US 64

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Asheboro ▪ Randolph County ▪ NCDOT

CORRIDOR STUDY

Final Report - *April 2011*

PTCOG Piedmont Triad Council of Governments

North Carolina Zoo Asheboro

Kimley-Horn and Associates, Inc.

US 64 Corridor Study

Prepared for:

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Acknowledgements

Development of the *US 64 Corridor Study* was a collaborative process that involved numerous stakeholders, including the Advisory Team, City of Asheboro, Randolph County and Piedmont-Triad Regional Planning Organization (RPO) staff, and the North Carolina Department of Transportation. Local citizens also provided input for this plan at public workshops held on June 1-3, 2010. All of their efforts are greatly appreciated.

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Chapter 1 – Background and Existing Conditions

The North Carolina Department of Transportation (NCDOT), in partnership with the City of Asheboro, Randolph County, and the Piedmont-Triad Regional Planning Organization (RPO), conducted a study of safety, mobility, accessibility, and general development sustainability along the US 64 Corridor (Dixie Drive) in Asheboro, NC. The corridor serves many purposes through the heart of the community, including vibrant commercial activity, commuter throughway, primary east-west spine route, and the most common access point for the North Carolina Zoo. This study evaluated the purpose and functionality of the US 64 corridor and developed a concise set of recommendations that enhance mobility, improve safety, and preserve the economic vitality along the corridor.

The study area for this project is the US 64 (Dixie Drive) corridor from East Presnell Street in the east to the US 220 Bypass/I-73 in the west. The project team worked in partnership with a Project Advisory Team (made up of representatives from NCDOT, the City of Asheboro, Randolph County, the North Carolina Zoo, and the Piedmont Triad RPO) to develop specific transportation and land use recommendations along the corridor. This document contains the following information:

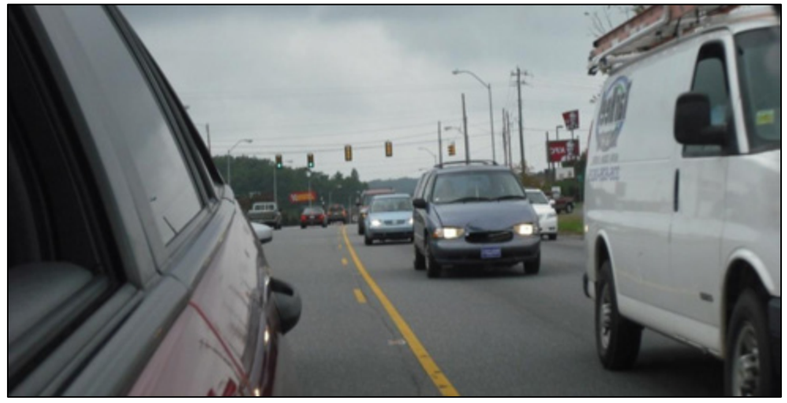
- A brief **History and Understanding** of the project
- The underlying **Vision, Goals, and Objectives** for the study
- A discussion of the **Public Involvement Process**
- General corridor **Existing Conditions**, including environmental and demographic data
- The initial assessment of **Existing Land Use Conditions** within the study area
- A review of **Existing Traffic Conditions** along the corridor
- The results of the **Existing Crash Analysis** along the corridor

Introduction and History

The US 64 Corridor (Dixie Drive) is the primary east-west corridor through the City of Asheboro, and serves regional traffic commuting between Charlotte and Raleigh. The City of Asheboro is the county seat of Randolph County and is home to the North Carolina Zoo, which attracts more than 700,000 visitors every year (in addition to the 20,000 plus residents who call Asheboro their permanent home).

The City of Asheboro was incorporated in 1796 on Christmas day. The community takes its name from the former governor of North Carolina, Samuel Ashe. The early trade of the community was centered on the county courthouse, which created quite a draw throughout Randolph County when court was in session. The community expanded outward from its early location and now has a total land mass of approximately 15 square miles.



While much of the business center in the Asheboro community is located in its historic downtown along Fayetteville Street and Salisbury Street, the majority of commercial businesses are located along the US 64 corridor. The scale of businesses along the corridor range from small "mom and pop" establishments to larger "Big Box" chain stores that cover numerous acres. Given the total economic impact that these businesses provide to the community, it is clear that any improvements that take place along the corridor need to do so while preserving and enhancing its economic vitality.

