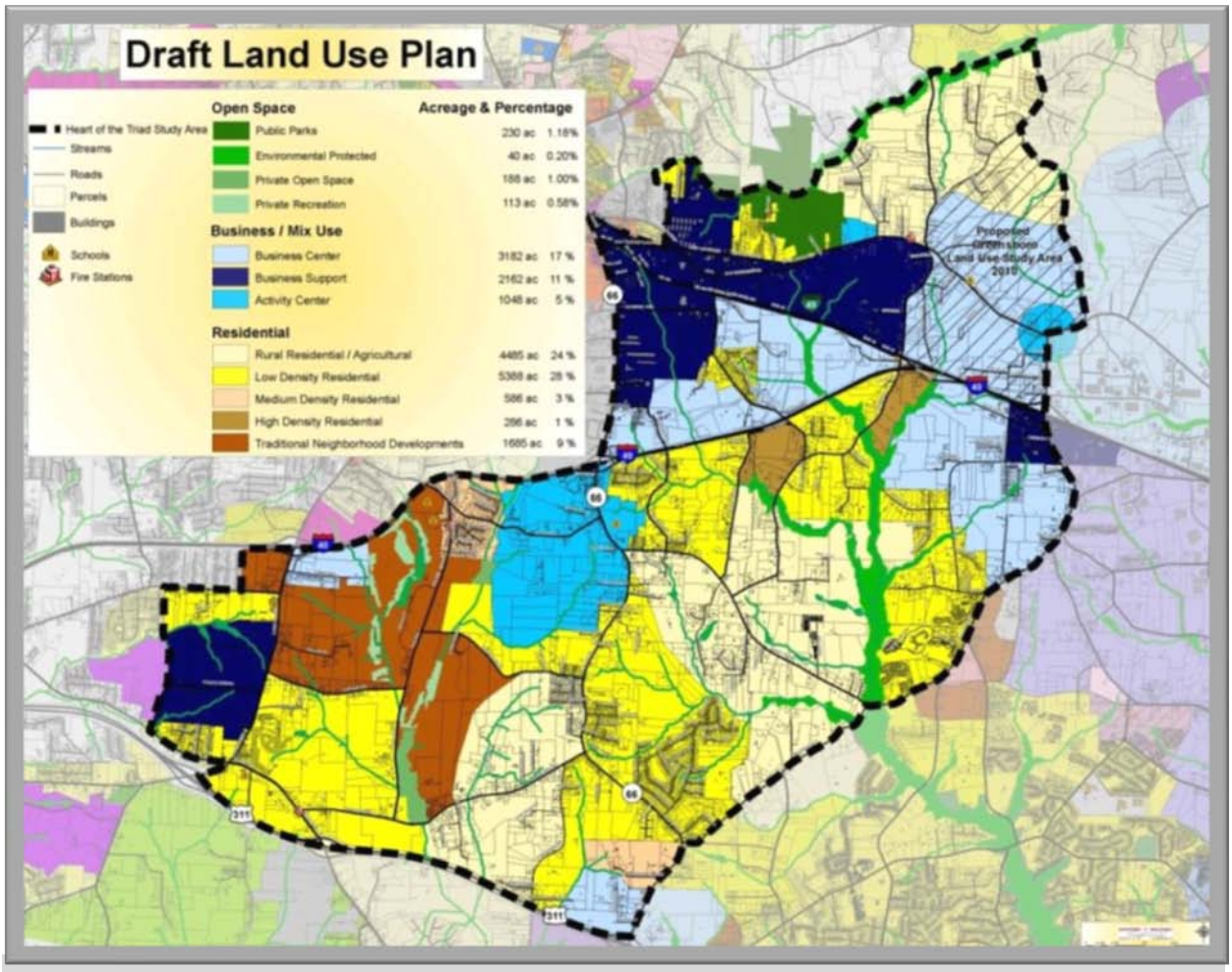


Figure 2: Heart of the Triad Draft Land Use Plan
Western Area Land Use & Infrastructure Plan

Demographics

Western Area demographic trends are analyzed and compared to Guilford County and the Greensboro-High Point Metropolitan Statistical Area (MSA). The Greensboro-High Point MSA includes Guilford, Randolph, and Rockingham counties.

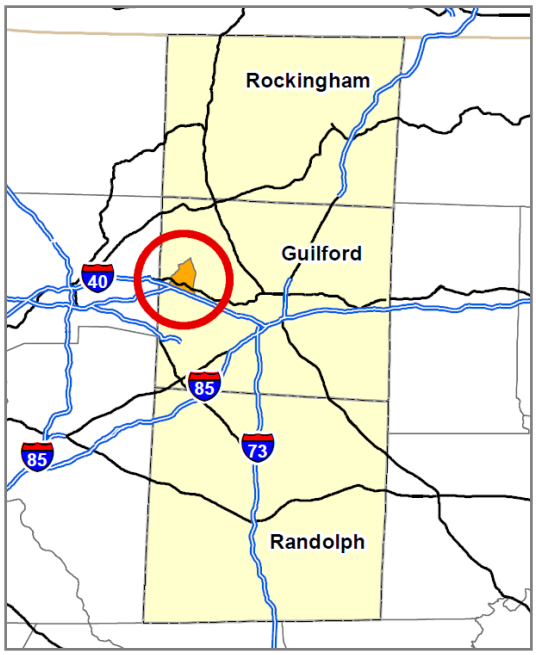
Population

The Western Area contains an estimated 1,755 residents. The 432 new residents between 2000 and 2010 equated to a growth rate of 32.7%. Guilford County and the Greensboro-High Point MSA grew at slower rates of 15.3% and 12.2%, respectively, during the same period. The percentage growth rate in the Western Area is elevated due to the smaller population base when compared to Guilford County and the MSA.

TABLE 1: COMPARISON OF POPULATION TRENDS, 2000-2010

			2000-2010 Change		
Area	**2000**	**2010**	**#**	**%**	**CAGR**
Western Area	1,323	1,755	432	32.7%	2.9%
Guilford County	421,048	485,583	64,535	15.3%	1.4%
Greensboro-High Point MSA	643,430	721,646	78,216	12.2%	1.2%
Planning Area % of MSA	0.21%	0.24%	0.55%		

Source: ESRI



The Western Area, circled in red, is located within the greater Greensboro-HighPoint MSA pictured above.

The Western Area captured 0.6% of the population growth in Guilford County between 2000 and 2010. The Western Area experienced a compound annual growth rate (CAGR) of 2.9%, approximately twice the rates for Guilford County and the Greensboro-High Point MSA.

Table 2 demonstrates Western Area population change between 2000 and 2010 by age cohort. Residents aged 45 to 54 represent the largest cohort in 2010, and added the most people over the previous ten years. The 55 to 64 age group had the highest growth rate of 107.6 %. These two cohorts represent individuals in the prime earning years, which aid in boosting move-up housing demand and retail spending potential.

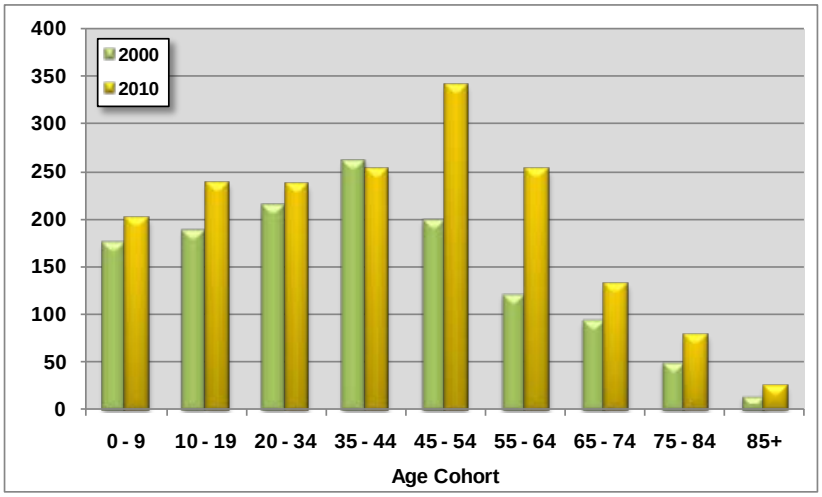
TABLE 2: POPULATION TRENDS BY AGE COHORT

Age Cohort	2000	2010	2000 - 2010 Change #	2000 - 2010 Change %
0 - 9	176	200	24	13.7%
10 - 19	189	239	49	26.2%
20 - 34	216	237	21	9.9%
35 - 44	262	253	-9	-3.5%
45 - 54	200	340	141	70.4%
55 - 64	122	253	131	107.6%
65 - 74	94	132	38	40.1%
75 - 84	50	77	27	53.6%
85+	15	25	10	68.8%
Total	1,323	1,755	432	32.7%

Source: ESRI

As shown in Chart 1, the 45 to 54 and 55 to 64 age cohorts experienced strong increases between 2000 and 2010. Other increases were experienced in seniors over age 65 and younger "Echo Boomers" aged less than 34 years.

CHART 1: POPULATION BY AGE COHORT, WESTERN AREA, 2000-2010



Greying of America

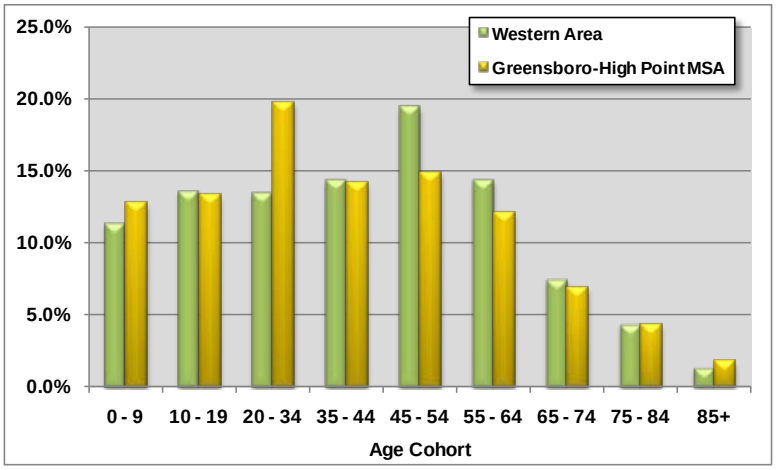
The United States is rapidly aging. In 2008, the population 65 and older totaled 39 million (13% of the population). By 2030, the number of older persons is expected to increase to more than 72 million (20%).

The 'greying effect' is amplified in North Carolina. From 2000 to 2010 the number of residents 55 and older surged 40 percent.

Source: U.S. Census Bureau and Administration on Aging.

In comparison to the Greensboro-High Point MSA, the Western Area currently has higher shares of population aged 45 to 64 (Chart 2). Alternatively, the Greensboro-High Point MSA has a significantly higher share of young adults, aged 20 to 34.

CHART 2: COMPARISON OF POPULATION SHARES BY AGE COHORT, 2010



Households

There are an estimated 670 households in the Western Area, an increase of 31.1% since 2000 (Table 3). The slightly higher 32.7% growth rate for population indicates an upward shift in average household size during the period.

TABLE 3: HOUSEHOLD TRENDS, PLANNING AREA & CHARLOTTE MSA, 2000-2010

			2000-2010 Change		
Area	**2000**	**2010**	**#**	**%**	**CAGR**
Greensboro Western Area	511	670	159	31.1%	2.7%
Guilford County	168,667	195,806	27,139	16.1%	1.5%
Greensboro-High Point MSA	256,315	289,542	33,227	13.0%	1.2%
Planning Area % of MSA	0.20%	0.23%	0.48%		

Source: ESRI

Guilford County experienced a slower 16.1% growth rate, from 168,667 households in 2000 to 195,806 households in 2010. Households in the Greensboro-High Point MSA increased from 256,315 in 2000 to 289,542 in 2010, an increase of 13.0%. Again, the percentage growth rate in the Western Area is elevated due to the smaller beginning household base, as compared to Guilford County and the MSA.

The Western Area experienced a strong increase in all household income cohorts over $75,000 between 2000 and 2010 (Table 4). Growth occurred in all cohorts except households earning less than $35,000 annually. However, this cohort continues to make up the largest share of the Western Area, at 24.9%.

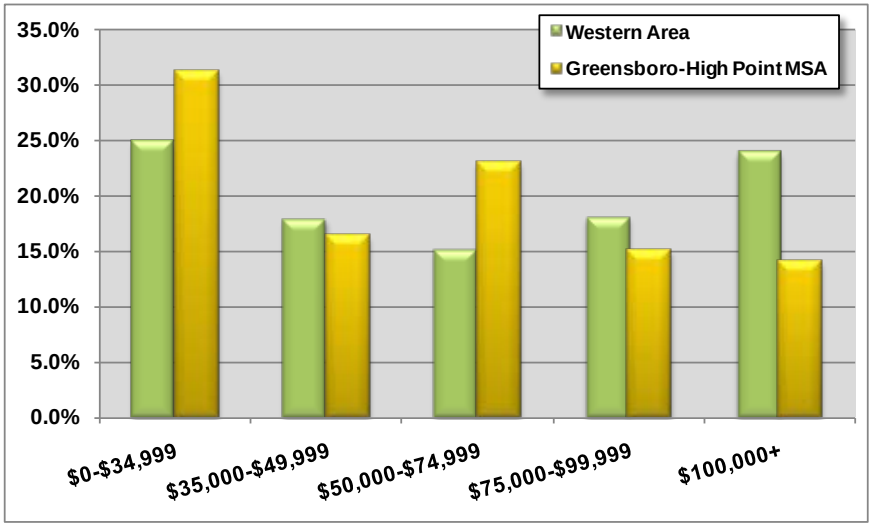
TABLE 4: HOUSEHOLD TRENDS BY INCOME COHORT, WESTERN AREA, 2000-2010

			2000-2010 Change	
Income Cohort	**2000**	**2010**	**#**	**%**
<$15,000	48	48	0	0.0%
$15,000 - $24,999	42	40	-2	-4.8%
$25,000 - $34,999	78	79	1	1.3%
$35,000 - $49,999	77	119	42	54.5%
$50,000 - $74,999	90	101	11	12.2%
$75,000 - $99,999	71	120	49	69.0%
$100,000 - $149,999	86	122	36	41.9%
$150,000 - $199,999	11	24	13	118.2%
$200,000+	8	17	9	112.5%
Total	**511**	**670**	**159**	**31.1%**

Source: ESRI

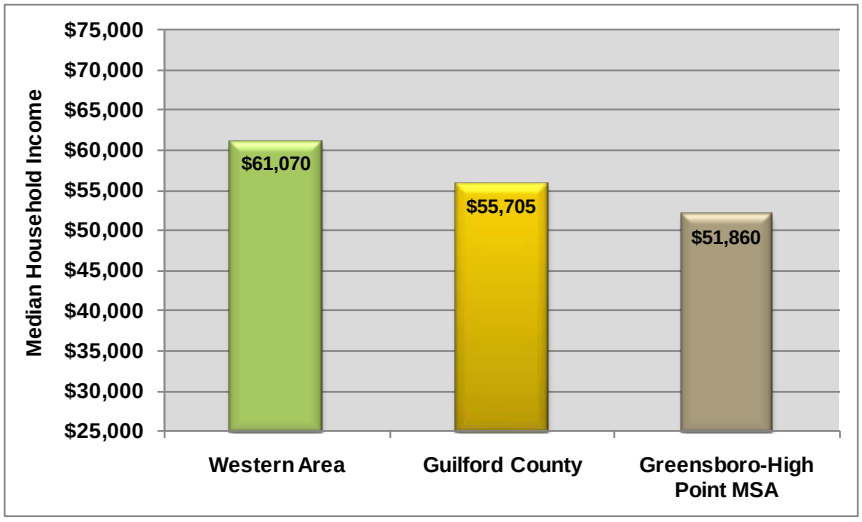
As demonstrated in Chart 3, the Western Area has comparatively higher shares of households earning more than $75,000 than the Greensboro-High Point MSA. The shares of lower income cohorts are also significantly smaller than the Greensboro-High Point MSA.

CHART 3: COMPARISON OF HOUSEHOLD SHARES BY INCOME COHORT, 2010



The median household income in the Western Area is currently estimated at $61,070, which is 26.9% more than $55,705 for Guilford County and 32.4% more than $51,860 for the Greensboro-High Point MSA (Chart 4).

CHART 4: MEDIAN HOUSEHOLD INCOME, 2009



Employment

This section analyzes employment for the Western Area, Guilford County, and the Greensboro-High Point MSA. Major employers and employment trends by industry for the MSA are analyzed. Major employers and employee inflow/outflow in the Western Area is shown for 2010.

Guilford County Major Employers

As shown in Table 5, two of the three largest Guilford County employers, Moses H. Cone Health System and High Point Regional Health System, are categorized under the Health Care employment sector. Other significant employment sectors include Professional Services, Distribution, and Manufacturing. The U.S. Postal Service has a 767-employee distribution center located on Pleasant Ridge Road in the Study Area. While none of the other major employers listed in Table 5 are in the Study Area, American Express and The Volvo Group are both located in close proximity.

TABLE 5: MAJOR EMPLOYERS, GUILFORD COUNTY, 2010

Employer	Produce/Services	City	Estimated Employment
Moses H. Cone Health System	Health Care	Greensboro	7,776
U.S. Postal Service	Mail Processing & Distribution	Greensboro	2,800
High Point Regional Health System	Health Care	High Point	2,400
American Express Credit Card Services*	Service Center	Greensboro	2,000
Bank of America	Financial Services	Greensboro	2,000
UPS	Package, Freight & Logistics	Greensboro	2,000
Lorillard, Inc.	Tobacco Products	Greensboro	1,800
AT&T	Telecommunications	Greensboro	1,600
Citi	Credit Card Services	Greensboro	1,500
The Volvo Group	Volvo Truck North America Corporate Headquarters	Greensboro	1,414

Source: Greensboro Economic Development Alliance

*It should be noted that in January 2011, American Express announced their decision to close its call center facility in Guilford County, located just outside the Western Area boundary. American Express is the fourth largest employer in Guilford County. This action amounts to a loss of 2,000 jobs by the end of 2011. Approximately 400 of the current employees will be offered the chance to work from home.

Guilford County Employment by Industry

As shown in Table 6, Guilford County had a total of 256,844 annualized full-time jobs in 2010, 5.6% less than in 2005. The largest industry in 2010 was Services with 122,120 employees, an increase of 2.3% since 2005. It should be noted that all Health Care and Education jobs are included in the Services sector. Public Administration experienced an increase of 409 jobs, or 3.9%, between 2005 and 2010.

Loss of Manufacturing Continues

Declines in manufacturing and construction in Guilford County are consistent with national and statewide trends.

According to the Labor Market Information Division of the Employment Security Commission the following industries will continue to experience significant declines (2004-2014 projections change in the annual growth/decline rate):

Apparel -7.96%

Textiles -5.44%

Furniture -.93%

TABLE 6: EMPLOYMENT TRENDS, GUILFORD COUNTY, 2005-2010

Industry	2005	2010	2005-2010 Change	
			#	%
Agriculture/Mining	751	392	-359	-47.8%
Construction	13,346	9,283	-4,063	-30.4%
Manufacturing	39,212	30,874	-8,338	-21.3%
Wholesale Trade	15,800	15,429	-371	-2.3%
Retail Trade	30,195	27,718	-2,477	-8.2%
Transportation/Utilities	17,942	16,460	-1,482	-8.3%
Information	6,111	5,099	-1,012	-16.6%
FIRE	18,342	18,583	241	1.3%
Services	119,404	122,120	2,716	2.3%
Public Administration	10,384	10,793	409	3.9%
Unclassified	500	93	-407	-81.4%
Total	**271,987**	**256,844**	**-15,143**	**-5.6%**

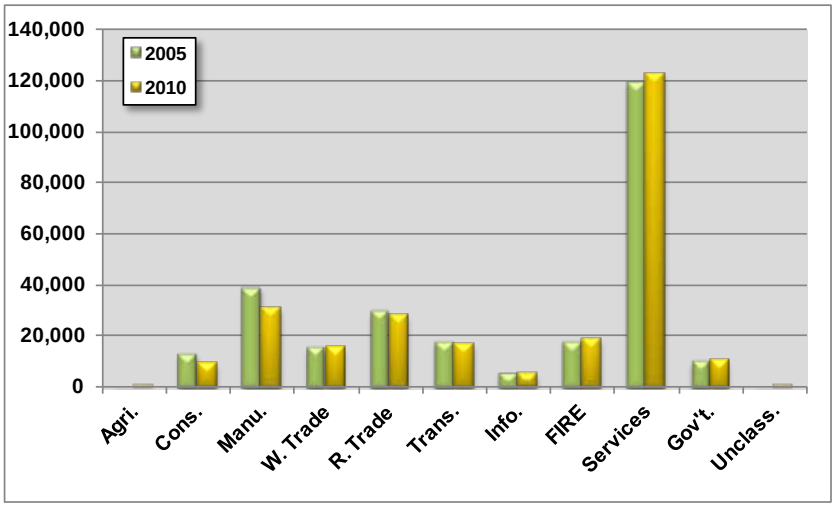
Source: NCESC

The significant declines in Manufacturing and Construction are consistent with both national and state economic trends. Overall, eight industries experienced a decline in employment between 2005 and 2010, the largest absolute declines were:

- Manufacturing (-8,338)
- Construction (-4,063)
- Retail Trade (-2,477)
- Transportation/Utilities (-1,482)
- Information (-1,012)

Chart 5 demonstrates the increase in Services, FIRE (Finance, Insurance and Real Estate) and Government employment between 2005 and 2010. However, increases in these industries were not enough to off-set the net 12,401-job loss in the Manufacturing and Construction sectors.

CHART 5: EMPLOYMENT TRENDS, GUILFORD COUNTY, 2005-2010



Western Area Major Employers

Major employers located in the Western Area are shown in Table 7. The ten largest employers located in the Western Area are primarily focused in Wholesaling, Manufacturing, and Distribution. Companies range from 767 employees at the United States Postal Service on Pleasant Ridge Road to 200 jobs at Embassy Suites, Key Risk Management Services, and Southeastern Freight Lines.

Market America, an online marketing firm, is the second largest employer in the Western Area.

TABLE 7: MAJOR EMPLOYERS, WESTERN AREA, 2010

Employer	Description	Estimated Employment
USPS	Post Distribution	767
Market America	Online Marketing	570
Analog Devices Inc.	Electronic Parts Wholesaler	350
Tyco Electronics	Fabricated Wire Manufacturing	300
Trane	Plumbing and HVAC Contractors	280
US Marine Corps Reserve	National Security	260
Coca-Cola Bottling Co.	Industrial Paper Wholesaler	260
Endura Products Inc.	Other Millwork	250
Purolator Facet Inc.	Valve and Pipe Manufacturing	205
Embassy Suites	Food Service Contractors	200
Key Risk Management	Other Insurance Activities	200
Southeastern Freight Lines	Long-Distance Trucking	200

Source: City of Greensboro

A number of major employers are located just outside the Western Area boundaries, including American Express, TIMCO, FexEd, Honda Aircraft, and Volvo. Again, it should be noted that American Express will be closing its call center facility by year-end 2011. American Express is the fourth largest employer in Guilford County. This action amounts to a loss of 2,000 jobs.

Planning Area Employment by Industry

Based on recent Economic and Social Research Institute (ESRI), the Western Area has an estimated 876 employed residents and 6,159 full-time place-of-work jobs. Based on this estimation, employment in the Western Area makes up 2.4% of the 260,157 total jobs in Guilford County.

To determine the net inflow or outflow of workers, the Western Area's place-of-work jobs were subtracted from the number of employed residents by industry. In 2009, the Western Area experienced a net inflow of at least 5,283 employees (Table 8). The Western Area experienced a net inflow for each major economic sector. The Manufacturing sector has the largest net inflow of 1,382 jobs.

TABLE 8: EMPLOYEE INFLOW/OUTFLOW BY INDUSTRY, WESTERN AREA, 2010

Industry	Employment		
	Place of Residence	Place of Work	Inflow/ (Outflow)
Agriculture/Mining	19	22	3
Construction	56	318	262
Manufacturing	155	1,537	1,382
Wholesale Trade	43	988	945
Retail Trade	108	982	874
Transportation/Utilities	57	477	420
Information	30	112	82
FIRE	53	173	120
Services	345	1,312	967
Public Administration	10	238	228
Total	**876**	**6,159**	**5,283**

Source: ESRI

Existing Land Use

Existing land use within the Western Area varies widely from undeveloped prime agricultural land to residential neighborhoods and business parks. The current development pattern reveals an area in transition from primarily a rural residential and agricultural community to one that is slowly growing through traditional suburban, business park and industrial corridor development. Figure 3 on the following page illustrates existing land use in the Western Area.

Light industrial, office and business park uses are concentrated in the portion of the study area within the City of Greensboro's jurisdiction. The industrial and office development pattern follows the water and sewer service area. In addition, there are a few clusters of commercial and office development in pockets along Pleasant Ridge Road and West Market Street.

> Indicative of its history as an agrarian community, significant portions in the County's jurisdiction remain largely agricultural.

Contiguous tracts of agriculture woodland and cropland with pockets of rural residential and rural subdivisions are concentrated in the Guilford County portion of the Western Area landscape. In addition, there are three significant institutional uses in the study area. Colfax Elementary School located on West Market Street, the Girl Scouts of America Triad Council's Magnolia Manor and the proposed Guilford Technical Community College site on NC-68.

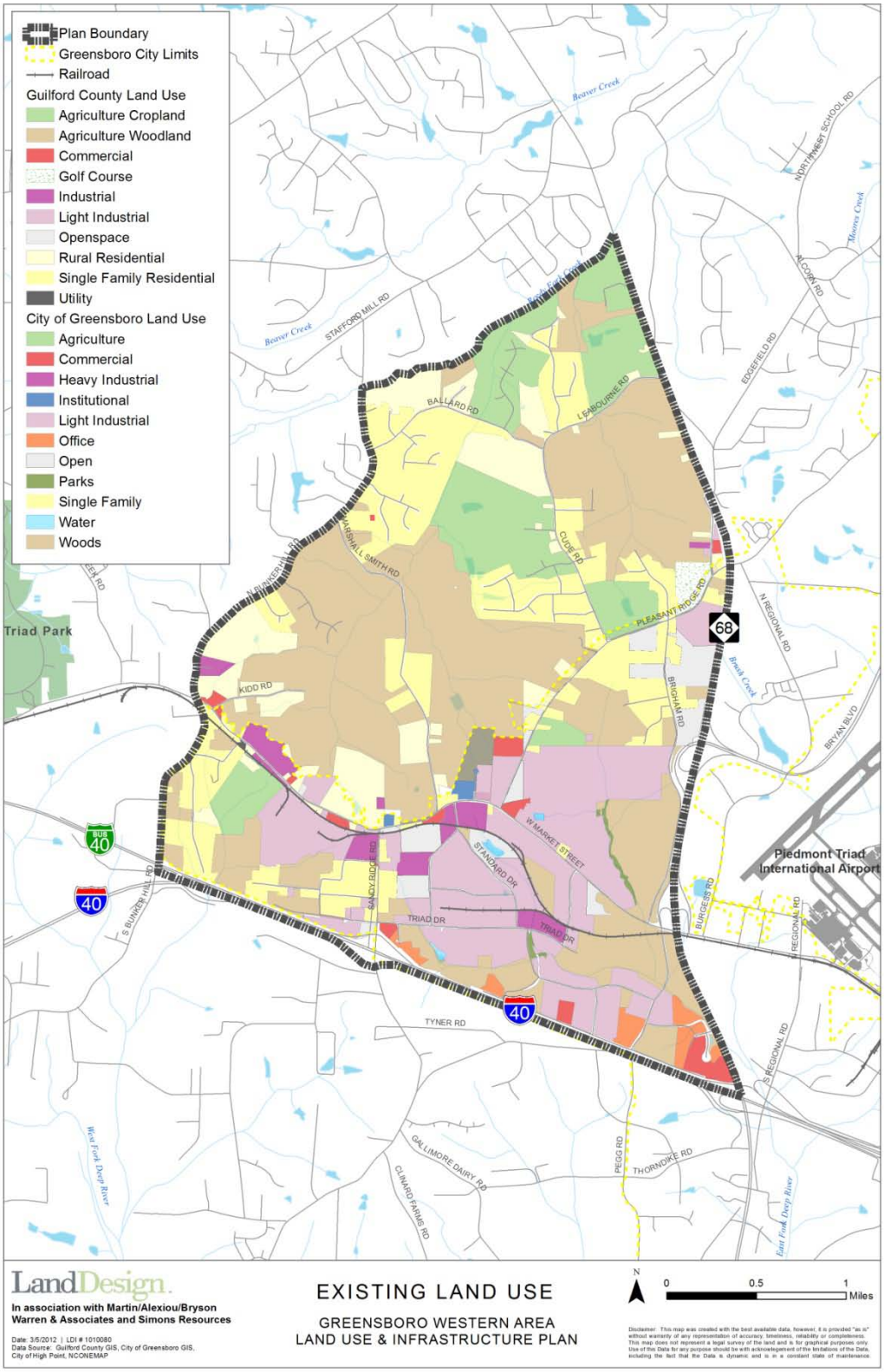
Most of the remaining land in the Western Area is devoted to single-family residences, both in rural residential subdivisions and scattered along the road network. These are generally large lot single family dwellings on well and septic tanks. (Further information on the type and value of housing stock is provided in the Housing section of this report.)

Agriculture croplands and woodlands dominate the Guilford County portion of the Western Area.

Single-family housing makes up 84% of housing units in the Western Area.

Light industrial; warehousing and distribution companies are primarily located along the West Market Street corridor.

Figure 3: Existing Land Use



Piedmont Triad International Airport

The Western Area is adjacent to the Piedmont Triad International Airport (PTIA). PTIA is a major employer and economic generator for region, providing both passenger and cargo services.

Three runways currently operate at PTIA; the most recent opening in January of 2010. The airport services approximately 900,000 passengers a year on six airlines. Currently, 61 flights depart daily from PTIA to 16 destinations.

Cargo airlines at PTIA (FedEx, Mountain Air, DHL and UPS) carry approximately 13% more tonnage than in 2006, due in part to the completion of the new FedEx Mid-Atlantic Hub. Reported cargo shipments reached approximately 84,000 tons at the end of 2006, before declining in 2007 and 2008. Cargo shipments increased to 89,000 tons in 2009, followed by another 9% increase to 97,000 tons in 2010 and 2011 (projected).