The US 64 corridor is also the source of many complaints and concerns related to congestion and safety for Asheboro residents, commuters, and tourists. Each has their own frustrations, whether it is congestion delay while traveling to the zoo, delay at specific intersections, or fear of being involved in a collision with a turning vehicle. This corridor faces a range of demonstrated problems, such as poor safety performance and compromised mobility due to intersection spillback issues and extensive turning conflict points. During the past five years there were more than 1,000 crashes along the 4.2 mile segment of roadway, including two fatal crashes and nearly 350 injury crashes. There are numerous locations along the corridor that experience high levels of delay and congestion, including intersections with Zoo Parkway and NC 42, which carry high volumes on all approaches.

The ***US 64 Corridor Study*** is not a reactive response to these problems, but rather a proactive approach to ensure that conditions are treated now before they worsen over time. Through this process, the intent is to break the pattern of poor corridor management, significant safety concerns, lack of interconnectivity, and unlimited turning conflict points through responsible future decision-making. NCDOT, in cooperation with the City of Asheboro, Randolph County, and the Piedmont Triad RPO, commissioned the study to address congestion, safety, and land use sustainability along the US 64 corridor in Asheboro, NC.

Project Understanding and Scope

The ***US 64 Corridor Study*** is a transportation planning project intended to address traffic, safety, and development interests along the subject corridor in the City of Asheboro. The study area for this project is the US 64 (Dixie Drive) corridor from East Presnell Street in the east to the US 220 Bypass/I-73 in the west. The primary tasks included in the study were:

- A thorough review of existing transportation and land use conditions along the corridor
- A project design charrette that effectively engaged the community in the planning process
- Evaluation of multiple alternative solutions along the corridor
- Assessment of existing and future land uses along the corridor
- Development of conceptual design plans for preferred transportation and infrastructure improvements along the corridor

The final outcome of these tasks is a comprehensive Traffic Operational and Safety Corridor Analysis for the subject portion of US 64, which included planning, organizing, conducting, and documenting a series of public workshops. The study involved extensive stakeholder and public outreach, multimodal considerations, land use impacts/planning, access management, and conceptual design plans for roadway improvements.

Key Issues

At the outset of the study, the project team conducted kickoff meetings for both transportation and land use portions of the corridor. The members of the Advisory Team were given the opportunity to identify key issues and objectives of the study. These discussions helped to define the framework of the study and ultimately provided the guidance used to develop the preferred alternatives along the corridor. The following items were identified during these meetings.

Project Issues (*as defined by the Advisory Team*)

Access and Mobility

- Future development and redevelopment needs **predictable** plans that **define** access along the corridor
- Access improvements need to be balanced with mobility needs of the corridor
- Congestion along Zoo Parkway needs to be addressed
- Evaluate multimodal transportation opportunities, including pedestrian-friendly streets and development, greenways, and the integration of transportation modes

Traffic Safety

- Reduce the overall number and severity of crashes
- Identify short term effective improvements that can be expeditiously funded and implemented
- Identify pedestrian safety improvements (i.e. crosswalks and pedestrian signals)
- Traffic needs to be "calmed" along the corridor (i.e. reduce speeding)

Gateway and Aesthetics

- The existing corridor is not pretty – needs to be **"Dressed Up"** and aesthetically pleasing
- Dixie Drive needs to be a premier corridor in the region – a true gateway for Asheboro
- This corridor needs a branding strategy to reinforce Dixie Drive as a destination

Land Use and Development

- Provide access plans that promote economic vitality and new business/economic development
- Corridor needs to be viable for both regional tourism and local commercial activities
- Look at improved internal circulation, local accessibility, and joint access for development
- Need to preserve existing commercial development on Dixie Drive
- Provide recommendations for dealing with aging big box retail stores

Desired Results

- Provide an access management plan (including improved driveway and intersection influence area, conflicts and crossing locations) that defines the future of the corridor

Vision and Objectives

The intent of the ***US 64 Corridor Study*** is to provide transportation and public safety recommendations and improvements to the US 64 (Dixie Drive) corridor through the City of Asheboro, primarily focusing on traffic and safety enhancements, but also being mindful of how the projects recommendations affect the adjacent land uses. Conversely, the study is also interested in how the adjacent land uses affect traffic patterns and whether strategic land use and development decisions can improve traffic and safety conditions along the corridor. With these in mind, the following project vision statement was developed and endorsed by the Project Advisory Team.

To create a Plan that enhances the safety, mobility, and "gateway" appearance of the US 64 corridor that promotes quality development, connectivity and economic vitality, while protecting the community character

Based on this vision statement, five specific objectives were developed to address corridor issues and guide the development of proposed improvements.

- **Objective 1 – Balance access and mobility in the corridor.** The focus of this objective is to provide a more consistent travel experience throughout the corridor, reducing intersection delay and congestion. Special attention was given to the Zoo Parkway approach to US 64, with the intent to reduce seasonal congestion related to peak travel behavior at the North Carolina Zoo. Potential improvements could include access management, signalization upgrades, geometric improvements, median channelization, and enhanced wayfinding.

- **Objective 2 – Address corridor safety concerns.** The focus of this objective is to provide a safer, more efficient travel realm for motorists, pedestrians, and cyclists along the US 64 corridor. The expected outcomes include improvements tailored to reducing specific crash types at intersections and along segments, including driveway improvements intended to reduce rear end and angle collisions. Recommendations could include smaller scale safety improvements, improved public safety decision support data and tools, and long term strategic goals to reduce crashes through improved, more effective education, enforcement, and adjudication. With a reduction in crash frequency or severity along the corridor, emergency responders and enforcement personnel will have greater opportunity to focus on issues such as maintaining emergency readiness, crime fighting, and community safety priorities.

- **Objective 3 – Identify potential aesthetic improvements.** The focus of this objective is to improve the overall appearance of the corridor by implementing potential streetscape, branding, and gateway treatments in the conceptual design. Recommendations could include street trees, landscaped medians, de-cluttering and signage control, and corridor branding.

- **Objective 4 – Integrate with planned development.** The focus of this objective is to ensure that recommendations are consistent and balanced not only with the needs and function of the roadway, but also the adjacent existing and planned development. Recommendations could include access management plans and future development agreements intended to make the development review process more transparent.

- **Objective 5 – Develop functional and implementable recommendations.** The focus of this objective is to present the overall recommendations of the study in a manner that is consistent and easy-to-understand for future development along the corridor. This objective was accomplished by the development of conceptual design plans for the corridor that outline the overall improvement and access management strategy.

Public Process

The US 64 corridor serves an important role in the transportation network, functioning as a primary commercial corridor for Asheboro and a strategic corridor serving regional mobility needs for eastern North Carolina. Many businesses rely on US 64 as their primary means of access. In addition, a mix of residential types use this corridor for access and to serve their work and non-work travel needs. As a result, it is important to get feedback from a wide expanse of public participants during the visioning and recommendations development process. To do this, the ***US 64 Corridor Study*** included a variety of outreach methods, including a charrette, stakeholder interviews, advisory team participation, and online survey and website tools. The intent of using these public outreach methods is not only to hear from a diverse group of people, but also to build consensus and validate recommendations throughout the planning process.

The public outreach techniques employed in this corridor study are detailed in the following sections.

Website/Survey/Newsletter

In order to keep the public up-to-date on the latest developments as the study progresses, a project website was created. The website, dixiedrivemobility.com, provides background information on the corridor study, materials from previous and upcoming public outreach sessions, news affecting the corridor, and a calendar of upcoming events. The website also includes a link to the online survey. The information on the website was updated periodically throughout the life of the corridor study.

As a part of this study, a survey has been developed to assess the issues facing corridor users as well as determining their preferences for improvements. This survey has been posted online for use by members of the general public that may not be able to attend the public outreach sessions. Additionally, print copies have been assembled for distribution to the Advisory Team as well as attendees of the public outreach sessions. Results from these surveys was tallied and shared with the project team and the Advisory Team. Additionally, these survey results were used to guide recommendations for the plan.

Around the midpoint of the corridor study process, a project newsletter was developed to summarize the project efforts to introduce a set of preliminary recommendations. This newsletter was posted on the website, distributed to the Advisory Team, and was available through the jurisdictions involved in the planning process.

Advisory Team

A local Advisory Team was developed for the study, representing individuals from the City of Asheboro, Chamber of Commerce, Randolph County, Piedmont Triad RPO, the North Carolina Zoo, and NCDOT. The role of the Advisory Team was to serve in an advisory role, but with significant participation in visioning exercises and information feedback. Advisory Team meetings addressed ongoing project activity issues, key decision discussions, presentations of pertinent information and evaluations, and recommendations for the Team's consideration.