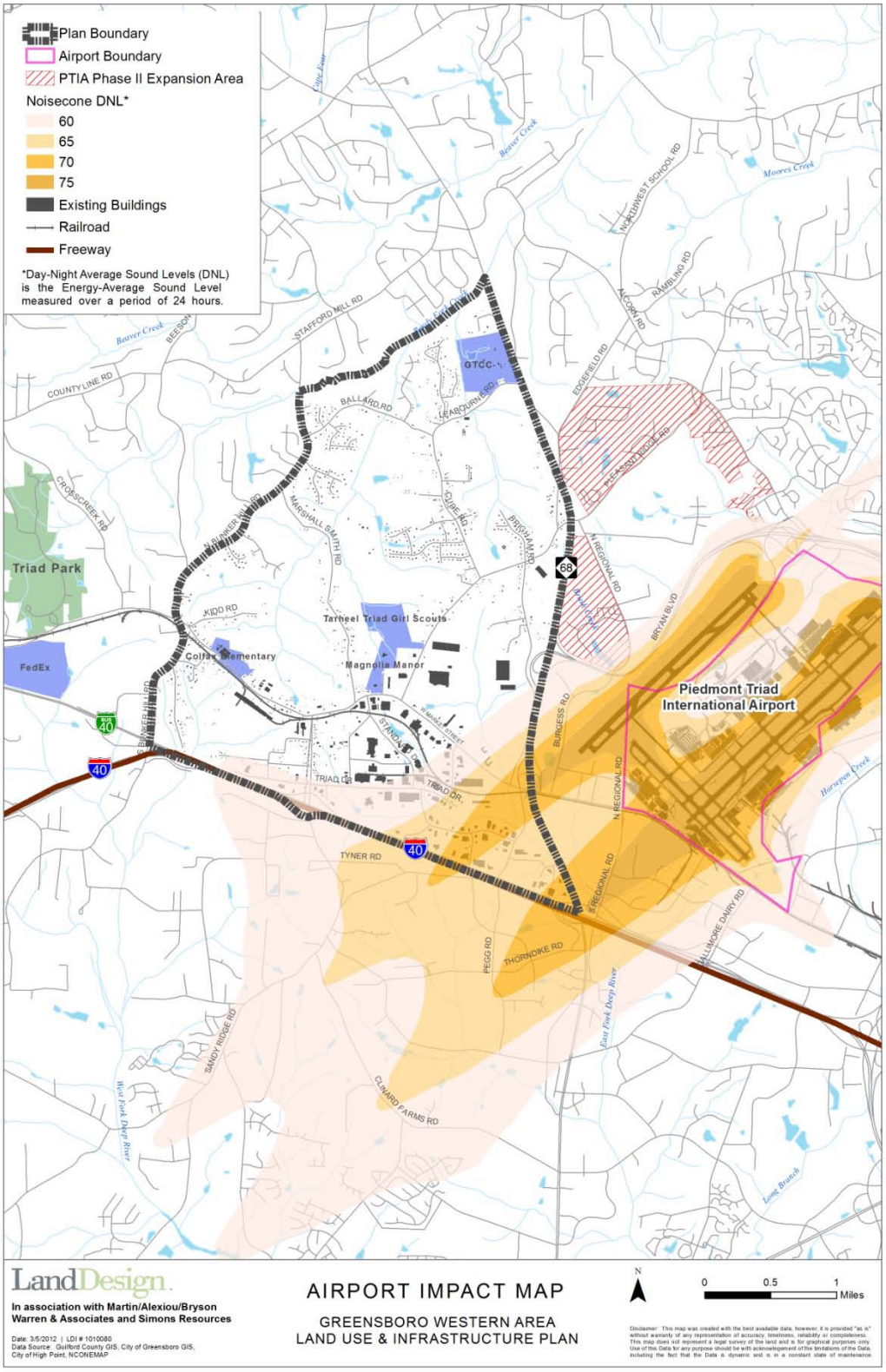
As depicted in Figure 4, the southeastern corner of the study area falls within the noise cone of the airport. The type and scale of uses within the noise cone are regulated by the City of Greensboro. Generally most land uses are considered to be compatible with airport noise that does not exceed 65 decibels. The City of Greensboro's Airport Overlay District limits the type and scale of development within the 60 DNL (Day-Night Average Sound Level) noise contour area. The Airport Overlay District is intended to support uses complementary to airport operations including industrial and warehousing and limit uses that would be negatively impacted by the airport such as residential development.

Airport Overlay District (AO)

The Airport Overlay District is intended to be limited to industrial uses and other uses that support airport operations, and to limit residential uses to very low densities near the Piedmont Triad International Airport in order to minimize the negative effects of aircraft noise on homes and prohibits the erection of structures which would, by virtue of their height, interfere with operations at the airport.

Source: City of Greensboro Zoning Code

Figure 4: Airport Impact Map



Zoning

The Western Area is zoned under two jurisdictions, Guilford County and the City of Greensboro. Zoning jurisdiction follows the municipal boundary lines, depicted in Figure 5.

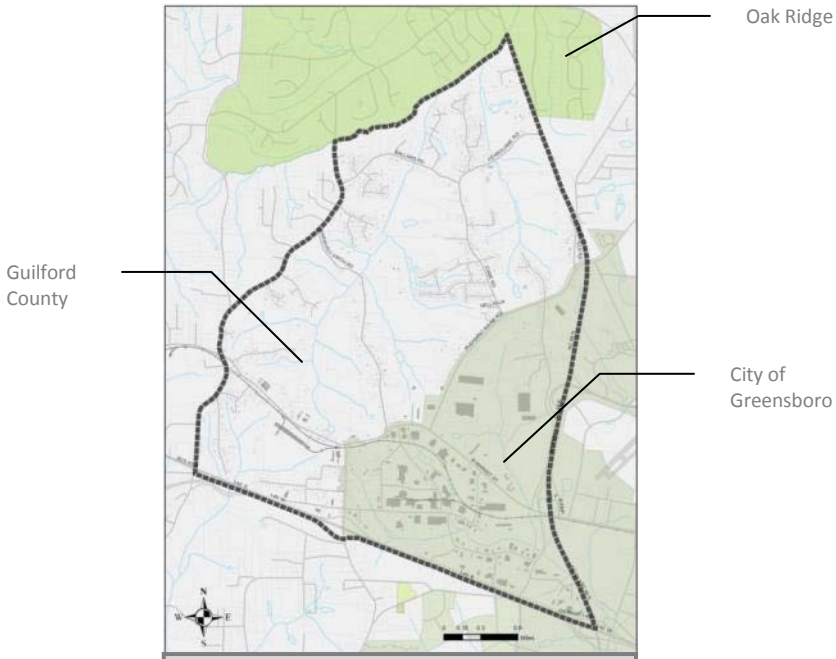


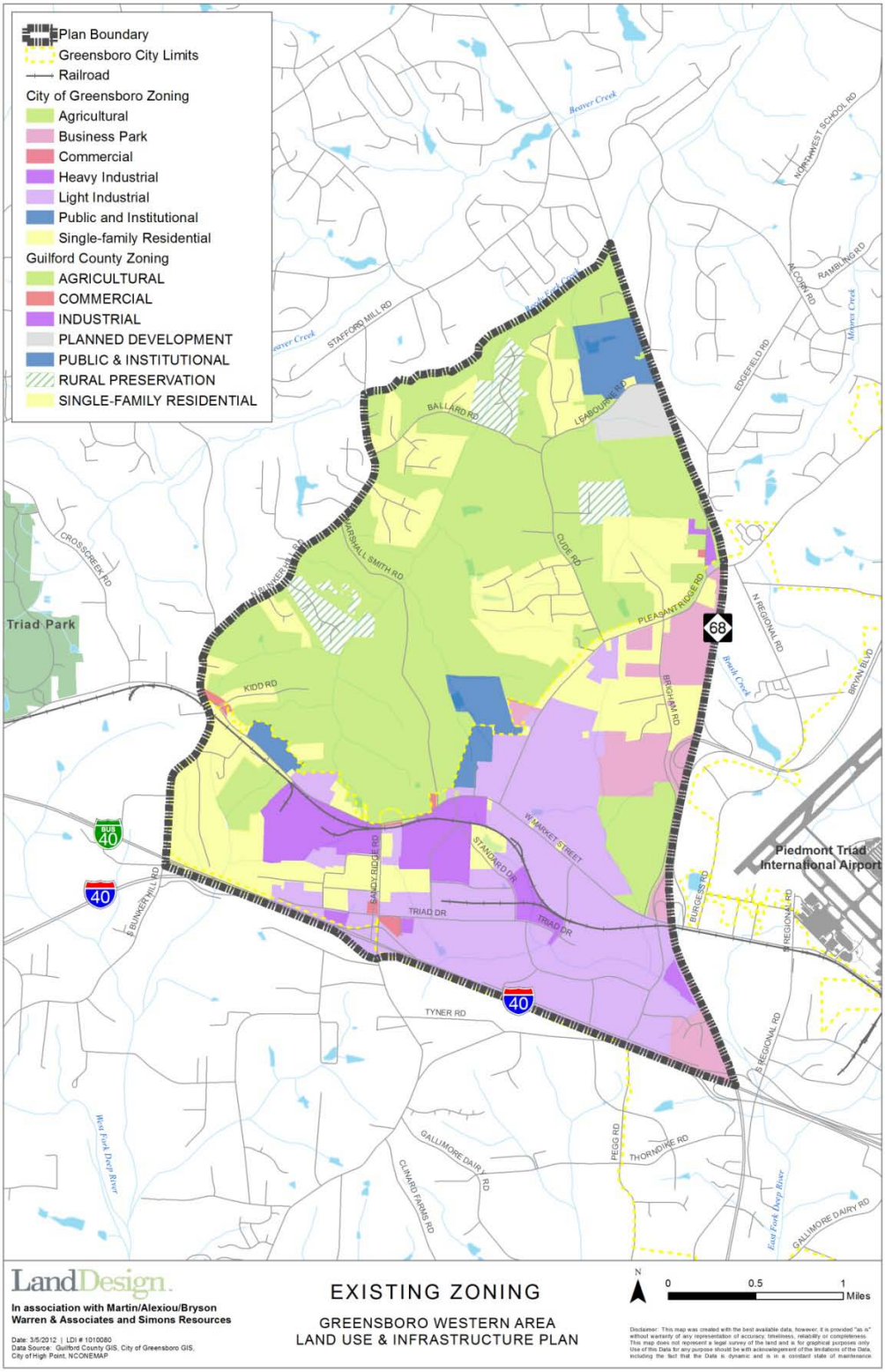
Figure 5: Municipal Boundary Lines
Western Area Land Use & Infrastructure Plan

A majority of the land in unincorporated Guilford County is zoned agricultural with pockets of rural residential (R-40). In addition there are three Rural Preservation Districts (RPD). According to the Guilford County Zoning Code, the Rural Preservation District is intended to accommodate rural developments designed to preserve rural character, significant man-made features, and environmentally sensitive areas. The district permits open space, recreational, agricultural, residential, and limited neighborhood business and office uses that are a part of a unified design.

As mentioned in the land use section, the portion of the study area in Greensboro's jurisdiction is largely zoned as light industrial, heavy industrial and corporate business park. In addition, there are a number of conditional use districts along Pleasant Ridge Road.

A complete description of the zoning depicted in Figure 6 is located in Appendix A: Zoning Class Descriptions.

Figure 6: Existing Zoning Map



Land Utilization

A significant portion of the Western Area remains undeveloped. (For the purpose of this inquiry 'undeveloped' refers to those parcels that do not have a building on the property according to Guilford County tax records.) Figure 7, depicted on the next page, illustrates the acres by zoning class that remain undeveloped in the study area. As noted in the complementing chart below, there are significant amounts of land that are zoned but not utilized in both the City of Greensboro and Guilford County's jurisdiction. (For complete methodology see Appendix B: Land Utilization, Land Value and Development Suitability Methodology.)

TABLE 9: PERCENTAGE OF UNDEVELOPED LAND BY ZONING CLASS IN THE WESTERN AREA

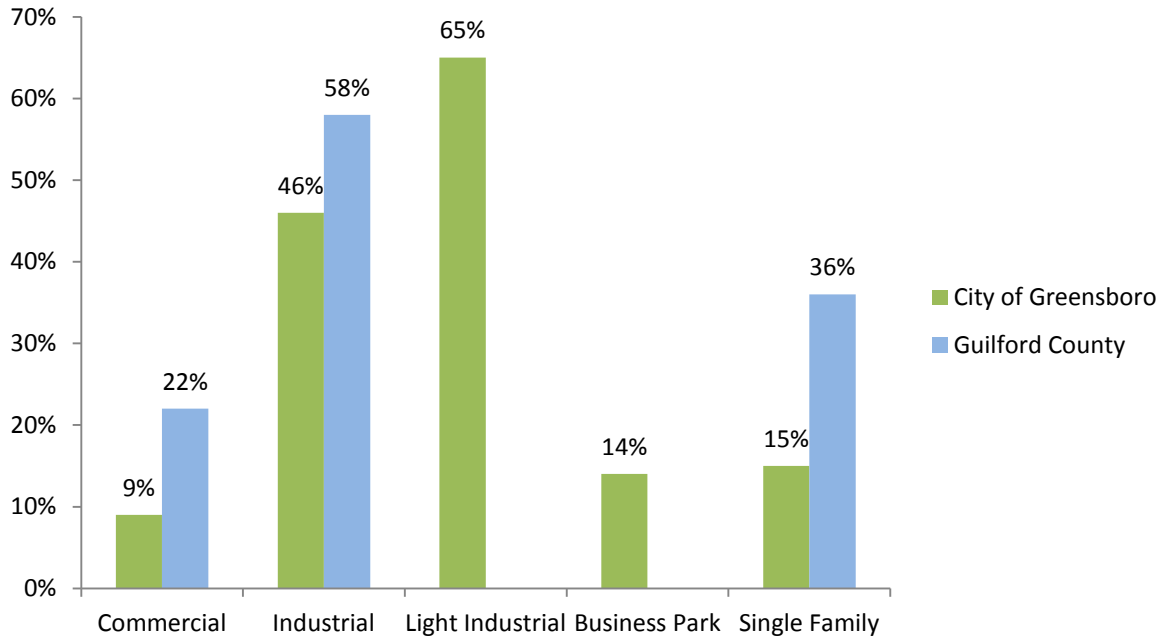
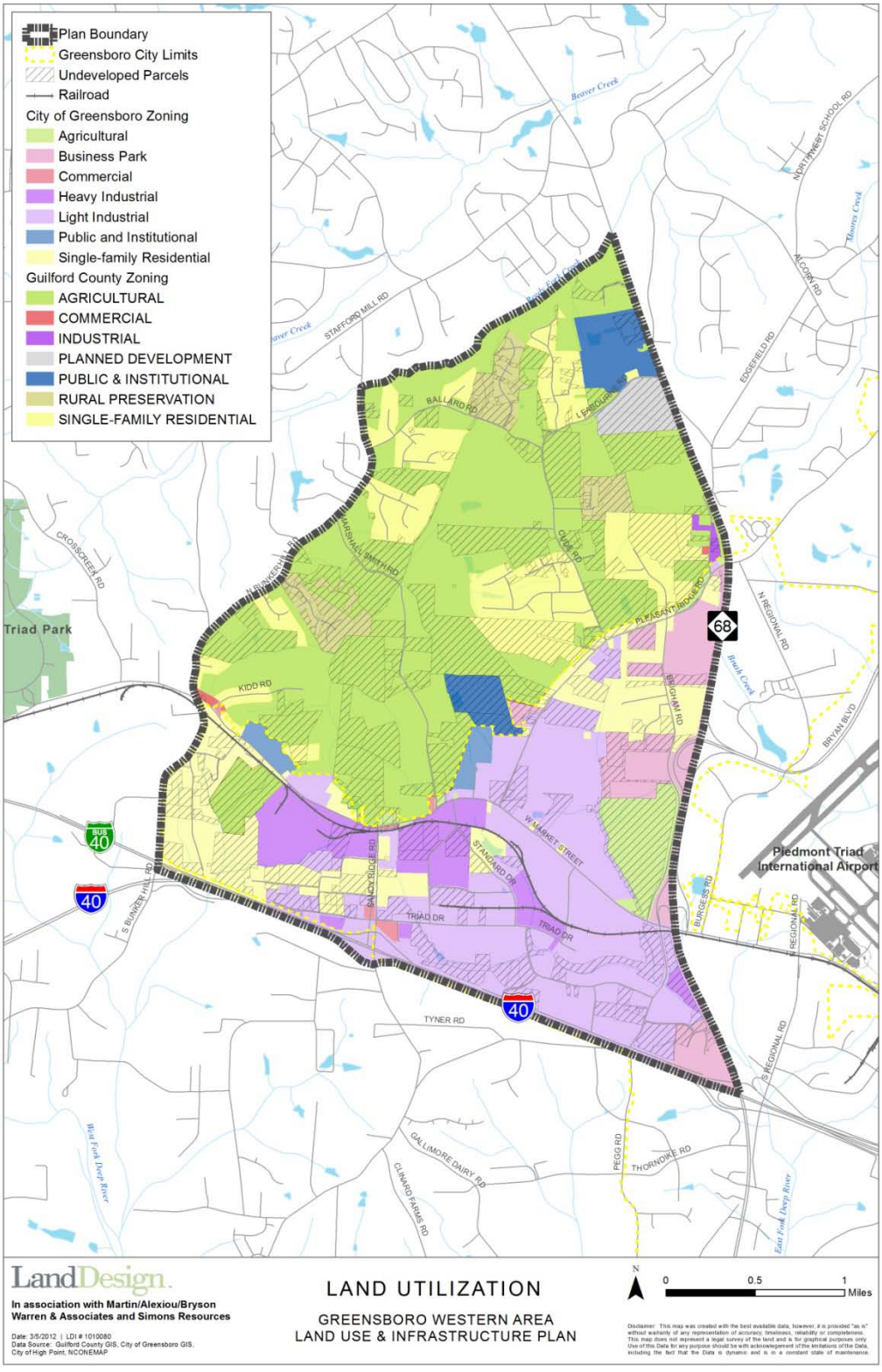
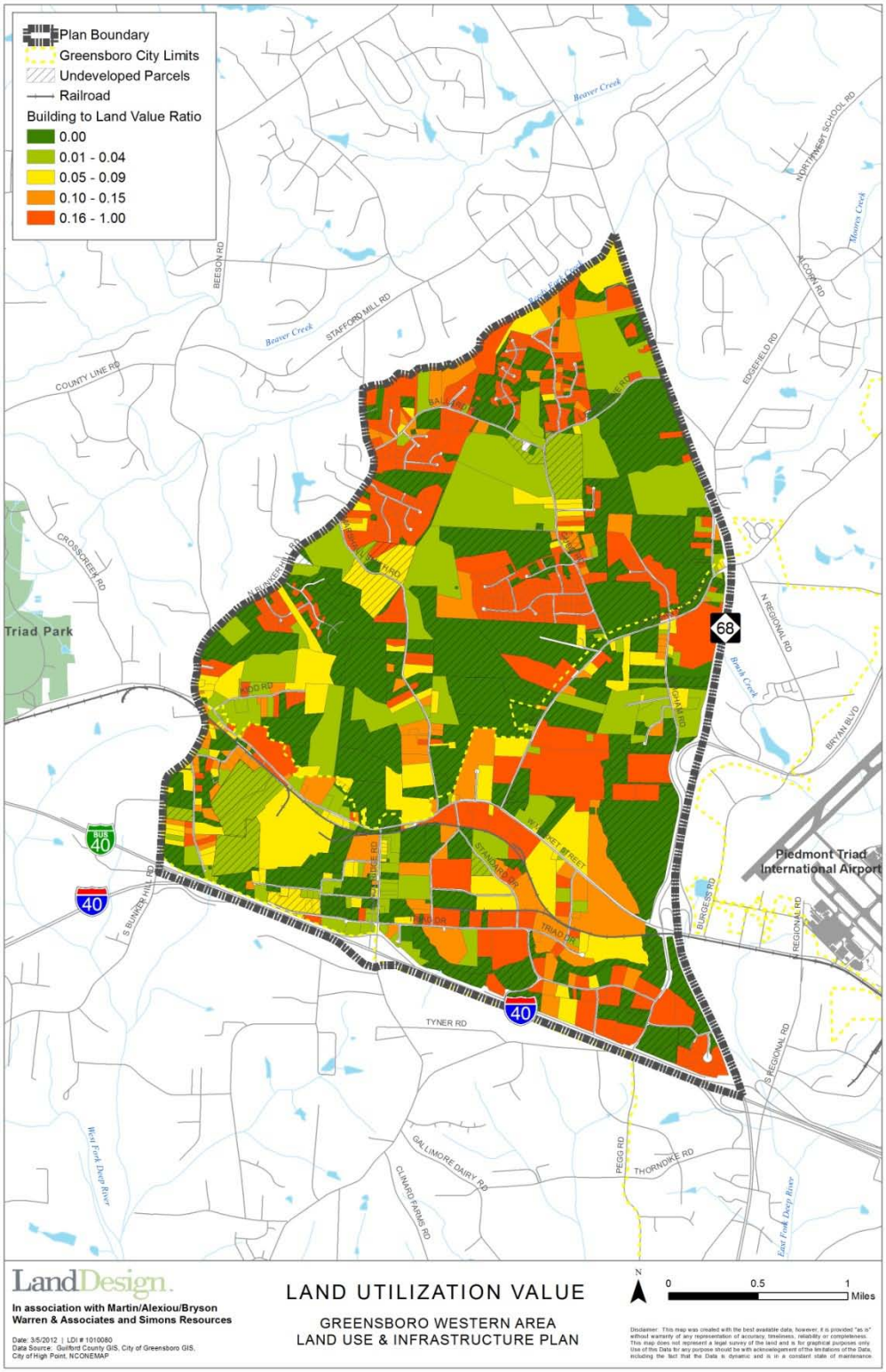


Figure 7: Land Utilization Map



In addition to the undeveloped acreage there are also many parcels that have a low building to land value ratio suggesting they are underutilized. Figure 8 illustrates the comparison of appraised building value to land value normalized for accuracy. (For complete methodology see Appendix B: Land Utilization, Land Value and Development Suitability Methodology.)

Figure 8: Land Utilization Value Map



Housing

This section analyzes housing trends by type and tenure for the Western Area, Guilford County, and the Greensboro-High Point MSA. Additionally, this section provides for-sale residential closing and sales price data, provided through the Triad multiple listing service (MLS). It should be noted that sales of new residential units are only included if they are sold through MLS, not if the transaction takes place directly through the builder.

Housing Unit Trends

Housing inventory in the Western Area increased by 182 units, or 32.2%, between 2000 and 2010 (Table 10). Guilford County grew at a slower 19.1% rate. Housing Units in the Greensboro-High Point MSA increased by 16.1% during the same period, similar to Guilford County.

TABLE 10: COMPARISON OF HOUSING UNIT TRENDS, 2000-2010

			2000-2010 Change		
Area	**2000**	**2010**	**#**	**%**	**CAGR**
Greensboro Western Area	548	730	182	33.2%	2.9%
Guilford County	180,391	214,788	34,397	19.1%	1.8%
Greensboro-High Point MSA	275,021	319,396	44,375	16.1%	1.5%
Planning Area % of MSA	0.20%	0.23%	0.41%		

Source: ESRI

The Western Area accounted for 0.41% of new housing unit growth in the Greensboro-High Point MSA. The Western Area experienced a compound annual growth rate (CAGR) of 2.9%, well above 1.8% and 1.5% for Guilford County and the Greensboro-High Point MSA, respectively.

In 2000, the 548 housing units in the Western Area were approximately 83.8% single-family (Table 11). Another 13.7% were manufactured housing and 2.6% were multi-family.

TABLE 11: HOUSING UNITS BY TYPE, WESTERN AREA, 2000

		% of
Type	**Units**	**Total**
Single-Family	459	83.8%
Multi-Family	14	2.6%
Manufactured Housing	75	13.7%
Total	548	100.0%

Source: ESRI

Comparatively, 64.9% of the housing units in Guilford County and 65.9% of the units in the Greensboro-High Point MSA were single-family residential (Chart 6). The Western Area also had a considerably lower share of multi-family units than both Guilford County (31.2%) and the Greensboro-High Point MSA (23.7%).

CHART 6: COMPARISON OF HOUSING UNITS BY TYPE, 2000

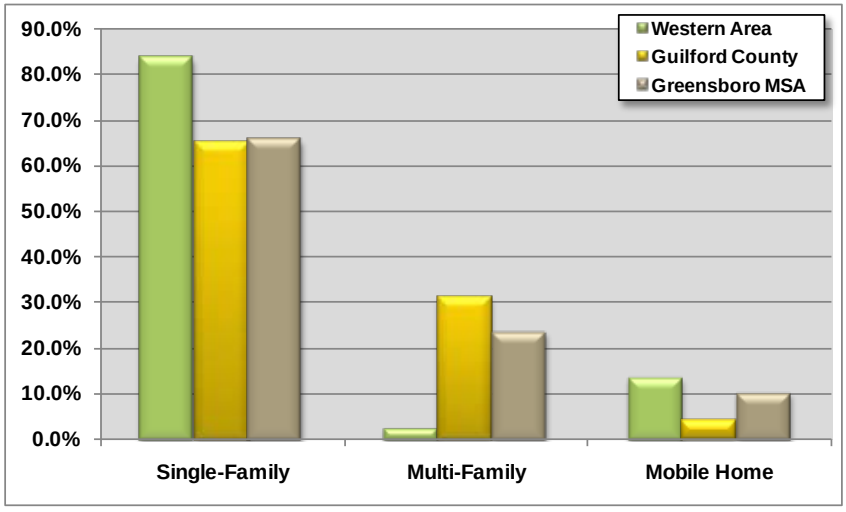
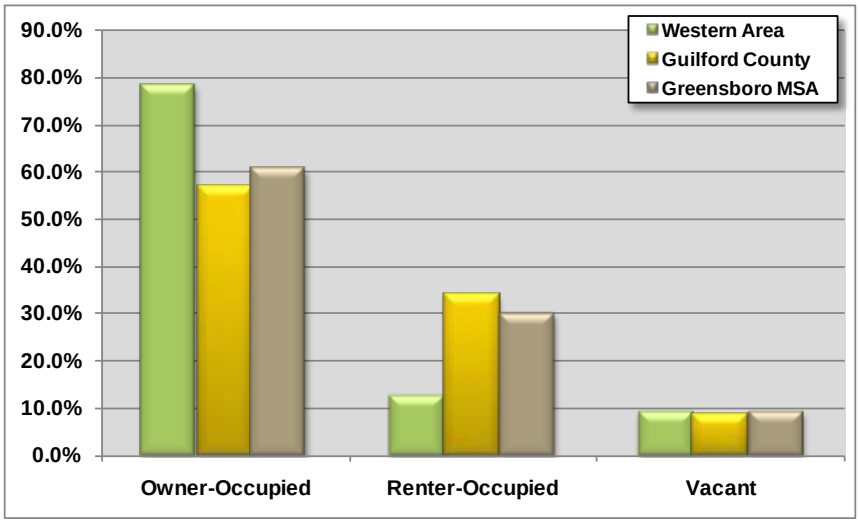


Chart 7 compares 2010 housing unit tenure in the Western Area to Guilford County and the Greensboro-High Point MSA. Owner-occupied units account for 78.4% of all housing units in the Western Area, higher than 57.1% for Guilford County and 60.6% for the Greensboro-High Point MSA.

CHART 7: COMPARISON OF HOUSING UNITS BY TENURE, 2010



The Western Area's 13.0% share of renter-occupied units is much less than both the County and MSA. The limited stock of multi-family units in the Western Area indicates that renter-occupied units are primarily investor-owned single-family properties.

Residential Market Trends

Annual closing and new unit pricing trends for for-sale residential product have been provided from the Triad Multiple Listing Service (MLS) data system. Residential closing data for the Triad is reported based on predefined MLS areas. Data has been collected and analyzed for Area 37 in Guilford County, as this geography aligns closely with the Western Area (Figure 9 pictured below). A comparison of the Western Area and MLS Area 37 is shown in the map below. New unit closing data is limited to transactions that occurred through the MLS system. Units sold directly by builders are generally not included.

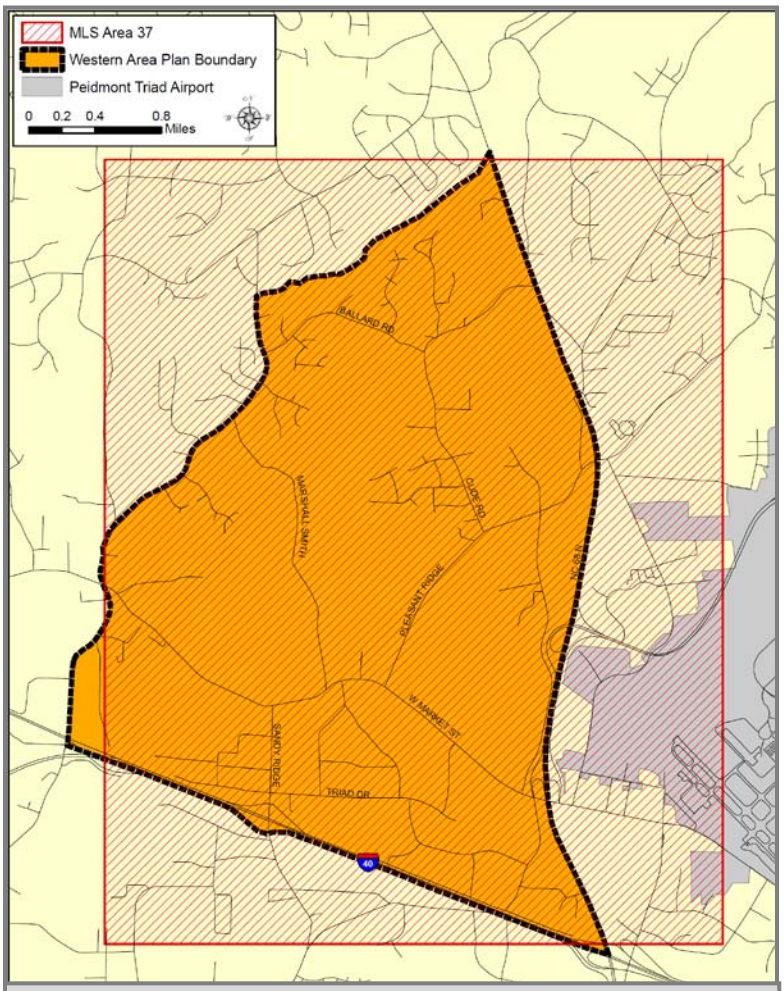


Figure 9: MLS Area 37 & Study Area
Western Area Land Use and Infrastructure Plan

Created by: Warren & Associates

Source: Triad MLS Data System

Single-Family Detached. There were 12,099 new and resale residential closings in Guilford County between 2008 and 2010 (Table 12). New closings represented 19% of the overall total. The 16% decline in closings

from 4,402 units in 2008 to 3,719 units in 2010 was consistent with national trends.

TABLE 12: ANNUAL DETACHED CLOSINGS, GUILFORD COUNTY, 2008-2010

	Single-Family Sales			New %
Year	**New**	**Resale**	**Total**	**of Total**
2008	788	3,614	4,402	18%
2009	898	3,080	3,978	23%
2010	672	3,047	3,719	18%
Total	2,358	9,741	12,099	19%
Ann. Avg.	786	3,247	4,033	

Source: BrokerMetrics

During the same time period, MLS Area 37 had a total of 119 total closings, averaging 40 per year. It is important to note that the 7% drop in transactions between 2008 and 2010 are indicative of greater resilience than the 16% decline for the larger Guilford County market. New closings made up only 10% of the total closings in 2010, a decline from 40% in 2008 as builders responded to a drop in demand during the national housing crisis (Table 13). Total closings in MLS Area 37 made up less than 1% of the Guilford County total between 2008 and 2010.

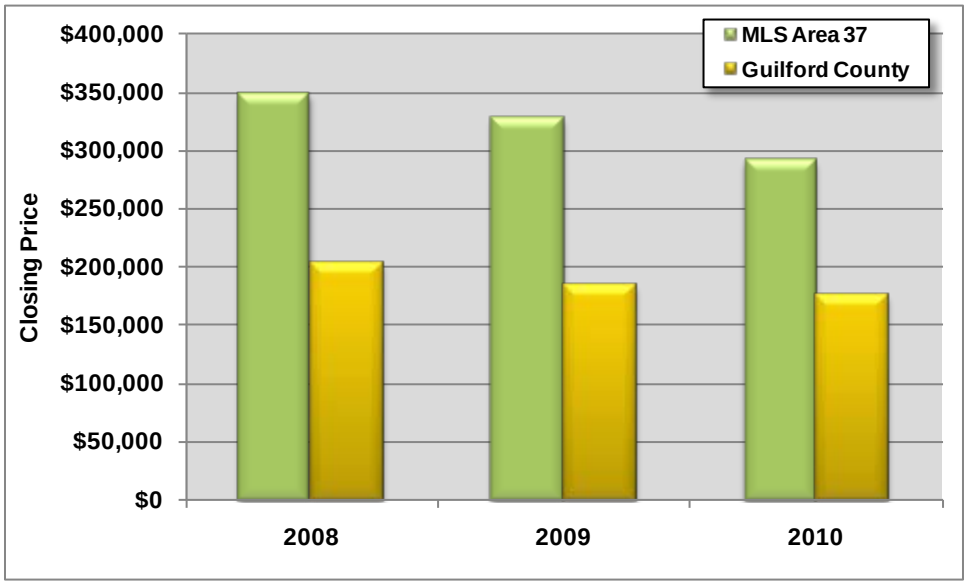
TABLE 13: ANNUAL DETACHED CLOSINGS, MLS AREA 37, 2008-2010

	Single-Family Sales			New %
Year	**New**	**Resale**	**Total**	**of Total**
2008	17	26	43	40%
2009	12	24	36	33%
2010	4	36	40	10%
Total	33	86	119	28%
Ann. Avg.	11	29	40	

Source: BrokerMetrics

The average closing price for a new, detached single-family residence in MLS Area 37 was higher than in Guilford County in every year between 2008 and 2010. As shown in Chart 8 the average closing price for new units decreased from $348,962 to $291,850, mirroring national housing market trends. New product pricing also declined in Guilford County. On average, closing prices in MLS Area 37 were 70% higher than in Guilford County. Data to determine the share of this premium that is attributable to house size is unavailable.

CHART 8: COMPARISON OF AVERAGE NEW DETACHED CLOSING PRICE, 2008-2010



Townhouse/Condominium. There were 2,598 townhouse or condominium closings in Guilford County between 2008 and 2010 (Table 14). The share of the total closings that were new product ranged from 21% in 2010 to 35% in 2008. As with detached product, the 58% drop in new closings reflected builder response to declining demand during the national housing crisis. Resales declined only 15% between 2008 and 2010.

TABLE 14: ANNUAL TOWNHOUSE/CONDO CLOSINGS, GUILFORD COUNTY, 2008-2010

	Closings			New %
Year	**New**	**Resale**	**Total**	**of Total**
2008	361	680	1,041	35%
2009	186	645	831	22%
2010	151	575	726	21%
Total	698	1,900	2,598	27%
Ann. Avg.	233	633	866	

Source: BrokerMetrics

There are currently no townhouses or condominiums in the Western Area. However, the larger MLS Area 37 does contain a townhouse community, located across Airport Center Drive from the American Express office building. As shown in Table 15, there were only 18 attached closings in MLS Area 37 in the last three years, averaging six annually. New closings made up 78% of the total during this time period. There were no new product closings in 2009.

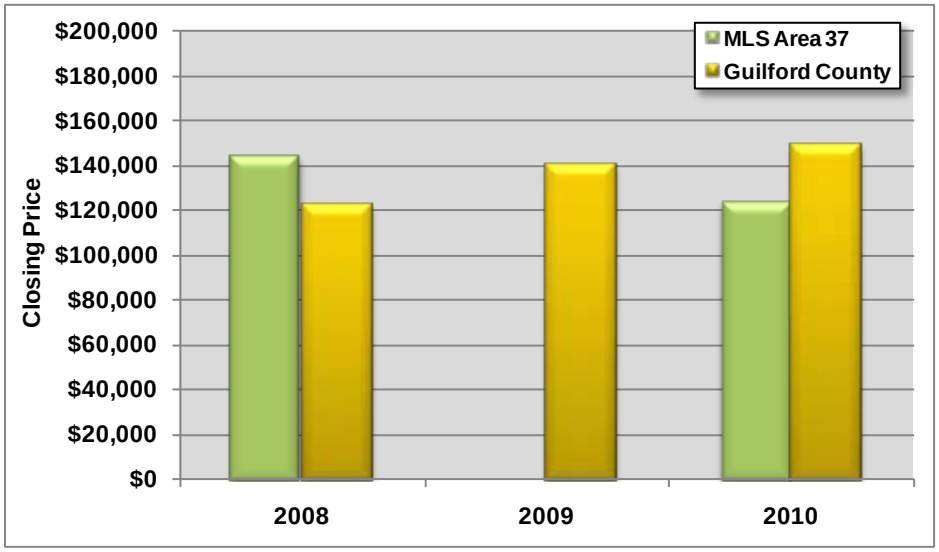
TABLE 15: ANNUAL TOWNHOUSE/CONDO CLOSINGS, MLS AREA 37, 2008-2010

	Townhouse Sales			New %
Year	New	Resale	Total	of Total
2008	3	1	4	75%
2009	0	2	2	0%
2010	11	1	12	92%
Total	14	4	18	78%
Ann. Avg.	5	1	6	

Source: BrokerMetrics

Average new attached closing prices in MLS Area 37 declined from $143,909 in 2008 to $123,163 in 2010 (Chart 9). There were no new closings in MLS Area 37 in 2009. Guilford County has experienced an increase in average new pricing, reporting a higher price than MLS Area 37 in 2010.

CHART 9: COMPARISON OF AVERAGE NEW TOWNHOUSE/CONDO CLOSING PRICE, 2008-2010



Historic Structures and Farms

There are a number of historic sites of note within and bordering the study area. These historic properties reveal the agrarian lifestyle and agriculture based economy of Western Guilford County's past. As noted in the Heart of the Triad Study, "many descendents of the original settlers still live in the area. Along with those residents, many new property owners have a strong sense of stewardship and preservation of the agricultural traditions and way of life."

Shaw-Cude House

Located in the central part of the study area are the Shaw-Cude House (pictured right) and the Dillon House and Tobacco Farm. Constructed in 1788 and 1917 respectively, these structures are typical of the scale, style and construction practices of their time. Additionally, a number of historic structures including homes, churches and schools lie adjacent to the study area. Notably, the Guilford Mill, which is on the National Register of Historical Sites, is located just north of the study area on NC 68. The water-powered mill, built in 1819, still operates as a working grist producing flour, grits, and other grain based products.[i]

Guilford Mill

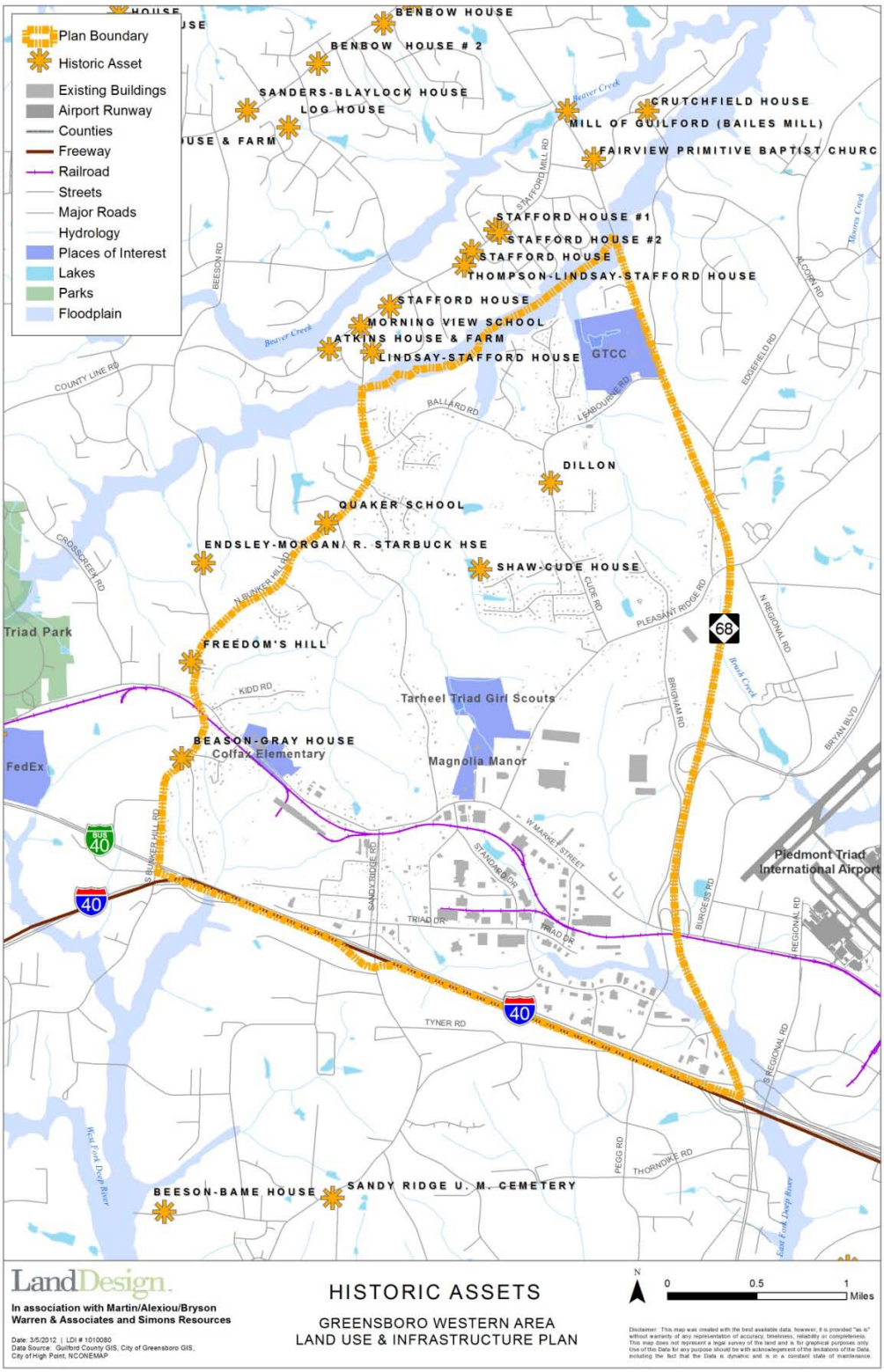
While there are many historic structures of note the lands associated with these structures are equally if not more important to the history of the Western Area. The history of agriculture and farming in the area is best expressed through the landscape surrounding the historic structures. Figure 10 illustrates the location of the historic sites and associated lands. A reference table is provided below:

TABLE 15: HISTORIC ASSESTS MAP REFERENCE

Name	Type	Style	Date Built
Dillon House	House & Farm	National Folk	1917
Shaw-Cude House	House & Farm	Quaker	1788
Beason-Gray House	House & Farm	National Folk	1890
Freedom's Hill	Church	Gothic Revival	1927
Endsley-Morgan House	House & Farm	Quaker	1780
Quaker School	School	National Folk	1850s
Atkins House and Farm	House & Farm	Pre-Railroad	1895
Morning View School	School	Folk Victorian	1905
Lindsay Stafford House	House	National Folk	1900
Stafford House	House	National Folk	1925
Thompson-Lindsay-Stafford House	House	Quaker/Federal	1823
Stafford House	House	Craftsman	1915
Stafford House #2	House	Pre-Railroad	1895

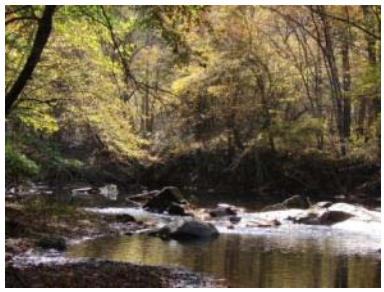
Source: Guilford County Historic Inventory

Figure 10: Historic Assets Map



Environmental Features

The Western Area is rich in environmental assets. Typical of the Piedmont region of North Carolina the area is characterized by flat or gentle rolling uplands that are dissected by creeks and streams. Figure 11 details the hydrology, topography and environmental characteristics of the Western Area.



Reedy Fork Creek runs along the northern edge of the study area boundary.

Hydrologic Features

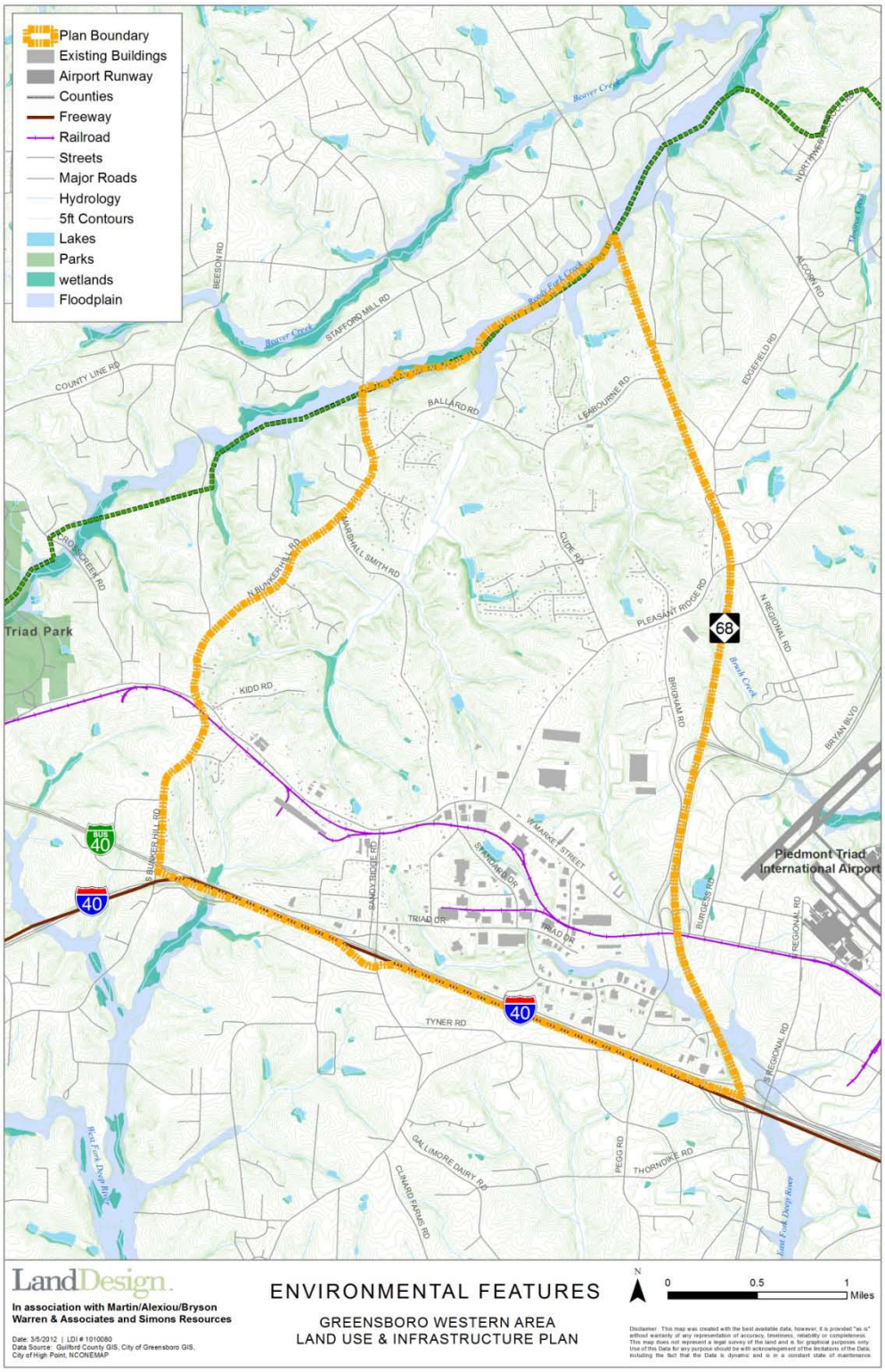
The entire study area sits in the Cape Fear River Basin. As illustrated in Figure 11 there are a number of creeks and streams that run throughout. The East Fork Deep River, a class IV surface water river, extends from the southeast corner at the intersection of NC 68 and Interstate 40. Reedy Fork Creak, a class III water source, forms the northern most border of the study area. According to the North Carolina Department of Natural Resources Class III and IV water supplies are sources of water for drinking, culinary, or food processing purposes. Class III waters are generally in low to moderately developed watersheds while Class IV waters are generally in highly developed watersheds.

The Loggerhead Shrike, a unique bird of prey, nests in the Western Area woodlands.

Soils and Topographic Features

The topography in the Western Area is typical of the region with gentle rolling hills with the steepest slopes along the banks of the creeks and streams. The predominant soil types in the Western Area are sandy and clay loam. Both soils are classified by the National Resources Conservation Service as "well-drained" with a moderate available water capacity of up to 8.3 inches. Sandy soils, with enough organic matter, are easy to cultivate. However, they are prone to over-draining and summer dehydration. Similarly loose clay soils, with high nutrient levels also provide decent growing conditions but are prone to water logging and poor aeration[ii]. The combination of these soil types in the Western Area reinforces the historic development of the region as primarily an agricultural area.

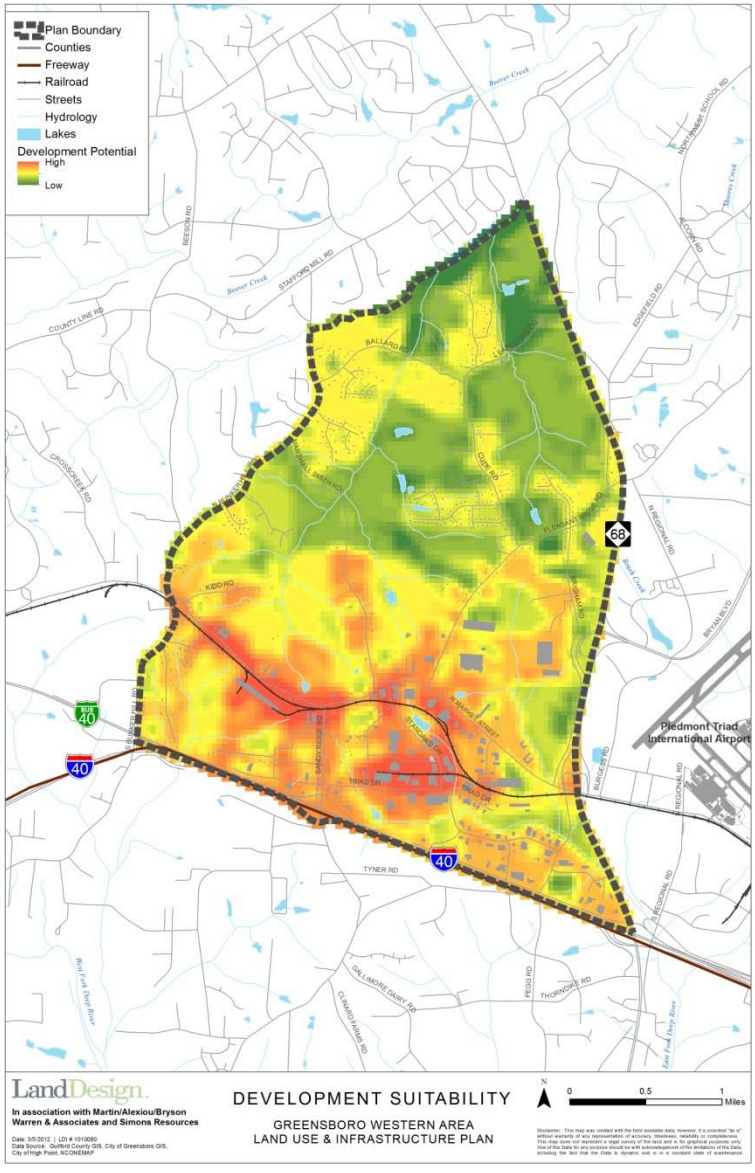
Figure 11: Environmental Features



Land Suitability

Proximity to infrastructure, including water lines, sewer lines, road intersection and railroads, access to schools and avoidance of historic sites, streams, wetlands and floodplains all contribute to determining which sites are most suitable for future development. Figure 12: Development Suitability, illustrates what areas are generally appropriate for future development. (For complete methodology see Appendix B: Land Utilization, Land Value and Development Suitability Methodology.)

Figure 12: Development Suitability



Parks, Recreation and Open Space

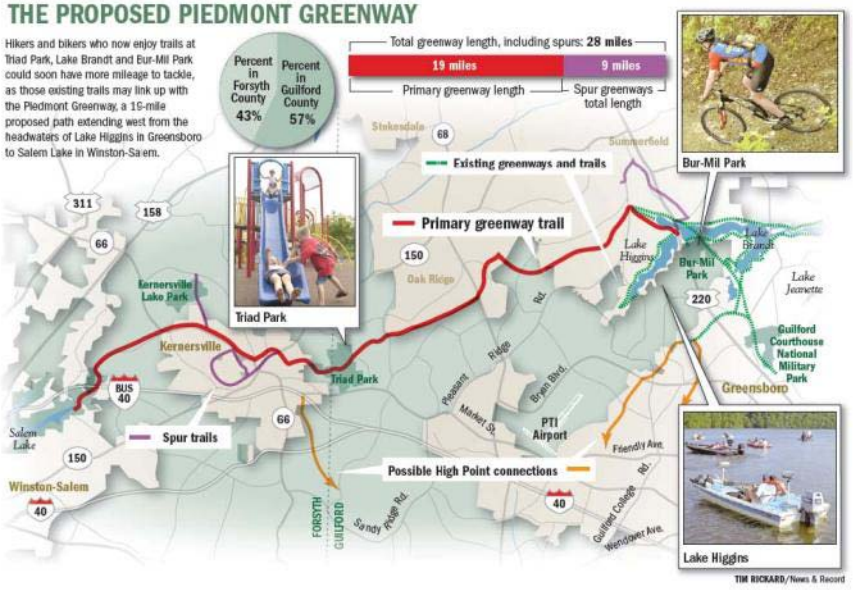
Within the study area there are no formal public parks or designated park spaces. The Carolina Golf Academy, located near the intersection of Pleasant Ridge Road and NC 68, is the only recreation site within the Western Area boundary. It is a 30 acre private facility that includes two practice holes, a driving range, two pitching and putting greens and a golf shop. The Academy is open to the public and charges a modest fee for facility use.

Triad Park, a 426-acre facility, sits just outside the western boundary of the study area.

Just west of the study area is Triad Park, a 426 acre joint venture between Forsyth and Guilford Counties. According to Guilford County Park and Recreate website the park will act as the regional centerpiece and provide a variety of recreation and leisure opportunities. The park offers both indoor and outdoor spaces for recreational use including an indoor banquet facility, four playgrounds, a soccer and softball field, volleyball courts, small fishing pond, four gazebos, picnic area with grills and both paved and natural surface walking and hiking trails.

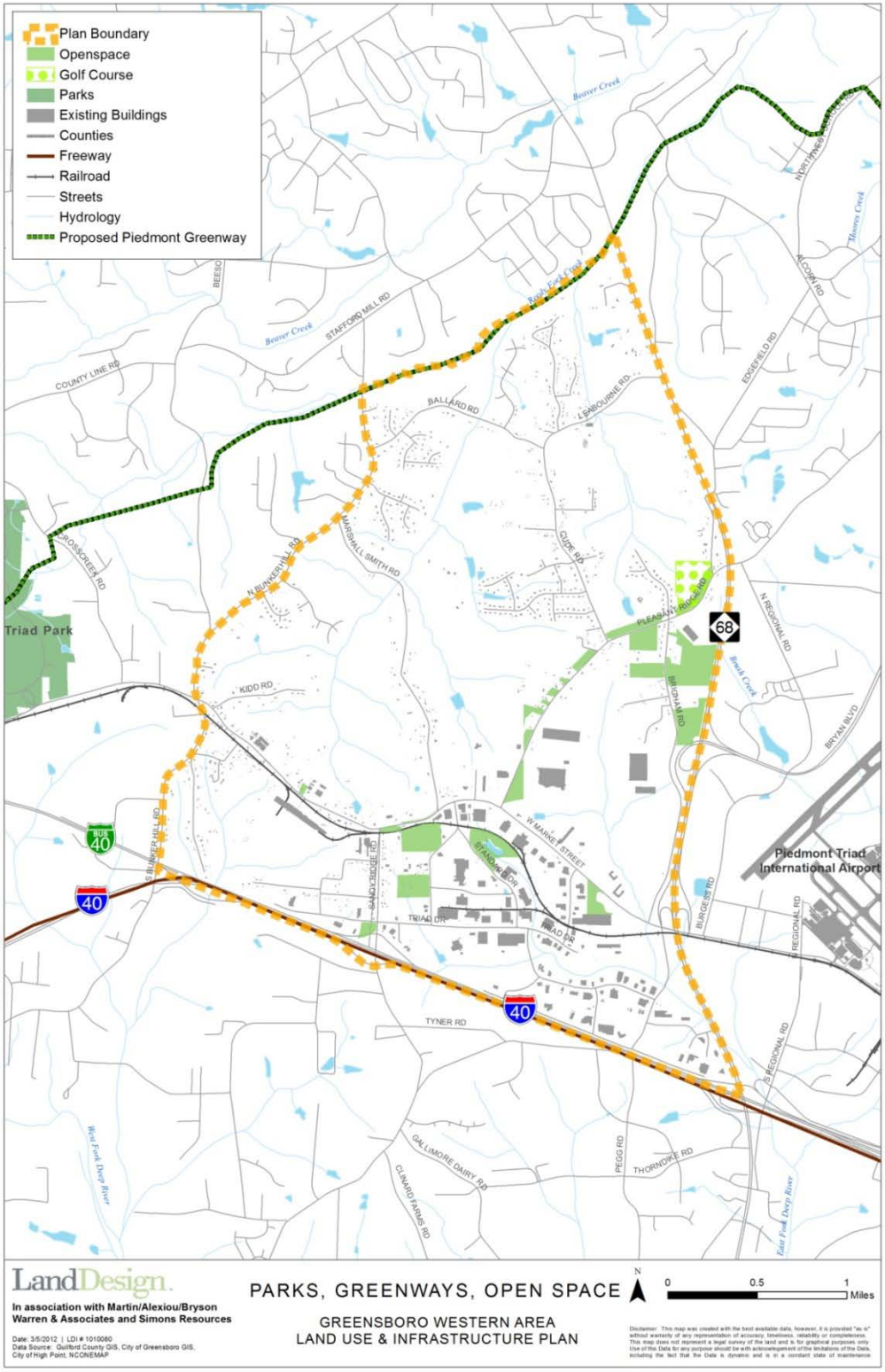
The planned 19-mile, multi-use Piedmont Greenway runs along Reedy Creek on the northern edge of the study area. The Piedmont Greenway is a significant regional amenity that will connect Guilford and Forsyth counties through the Triad Regional Park and downtown Kernersville. The image below illustrates these regional connections.

In addition to Triad Park, the Piedmont Greenway and Carolina Golf Academy there are approximately 180 acres of designated open space. 175 acres are within Greensboro's jurisdiction and the remaining 5 acres are in the County's jurisdiction. Figure 13 on the following page illustrates the parks, recreation and open space in the Western Area.



Source: The Piedmont Land Conservancy

Figure 13: Parks, Greenways, Open Space



Community Character

The study area is notably divided into two major zones. The area within the City of Greensboro jurisdiction is largely commercial with various industrial, business park and office uses. The portion of the study area within Guilford County is predominately rural with pockets of residential subdivisions.

As previously mentioned, the Western Area is a community in transition. The following descriptions provide generalizations about the four major types of areas.

Agricultural Areas

Productive agricultural lands are located mainly in the central and western portion of the planning area. The pastoral landscape is most notable along Marshall Smith Road and south of Leabourne Road and Ballard Road. The presence of expansive open space, active farming operations and the terrain helps to maintain the area's rural and agrarian character.

Residential Neighborhood Areas

Housing within the western area is characterized by low density, large lot, and single-family homes. Housing development has primarily occurred along Cude Road, North Bunker Hill Road, Ballard Road and in the northernmost area of the study area that borders the Town of Oak Ridge. The area north and south of Ballard Road is transitioning from a rural residential to suburban, although large tracts of undeveloped land still remain. Within the developments there are few to no connective pedestrian amenities such as sidewalks or street lamps.

Commercial

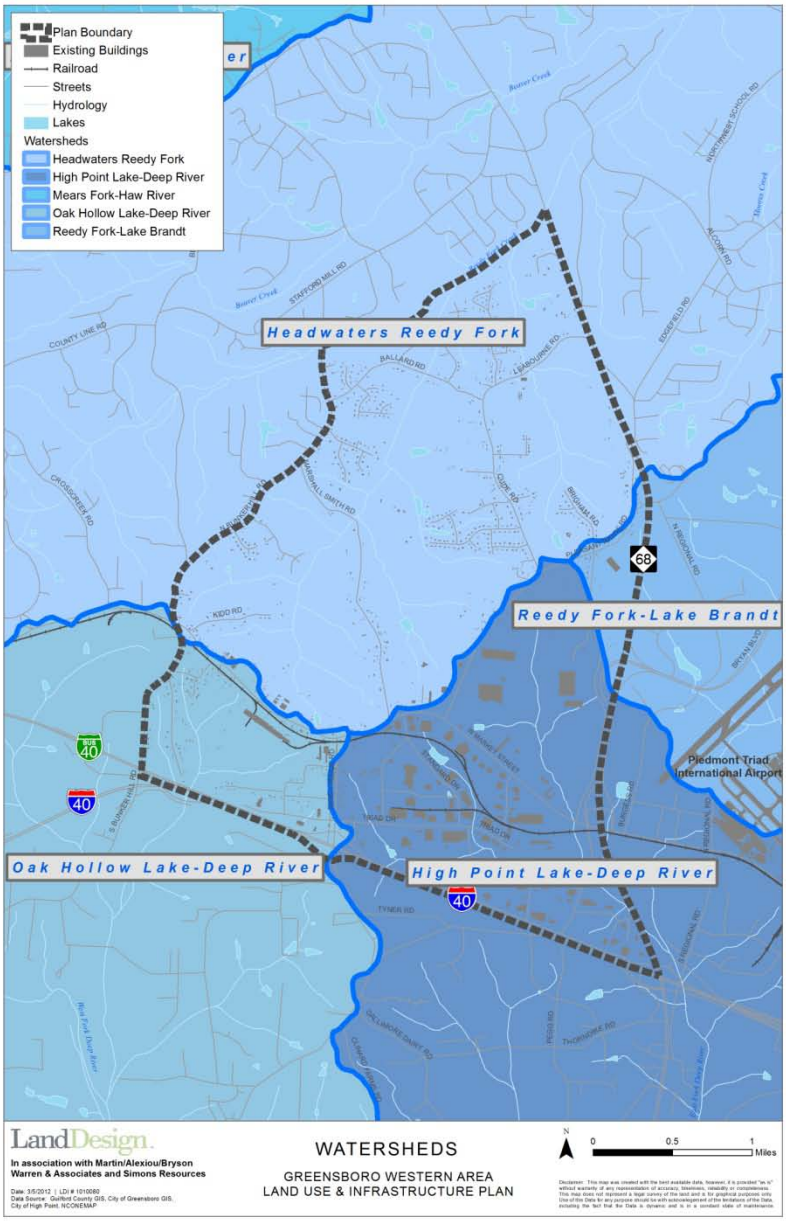
A new commercial strip development has opened the intersection of Cude Road and Pleasant Ridge Road. Unlike much of the existing commercial building stock in the Western Area, this particular development is brick with significant façade detailing and large windows facing the parking area.

Light Industrial and Business Park Corridors

There are two main employment corridors in the study area. Established development along the West Market Street corridor is characterized by low structures of one to two stories. Individual structures are co-located but with little connective infrastructure such as sidewalks. The second corridor runs along NC- 68. This is a significant, highly traveled north-south arterial within the planning area. Structures along this corridor have considerably larger building footprints than those adjacent to West Market Street. Both employment areas are characterized by large building setbacks, significant amounts of parking and structures with little to no façade detail.