At the outset of the project, a kickoff meeting was held involving representatives of NCDOT, the City of Asheboro, and project Advisory Team members. This meeting was intended to provide a framework for the exchange of pertinent project information, establish communication protocols between the Consultant, the NCDOT Project Manager, and other staff, and go over the project work plan. This meeting set a framework for the rest of the public outreach and corridor planning process.

Project Design Charrette

The core element of the public outreach process for the ***US 64 Corridor Study*** was a project design charrette, held from June 1-3, 2010 within the Randolph Mall. The charrette process was used to develop the corridor context and design plans for the US 64 corridor. During the charrette, the design team sat down with Advisory Team members, businesses, and the general public to identify issues, affirm guiding principles, and validate proposed recommendations. On the first day of the charrette, a Citizens Information Workshop for the general public was held to work through a visioning process and issues identification exercise. The results of this workshop were used to guide the recommendations formulated on days two and three of the charrette. On the final night of the charrette, a second Citizens Information Workshop was held to present the recommendations and conceptual designs formulated during the charrette process, get public feedback, and to begin focusing on implementation. Throughout the charrette, the public was invited to drop in at any time during the day and was encouraged to attend the evening Citizens Information Workshops.

Near the conclusion of the corridor planning process, a final Citizens Informational Workshop was held on November 17, 2010 to present the preferred alternatives to stakeholders and the Asheboro community.

Stakeholders

Stakeholder groups are an important part of the corridor planning process. Groups such as corridor business owners, economic development groups and chambers of commerce, environmental preservation groups, and other special interest groups may have a unique knowledge or perception of the issues facing the US 64 corridor. As a result, a portion of the charrette process was devoted to interviewing and consulting with representatives of these groups to gain these viewpoints and incorporate them into the planning process.

Existing Conditions

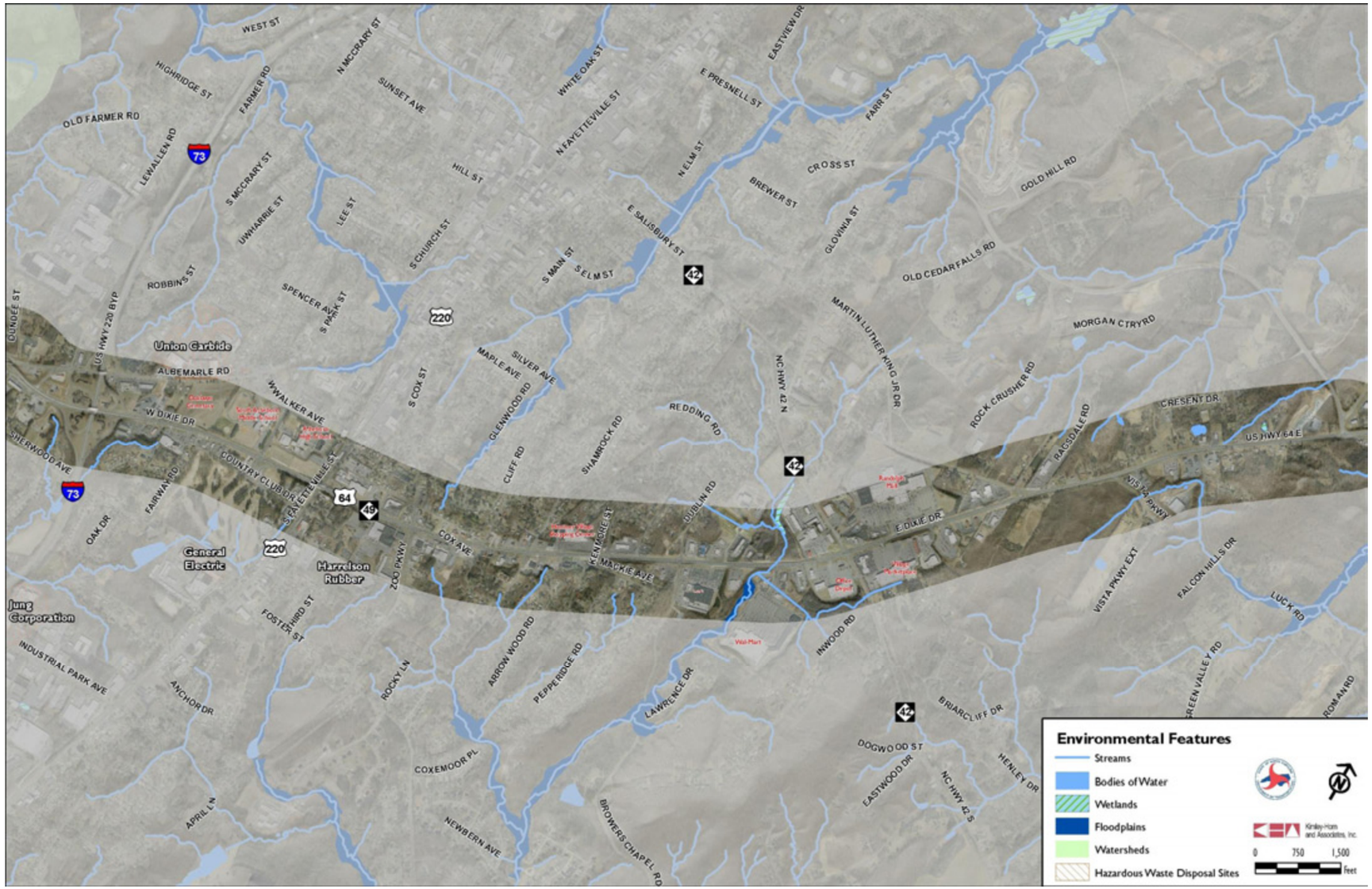
The primary focus of this chapter is to provide an inventory of existing conditions along the corridor. The process of accumulating and evaluating existing conditions data allowed the project team to better understand the actual issues and constraints around the US 64 corridor. This evaluation became the foundation for the development of specific existing conditions along the corridor. The following sections describe the existing conditions analysis.