Watersheds and Subbasins

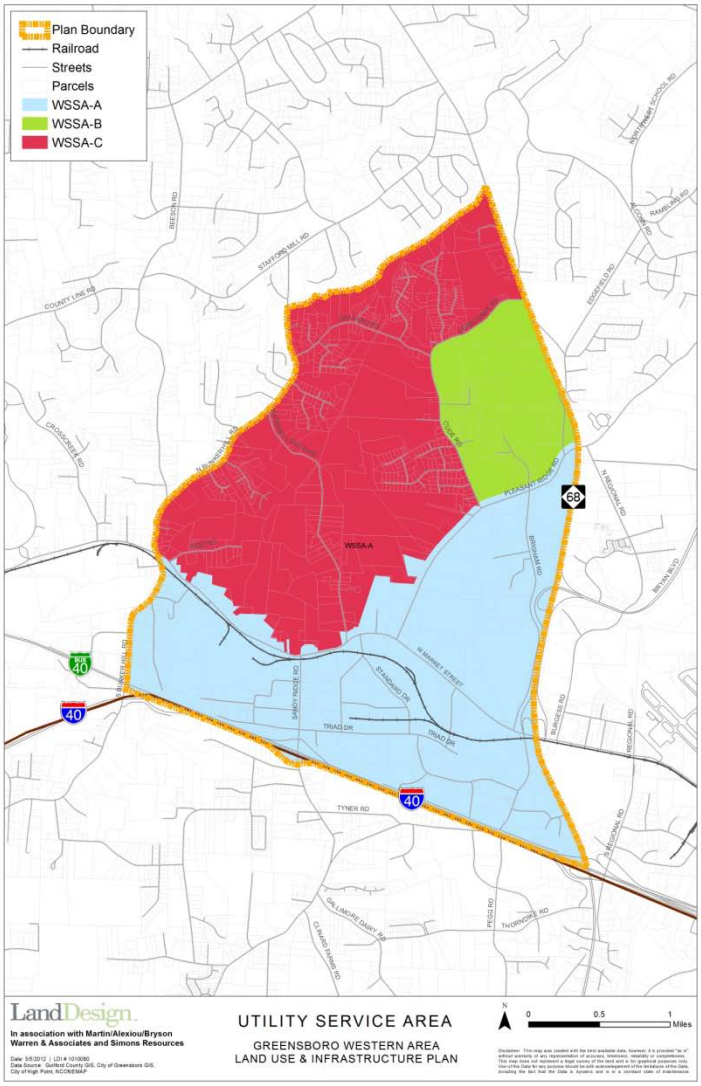
As illustrated in Figure 14, the Western Area is located in two watersheds, Greensboro and High Point. The East Fork Deep River Sub basin follows along the branch of the East Fork Deep River in the Southeastern portion of the study area.



Water and Sewer Infrastructure

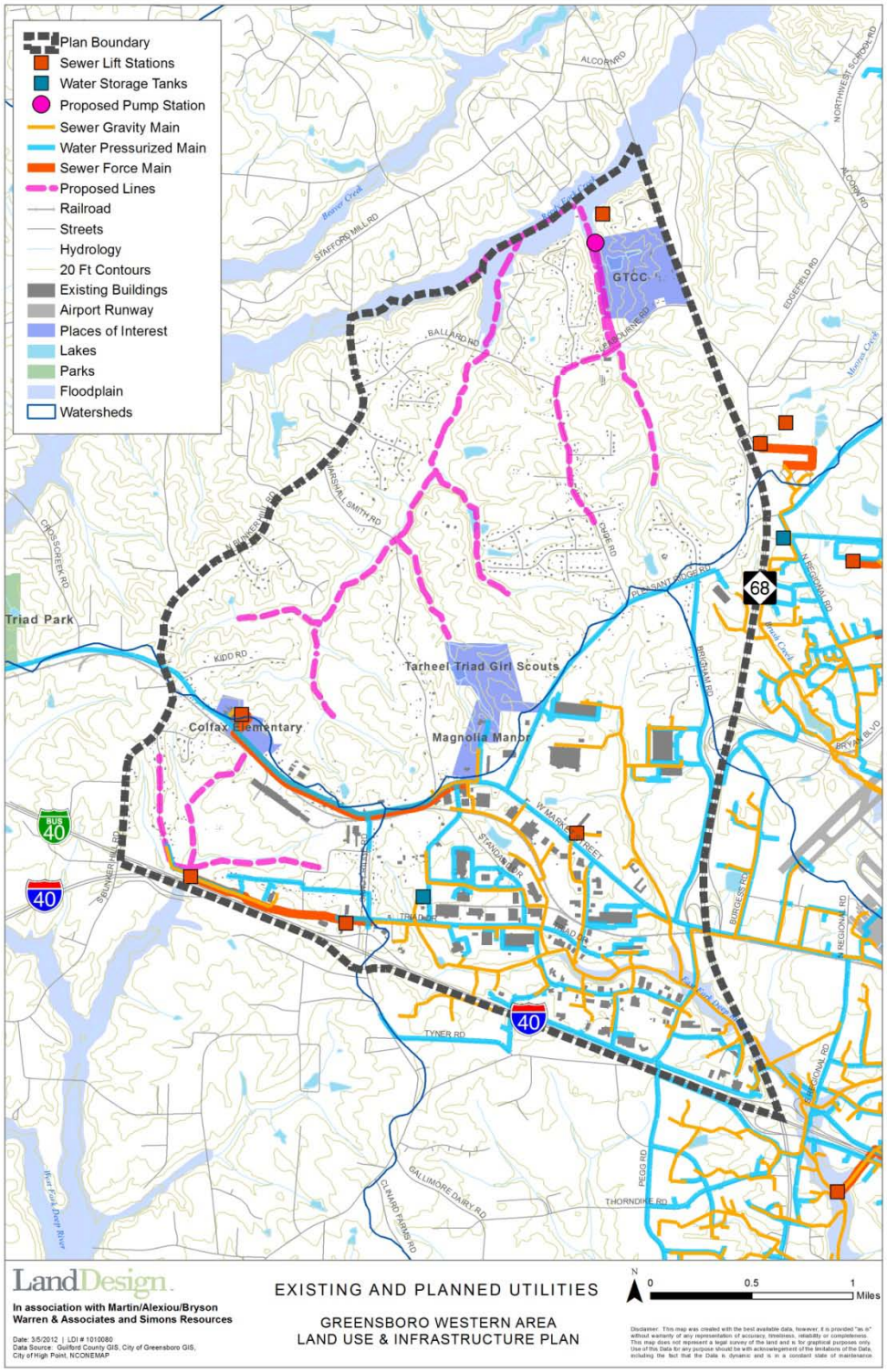
The City of Greensboro recently commissioned a Western Area specific supplement to the city-wide Sewer Master Plan completed by consultants at Arcadis and Malcolm Pirne. In addition, Hazen Sawyer completed a similar update assessing water utility and availability in the Western Area. The following map, created by Hazen and Sawyer, depicts the existing and planned water and sewer service areas in the Western Area:

- **Water/Sewer Service Area A**: scheduled for extension of services between 2007 and 2013
- **Water/Sewer Service Area B**: scheduled for extension of services between 2013 and 2019
- **Water/Sewer Service Area C**: scheduled for extension of services beyond 2019



According to the findings of both studies, the City of Greensboro provides either water or sewer service to approximately 44% of the parcels in Western Area. The remaining portion of the study is on well and septic systems. As illustrated in Figure 15, the area served by water and sewer is primarily the industrial and business park corridors located along West Market Street and Pleasant Ridge Road. Planned line extensions would serve primarily the GTCC campus in the northeast portion of the study area and designated Water/Sewer Service Area C.

Figure 15: Existing and Planned Utilities



Existing Transportation Networks

This section summarizes the current condition of transportation networks in and around the study area. Some facilities outside the study area are included because they significantly affect travel on facilities within the study area. For example, I-73, which barely enters the study area limits, will have a major impact on the study area.

This section is organized around the four main transportation modes or systems in the study area. Because of the importance of infrastructure to this study, the focus in this report is on the networks used by each of these modes:

- Roadway
- Railway
- Transit
- Pedestrian and Bicycle Network.

In each case, the existing network is first identified and described, and any recent changes or planned improvements are summarized. This is followed by a discussion of the travel market served by each network: who uses it, and how is demand likely to change in the future, if at all. Note that the Piedmont Triad International Airport is not discussed in great depth, since that information is provided elsewhere. However, highlights of some relevant issues are included for informational purposes.

Roadway

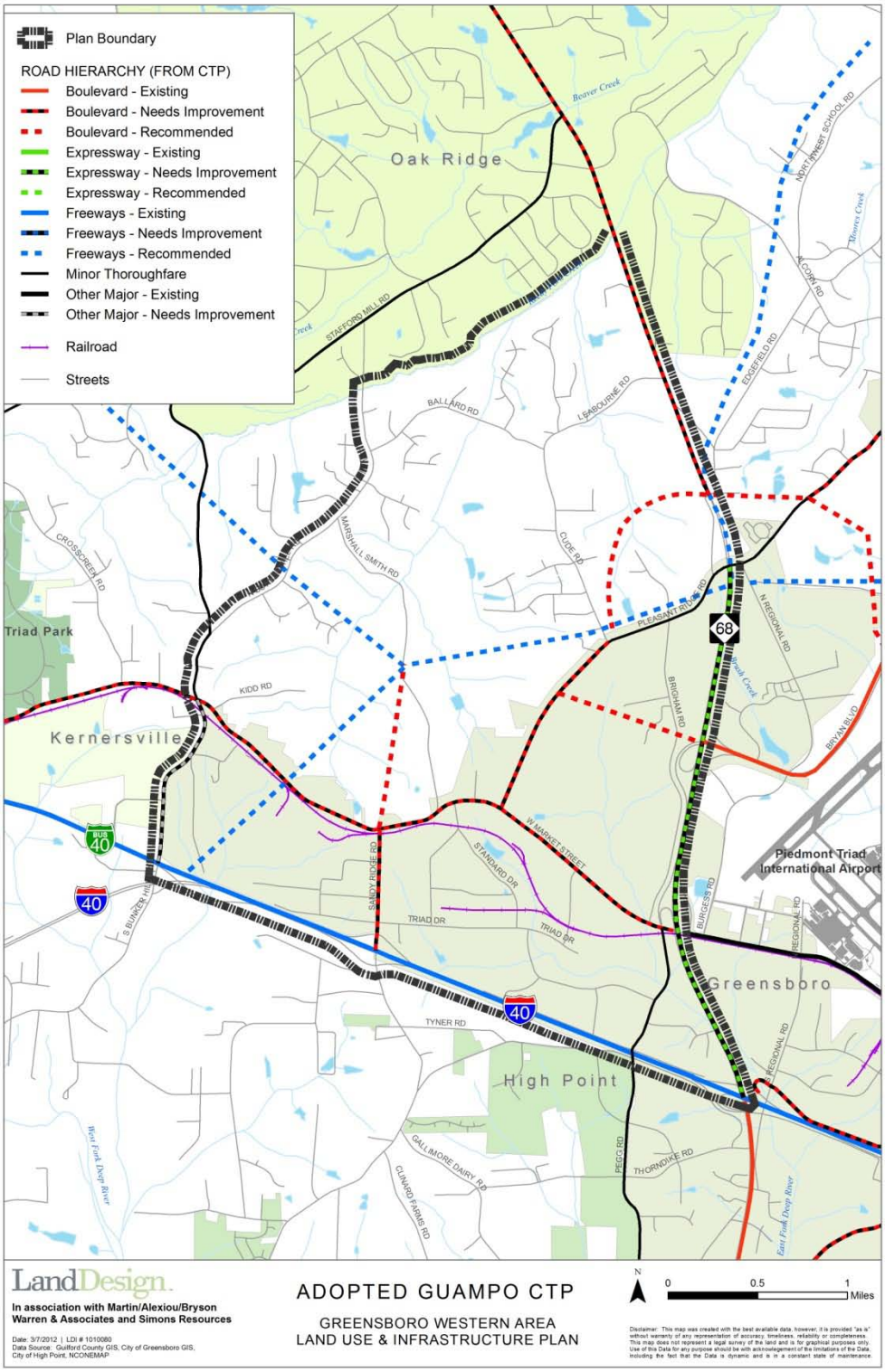
Key Facilities

The list below describes the major roads serving or affecting the study area. The list is limited to those facilities that are included in the Piedmont Triad Regional Model (PTRM) or the local long-range/comprehensive transportation plans, since these facilities are, by their inclusion, defined as significant elements of the regional transportation network. Additionally, complete data and analysis tools are generally available only for facilities meeting these criteria. Figure 16 depicts these facilities.

Interstate 40 – Defined as a freeway in the current Comprehensive Transportation Plan (CTP) I-40 is an 8-lane interstate facility with a 65 mph speed limit. It is the major east-west facility in the area serving both local traffic and intercity traffic between Greensboro, Winston-Salem, and High Point.

NC – 68 – Defined as an expressway in the CTP, NC 68 is a predominantly 4 lane facility with a 55 mph speed limit. At the north end of the facility the cross-section narrows to 2-lanes, but the speed limit remains unchanged. This is the major north-south facility in the area, connecting I-40 with Bryan Boulevard and the PTIA. This facility also provides an intercity connection between High Point and Greensboro.

Figure 16: Adopted GUAMPO CTP



Bryan Boulevard – Bryan Boulevard is defined as a freeway east of the access point to PTIA, and a boulevard between the access to PTIA and NC 68. East of the study area the freeway portion of Bryan Boulevard has a 4-lane cross-section with a 55 mph speed limit, but that expands to 6-lanes near the study area with the same speed limit. The boulevard portion of Bryan Boulevard has a 4-lane cross-section with a 55 mph speed limit. The primary function of Bryan Boulevard is to provide access to the northwest portions of Greensboro and Guilford County, specifically the PTIA. It is generally oriented east-west, and connects downtown Greensboro with PTIA and NC 68.

West Market Street – Defined as a major thoroughfare in the current CTP, West Market Street has a 2-lane cross-section with a project underway to widen to 4-lane divided through much of the study area with a 45 mph speed limit. To the east of the study area (specifically, east of NC 68), West Market Street has a 4-lane cross-section with a 45 mph speed limit. West Market Street serves as a parallel facility to I-40 with connections to I-40 via NC 68 and Sandy Ridge Road. West Market Street serves mostly local traffic although it does serve some intercity traffic.

Pleasant Ridge Road – Defined as a boulevard in the CTP, Pleasant Ridge Road has a 2-lane cross-section with a 45 mph speed limit. Pleasant Ridge Road serves to connect West Market Street, NC 68 and other local roads in the area. It does not serve much if any intercity traffic.

Pegg Road/Thatcher Road – Defined as minor thoroughfares in the current CTP, Pegg Road and Thatcher Road have 2-lane cross-sections and 35 mph speed limits. There is currently no connection between the two facilities over I-40, but a connection is planned for the future. At that time, Pegg Road and Thatcher Road will be widened and will serve as a crossing of I-40 parallel to NC 68. Currently, these roads serve only local traffic accessing adjacent development. In the future, they will still serve mostly local traffic, but will attract some trips away from NC 68.

Sandy Ridge Road – Defined as a boulevard in the current CTP, Sandy Ridge Road has a 2-lane cross-section with a 45 mph speed limit. It is a north-south facility that connects Market Street to I-40 and points south. West Market Street is the current northern terminus of Sandy Ridge Road. Sandy Ridge Road serves predominantly local traffic, but does attract some intercity traffic given it's connections to West Market Street, I-40, and High Point/southwestern Guilford County.

Bunker Hill Road – The western edge of the study limits, Bunker Hill Road is defined as a minor thoroughfare south of Beeson Road, and is not included in the CTP north of Beeson Road. It has a 2-lane cross-section with a 45 mph speed limit north of I-40 and a 55 mph speed limit south of I-40. Bunker Hill Road is a north-south road connecting Sandy Ridge Road with West Market Street and Stafford Mill Road. It serves mostly local traffic.

Marshall Smith Road – Not included in the CTP, Marshall Smith Road has a 2-lane cross-section with a 45 mph speed limit. Marshall Smith Road is

oriented north-south and connects West Market Street with Bunker Hill Road. It serves predominantly local traffic.

Cude Road – Not included in the current CTP, Cude Road has a 2-lane cross-section and a 45 mph speed limit. Cude Road is oriented north-south and connects Pleasant Ridge Road to Leabourne Rd/Ballard Rd. Cude Road serves predominantly local traffic.

Leabourne Road/Ballard Road – Not included in the current CTP, Leabourne Road/Ballard Road has a 2-lane cross-section and a 45 mph speed limit. Leabourne Road/Ballard Road is oriented east-west and connects Bunker Bill Road to Cude Road and NC 68. It serves predominantly local traffic.

Traffic Volumes

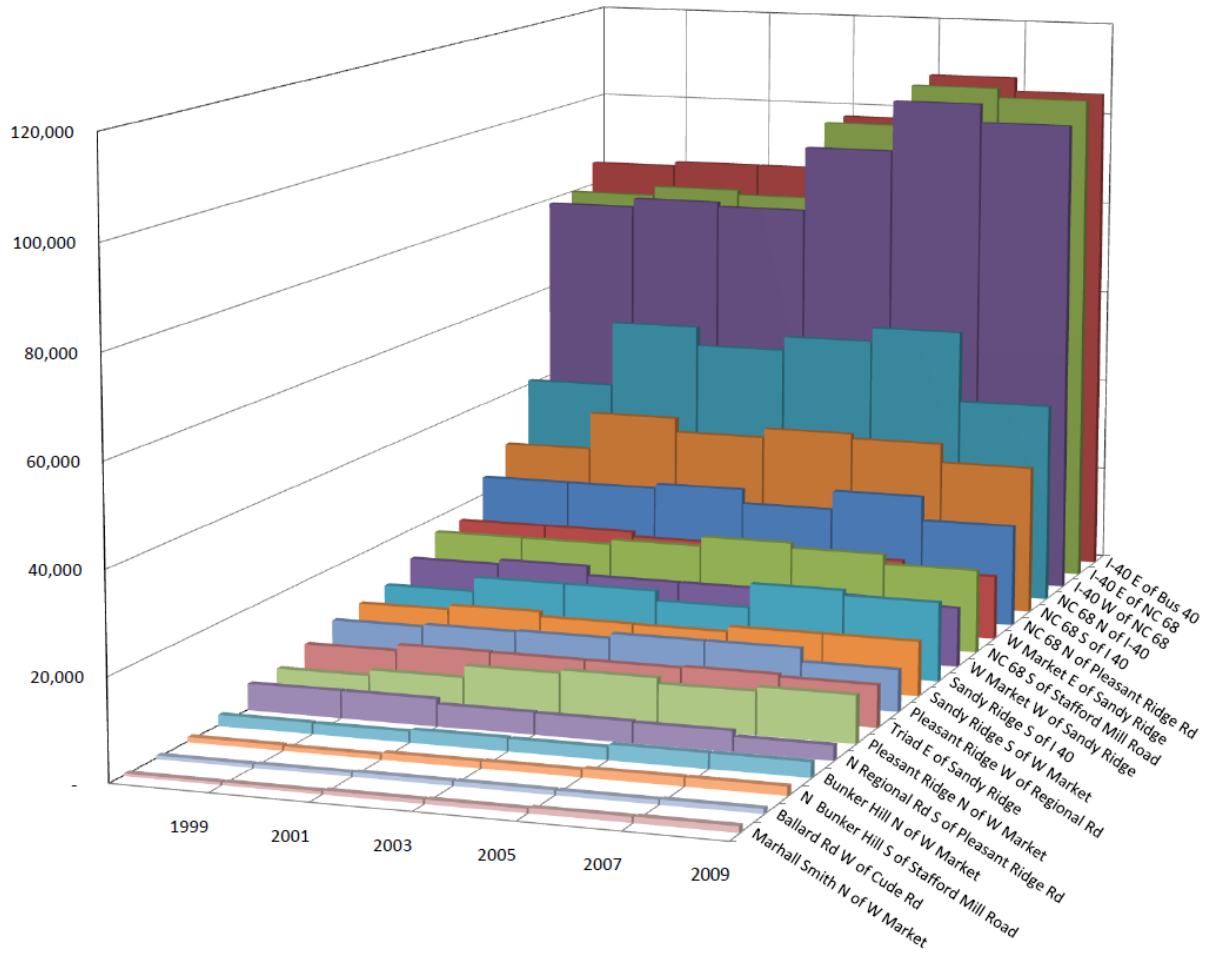
The North Carolina Department of Transportation (NCDOT) collects average annual daily travel (AADT) data on a biennial basis at many locations within and around the study area. That data is summarized in Table 16 and Chart 10.

TABLE 16: NCDOT HISTORICAL AADT DATA

Location	1999	2001	2003	2005	2007	2009
I-40 E of Bus 40	85,000	86,000	86,000	98,000	108,000	105,000
I-40 E of NC 68	80,000	82,000	81,000	98,000	107,000	105,000
I-40 W of NC 68	79,000	81,000	80,000	94,000	105,000	101,000
NC 68 N of I-40	41,000	55,000	51,000	54,000	57,000	42,000
NC 68 S of I 40	29,000	37,000	34,000	36,000	35,000	31,000
NC 68 N of Pleasant Ridge Rd	24,000	24,000	25,000	22,000	26,000	21,000
W Market E of Sandy Ridge	17,000	17,000	16,000	14,000	15,000	13,000
NC 68 S of Stafford Mill Road	17,000	17,000	18,000	20,000	19,000	17,000
W Market W of Sandy Ridge	14,000	15,000	13,000	13,000	13,000	12,000
Sandy Ridge S of I 40	11,000	14,000	14,000	12,000	17,000	16,000
Sandy Ridge S of W Market	10,000	11,000	10,000	9,900	11,000	11,000
Pleasant Ridge W of Regional Rd	9,300	9,800	10,000	11,000	11,000	8,300
Triad E of Sandy Ridge	7,300	8,600	8,500	8,500	8,800	8,300
Pleasant Ridge N of W Market	5,300	6,500	8,900	9,600	8,500	9,400
N Regional Rd S of Pleasant Ridge Rd	5,300	5,300	4,300	4,200	4,000	2,900
Bunker Hill N of W Market	2,200	2,100	2,500	2,400	3,000	3,000
N Bunker Hill S of Stafford Mill Road	1,000	850	1,300	1,400	1,700	1,700
Ballard Rd W of Cude Rd	670	740	860	900	870	1,000
Marhall Smith N of W Market	510	570	770	860	1,100	1,200

The general trend of the data shows a gradual, steady increase in AADTs. Some locations do indicate a decrease in AADT between 2007 and 2009. This decrease is believed to be tied directly to the economic downturn, and is not expected to reflect a long-term change in traffic trends. As the economy improves, it is anticipated that traffic volumes will again increase.

CHART 10: NCDOT HISTORICAL AADT DATA TRENDS



Planned Improvement Projects

The following list details all projects currently included in the TIP and LRTP in the vicinity of the study area.

- **West Market Street (NCDOT TIP# R-2611)** - Currently under construction, this project widens West Market Street to a multilane facility between Bunker Hill Road (SR 2007) in Colfax and NC 68.
- **I-73 Connector (NCDOT TIP# I-5110)** – This new 4-lane freeway extending between NC 68 and Bryan Boulevard is expected to be under construction in 2015-2019.
- **NC 68/US 220 Connector (R-2413)** – A new 4-lane proposed freeway from NC 68 north of Pleasant Ridge Road extending between Edgefield Road (SR 2011) to the NC 68/US 220 intersection is expected to be under construction in 2014-2017.
- **NC 68 Widening** – Is proposed to be widened from 2-lane undivided to 4-lane divided between Peeples Road (SR 2130) and Rockingham County Line.

- **NC 68 Widening** – Is proposed to be widened from 4-lane to 6-lane divided between West Market Street and Pleasant Ridge Road
- **Pleasant Ridge Road Widening** – Will be widened from 2-lane undivided to 4-lane divided between West Market Street and west of NC 68.
- **Pleasant Ridge Road Relocation at I-73** – A 3-lane minor arterial alignment will connect Montmartre Road and Cude Road. (Part of NCDOT TIP# R-2413).
- **Sandy Ridge Road widening** – Is proposed to be widened from 2-lane undivided to 4-lane and 60lane divided between I-40 and West Market Street (High Point LRTP).
- **North-South Connector** – A new 4-lane freeway will connect US 311 with I-40 (High Point LRTP).
- **I-73/I-74 Connector (Regional Airport Connector)** – A proposed new 4-lane divided facility extending from NC 68 to Guilford County (Winston-Salem and Greensboro LRTP).
- **Greensboro Western Urban Loop Extension** – Extension of the Urban Loop from the existing terminus at Bryan Boulevard to Battleground Avenue in 2013-2016, with subsequent completion of the Greensboro Loop.

Key Interchanges/Intersections

The interchanges and intersections most critical to the study area tend to be located in the southern and eastern portions of the study area.
Intersections in the western and northern parts of the study area are less critical, since they carry lower traffic volumes, operate at acceptable operating levels of service (LOS), and exhibit low collision totals and rates.
Intersections and interchanges identified as the most critical because of traffic volumes, delay, and/or collisions are:

- I-40 and NC 68
- I-40 and Sandy Ridge Road
- NC 68 and Market Street
- Market Street and Pleasant Ridge Road
- Market Street and Sandy Ridge Road
- Pleasant Ridge Road. And NC 68

Intersection Level of Service

Peak hour level of service (LOS) measures the adequacy of the intersection geometrics and traffic signalization controls of a particular intersection or approach for the given turning and through movement volumes. Levels of service range from A through F, based on delays experienced by vehicles traveling through an intersection during the peak hour. Level of service D is generally considered an acceptable operating condition for signalized intersections in urban areas. Level of service C is typically acceptable in rural areas.

Table 17 summarizes the delay ranges for each level of service at signalized intersections.

Table 18 and Figure 17 summarize intersection LOS data from the Sandy Ridge Road (SR 1850) Widening and Extension report. It is based on traffic counts and intersection geometrics undertaken in early 2009. The data provided below is only for those key interchanges and intersections identified above.

Some of the signalized intersections presently operate under failing conditions in one or both of the peak hours. Specifically, the West Market Street/Sandy Ridge Road intersection is operating at a LOS F and LOS E during the AM and PM peak hours, respectively. The NC 68 at Pleasant Ridge Road intersection also operates at a failing LOS during both peak hours.

TABLE 17: LEVEL OF SERVICE DESCRIPTIONS FOR INTERSECTIONS

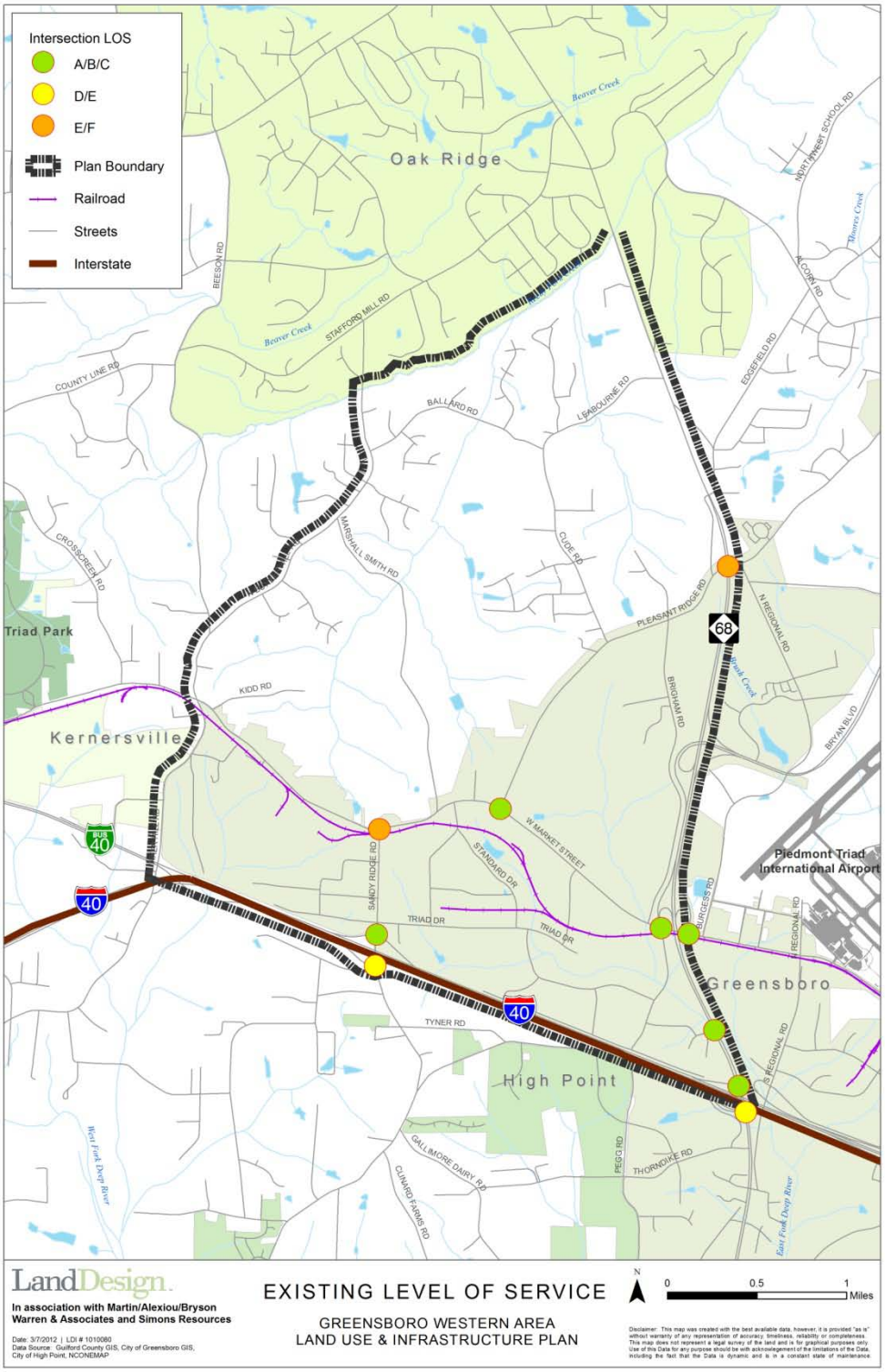
Level of Service	Description	Signalized Intersection
A	Little or no delay	<= 10 sec.
B	Short traffic delay	10-20 sec.
C	Average traffic delay	20-35 sec.
D	Long traffic delay	35-55 sec.
E	Very long traffic delay	55-80 sec.
F	Unacceptable delay	> 80 sec.

TABLE 18: EXISTING LEVELS OF SERVICE FOR KEY INTERSECTIONS

2009 Level of Service		
Intersection	AM Peak	PM Peak
I-40 WB Ramps and NC 68	A (WB-B) (8.0 sec)	B (SB-B) (13.6 sec)
I-40 EB Ramps/Albert Pick Road and NC 68	D (WB-D) (42.1 sec)	C (WB-D) (33.3 sec)
I-40 EB Ramps and Sandy Ridge Road	D (EB-D) (47.0 sec)	C (EB-D) (25.5 sec)
I-40 WB Ramps and Sandy Ridge Road	B (WB-D) (16.6 sec)	C (WB-D) (20.8 sec)
NC 68 SB Ramps/Thatcher Road and West Market Street	C (NB-D) (29.7 sec)	C (SB-E) (34.7 sec)
NC 68 NB Ramps and West Market Street	B (SB-D) (13.0 sec)	B (SB-D) (10.8 sec)

West Market Street and Pleasant Ridge Road	**B (SB-D) (17.5 sec)**	**C (SB-D) (23.1 sec)**
West Market Street and Sandy Ridge Road	**F (NB-F) (125.2 sec)**	**E (NB-E) (64.7 sec)**
Pleasant Ridge Road and NC 68	**F (EB-F) (146.7 sec)**	**F (EB-F) (88.6 sec)**

Figure 17: Existing Levels of Service



Collision Data

Standard crash data reports from July 1, 2006 through June 30, 2009 were obtained from NCDOT for the study area. Data was examined for the following corridors: Sandy Ridge Road, West Market Street, Pleasant Ridge Road, NC 68, and Bryan Boulevard. This data identifies 252 collisions at 16 high frequency locations during the time period examined.

Table 19 and Figure 18 summarize this collision data for key locations by accident type:

- Angle
- Head on
- Object
- Overturn
- Ran off road
- Rear end,
- Sideswipe,
- Left / right turns
- Other / not reported

The majority of reported crashes in the study are rear end and angle collisions.

TABLE 19: CRASH SUMMARY BY TYPE

Intersection	Total	Angle	Head On	Object	Other	Overturn	Ran Off Road	Rear End	Sideswipe	Turns
I 40 EB/Albert Pick Rd at NC 68	45	15			1	1		22	5	1
Bryan Blvd at Regional Rd	36	9	1		2		2	17	1	4
I 40 WB at NC 68	31	7			2			17	1	4
NC 68 at Pleasant Ridge Rd	24	7	1		1		1	8	4	2
NC 68 at Triad Center Rd	23	7					1	12	3	
NC 68 at Hickory Ridge Rd	15	7	1		1			5	1	
Sandy Ridge Rd at Norcross Rd	12			1				1		10
NC 68 at Thorndike	11	3			1		1	4	2	
NC 68 at Edgefield Rd	10	1		2	1			2	2	2
Market St at Sandy Ridge Road	9				1		3	3		2
Sandy Ridge Rd at I 40 WB	7	3				1	1		1	1
NC 68 SB/Thatcher at Market St	6	1						3		2
Bryan Blvd at N Triad Blvd	6					1		1		4
NC 68 at Market St (bridge)	6	1			1		1	1		2
Pleasant Ridge Rd at Regional Rd	6	1		1				3		1
Sandy Ridge Rd at Triad Dr	5	2						2	1	
GRAND TOTAL	**252**	**64**	**3**	**4**	**11**	**3**	**10**	**101**	**21**	**35**

By comparing crash rates for these particular corridors with statewide average crash rates for comparable facility types, it can be demonstrated that the crash experience for the facilities analyzed does not suggest any significant hazards or unusual conditions. Most of the facilities analyzed have crash rates below the representative averages, and those that are not are only slightly above. Since these locations also have very low absolute rates, such variances are not of significant concern. Table 19 provides a summary comparison between crash rates for study area major roadways and statewide averages for corresponding facility types. Although some locations within the study area have a relatively high occurrence of crashes over the three-year data period, the crash rates for the roadways are generally lower than rates along similar facilities across the state.

Trucking Impacts

The impact of trucking and freight movement on the roadway network in this area cannot be understated. Many of the major routes in the study area --particularly I-40, NC 68, West Market Street, and Bryan Boulevard-- are major truck routes serving facilities that generate high volumes of truck traffic. To illustrate this point, a number of "truck intensive businesses" were identified in the FONSI for the West Market Street widening project (R-2611). That report also found that truck traffic made up approximately 6% of daily traffic along West Market Street. This conclusion is supported by the "Traffic Forecasts for NCDOT Feasibility Study No. FS-0707A Sandy Ridge Road Widening and Extension,"(2011) which assumed that approximately 7% of daily traffic on West Market Street consisted of trucks. This report further states that truck traffic on NC 68 was 8% of the daily volume, and that the trucks comprise 12% of daily traffic on I-40.

Figure 18: Crash Summary by Location

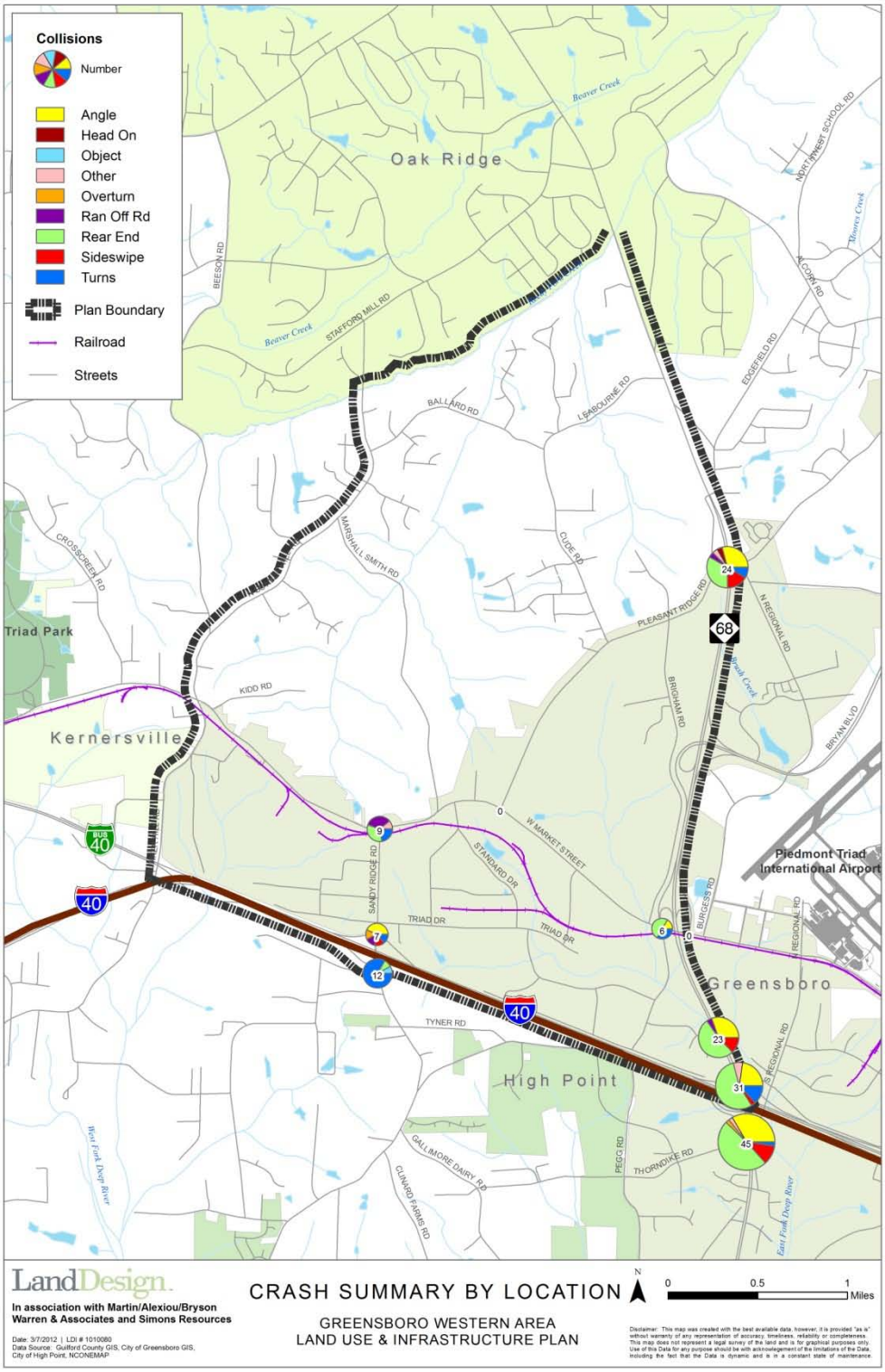


TABLE 20: CRASH RATES* COMPARISON TO SIMILAR FACILITIES STATEWIDE (2006-2009)

Facility		Total Crash Rate	Injury Crash Rate	Fatal Crash Rate
Urban Secondary Routes	Sandy Ridge Road	334.22	133.69	0
	Market Street	89.63	44.82	1.87
	Pleasant Ridge Road	129.29	38.03	0
	Statewide Average	*413.78*	*130.38*	*1.31*
Urban NC Routes	NC 68	117.89	37.74	0
	Statewide Average	*303.18*	*97.95*	*1.12*

*Rates are reported as collisions per 100 million vehicle miles traveled

Truck volumes play a significant role in the design of the facilities in the study area. Everything from the type of materials used to construct the roads to the geometric standards used in design, is affected by the large volume of heavy truck traffic carried on them.

Future truck volumes in the study area depend mainly on future land uses, particularly on NC 68, West Market Street, and at the PTIA. Land parcels in those areas currently support light industrial, warehousing, and other truck-intensive uses. If those land uses continue or intensify (as current zoning and land use plans suggest), then truck traffic should remain at current levels, or even increase.

Rail

There is one rail line passing through the study area, the Norfolk Southern "K-line." This freight line runs in an east-west direction adjacent to West Market Street, connecting the NCRR main line (in Greensboro) with the Winston-Salem railroad to the west. The line currently carries fewer than six freight trains per day, with speeds restricted to 35 mph. There are two sidings, one crossing Standard Drive and serving the properties along Capital Drive and Triad Drive, and one just west of Sandy Ridge Road serving the nearby rail yard.

There are nine locations where the railroad crosses public roads. Only one crossing, the crossing of NC 68, is grade separated. The remaining eight are at-grade crossings:

- Thatcher Road
- Landmark Drive
- Standard Drive (siding)
- Little Santee Road
- Sandy Ridge Road
- Bobby Lane

- McGuire Road
- Bunker Hill Road

All at-grade crossings, with the exception of the siding crossing of Standard Drive, are within 1,000 feet of Market Street, with most being within 200 feet of Market Street.

There have been a total of 16 rail collisions along the K-line since 1983, not all of which have occurred within the study area. There have been no collisions since 2001. This is due to safety upgrades implemented for these at-grade crossings. It should be noted that the potential for rail collisions still exists at any at-grade crossing, and that this potential could grow with increases in traffic volumes (especially truck volumes), or train speeds and frequencies, or both.

This rail corridor has been identified in several previous reports as a potential future regional commuter rail line between Greensboro and Winston-Salem, a distance of 30 miles. According to recent discussions with representatives from the Piedmont Authority for Regional Transit (PART), this corridor is still considered the best location for a line between these two cities, and will be studied further whenever a regional commuter rail system is planned and developed.

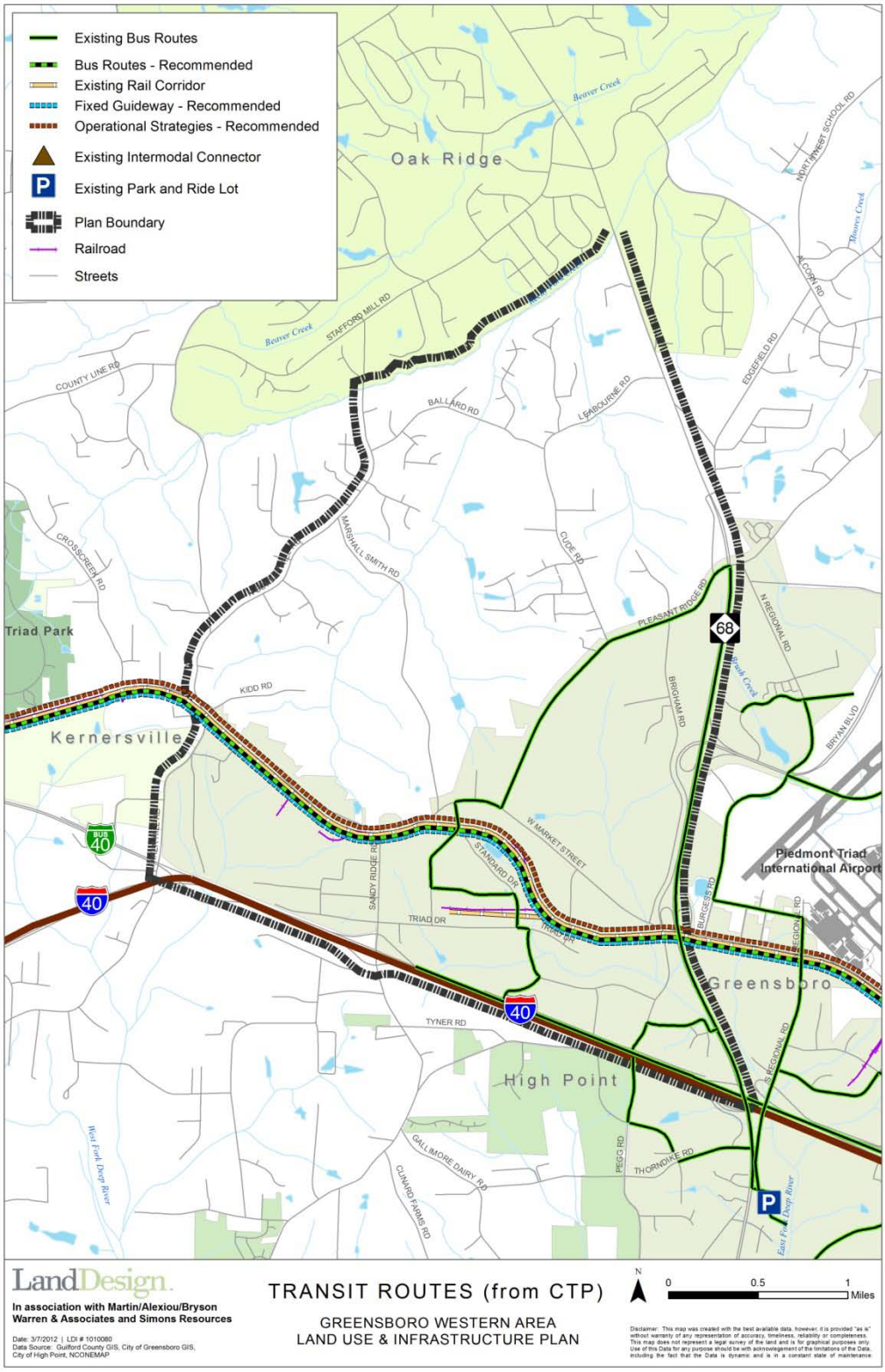
Transit

The existing PART transit hub is located on South Regional Road and adjacent to NC 68 south of I-40. Four regional bus routes currently serve this hub. Three of these routes provide express service on 30-minute headways to transit centers in Greensboro, Winston-Salem, and High Point. The fourth route connects the Winston-Salem transit hub with hospitals in Chapel Hill and Durham. It makes only two trips daily, stopping at the PART hub every five hours. In addition to the fixed route service there is also a shuttle service from the PART hub to PTIA and locations in northwest Guilford County. Note that these routes and service hours are subject to change, and may vary from what is indicated.

Additional transit service to the study area is planned for the longer term. According to the 2025 Regional Transit Vision, a new gold line route will connect Winston-Salem and Kernersville to the PART transit hub and PTIA. GTA and the Winston-Salem Transit Authority (WSTA) also have plans to eventually serve the study area. Perhaps the most ambitious plan proposes intracity rail service between downtown Greensboro and PTIA.

Figure 19 summarizes existing and proposed transit service routes as identified in the Comprehensive Transportation Plan. Both fixed-route bus and demand-based shuttle services are shown. Again, however, actual routes are subject to change, and may differ from the map.

Figure 19: Transit Routes



Bicycle and Pedestrian

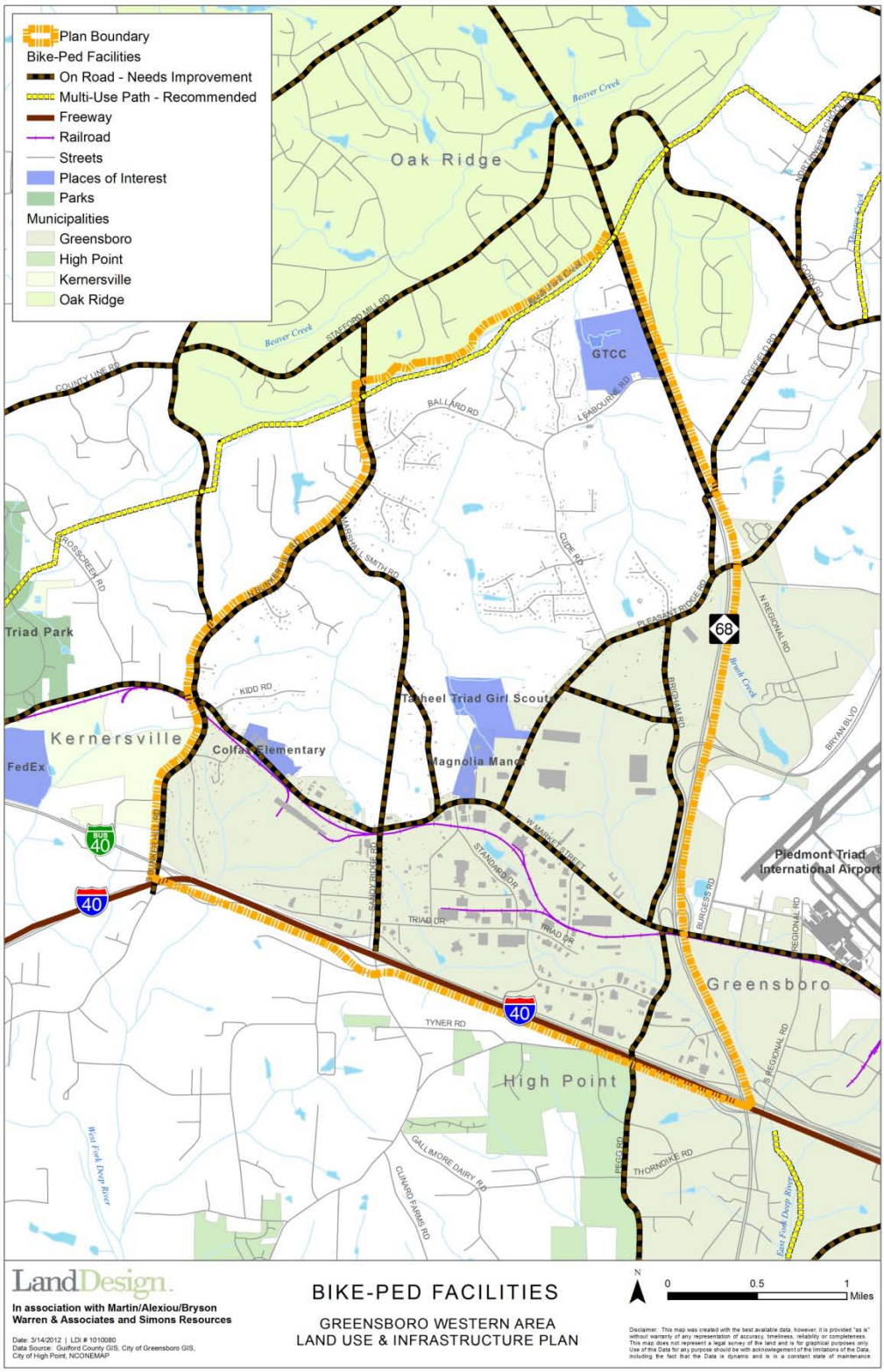
The existing pedestrian and bicycle network in the study area is sparse. There are no dedicated bicycle facilities, either on-road or off-road, in the study area. The sidewalk network is fragmentary, since most roads in the area were initially constructed as two-lane rural roads without curb-and-gutter or sidewalks. There are no off-road pedestrian and/or bicycle facilities in the study area.

It is anticipated that the pedestrian and bicycle networks will develop more fully over time, primarily in conjunction with roadway improvements and new development (or redevelopment). West Market Street is identified as a potential long-term route in the current GUAMPO Comprehensive Bicycle, Pedestrian, and Greenway Plan. Sidewalks and wide outside lanes are to be included in the West Market Street and the proposed Sandy Ridge Road improvements. Above and beyond these specific improvements, it is the policy of the Greensboro Urban Area Metropolitan Planning Organization (GUAMPO) to include sidewalk and bicycle accommodations on roadway improvement projects wherever possible.

The Greensboro Urban Area Bicycle, Pedestrian, and Greenway Master Plan addresses relevant facilities in the study area. The Piedmont Greenway, which will be routed along the northern edge of the study boundary, is currently under development in other locations. The time-frame for completion of this project is not known at this time. The Comprehensive Bicycle, Pedestrian, and Greenway Plan is currently undergoing an update with the scheduled completion in late 2011. That update will consider input from local stakeholders, and should have significant impacts on the design and completion schedule of bicycle and pedestrian facilities in the study area.

Figure 20 shows existing and planned facilities.

Figure 20: Bike/Ped Facilities



Appendix A: Zoning Classifications

Guilford County Zoning Classifications	
Zoning Class	**Class Description**
Agriculture	The AG, Agricultural District, is primarily intended to accommodate uses of an agricultural nature, including farm residences and farm tenant housing. It also accommodates scattered non-farm residences on large tracts of land. It is not intended for major residential subdivisions.
Commercial-Highway Business	The HB, Highway Business District is primarily intended to accommodate those retail service and distributive uses which are typically located along thoroughfares. The district is established to provide locations for establishments which require high visibility and good road access, or which cater primary to passing motorists. Developments in this district generally have substantial front setbacks.
Light Industrial	The LI, Light Industrial district is primarily intended to accommodate limited manufacturing, wholesaling, warehousing, research and development, and related commercial/service activities which in their normal operations, have little or no adverse effect upon adjoining properties.
Planned Development - Mixed	The PD-M, Planned Development Mixed District is intended to accommodate residential, commercial and light industrial uses developed on large tracts in accordance with the Unified Development Plan.
Public & Institutional	The PI, Public and Institutional district is intended to accommodate mid- and large-sized public, quasi-public, and institutional uses which havea substantial land use impact or traffic generation potential. It is not intended for smaller public and institutional uses cu stomarily found with-in residential areas

Rural Preservation	The RPD, Rural Preservation District is intended to accommodate rural developments designed to preserve rural character, significant man-made features, and environmentally sensitive areas. The district permits open space, recreational, agricultural, residential, and limited neighborhood business and office uses that are a part of a unified design.
Single-Family Residential	The RS-40, Residential Single-Family District is primarily intended to accommodate single-family detached dwellings on large lots in areas without access to public water and wastewater services. The district is established to promote single-family detached residences where environmental features, public service capacities or soil characteristics necessitate very low density single-family development. The overall gross density in RS-40 area will typically be 1.0 unit per acre or less.
Corporate Park	The CP, Corporate Park District is primarily intended to accommodate office complexes, ware-house, research and development and assembly uses on large sites in a planned, campus like setting that emphasize natural characteristics and landscaping. The district may also contain retail and services uses which customarily located within planned employment centers.
Heavy Industrial	The HI, Heavy Industrial district is primarily intended to accommodate a wide range of assembling, fabricating, and manufacturing activities. The district is established for the purpose of providing appropriate locations and development regulations for uses w hich may have significant environmental impacts or require special measures to ensure compatibility with adjoining properties.

City of Greensboro Zoning Classifications	
Zoning Class	**Class Description**
Agricultural	The AG, Agricultural District, is primarily intended to accommodate uses of an agricultural nature, including farm residences and farm tenant housing. It also accommodates scattered non-farm residences on large tracts of land. It is not intended for major residential subdivisions.
Airport Overlay District	The -AO, Airport Overlay District is intended to be limited to industrial uses and other uses that support airport operations, and to limit residential uses to very low densities near the Piedmont Triad International Airport in order to minimize the negative effect aircraft noise on homes and prohibits the erection of structures which would, by virtue of their height interfere with the airport.
Corporate/ Business Park	The CP, Corporate Park District is primarily intended to accommodate office complexes, ware-house, research and development and assembly uses on large sites in a planned, campus like setting that emphasize natural characteristics and landscaping. The district may also contain retail and services uses which customarily located within planned employment centers. Design and orientation and operation of uses should ensure compatibility with adjacent uses.
Commercial-Low	The C-L, Commercial-Low district is primarily intended to accommodate low intensity shopping and services close to residential areas. The district is established to provide locations for businesses which serve nearby neighborhoods. The district is typically located near the intersections of collectors or thoroughfares in areas which are otherwise developed with residences.

Conditional Districts	Conditional districts are zoning districts in which the development and use of the property is subject to predetermined ordinance standards and the rules, regulations, and conditions imposed as part of the legislative decision creating the district and applying it to the particular property.
Highway Business	The HB, Highway Business District is primarily intended to accommodate those retail service and distributive uses which are typically located along thoroughfares. The district is established to provide locations for establishments which require high visibility and good road access, or which cater primarily to passing motorists. Developments in this district generally have substantial front setbacks.
Light Industrial	The LI, Light Industrial District is primarily intended to accommodate limited manufacturing, wholesaling, are housing, research and development and related commercial/service activities which, in their normal operations, have little or no adverse effect upon adjoining properties.
Planned Development -Mixed	The PD-M District is intended to accommodate residential, commercial and light industrial uses developed on large tracts in accordance with a Unified Development Plan.
Public/Institutional	The PI, Public and Institutional District is intended to accommodate mid-and large-sized public, semi-public and institutional uses which have a substantial land use impact or traffic generation potential. It is not intended for smaller public and institutional uses customarily found within residential areas.
Public/Institutional	The PI, Public and Institutional district is intended to accommodate mid- and large-sized public, quasi-public, and institutional uses which have a substantial land use impact or traffic generation potential. It is not intended for smaller public and institutional uses customarily found with-in residential areas
Residential (R-3)	The R-3, Residential Single-family district is primarily intended to accommodate low density single-family detached residential development. The overall gross density in R-3 will typically be 3 units per acre or less.

Appendix B: Land Utilization, Value Comparison and Suitability Methodology

PARCEL VALUE MAP

The first parcel (Greensboro_reportmapstemplate_landvalue) map was created using the following steps:

1. The parcels shapefile was divided into two shapefiles, one for parcels within the city limits, and one for parcels outside of the city limits to allow for separate analyses if necessary.
2. A field (PERCVAL—percent value) was added to each of the new parcels shapefile, calculated as ([building value] / [land value]).
3. A second field (PERCVNORM—percent value normalized) was added to each parcels shapefile, which normalizes PERCVAL values by the greatest value given by the PERCVAL calculation. (The greatest value for in-city parcels was 20.8263. For non-city parcels, 12.8599.) This normalization creates a range from 0 – 1 for PERCVNORM, where 0 is the lowest building-to-land value ratio, and 1 is the greatest.
4. The parcel symbology is a 10-class, quantile classification scheme using PERCVNORM as the value field. Green values (lowest nominally) represent the most undeveloped land, and red (highest nominally) the most developed land. Parcels with no PERCVAL value consequently had no buildings on the site, and were reclassified to beige to represent that.
5. Using satellite imagery and parcel size/shape, parcels making up subdivisions were selected and exported into their own shapefile, then added to the map.

PARCEL LAND UTILIZATION MAP AND TABLE

The land utilization (parcel_utilization_stats) table and the second parcel map (Greensboro_reportmapstemplate_landvalue) were created using the following steps:

Table

1. Join the GSO and Guilford zoning files.
2. When the two files are joined, their individual fields will not intermingle.
3. Intersect the joined zoning file with the parcels shapefile.
4. Select “Zoning Class and Zoning Class 1” types in groups by their general zoning classes, as well as the number of buildings.
5. County zoning classes groups:
   - Agriculture
   - Commercial
   - Industrial
   - Institutional
   - Planned Development
   - Rural Preservation
   - Single Family
6. City zoning classes* groups:
   - Agriculture
   - Business park
   - Heavy Industrial
   - Light Industrial
   - Public and Institutional

- Single Family Residential
- Commercial

*Conditional use districts grouped in general zoning categories (i.e., conditional heavy industrial contained within heavy industrial)

For each group, first the selection must be run with building count = 0. For agriculture, this would be parcels with agricultural zoning that do not have any buildings on the parcels. Then, the statistics tool is used on the "TOTAL_ACRE" field to determine the number of undeveloped acres.

The next step is to determine the acreage of parcels with buildings on them. For each group, run the zoning class selection with building count > 0. Again, use the statistics tool to determine the number of developed acres.

Map

1. Set the symbology for the parcels layer with building count (BUILD_COUN) as the value field.
2. Change the display for parcels with 0 buildings to crosshatch, and above 0 to hollow with no outline.
3. Lay the symbolized parcel layer on top of zoning.

DEVELOPMENT SUITABILITY MAP

The development suitability (devpot_foc) map was created using the following steps:

1. Organize and pick variables:

Developed Land	**Un/Underdeveloped Land**
Railroads (0.1 mi buff)	Farms
School (1 mi buff)	Threatened farms
Sewer system	Trails
Water lines	Historic sites
Land use	NHEO
- Commercial	Streams
- Industrial	Wetlands
- Institutional	Floodplains
- Single family residential	Lakes
- Utility	
- Agriculture	
- Open space	
- Parks	
- Rural residential	
- Woods	
- Commercial	

**Major roads excluded because of their consistency throughout the relatively small study area.

2. Convert variables to raster format (50 foot cell size).
3. Reclass the rasters into a binary format. Cells where the variables occur are set to 1. All other cells, including NoData, are set to 0.
4. Use the raster calculator to perform:

   ([Sum of "developed land" variable rasters] – [Sum of "un/underdeveloped land" variables])
   The lowest values are the least developable land. The highest values are the most developable land.

5. Use the focal statistics tool with a 3x3 cell rectangular neighborhood, setting mean as the statistic t type.
6. Set the symbology to the greatest number of possible classes and quantile classification, using the green-to-red color ramp. Right click on a class to flip the color ramping so that low values are red and high values are green for a "potential for developability" map.

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[i] *Old Mill of Guilford Website, http://www.oldmillofguilford.com/index.htm. Accessed January 3, 2011.*

[ii] *Source: Natural Resources Conservation Services, http://www.nrcs.usda.gov/ Accessed June 2, 2011*

appendix d: market analysis

Greensboro Western Area
Land Use and Infrastructure Plan
Market Analysis

Greensboro, NC

December 2011

Prepared for

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1. Introduction

Warren & Associates was retained by LandDesign, Inc. to conduct a market analysis for the Greensboro Western Area Land Use and Infrastructure Plan. This analysis documents existing conditions from a demographic and real estate market perspective. The scope for this assignment included:

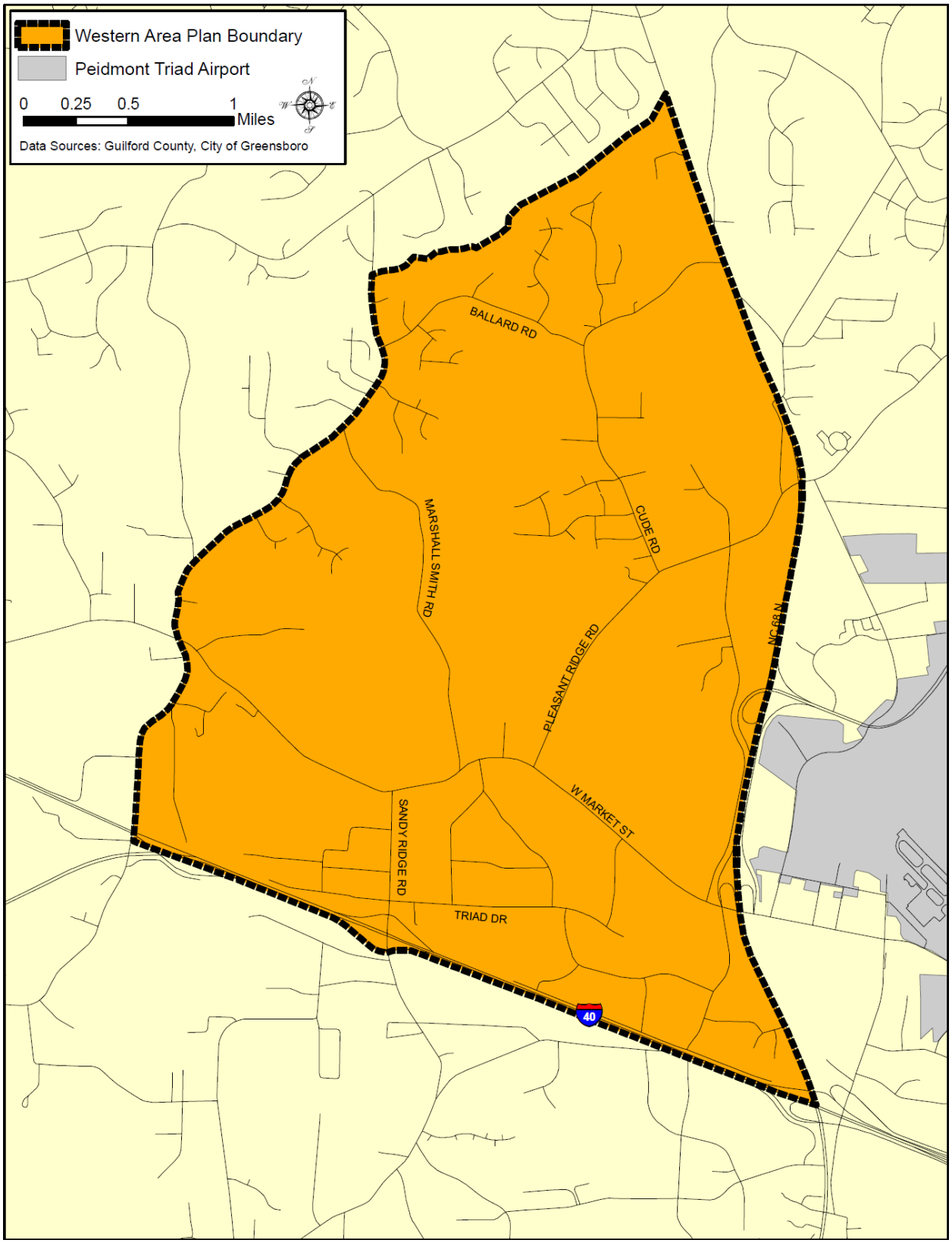
- Analyze demographic and employment trends
- Analyze real estate market trends
- Forecast supportable residential units through 2030
- Forecast supportable retail square footage through 2030
- Forecast supportable office and industrial square footage through 2030
- Recommend competitive locations for each land use type, including mixed-use
- Recommend implementation strategies

The Study Area encompasses the western fringe of the City of Greensboro and a portion of unincorporated Western Guilford County, including the Colfax community (Map 1). It is roughly bounded by Reedy Fork Creek and Leabourne Road to the north, I-40 to the south, NC-68 to the east, and Bunker Hill Road to the west. The major road corridors of the Study Area include W. Market Street, I-40, and NC-68.