Environmental Features

As a community located in the rolling terrain of the Piedmont Plateau and the Uwharrie Mountains, Asheboro has a unique set of environmental challenges. Unlike the more eastern portions of North Carolina, the terrain of this area minimizes the effect of wetland areas on the landscape. However, along the US 64 corridor there are several streams that would have to be considered before recommending expansion to the right-of-way of the highway or before new developments could be considered on certain parcels.

The US 64 corridor is home to a variety of commercial, industrial, and residential uses. When current or former industrial sites are considered, it is important to identify those areas that serve as hazardous waste disposal sites. These sites are typically subject to more stringent requirements guiding the proper treatment and disposal of hazardous materials. Additionally, additional treatment or remediation may be necessary at some of these sites before they would be suitable for redevelopment. While there are no hazardous waste disposal sites located directly along the US 64 corridor, there are some in the surrounding areas. Union Carbide, General Electric, Harrelson Rubber, and Jung Corporation have all been identified by the state of North Carolina as hazardous waste disposal sites.

The map to the right displays environmental features such as water bodies, wetlands, floodplains, watersheds, and hazardous waste disposal sites along the US 64 corridor.



Demographic Characteristics

Asheboro is a growing community, experiencing a population increase of almost 15% between 2000 and 2008. This population growth combined with volatile economic conditions at the national level has resulted in a shift in demographics for the City of Asheboro. 2006-2008 data was obtained from the American Community Survey to analyze these trends. Overall, the averages for demographic characteristics such as vehicle availability and minority population are similar for the City of Asheboro, the state of North Carolina, and the United States as a whole. An increased reliance on single-user and carpool modes is noticeable in the journey to work information. The City of Asheboro does not have a local fixed-route transit service, which explains why transit is not shown as a viable option for commuting to work. Walking to work is a less viable option in Asheboro, since the layout of the City and density of development is, in general, not conducive to commuter pedestrian travel. However, the benefit of a smaller population and employment center can be seen in the travel time to work statistic, which indicates that work trips for people residing in the City of Asheboro are on average four minutes less than the average North Carolinian and six minutes less than the average American.

There are some demographic characteristics that are significantly different for the City of Asheboro compared to state and national averages. Hispanics and Latinos comprise 26.3% of the population of the City of Asheboro, compared with only 7% statewide and 15.1% nationally. This information is important to consider during the transportation planning process, since Spanish-language communication or outreach methods may need to be employed in certain areas or project types.

Perhaps the most notable demographic characteristic is the percentage of the population whose income falls below the poverty level. The recent economic recession has increased this figure at all geographic levels. However, Asheboro appears to have been hit harder than the state or the nation. While the percentage of people below the poverty level was determined in the 2000 Census to be 15.8% for the City of Asheboro, 2006-2008 data now places that percentage at 29.4%. That is double the amount at the statewide level, and more than double the national average. While additional study would be needed to determine which portions of the City have been most significantly affected, this information can provide several useful guidelines for the corridor planning process. The effect of corridor improvements on the economic viability and stability of the area should be considered throughout the corridor plan. Recommendations that can stimulate the local economy should be promoted. Finally, consideration should be given to ensure that low-income areas are not disproportionately affected in a negative way by proposed roadway recommendations.