The Study Area, located in the northwestern quadrant of Guilford County, is within a 15- to 30- minute drive of downtown Greensboro, Oak Ridge, High Point, and Kernersville, and Winston-Salem. The Piedmont Triad International Airport is located immediately east of the Study Area. The proximity to the airport and interstate highways, as well as access to the regional labor force, make the Study Area an attractive location for employment uses, particularly distribution, manufacturing, and wholesale trade.

It should also be noted that while the portion of the Study Area south of W. Market Street and east of Pleasant Ridge Road is primarily office and industrial in nature, the balance is low- to medium-density residential and agricultural.

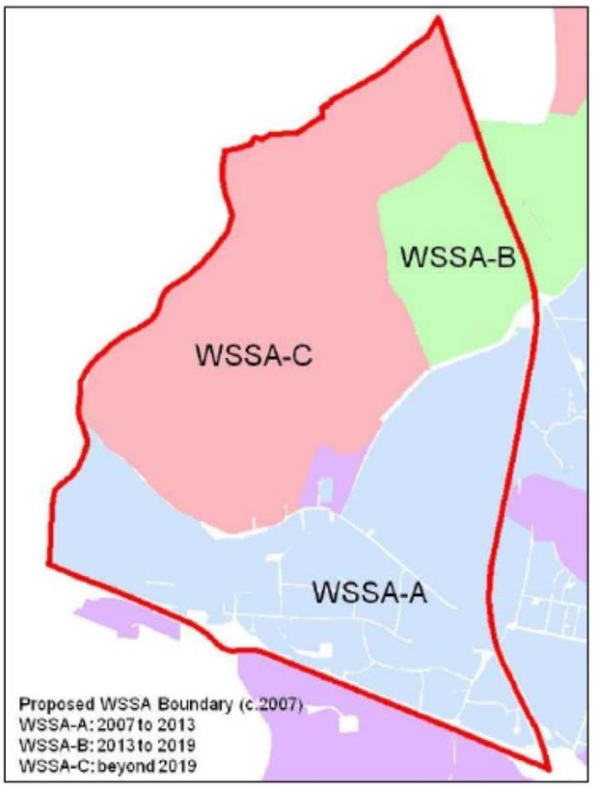
Map 1: Greensboro Western Planning Area, 2011



Map 2 demonstrates the existing and planned water and sewer service areas in the Western Area. Service extensions planned in the Study Area are as follows:

- Water/Sewer Service Area A (WSSA-A): Scheduled for extension of services between 2007 and 2013.
- Water/Sewer Service Area B (WSSA-B): Scheduled for extension of services between 2013 and 2019.
- Water/Sewer Service Area C (WSSA-C): Scheduled for extension of services beyond 2019.

The area served by water and sewer is primarily the industrial and business park corridors located along West Market Street and Pleasant Ridge Road. The portion of the Study Area located in WSSA-C is primarily agricultural and low-density single-family in nature. For the most part, these parcels rely on well and septic systems, which dictate a lower density.



Map 2: Water/Sewer Service Areas, 2011
Source: Hazen Sawyer

2. Economic Overview

Typical market assessment methodology may not show the true potential of the Western Area, which is adjacent to the Piedmont Triad International Airport (PTIA). The City of Greensboro, and in particular the area surrounding PTIA, have an advantageous location in the Mid-Atlantic region. Transportation and infrastructure connections, such as highways and rail, will influence employer decisions to locate professional, manufacturing, and distribution uses in or near the Western Area, especially aviation-related companies. The following talking points describe the major bigger-picture influences for the Greensboro Western Area.

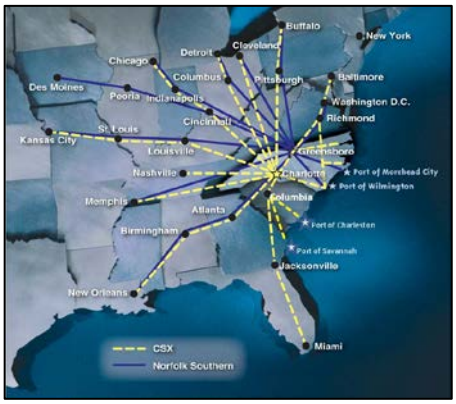
2.1 Highway Infrastructure

Currently, two major interstate highways merge in Greensboro: I-85 (north-south) and I-40 (east-west). Additionally, Greensboro's central location in North Carolina provides easy access to I-95 and I-77, in addition to other major highways, including US-29, US-220, NC-68, and NC-421. Future I-73 and I-74 corridors will also intersect in Greensboro, near PTIA and the Western Area.

The I-73 corridor is planned to run from Michigan to Myrtle Beach, SC. Currently, the southwestern portion of the Greensboro Urban Loop is one of only two sections of the corridor that is signed as I-73. The proposed portion of I-73 running adjacent to PTIA, then north into Rockingham County, will be included in our analysis of this area. Closely related to the I-73 corridor, the I-74 extension is planned to run from Ohio to Myrtle Beach, SC. Several sections of this corridor will follow proposed I-73. This analysis considered a connection between Winston-Salem's planned outer-belt and Greensboro, running east-west across the Western Area.

Existing and planned highway infrastructure will help further Greensboro's connections to surrounding regions. Additionally, the proposed I-73/I-74 corridor will provide more direct access to ports in South Carolina and Georgia.

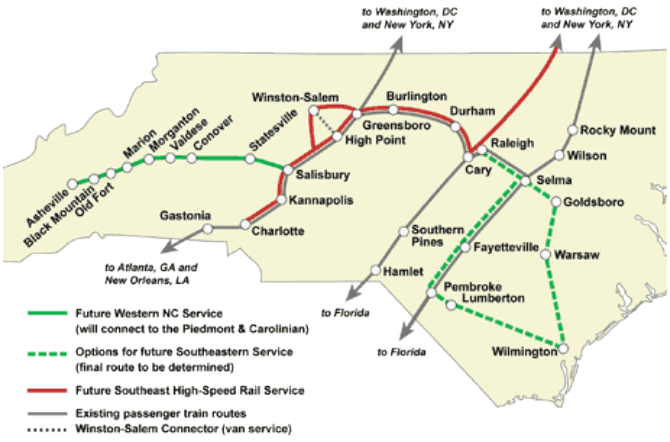
2.2 Railroads



Norfolk Southern and CSX both provide extensive freight rail service in the Greensboro area. Norfolk Southern provides direct access to North Carolina's two deepwater ports at Morehead City and Wilmington. Access is also available, through Charlotte, to ports in South Carolina and Georgia.

Additionally, the Port of Virginia at Norfolk recently announced the expansion of a new double-stack rail service

that will connect into central North Carolina. It was reported that the new rail capacity will serve Greensboro with a focus on the textile, furniture, retail, chemical, and agricultural industries. The completion of this connection will enhance this location for distribution and logistics companies.



The Southeast High Speed Rail Corridor is planned to run from Washington, DC to Charlotte, NC. The high-speed rail service will provide travelers a competitive alternative to air and automobile trips. The goal is for passenger service to begin over the preferred alternative between 2018 and 2022. Rail lines will be improved to handle high-speed rail and freight; this is a critical East Coast freight connection.

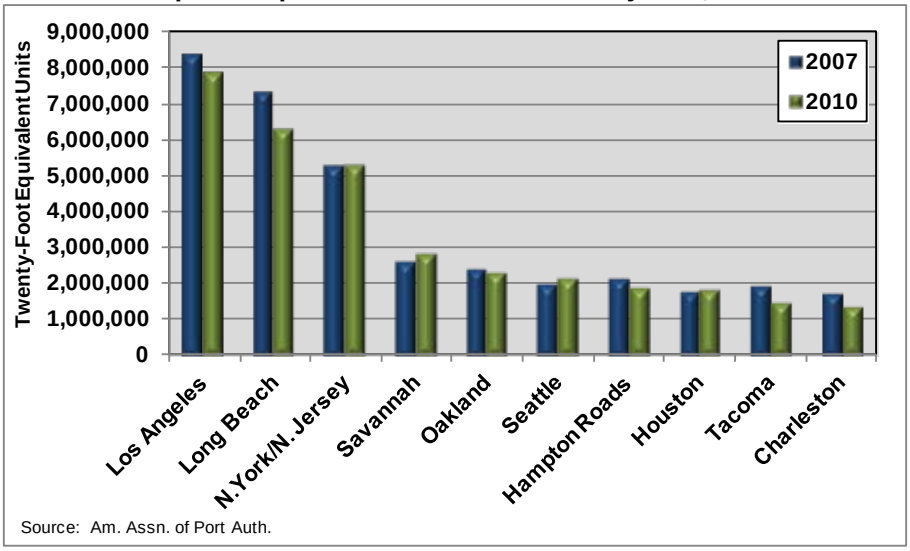
The City of Charlotte is constructing an intermodal facility with Norfolk-Southern Corporation on 200 airport acres. Norfolk-Southern plans to relocate operations from Brevard Street, north of downtown Charlotte, to the airport. The $90 million project will integrate thousands of containers transported by rail, as well as trucks from nearby I-85 and I-485. When completed in late-2012, the 280-employee facility is expected to be the site of 250,000 container lifts per year. Through Norfolk Southern, the City of Greensboro would have direct access to Charlotte and the new intermodal facility. It should also be noted that the CSX facility off of Rozzelles Ferry Road is also expanding in Charlotte.

2.3 Ports

According to the American Association of Port Authorities, US Seaports are responsible for moving nearly all the country's overseas cargo volume: 99.4% by weight and 64.1% by volume. The completion of the Panamax project in 2014 will increase the dimension of ships able to pass through the locks. This will result in more trade funneling through fewer ports. The Panama Canal Authority estimates a 35% increase in cargo volume through 2025.

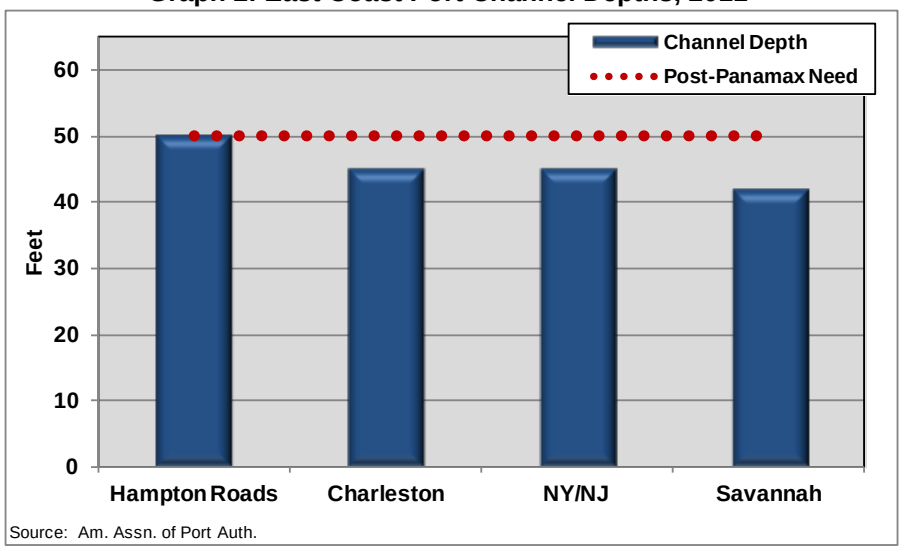
Graph 1 shows the top ten U.S. ports by twenty-foot equivalent units (TEU). The top ten ports currently have a 79% market share, which is likely to grow post-Panamax as they are capable of accommodating larger container ships (up to 12,000 TEUs). It should be noted that Wilmington falls lower on the list of major ports by TEU, making up only 20% of Charleston's volume.

Graph 1: Top Ten United States Ports by TEU, 2011



Post-Panamax ships will require up to 50' of water depth to navigate when fully loaded. Only one East Coast seaport, Hampton Roads, is that deep (Graph 2). The Port of Charleston needs to deepen its shipping channel from 45 to 50 feet at an estimated cost of $350 million. Savannah will require more dredging, from 42 to 50 feet, with an estimated cost of $600 million. These ports are competing for federal funding to expand capacity by 2014.

Graph 2: East Coast Port Channel Depths, 2011



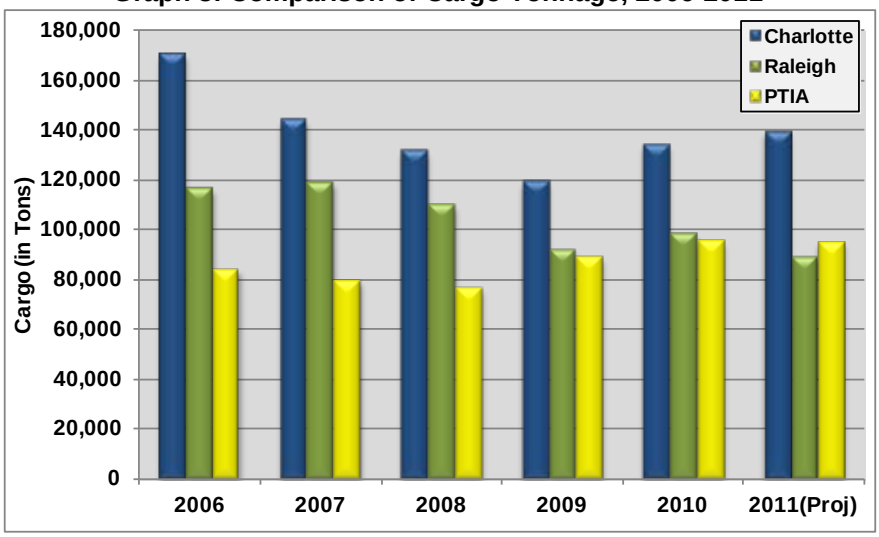
Wilmington has completed a feasibility study to relocate to a new site 20 miles south of the current facility near downtown by 2017. Recommendations from the study indicated that the investment required to accommodate post-Panamax ships would likely not pay off long-term, meaning that connections to ports in Virginia, South Carolina, and Georgia could become increasingly more important to the City of Greensboro.

2.4 Piedmont Triad International Airport

The Western Area is adjacent to the Piedmont Triad International Airport. Three runways currently operate at PTIA; the most recent opening in 2009. Passenger service, as well as the related parking, retailers, and restaurants, continue to provide significant income for PTIA. The airport serves approximately 900,000 passengers a year on seven airlines. Currently, 61 flights depart daily from PTIA to 16 destinations.

Cargo airlines at PTIA (FedEx, Mountain Air, and UPS) are carrying approximately 13% more tonnage than in 2006, due in part to the completion of the new FedEx Mid-Atlantic Hub. Reported cargo shipments reached approximately 84,000 tons at the end of 2006, before declining in 2007 and 2008. Cargo shipments increased to 89,000 tons in 2009, followed by another 9% increase to 97,000 tons in 2010 and 2011 (projected).

Graph 3: Comparison of Cargo Tonnage, 2006-2011

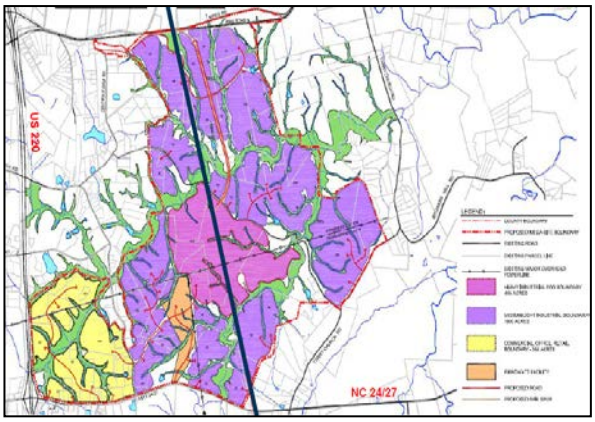


It should be noted that while the Charlotte airport is a significantly larger cargo shipper, PTIA's total of 97,000 tons in 2010 was just slightly less than 98,000 tons for Raleigh. Based on cargo reports for the first eight months of 2011, PTIA could actually ship more cargo than Raleigh by year-end.

The new FedEx Mid-Atlantic Air Hub opened in 2009 at PTIA. The 500,000-square-foot facility is the company's fifth major US air cargo hub. The facility is capable of sorting 24,000 packages in one hour. There are currently over 200 jobs at the new FedEx facility, with a potential of 600 positions when the facility reaches capacity.

2.5 Heart of North Carolina MegaPark

The Heart of North Carolina MegaPark is a joint collaboration between Moore and Montgomery counties. The site consists of 3,000 acres of contiguous, undeveloped land at the northwestern corner of Moore County and the eastern corner of Montgomery County. It is bounded by NC24/27 and Spies Road, and bisected by the new I-73/74. The City of Greensboro is located 50 minutes north of the site.



In addition to highway connections, the Heart of North Carolina MegaPark will have access along the Aberdeen Carolina & Western Railway, which connects to both the Norfolk Southern and CSX freight railways.

The majority of the MegaPark acreage lies in Moore County. However, because more than 1/3 of the site is in Montgomery County, the MegaPark is designated Tier 1 for state incentives, or $12,500-per-new-job tax credit and a 7% tax credit for investment in personal property. Moore County is designated as Tier 3, which would have allowed for lower incentives. Build-out of the site is expected to take more than two decades.

3. Demographic Trends

In this section, Western Area demographic trends are analyzed and compared to Guilford County and the Greensboro-High Point MSA (Map 3). The Greensboro-High Point MSA includes Guilford, Randolph, and Rockingham counties.

3.1 Population

The Western Area contains an estimated 1,755 residents. The 432 new residents between 2000 and 2010 equated to a growth rate of 32.7% (Table 1). Guilford County and the Greensboro-High Point MSA grew at slower rates of 15.3% and 12.2% during the same period. It should be noted that the percentage growth rate in the Western Area is elevated due to the smaller population base, as compared to Guilford County and the MSA.

Table 1: Comparison of Population Trends, 2000-2010

			2000-2010 Change		
Area	**2000**	**2010**	**#**	**%**	**CAGR**
Western Area	1,323	1,755	432	32.7%	2.9%
Guilford County	421,048	485,583	64,535	15.3%	1.4%
Greensboro-High Point MSA	643,430	721,646	78,216	12.2%	1.2%
Planning Area % of MSA	**0.21%**	**0.24%**	**0.55%**		

Source: ESRI

The Western Area captured 0.6% of the population growth in Guilford County between 2000 and 2010. The Western Area experienced a compound annual growth rate (CAGR) of 2.9%, approximately twice the rates for Guilford County and the Greensboro-High Point MSA.

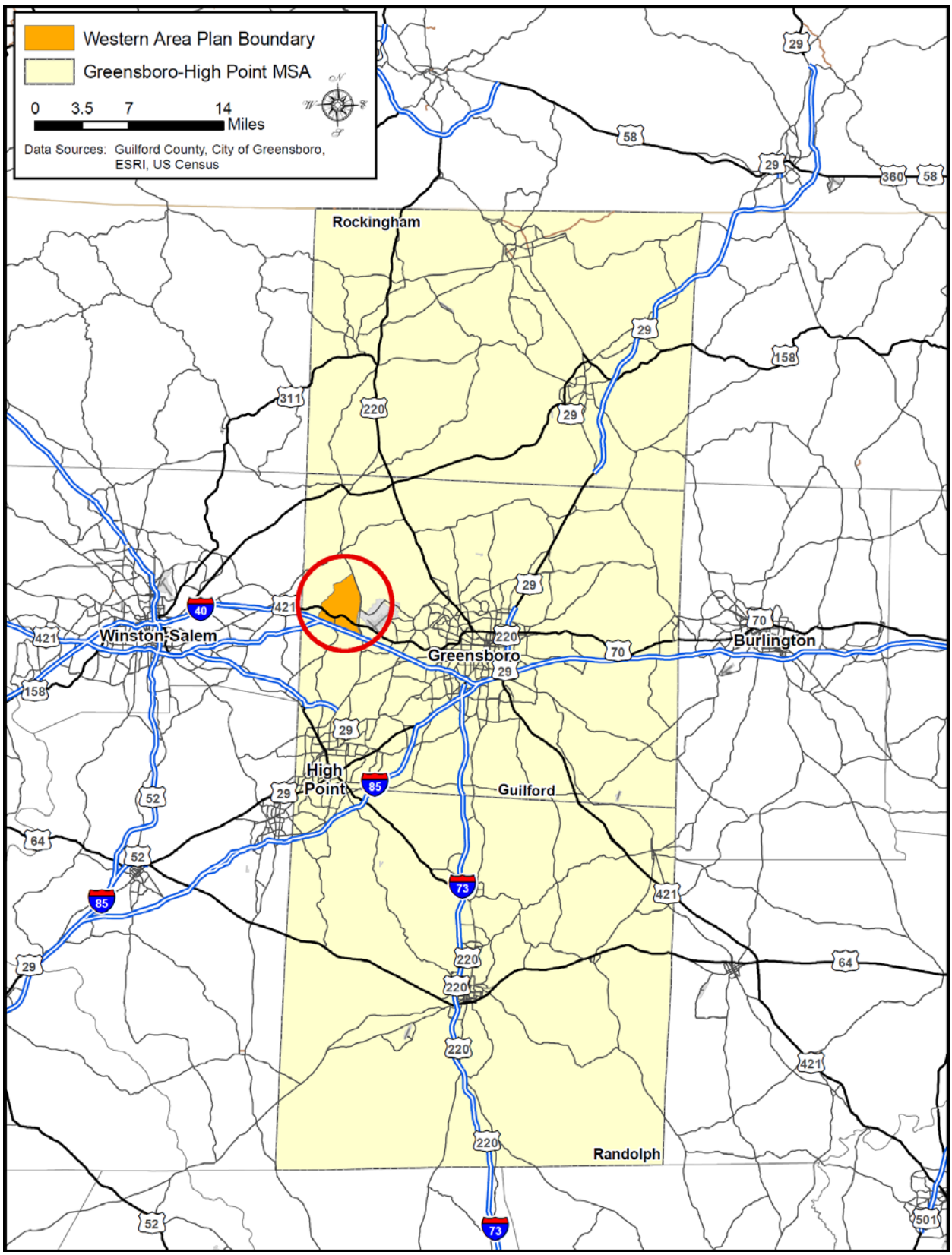
Table 2 demonstrates Western Area population change between 2000 and 2010 by age cohort. While residents aged 45 to 54 represented the largest cohort in 2010, the 55 to 64 group increased 107.6 % in ten years. These two Baby Boomer cohorts represent individuals in the prime earning years, with few dependent children at home.

Table 2: Population Trends by Age Cohort, Western Area, 2000-2010

			2000-2010 Change	
Cohort	**2000**	**2010**	**#**	**%**
0 - 9	176	200	24	13.7%
10 - 19	189	239	49	26.2%
20 - 34	216	237	21	9.9%
35 - 44	262	253	-9	-3.5%
45 - 54	200	340	141	70.4%
55 - 64	122	253	131	107.6%
65 - 74	94	132	38	40.1%
75 - 84	50	77	27	53.6%
85+	15	25	10	68.8%
Total	**1,323**	**1,755**	**432**	**32.7%**

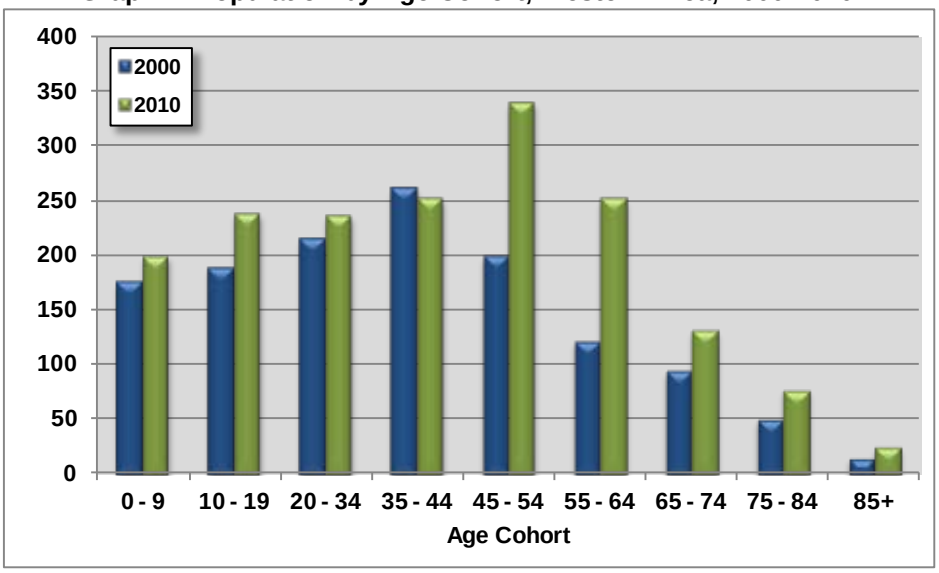
Source: ESRI

Map 3: Greensboro-High Point Metropolitan Statistical Area, 2011



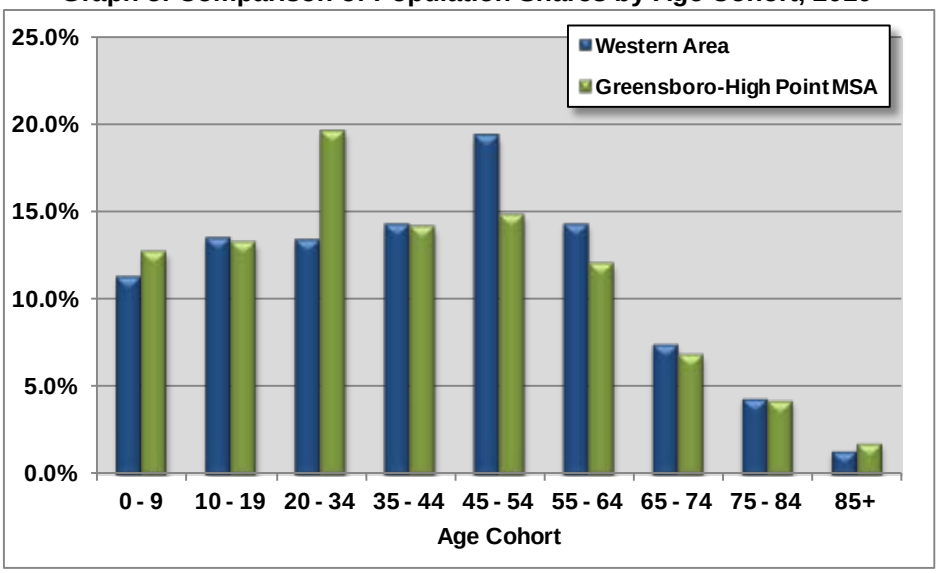
As shown in Graph 4, the 45 to 54 and 55 to 64 cohorts experienced a strong increase between 2000 and 2010. Other increases were experienced in seniors over age 65 and younger "Echo Boomers" aged less than 34 years.

Graph 4: Population by Age Cohort, Western Area, 2000-2010



In comparison to the Greensboro-High Point MSA, the Western Area currently has higher shares of population aged 45 to 64 (Graph 5). Alternatively, the Greensboro-High Point MSA has a significantly higher share of young adults, aged 20 to 34.

Graph 5: Comparison of Population Shares by Age Cohort, 2010



3.2 Households

There are an estimated 670 households in the Western Area, an increase of 31.1% since 2000 (Table 3). The slightly lower growth rate in households than 32.7% for population indicates an upward shift in average household size.

Table 3: Household Trends, Planning Area & Charlotte MSA, 2000-2010

			2000-2010 Change		
Area	**2000**	**2010**	**#**	**%**	**CAGR**
Greensboro Western Area	511	670	159	31.1%	2.7%
Guilford County	168,667	195,806	27,139	16.1%	1.5%
Greensboro-High Point MSA	256,315	289,542	33,227	13.0%	1.2%
Planning Area % of MSA	**0.20%**	**0.23%**	**0.48%**		

Source: ESRI

Guilford County experienced a slower 16.1% growth rate, from 168,667 households in 2000 to 195,806 households in 2010. Households in the Greensboro-High Point MSA increased from 256,315 in 2000 to 289,542 in 2010, an increase of 13.0%. Again, the percentage growth rate in the Western Area is elevated due to the smaller household base, as compared to Guilford County and the MSA.

3.2.1 Household Trends by Income Cohort

The Western Area experienced a strong increase in all household income cohorts over $75,000 between 2000 and 2010 (Table 4). Growth was experienced in all cohorts except households earning less than $35,000 annually. However, this cohort continues to make up the largest share of the Western Area, at 24.9%. This trend is likely to change, with households earning over $100,000 annually poised to become the largest cohort.

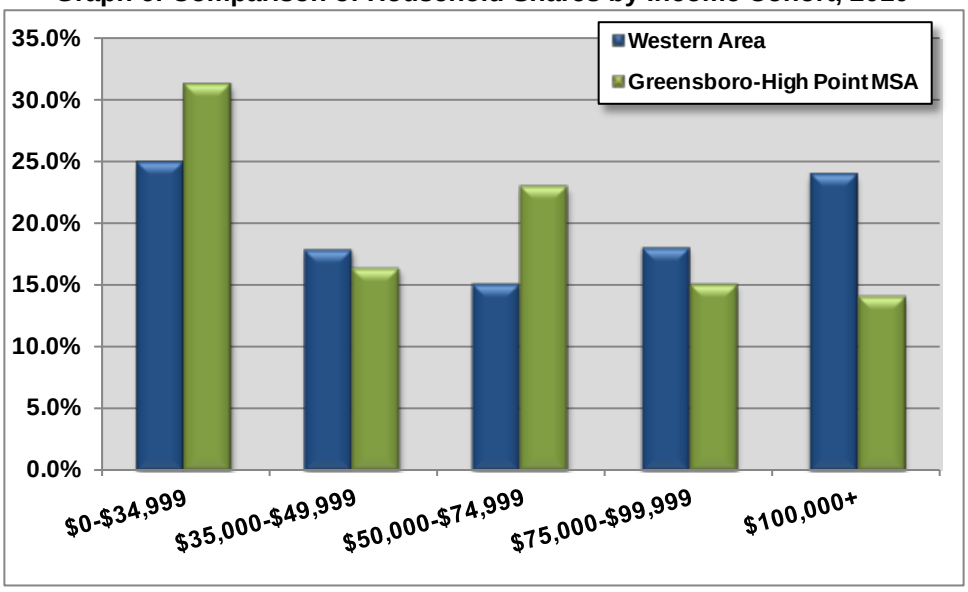
Table 4: Household Trends by Income Cohort, Western Area, 2000-2010

Income			2000-2010 Change	
Cohort	**2000**	**2010**	**#**	**%**
$0-$34,999	168	167	-1	-0.6%
$35,000-$49,999	77	119	42	54.5%
$50,000-$74,999	90	101	11	12.2%
$75,000-$99,999	71	120	49	69.0%
$100,000+	105	163	58	55.2%
Total	**511**	**670**	**159**	**31.1%**

Source: ESRI

As demonstrated in Graph 6, the Western Area has comparatively higher shares of households earning more than $75,000 than the Greensboro-High Point MSA. The share of households earning less than $35,000 annually is significantly smaller than the Greensboro-High Point MSA.

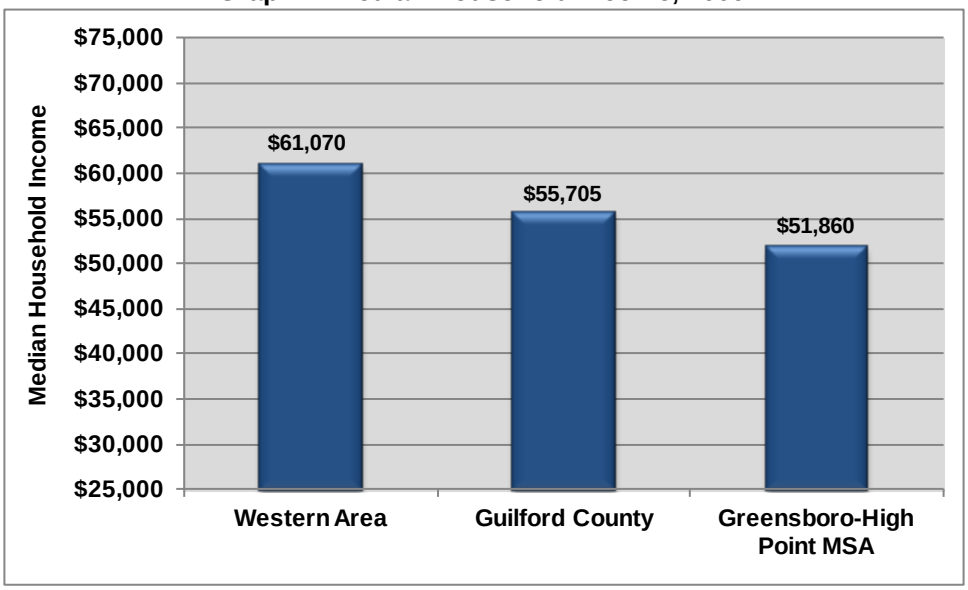
Graph 6: Comparison of Household Shares by Income Cohort, 2010



3.2.2 Median Household Income

The median household income in the Western Area is currently estimated at $61,070, 26.9% more than $55,705 for Guilford County and 32.4% more than $51,860 for the Greensboro-High Point MSA (Graph 7).

Graph 7: Median Household Income, 2009



4. Employment

This section analyzes employment for the Western Area, Guilford County, and the Greensboro-High Point MSA. Major employers and employment trends by industry for the MSA are analyzed. Major employers and employee inflow/outflow in the Western Area is shown for 2010.

4.1 Guilford County Trends

4.1.1 Major Employers

As shown in Table 5, two of the three largest Guilford County employers, Moses H. Cone Health System and High Point Regional Health System, are categorized under the Health Care employment sector. Other significant employment sectors include Professional Services, Distribution, and Manufacturing. The U.S. Postal Service has a 767-employee distribution center located on Pleasant Ridge Road in the Western Area. While none of the other major employers listed in Table 5 are in the Western Area, American Express and The Volvo Group are both located in close proximity. Some of the largest employers have multiple locations in Guilford County.

Table 5: Major Area Employers, Guilford County, 2010

Employer	Produce/Services	City	Estimated Employment
Moses H. Cone Health System	Health Care	Greensboro	7,776
U.S. Postal Service	Mail Processing & Distribution	Greensboro	2,800
High Point Regional Health System	Health Care	High Point	2,400
American Express Credit Card Services	Service Center	Greensboro	2,000
Bank of America	Financial Services	Greensboro	2,000
UPS	Package, Freight & Logistics	Greensboro	2,000
Lorillard, Inc.	Tobacco Products	Greensboro	1,800
AT&T	Telecommunications	Greensboro	1,600
Citi	Credit Card Services	Greensboro	1,500
The Volvo Group	Volvo Truck North America Corporate Headquarters	Greensboro	1,414

Source: Greensboro Economic Development Alliance

It should be noted that in January 2011, American Express announced their decision to close the call center facility in western Guilford County, near the Study Area. American Express is the fourth largest employer in Guilford County. This action amounts to a loss of 2,000 jobs by the end of 2011. Approximately 400 of the current employees will be offered the chance to work from home.

American Express is currently constructing a new data center in eastern Guilford County that could employ up to 150 people at full capacity. The data center is expected to be complete by early 2013.

4.1.2 Employment by Industry

As shown in Table 6, Guilford County had a total of 256,844 annualized full-time jobs in 2010, 5.6% less than in 2005. The loss of 15,143 jobs was spread across eight sectors, with the largest decline of 8,338 jobs in manufacturing. The largest industry in 2010 was Services with 122,120

employees, an increase of 2.3% since 2005. It should be noted that all Health Care and Education jobs are included in the Services sector. Public Administration experienced an increase of 409 jobs, or 3.9%, between 2005 and 2010.

Table 6: Employment Trends, Guilford County, 2005-2010

			2005-2010 Change	
Industry	**2005**	**2010**	**#**	**%**
Agriculture/Mining	751	392	-359	-47.8%
Construction	13,346	9,283	-4,063	-30.4%
Manufacturing	39,212	30,874	-8,338	-21.3%
Wholesale Trade	15,800	15,429	-371	-2.3%
Retail Trade	30,195	27,718	-2,477	-8.2%
Transportation/Utilities	17,942	16,460	-1,482	-8.3%
Information	6,111	5,099	-1,012	-16.6%
F.I.R.E.	18,342	18,583	241	1.3%
Services	119,404	122,120	2,716	2.3%
Public Administration	10,384	10,793	409	3.9%
Unclassified	500	93	-407	-81.4%
Total	**271,987**	**256,844**	**-15,143**	**-5.6%**

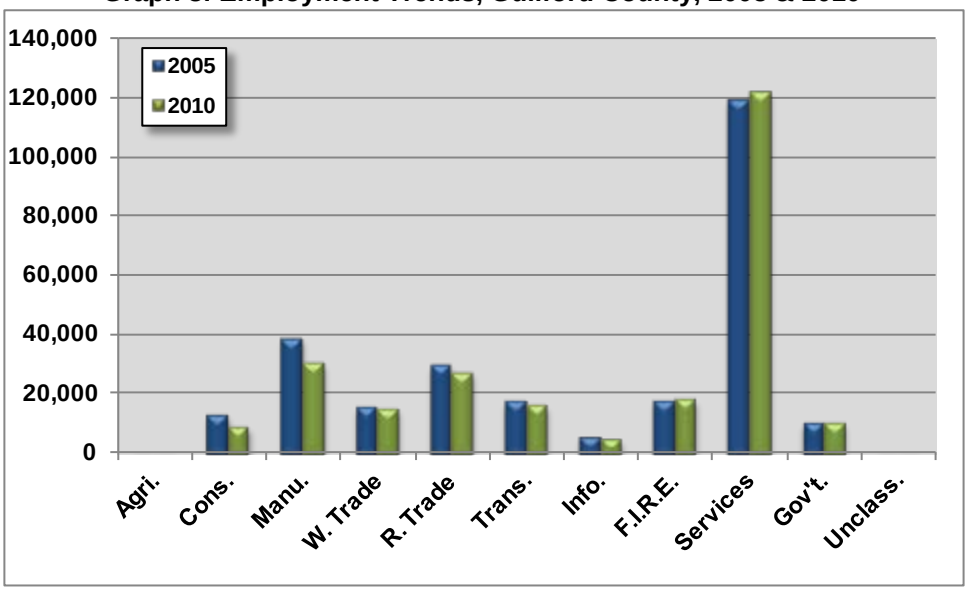
Source: NCESC

The significant declines in Manufacturing and Construction were consistent with both national and state economic trends. Overall, eight industry sectors experienced a decline in employment between 2005 and 2010. The largest absolute declines were:

- Manufacturing (-8,338)
- Construction (-4,063)
- Retail Trade (-2,477)
- Transportation/Utilities (-1,482)
- Information (-1,012)

Graph 8 demonstrates the increase in Services, Finance, Insurance, and Real Estate (F.I.R.E.), and Government employment between 2005 and 2010. However, increases in these industries were not enough to off-set the net 12,401-job loss in the Manufacturing and Construction sectors.

Graph 8: Employment Trends, Guilford County, 2005 & 2010



4.2 Western Area

4.2.1 Major Employers

Major employers located in the Western Area are shown in Table 7. The ten largest employers located in the Western Area are primarily focused in Wholesaling, Manufacturing, and Distribution. Companies range from 767 employees at the United States Postal Service on Pleasant Ridge Road to 200 jobs at Embassy Suites, Key Risk Management Services, and Southeastern Freight Lines.

Table 7: Major Employers, Western Area, 2011

Employer	Description	Estimated Employment
United States Postal Service	Mail Distribution	767
Market America	Online Marketing	568
Analog Devices Inc.	Electronic Parts Wholesaler	350
Tyco Electronics	Fabricated Wire Manufacturing	300
Trane	Plumbing and HVAC Contractors	280
US Marine Corps Reserve	National Security	260
Coca-Cola Bottling Co.	Industrial Paper Wholesaler	260
Endura Products Inc.	Other Millwork	250
Purolator Facet Inc.	Valve and Pipe Manufacturing	205
Embassy Suites	Food Service Contractors	200
Key Risk Management Services	Other Insurance Activities	200
Southeastern Frieght Lines	Long-Distance Trucking	200

Source: City of Greensboro

4.2.2 Planning Area Employment

Based on recent Economic and Social Research Institute (ESRI) data, the Western Area has an estimated 876 employed residents and 6,159 full-time place-of-work jobs. Based on this estimation, employment in the Western Area makes up 2.4% of the 260,157 total jobs in Guilford County.

To determine the net inflow or outflow of workers, the Western Area's place-of-work jobs were subtracted from the number of employed residents by industry. In 2010, the Western Area experienced a net inflow of at least 5,283 employees (Table 8). In fact, the Western Area experienced a net inflow for each major economic sector. The Manufacturing sector had the largest net inflow of 1,382 jobs. The significant inflow indicates the Western Area's competitiveness as a regional employment destination.

Table 8: Employee Inflow/Outflow by Industry, Western Area, 2010

	Employment		Estimated
Industry	Place of Residence	Place of Work	Inflow/ (Outflow)
Agriculture/Mining	19	22	3
Construction	56	318	262
Manufacturing	155	1,537	1,382
Wholesale Trade	43	988	945
Retail Trade	108	982	874
Transportation/Utilities	57	477	420
Information	30	112	82
FIRE	53	173	120
Services	345	1,312	967
Public Administration	10	238	228
Total	**876**	**6,159**	**5,283**

Source: ESRI

5. Housing Trends

This section analyzes housing trends by type and tenure for the Western Area, Guilford County, and the Greensboro-High Point MSA. Additionally, this section provides for-sale residential closing and sales price data, provided through the Triad Multiple Listing Service (MLS). It should be noted that sales of new residential units are only included if they are sold through MLS, excluding transactions directly through the builder.

5.1 Housing Unit Trends

Housing inventory in the Western Area increased by 182 units, or 32.2%, between 2000 and 2010 (Table 9). Guilford County grew at a slower 19.1% rate. Housing units in the Greensboro-High Point MSA increased by 16.1% during the same period, similar to Guilford County.

Table 9: Housing Unit Trends, Planning Area & Charlotte Region, 2000-2010

			2000-2010 Change		
Area	**2000**	**2010**	**#**	**%**	**CAGR**
Greensboro Western Area	548	730	182	33.2%	2.9%
Guilford County	180,391	214,788	34,397	19.1%	1.8%
Greensboro-High Point MSA	275,021	319,396	44,375	16.1%	1.5%
Planning Area % of MSA	**0.20%**	**0.23%**	**0.41%**		

Source: ESRI

The Western Area accounted for 0.41% of new housing unit growth in the Greensboro-High Point MSA. The Western Area experienced a compound annual growth rate (CAGR) of 2.9%, well above 1.8% and 1.5% for Guilford County and the Greensboro-High Point MSA, respectively. The higher growth rate was attributable in part to a much lower base.

In 2000, the 548 housing units in the Western Area were approximately 83.8% single-family (Table 10). Another 13.7% were manufactured housing and 2.6% were multi-family.

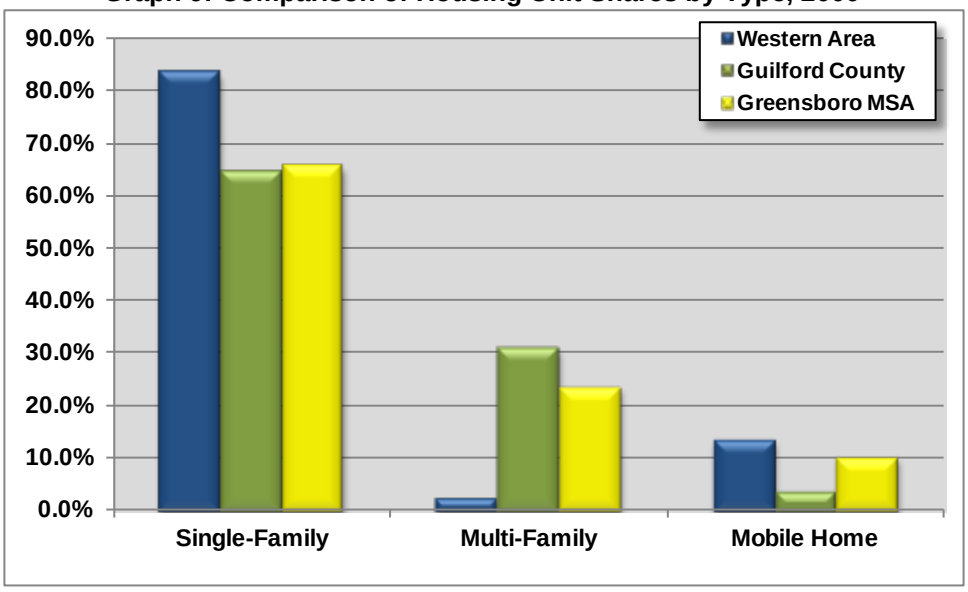
Table 10: Housing Units by Type, Planning Area, 2000

Type	**Units**	**% of Total**
Single-Family	459	83.8%
Multi-Family	14	2.6%
Manufactured Home	75	13.7%
Total	**548**	**100.0%**

Source: ESRI

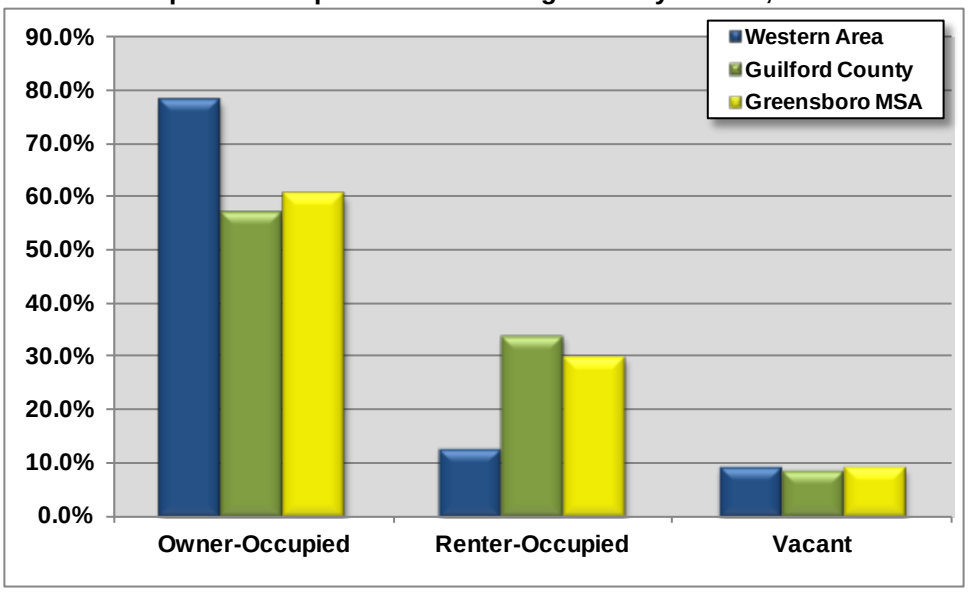
Comparatively, 64.9% of the housing units in Guilford County and 65.9% of the units in the Greensboro-High Point MSA were single-family residential (Graph 9). The Western Area also had a considerably lower share of multi-family units than both Guilford County (31.2%) and the Greensboro-High Point MSA (23.7%). This reflects the lower density development pattern in the Western Area particularly west of Pleasant Ridge Road due to limited public utility service.

Graph 9: Comparison of Housing Unit Shares by Type, 2000



Graph 10 compares 2010 housing unit tenure in the Western Area to Guilford County and the Greensboro-High Point MSA. Owner-occupied units accounted for 78.4% of all housing units in the Western Area, substantially higher than 57.1% for Guilford County and 60.6% for the Greensboro-High Point MSA.

Graph 10: Comparison of Housing Units by Tenure, 2010



The Western Area's 13.0% share of renter-occupied units is much less than both the County and MSA. The limited stock of multi-family units in the Western Area indicates that renter-occupied units are primarily investor-owned single-family properties.

5.2 For-Sale Residential Market Trends

Annual closing and new unit pricing trends for for-sale residential product have been provided from the Triad Multiple Listing Service (MLS) data system. Residential closing data for the Triad is reported based on predefined MLS areas. Data has been collected and analyzed for Area 37 in Guilford County, as this geography aligns closely with the Western Area. A comparison of the Western Area and MLS Area 37 is shown in Map 4. New unit closing data is limited to transactions that occurred through the MLS system. Units sold directly by builders outside of the MLS system are not included.

5.2.1 Single-Family Detached

There were 12,099 new and resale residential closings in Guilford County between 2008 and 2010 (Table 11). New closings sold through MLS represented 19% of the overall total, ranging from 18% in 2008 and 2010 to 23% in 2009. The 16% decline in closings from 4,402 units in 2008 to 3,719 units in 2010 was consistent with national trends.

Table 11: Annual Detached Closings, Guilford County, 2008-2010

	Closings			New %
Year	New	Resale	Total	of Total
2008	788	3,614	4,402	18%
2009	898	3,080	3,978	23%
2010	672	3,047	3,719	18%
Total	**2,358**	**9,741**	**12,099**	**19%**
% of Total	**19.5%**	**80.5%**	**100.0%**	
Ann. Avg.	**786**	**3,247**	**4,033**	

Source: BrokerMetrics; MLS

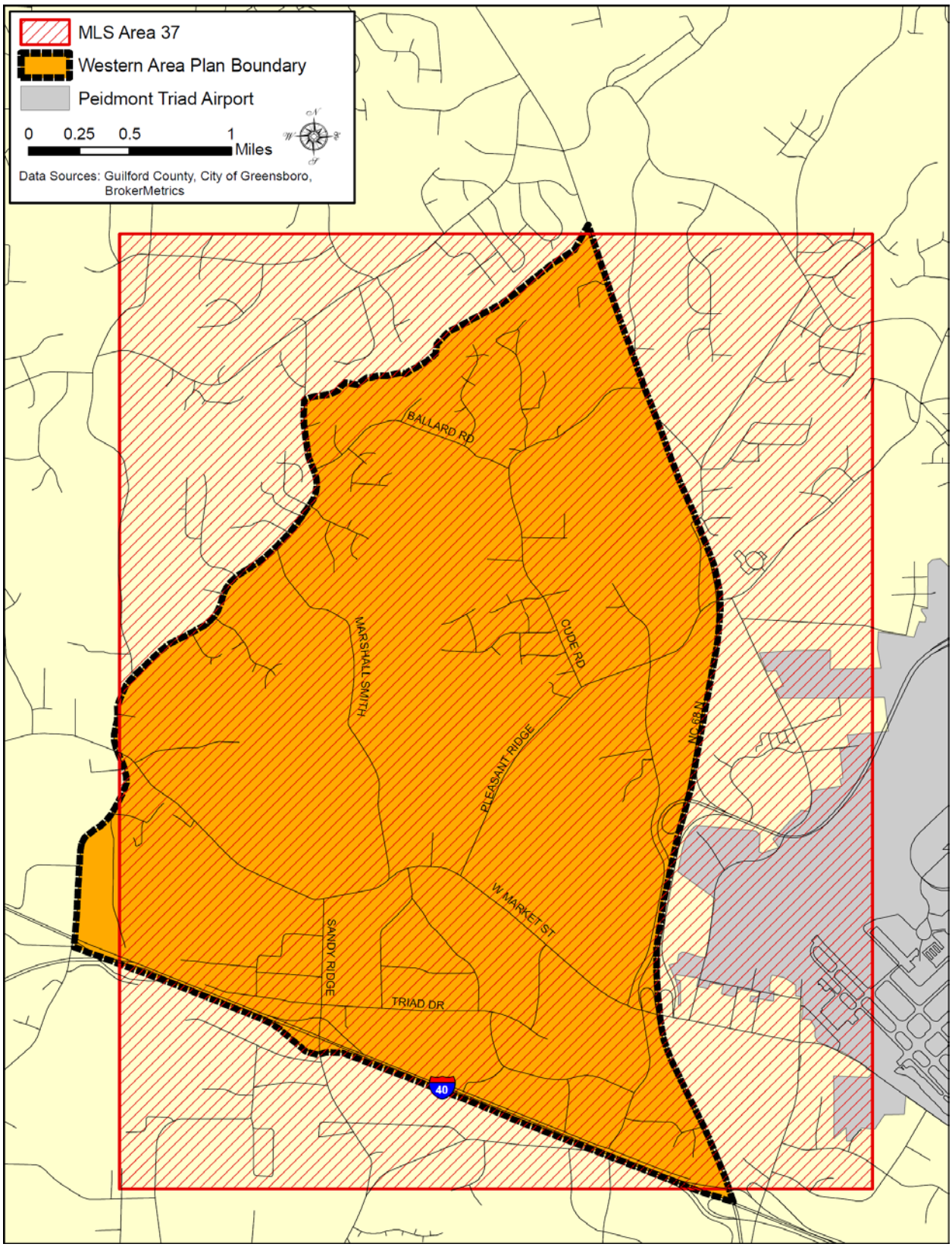
During the same time period, MLS Area 37 had a total of 119 total closings, averaging 40 per year. It is important to note that the 7% drop in transactions between 2008 and 2010 was indicative of greater resilience than the 16% decline for the larger Guilford County market. The 119 closings in MLS Area 37 made up less than 1% of the Guilford County total between 2008 and 2010 (Table 12).

Table 12: Annual Detached Closings, MLS Area 37, 2008-2010

	Closings			New %
Year	New	Resale	Total	of Total
2008	17	26	43	40%
2009	12	24	36	33%
2010	4	36	40	10%
Total	**33**	**86**	**119**	**28%**
% of Total	**27.7%**	**72.3%**	**100.0%**	
Ann. Avg.	**11**	**29**	**40**	

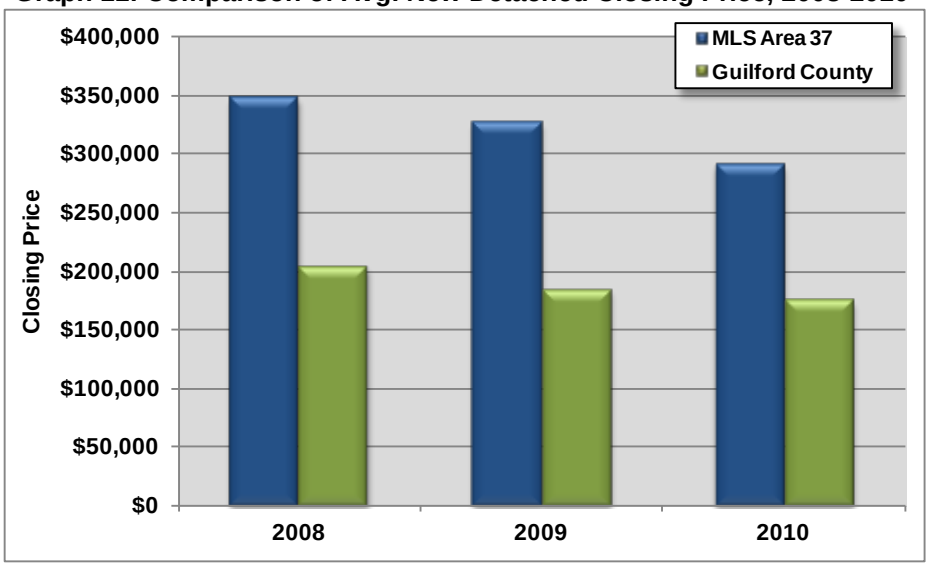
Source: BrokerMetrics; MLS

Map 4: Comparison of Planning Area and MLS Area 37, 2011



The average closing price for a new, detached single-family residence in MLS Area 37 was higher than in Guilford County in every year between 2008 and 2010. As shown in Graph 11, the average closing price for new units in MLS Area 37 decreased from $348,962 to $291,850, mirroring national housing market trends. New product pricing also declined in Guilford County. On average, closing prices in MLS Area 37 were 70% higher than in Guilford County. Data to determine the share of this premium that is attributable to house size is unavailable.

Graph 11: Comparison of Avg. New Detached Closing Price, 2008-2010



5.2.2 Townhouse/Condominium

There were 2,598 townhouse or condominium closings in Guilford County between 2008 and 2010 (Table 13). The share of the total closings that were new product fell to 21% in 2010 from 35% in 2008. As with detached product, the 58% drop in new closings reflected builder response to declining demand during the national housing crisis. Resales declined only 15% between 2008 and 2010.

Table 13: Annual Townhouse/Condo Closings, Guilford County, 2008-2010

	Closings			New %
Year	New	Resale	Total	of Total
2008	361	680	1,041	35%
2009	186	645	831	22%
2010	151	575	726	21%
Total	**698**	**1,900**	**2,598**	**27%**
% of Total	**26.9%**	**73.1%**	**100.0%**	
Ann. Avg.	**233**	**633**	**866**	

Source: BrokerMetrics; MLS

There are currently no townhouses in the Western Area. However, the larger MLS Area 37 does contain a townhouse community, located across Airport Center Drive from the American Express office tower. As shown in Table 14, there were only 18 attached closings in MLS Area 37 in the last three years, averaging six annually. New closings made up 78% of the total during this time period. There were no new product closings in 2009.

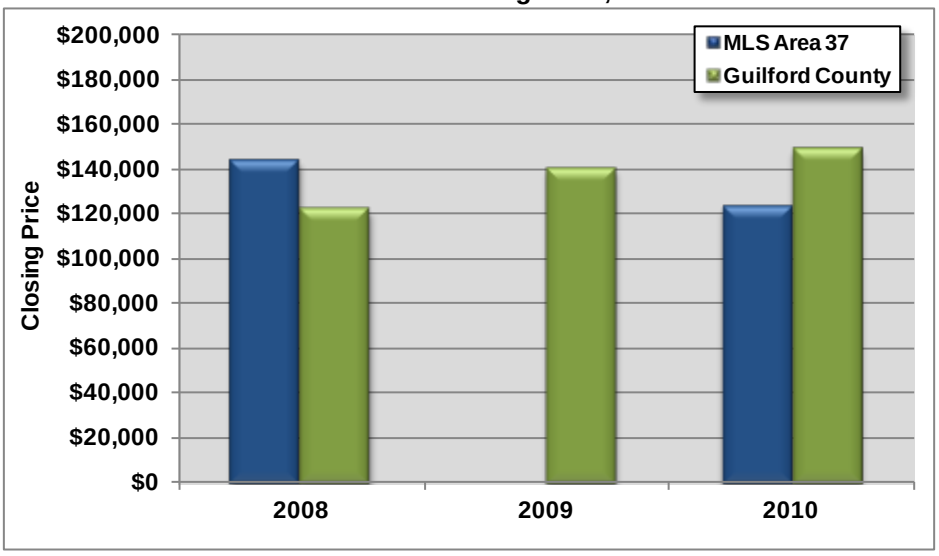
Table 14: Annual Townhouse/Condo Closings, MLS Area 37, 2008-2010

Year	Closings New	Closings Resale	Total	New % of Total
2008	3	1	4	75%
2009	0	2	2	0%
2010	11	1	12	92%
Total	**14**	**4**	**18**	**78%**
% of Total	**77.8%**	**22.2%**	**100.0%**	
Ann. Avg.	**5**	**1**	**6**	

Source: BrokerMetrics; MLS

Average new attached closing prices in MLS Area 37 declined from $143,909 in 2008 to $123,163 in 2010 (Graph 12). There were no new closings in MLS Area 37 in 2009. Guilford County has experienced an increase in average new pricing, reporting a higher price than MLS Area 37 in 2010.

Graph 12: Comparison of Avg. New Townhouse/Condo Closing Price, 2008-2010



6. Population and Residential Unit Forecast

6.1 2011-2030 Population Forecast

Three different residential growth scenarios were evaluated to forecast population, households, and housing units for the Study Area through 2030. These include:

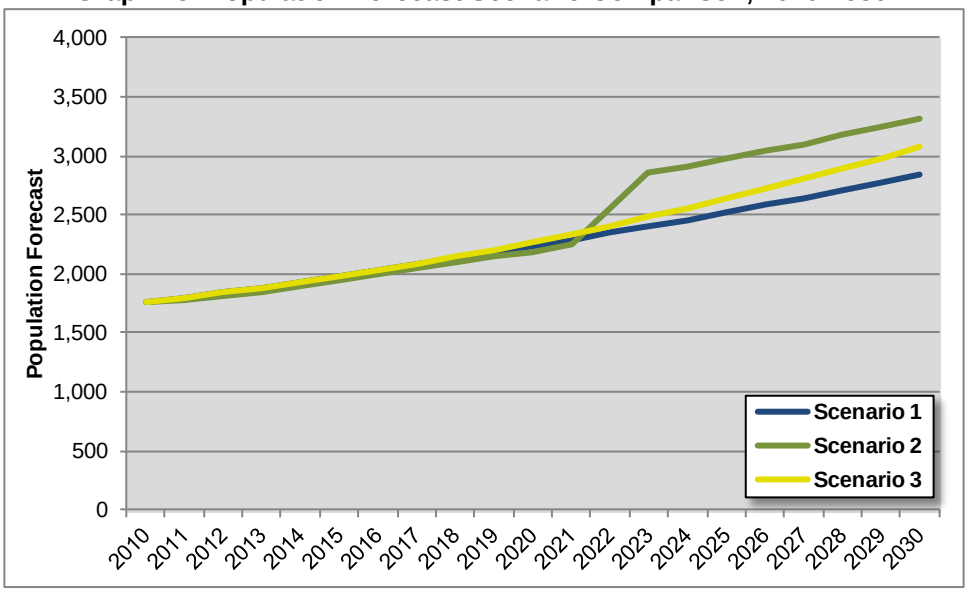
1. **2000-2010 Baseline** – Environmental Systems Research Institute (ESRI) forecasted a compound annual growth rate of 2.4% between 2010 and 2015. This straight-line growth rate was used to forecast new population through 2030.

2. **2008-2010 Absorption Trends** – Average for-sale residential absorption trend data between 2008 and 2010 was used to forecast housing unit growth through 2030. Acceleration was shown post-2020 to indicate continued improvements to the economy following the recession.

3. **2000-2010 Accelerated Growth** – The 2000-2010 Baseline forecast was accelerated post-2015 to indicate improvements to the economy following the recession. This model also assumes continued positive job formation and transportation improvements in the Study Area.

Graph 13 demonstrates the population forecasts between 2010 and 2030 using the three methods described above. The final forecast was derived from taking a straight average of the three methods. The 2008-2010 Absorption Trends scenario produced the highest population forecast, due to the inclusion of apartment communities in the Study Area. Apartment units were included based on a national shift in tenure trends, which has steadily increased the demand for rental communities. The addition of new multi-family units is demonstrated by an increase in Scenario 2 (Absorption Trends) post-2020.

Graph 13: Population Forecast Scenario Comparison, 2010-2030



As shown in Table 15, the 2010-2030 population growth forecasted by the three scenarios ranges from 1,080 for Scenario 1 (Baseline) to 1,560 new residents for Scenario 2 (Absorption Trends). Averaging the three scenarios equates to 1,320 new residents between 2010 and 2030. The resulting 2.8% compound annual growth rate forecasted between 2010 and 2030 would be more than the ESRI forecasted 2010 to 2015 CAGR of 2.4%, but equivalent to the reported CAGR over the last decade.

Table 15: Population Forecast Comparison, 2010-2030

			'10-'30 Change	
Scenario	**2010**	**2030**	**#**	**%**
Scenario 1	1,760	2,840	1,080	61.4%
Scenario 2	1,760	3,320	1,560	88.6%
Scenario 3	1,760	3,090	1,330	75.6%
Average	**1,760**	**3,080**	**1,320**	**75.0%**

Source: ESRI, Warren & Associates

6.2 Housing Unit Delivery Forecast

Table 16 demonstrates the results of taking a straight average of the population forecasts based on the three scenarios. Housing unit forecasts are based on average household sizes and an 8% vacancy rate. Housing units in the Study Area could increase by 74.0%, or 540 new units, between 2010 and 2030. Housing unit delivery is expected to increase after 2015, as the economy continues to recover from the economic recession.

Table 16: Residential Forecast, Study Area, 2010-2030

				2010-2030 Change	
	2010	**2020**	**2030**	**#**	**%**
Housing Units	730	920	1,270	540	74.0%
Households	670	850	1,170	500	74.6%
Population	1,760	2,230	3,080	1,320	75.0%

Source: ESRI, Warren & Associates

Single-family detached units are expected to make up approximately 50% of new residential housing between 2010 and 2030, equating to 270 units (Table 17). There are currently no townhouse units in the Study Area, but 70 units in one development, are forecasted between 2010 and 2030.

Table 17: Housing Unit Delivery Forecast, Study Area, 2010-2030

	Housing Unit Growth					% of
Type	**2010-2015**	**2015-2020**	**2020-2025**	**2025-2030**	**Total**	**Total**
Single-Family	50	60	80	80	270	50.0%
Townhouse			30	40	70	13.0%
Apartment			200		200	37.0%
Total	**50**	**60**	**310**	**120**	**540**	

Source: ESRI, Warren & Associates

There are currently no apartment units in the Study Area. New apartment communities were included based on a national shift in tenure trends, which has steadily increased the demand for rental communities. Approximately one new apartment community, containing 200 units could be completed by 2030. Demand for higher density residential development is likely to increase as more employers are attracted to the area, and the proposed transportation improvements are completed.

There are currently an estimated 658 housing units in the Study Area. Including the forecasted 540 housing units the Study Area could contain nearly 1,200 housing units by 2030 (Table 18). In 2030, single-family detached units could make up 77.5%, while townhouses and apartments could make up the remaining 22.5%. This represents a diversification from the current housing stock where 100% of the units are single-family detached.

Table 18: Total Housing Units, Study Area, 2010-2030

	Units			Shares
Land Use	2010	'10-'30	2030	in 2030
Single-Family	658	270	928	77.5%
Townhouse	0	70	70	5.8%
Apartment	0	200	200	16.7%
Total	**658**	**540**	**1,198**	**100.0%**
% of Total	**54.9%**	**45.1%**	**100.0%**	

Source: Guilford County, W & A

6.3 Land Demand

The 2010-2030 land demand for residential units is based on assumption ranges for units per acre by type. The density assumption for single-family detached is one to two units per acre, equating to a demand of 135 to 270 acres (Table 19). The density for townhouses is assumed to be six to eight units per acre, with a total land demand of nine to 12 acres. At a density of 12 to 16 units per acre, the forecasted apartment community would have a land demand of 13 to 17 acres. In total, the incremental 2010-2030 residential land demand ranges from 156 to 298 acres.

Table 19: Forecasted Land Demand, Study Area, 2010-2030

	Residential Acreage				
Type	2010-2015	2015-2020	2020-2025	2025-2030	Total
Single-Family[1]	25 - 50	30 - 60	40 - 80	40 - 80	135 - 270
Townhouse[2]	0 - 0	0 - 0	4 - 5	5 - 7	9 - 12
Apartment[3]	0 - 0	0 - 0	13 - 17	0 - 0	13 - 17
Total	**25 - 50**	**30 - 60**	**56 - 102**	**45 - 87**	**156 - 298**

[1] Acreage assumption for single-family is one to two units per acre.

[2] Acreage assumption for townhouses is six to eight units per acre.

[3] Acrage assumption for apartments is 12 to 16 units per acre.

Source: ESRI, Warren & Associates

7. Retail Inventory and Forecast

The Western Area currently has a very limited supply of retail. There are no multi-tenant shopping centers located in the Study Area. Based on feedback from public meetings, residents typically shop in Kernersville, High Point, or on New Garden Road, east of the Study Area. Retail in the Study Area is concentrated on W. Market Street and Pleasant Ridge Road.

7.1 Retail Inventory

The retail inventory is based on tax records provided by Guilford County. It should be noted that auto-related uses, hotels and lodging, and daycares are excluded from the retail total, even though they are coded as retail in the tax records. Of the 12,308 square feet of retail space in the Study Area, 70% has been completed since 2000 (Table 20).

Table 20: Retail Inventory, Study Area, 2011

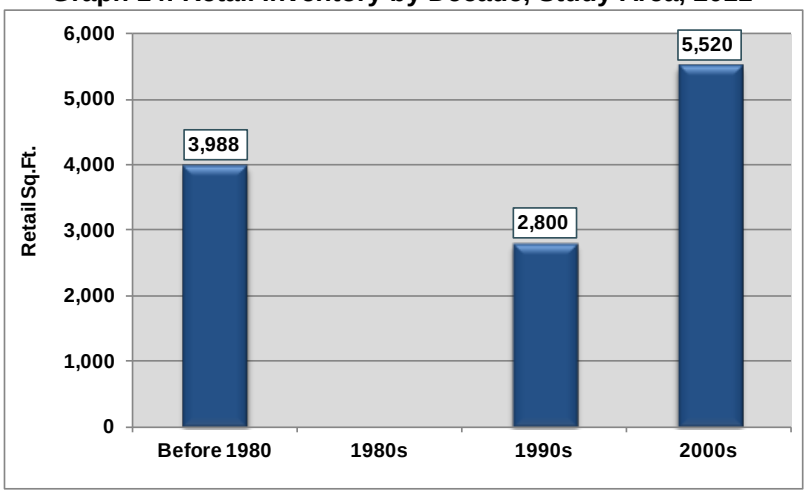
Decade Completed	Square Feet	Share of Total
Before 1980	3,988	32.4%
1980s	0	0.0%
1990s	2,800	22.7%
2000s	5,520	44.8%
Total	**12,308**	**100.0%**

Source: Guilford County; W&A

It should be noted that a new unanchored strip center was completed in 2007 on Pleasant Ridge Road. While this center has a commercial use code in the Guilford County tax records, all of the suites are currently occupied by office users. As such, this strip center has been included in the office inventory in Section 8.

With the exception of the 1980s when no space was added, retail completions have ranged from 2,800 to 5,520 square feet per decade (Graph 14). This equates to approximately one small development every ten years.

Graph 14: Retail Inventory by Decade, Study Area, 2011



7.2 Retail Forecast

The 2010-2030 retail demand for the Study Area was forecasted using the following method:

1. Calculating the Study Area's total household income in 2020 and 2030 by applying the forecasted households to income projections derived from ESRI trends.
2. Estimating the County's expenditure potential based on data from the North Carolina Department of Revenue that indicates the percentage of income spent on various retail goods and services.
3. Determining the Study Area sales for 2020 and 2030. Sales inflow from non-Study Area residents, including those who work there, has not been applied to the forecast.
4. Converting retail sales to square feet, based on sales per square feet data by type of retail.

Based on this method, the Study Area had an estimated retail demand of nearly 50,000 square feet in 2010 (Table 21). It should be noted that based on the average household income and the percentage of income spent on various retail, the 2010 demand of 49,928 square feet exceeds the existing supply of 12,307 square feet. This equates to a gap of approximately 37,620 square feet.

Table 21: Supportable Retail Square Feet, Study Area, 2010-2030

Retail	Supportable Square Feet					2010-2030	Percent
Category	2010	2015	2020	2025	2030	Change	of Total
Supermarkets & Other Groceries	7,105	8,980	10,796	13,859	16,605	9,500	14.2%
Food Services - Restaurants	6,366	8,045	9,673	12,417	14,877	8,512	12.7%
Other General Merchandise Stores	4,967	6,278	7,548	9,689	11,609	6,642	9.9%
Building Material & Supply Dealers	7,202	9,102	10,943	14,048	16,831	9,630	14.4%
Pharmacies & Drug Stores	3,883	4,908	5,900	7,574	9,075	5,192	7.8%
Clothing Stores	3,448	4,358	5,239	6,726	8,058	4,610	6.9%
Discount Department Stores	2,566	3,244	3,900	5,006	5,998	3,432	5.1%
Department Stores	1,814	2,292	2,756	3,538	4,238	2,425	3.6%
Electronics & Appliances	1,573	1,989	2,391	3,069	3,677	2,104	3.2%
All Other	11,005	13,909	16,722	21,467	25,719	14,715	22.0%
Total	**49,928**	**63,105**	**75,869**	**97,394**	**116,688**	**66,761**	**100.0%**

Source: Warren & Associates

Net growth between 2010 and 2030 is estimated at approximately 67,000 square feet. The 2030 square footage demand for Building Material and Supply Dealers is expected to make up 14.4%, followed by Supermarkets & Other Groceries at 14.2%, and Food Services at 12.7%.

A site-specific analysis with a defined trade area would include inflow from area employees and other non-residents. Including inflow calculations in the forecast would increase the overall demand for the area.

7.3 Land Demand

Retail land demand is based on the forecasted 2010-2030 net growth of 66,761 square feet, plus the current supply gap of 37,620 square feet. This equates to an estimated retail demand of 104,380 square feet through 2030.

As shown in Table 22, land demand is based on floor area ratios (FAR) ranging from 0.25 to 0.30, which are typical industry standards for retail development. Applying the assumed FARs to the forecasted 2010-2030 square footage equates to a land demand of approximately eight to 10 acres through 2030.

Table 22: Retail Land Demand, 2010-2030

	2010-2030	
Density Assumption	Forecast (Sq.Ft.)	Land (Acres)
0.25 FAR	104,380	10
0.30 FAR	104,380	8

Source: Warren & Associates

8. Office Inventory and Forecast

This section details the Study Area's existing office inventory, estimates the current vacancy rate, and forecasts square footage and land demand through 2030. Similar to the retail inventory, completed office space is based on appraisal codes in the Guilford County tax parcel data.

8.1 Office Inventory

The Study Area has an estimated 768,737 square feet of office space (Table 23). Approximately 68% of the total inventory was completed in the 1990s, with another 7.2% completed since 2000. The largest office building in the Study Area is the 132,000 square foot former Oakwood Homes headquarters, located on McCloud Road with visibility from I-40. This office tower was completed in 1995, making up approximately one-fifth of that decade's inventory.

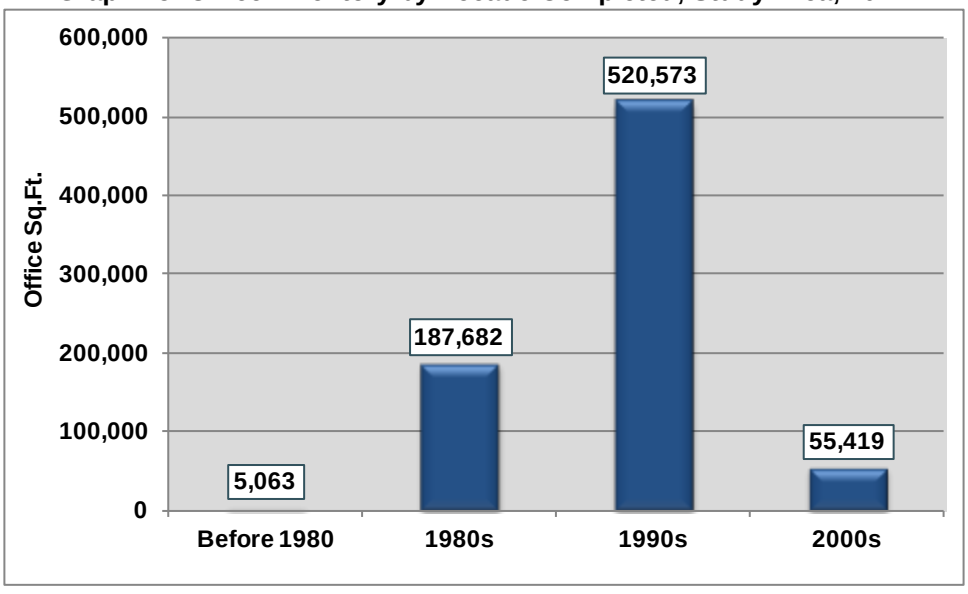
Table 23: Office Inventory, Study Area, 2011

Decade Completed	Square Feet	Share of Total
Before 1980	5,063	0.7%
1980s	187,682	24.4%
1990s	520,573	67.7%
2000s	55,419	7.2%
Total	**768,737**	**100.0%**

Source: Guilford County; W&A

Graph 15 shows the distribution of office deliveries by decade in the Study Area. Office space construction has varied widely, ranging from only 5,063 square feet in all decades before 1980 to 520,573 square feet in the 1990s.

Graph 15: Office Inventory by Decade Completed, Study Area, 2011



8.2 Current Office Vacancy and Rent

Current office vacancy and rent estimates are based on interviews with local commercial realtors, available inventory reported by the Greensboro Economic Development Alliance, and The Triad Business Journal. The Triad Business Journal reports office vacancy rates for an area surrounding PTIA. While this area does not line up exactly with the Study Area, the reported vacancy rate is comparable to findings for the Study Area.

The current office vacancy rate for the Study Area is estimated at between 15% and 20%. This includes Class A, B, and C office spaces. The largest office vacancy in the Study Area is the 132,000-square-foot former Oakwood Homes headquarters on McCloud Road. This single-tenant building is currently being marketed for a new user or users.

It should be noted that the Triad Business Journal reports a $17.15 per square foot average Class A office rent for the area surrounding PTIA. This rent is higher than the $16.14 Guilford County average.

8.3 Office Forecast

Office demand for the Study Area was based on office-occupying employment growth, as reported for Guilford County by Woods & Poole. As shown in Table 24, Guilford County is expected to add another 39,430 jobs by 2030, a 15.4% increase. In 2030, Services is expected to have nearly 155,000 jobs; it will continue to be the largest sector. It should be noted that the Services sector includes Education and Healthcare and Social Assistance. Manufacturing and Wholesale Trade are expected to experience a loss of employment, a continued trend from the last five years.

Table 24: Guilford County Employment Forecast, 2010-2030

				2010-2030 Change	
Industry	**2010**	**2020**	**2030**	**#**	**%**
Agriculture and Mining	392	427	456	64	16.2%
Construction	9,283	10,641	11,347	2,064	22.2%
Manufacturing	30,874	30,623	29,589	-1,285	-4.2%
Transportation/Utilities	15,429	15,774	15,871	442	2.9%
Information	27,718	28,816	30,345	2,627	9.5%
Wholesale Trade	16,460	14,426	14,276	-2,184	-13.3%
Retail Trade	5,099	5,850	6,258	1,159	22.7%
F.I.R.E.	18,583	20,992	22,191	3,608	19.4%
Services	122,213	140,306	154,743	32,530	26.6%
Public Administration	10,793	11,193	11,198	405	3.8%
Total	**256,844**	**279,048**	**296,274**	**39,430**	**15.4%**

Source: NCESC, Woods & Poole

To determine the forecasted increase in office-occupying employment, office shares were applied to each industry projection. Finance, Insurance, and Real Estate (F.I.R.E.), Government, and Services have the highest shares of office-occupying employment, ranging from 65% to 90%. Guilford County is forecasted to have an increase of 25,685 office-occupying employees, or 21.0%, between 2010 and 2030 (Table 25). The Services sector's 21,144 new office jobs are expected to make 82.3% of the total increase.

Table 25: Guilford County Office-Occupying Jobs, 2010-2030

Industry	Office Share	2010	2020	2030	2010-2030 Change #	2010-2030 Change %
Agriculture and Mining	0.0%	0	0	0	0	0.0%
Construction	10.0%	928	1,064	1,135	206	22.2%
Manufacturing	5.0%	1,544	1,531	1,479	-64	-4.2%
Transportation/Utilities	25.0%	3,857	3,944	3,968	111	2.9%
Information	30.0%	8,315	8,645	9,103	788	9.5%
Wholesale Trade	15.0%	2,469	2,164	2,141	-328	-13.3%
Retail Trade	10.0%	510	585	626	116	22.7%
F.I.R.E.	95.0%	17,654	19,942	21,082	3,428	19.4%
Services	65.0%	79,438	91,199	100,583	21,144	26.6%
Government	70.0%	7,555	7,835	7,838	283	3.8%
Total		**122,271**	**136,908**	**147,956**	**25,685**	**21.0%**

Source: NCESC, Woods & Poole

Forecasted office-occupying jobs have been used to estimate demand for square footage and land. Estimates for office demand are based on an average of 250 square feet per employee in 2010, declining to 225 square feet in 2020 and 200 square feet in 2030. This is consistent with national trends indicating declining space per employee.

As shown in Table 26, office demand in Guilford County is expected to increase from 30.6 million square feet in 2010 to 34.0 million square feet in 2030, an increase of 3.5 million square feet over the forecast period.

Table 26: Office Demand Forecast, Guilford County, 2010-2030

	2010	2020	2030	2010-2030 Change #	2010-2030 Change %
Jobs	122,271	136,908	147,956	25,685	21.0%
Square Feet[1]	30,567,738	35,425,020	34,029,816	3,462,079	11.3%

1 Based on a 15% vacancy rate and declining square feet per employee.

Source: Woods & Poole, Warren & Associates

Table 26 demonstrates the Study Area's potential capture of Guilford County's forecasted office demand. Based on its regional access, planned transportation improvements, and proximity to PTIA, the Study Area is expected to experience an increasing capture of the County-wide demand, from 2.5% in 2010 to 3.0% in 2020 and 4.5% in 2030. The Study Area could have a net office demand of over 767,000 square feet through 2030.

Table 27: Office Demand Forecast, Study Area, 2010-2030

	2010	2020	2030	2010-2030 Change #	2010-2030 Change %
Jobs	3,057	4,107	6,658	3,601	117.8%
Square Feet	764,193	1,062,751	1,531,342	767,148	100.4%

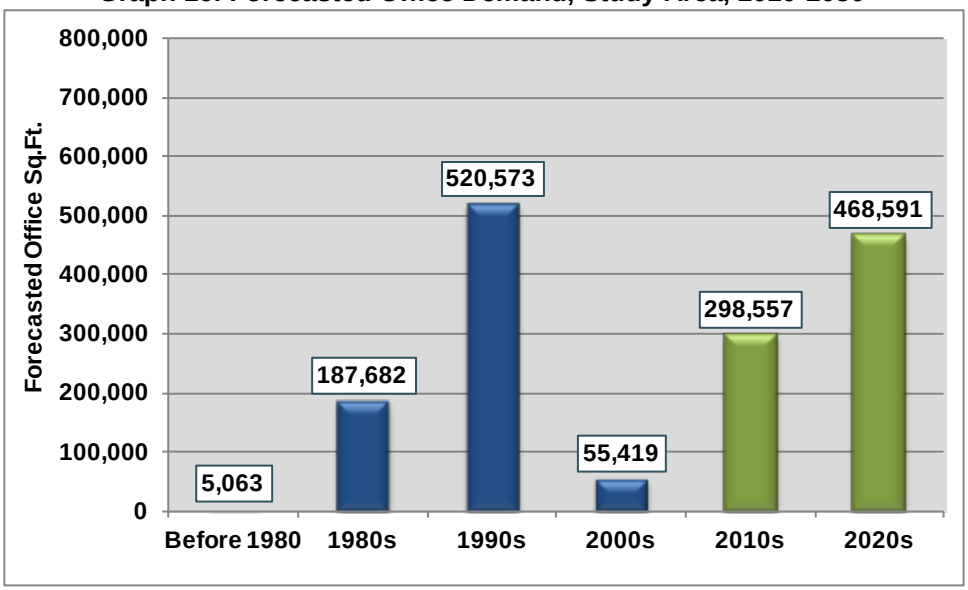
* Capture rates: 2.5% in 2010; increasing to 3% in 2020 and 4.5% in 2030.

Source: Woods & Poole, Warren & Associates

It should be noted that a 15% vacancy factor has been applied to the net square footage, which is consistent with current vacancy rates and historical trends. This vacancy rate is expected to be the stabilized rate in the Study Area through 2030.

Graph 16 compares the forecasted office demand by decade, to the previous completions in the Study Area. Based on office-occupying employment trends, the Study Area is expected to have a demand of nearly 300,000 square feet before 2020, and another 468,000 square feet between 2020 and 2030.

Graph 16: Forecasted Office Demand, Study Area, 2010-2030



8.4 Land Demand

Similar to retail, land demand for office is based on floor area ratios (FAR) ranging from 0.25 to 0.30, which are typical industry standards. Applying the assumed FARs to the forecasted 2010-2030 square footage equates to a office land demand of approximately 59 to 70 acres through 2030 (Table 28).

Table 28: Office Land Demand, 2010-2030

	2010-2030	
Density Assumption	Forecast (Sq.Ft.)	Land (Acres)
0.25 FAR	767,148	70
0.30 FAR	767,148	59

Source: Warren & Associates

9. Industrial Inventory and Forecast

This section details the Study Area's current industrial building inventory, estimated vacancy rate and rents, and provides a demand forecast through 2030.

9.1 Industrial Inventory

Based on tax parcel data provided by Guilford County, the Study Area currently contains over 3.7 million square feet of industrial space (Table 29). The Study Area has experienced a relatively consistent delivery of industrial space, ranging between approximately 800,000 and 1,000,000 square feet per decade. Approximately 22.5% of the space, or 840,000 square feet, has been completed since 2000.

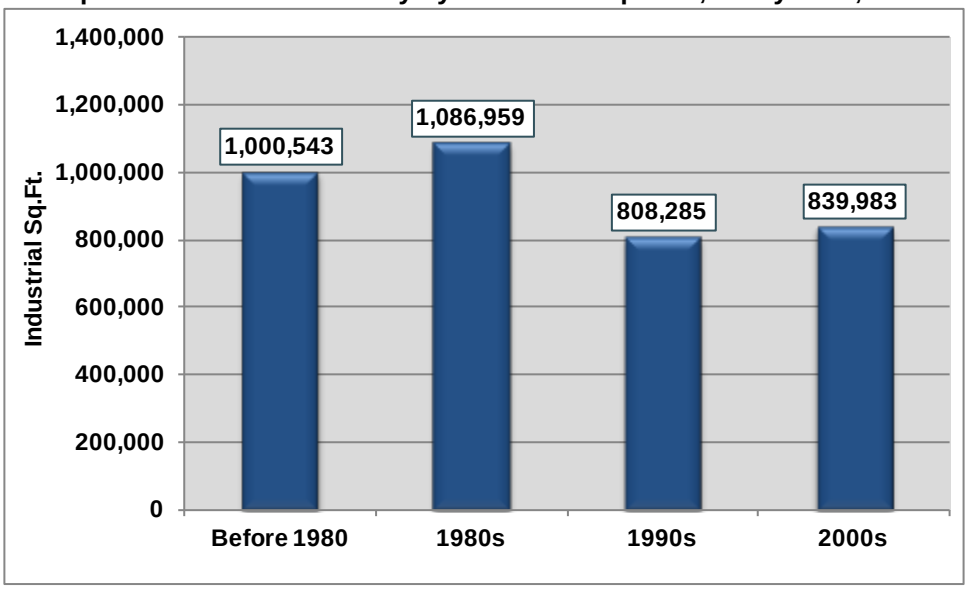
Table 29: Inventory by Decade Completed, Study Area, 2011

Decade Completed	Square Feet	Share of Total
Before 1980	1,000,543	26.8%
1980s	1,086,959	29.1%
1990s	808,285	21.6%
2000s	839,983	22.5%
Total	**3,735,770**	**100.0%**

Source: Guilford County; W&A

As shown in Graph 17, the Study Area has experienced a relatively consistent delivery of industrial space by decade. The 1980s experienced the most construction of industrial space with 1.1 million square feet, while the 1990s had the least at 808,000 square feet.

Graph 17: Industrial Inventory by Decade Completed, Study Area, 2011



9.2 Current Industrial Vacancy and Rents

Current industrial vacancy and rent estimates are based on interviews with local commercial realtors, available inventory reported by the Greensboro Economic Development Alliance, and The Triad Business Journal. The Triad Business Journal reports industrial vacancy rates for an area surrounding PTIA. While this area does not line up exactly with the Study Area, the reported vacancy rate is comparable to findings for the Study Area.

The current industrial vacancy rate for the Study Area is estimated at approximately 14% to 16%. This includes warehouse, distribution, and flex buildings. Two of the newest industrial developments, Bull Ridge on Pleasant Ridge Road and Enterprise Park on Brigham Road, are both 100% occupied. It should be noted that both Bull Ridge and Enterprise Park have sites for future development.

The Triad Business Journal reports a $4.93 per square foot industrial average for the area surrounding PTIA. This average quoted rent is higher than any other submarket in Guilford County.

9.3 Industrial Forecast

Based on the 2010-2030 Woods & Poole employment forecasts, as demonstrated in Section 8.3, new industrial jobs are based on industrial shares. These shares range from 0.0% for Agriculture and Mining to 90% for Manufacturing. Guilford County is expected to have an increase of 2,343 new industrial-occupying jobs between 2010 and 2030, a 3.0% increase (Table 30). Consistent with national trends, the Manufacturing and Wholesale Trade sectors are expected to continue to decline.

Table 30: Industrial-Occupying Employment, Guilford County, 2010-2030

Industry	Ind. Share	2010	2020	2030	2010-2030 Change #	2010-2030 Change %
Agriculture and Mining	0.0%	0	0	0	0	0.0%
Construction	15.0%	1,392	1,596	1,702	310	22.2%
Manufacturing	90.0%	27,787	27,561	26,630	-1,156	-4.2%
Transportation/Utilities	50.0%	7,715	7,887	7,936	221	2.9%
Information	50.0%	13,859	14,408	15,172	1,313	9.5%
Wholesale Trade	85.0%	13,991	12,263	12,135	-1,856	-13.3%
Retail Trade	5.0%	255	292	313	58	22.7%
F.I.R.E.	5.0%	929	1,050	1,110	180	19.4%
Services	10.0%	12,221	14,031	15,474	3,253	26.6%
Government	5.0%	540	560	560	20	3.8%
Total		**78,689**	**79,646**	**81,032**	**2,343**	**3.0%**

Source: NCESC, Woods & Poole

Forecasted industrial-occupying jobs have been used to estimate demand for square footage and land. Estimates for industrial demand are based on an average of 300 square feet to 1,500 square feet per employee, depending on use.

Table 31 demonstrates the Study Area's potential capture of Guilford County's forecasted industrial demand. Due to regional access from transportation improvements and proximity to PTIA, the Study Area is expected to experience an increasing capture of the County-wide demand, from 5% in 2010 to 6% in 2020 and 8% in 2030. The Study Area is expected to have a net industrial demand of over 2.0 million square feet through 2030.

Table 31: Industrial Demand Forecast, Study Area, 2010-2030

				2010-2030 Change	
	2010	2020	2030	#	%
Jobs	3,934	4,779	6,483	2,548	64.8%
Square Feet	3,554,299	4,179,850	5,581,223	2,026,924	57.0%

* Based on an increasing share of the County's forecast.

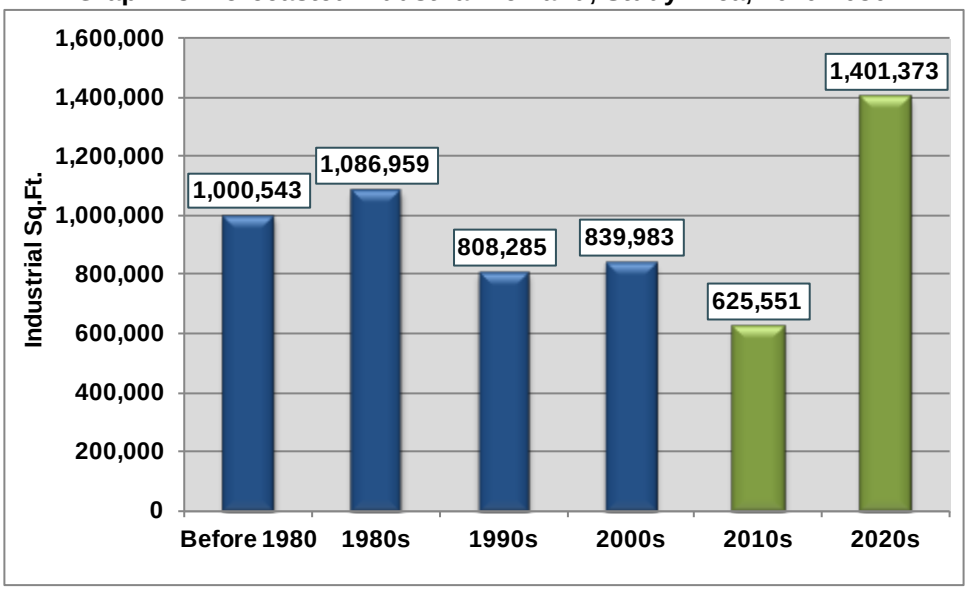
** Share begins with 5% in 2010; increasing to 6% in 2020 and 8% in 2030.

Source: Woods & Poole, Warren & Associates

A 15% vacancy was used for the 2010 estimate; however, the vacancy rate was decreased to 10% in 2020 and 2030, more consistent with historical trends. Net demand was utilized to fill current excess vacancy. The 10% vacancy rate is expected to be the stabilized rate in the Study Area through 2030.

Graph 18 compares the forecasted industrial demand by decade, to the previous completions in the Study Area. Based on industrial-occupying employment trends, the Study Area is expected to have a demand of over 625,000 square feet through 2020, and another 1.4 million square feet between 2020 and 2030. The increased demand between 2020 and 2030 is partially due to transportation improvements, specifically I-73, that are expected to be completed within that time frame.

Graph 18: Forecasted Industrial Demand, Study Area, 2010-2030



9.4 Land Demand

Land demand for industrial is based on floor area ratios (FAR) ranging from 0.20 to 0.25. Industrial uses typically have a lower FAR than retail or office because of larger building footprint requirements. Applying the assumed FARs to the forecasted 2010-2030 square footage equates to a industrial land demand of approximately 186 to 233 acres through 2030 (Table 32).

Table 32: Industrial Land Demand, 2010-2030

		2010-2030	
Density Assumption		Forecast (Sq.Ft.)	Land (Acres)
0.20	FAR	2,026,924	233
0.25	FAR	2,026,924	186

Source: Warren & Associates