Demographic Characteristics			
	City of Asheboro	**North Carolina**	**United States**
COMMUTING TO WORK			
Car, truck, or van -- drove alone (%)	81.3%	79.8%	75.8%
Car, truck, or van -- carpooled (%)	15.7%	12.0%	10.6%
Public transportation (excluding taxicab) (%)	0.0%	1.0%	4.9%
Walked (%)	0.9%	1.8%	2.8%
Other means (%)	1.1%	1.4%	1.7%
Worked at home (%)	1.1%	4.0%	4.0%
Mean travel time to work (minutes)	19.2	23.3	25.3
**Workers 16 years and over*			
INCOME BELOW THE POVERTY LEVEL			
All families (%)	26.1%	10.8%	9.6%
All people (%)	29.4%	14.6%	13.2%
**In the past 12 months*			
VEHICLES AVAILABLE			
No vehicles available (%)	7.3%	6.5%	8.8%
**Occupied housing units*			
RACE			
Minority Population (%)	31.4%	30.1%	26.1%
HISPANIC OR LATINO			
Hispanic or Latino Population (%)	26.3%	7.0%	15.1%

Source: 2006-2008 American Community Survey

Previous Planning Efforts

In a project such as this, it is important to understand what types of recommendations and strategies have been identified through previous planning efforts. There have been a few previous studies and projects with some sense of emphasis on the US 64 Corridor. The US 64 Corridor Study should be closely coordinated with other state, regional, county, and local plans and/or policies that might influence recommendations in the corridor. This section summarizes the consultant's review of existing documents prepared by authoritative agencies within the region and highlights issues, policies, or directives that may influence reasonable implementation of the recommendations set forth in this study.

City of Asheboro Thoroughfare Plan

The City of Asheboro Thoroughfare Plan, completed in March of 2001, built on previous planning efforts to provide a detailed understanding of the transportation system in Asheboro and a framework for the development of a travel demand model for the area. The plan provided guidance for the general classification of roadways in the city, as well as general recommendations to address modeled deficiencies. US 64 is designated as a major thoroughfare in this plan. While no specific recommendations are made for US 64, the plan does stress the importance of completing the US 64 Bypass to alleviate congestion through the heart of the community.

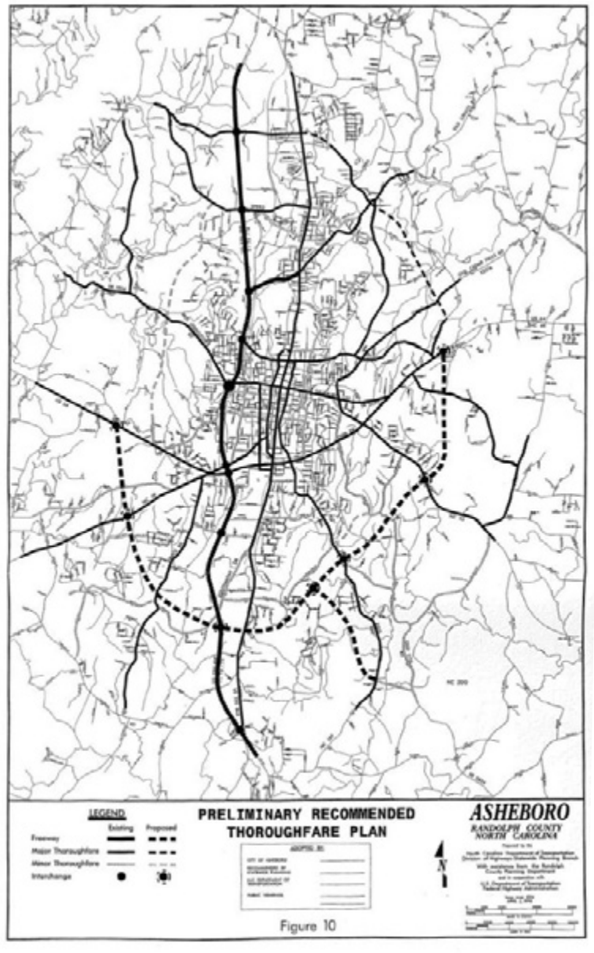
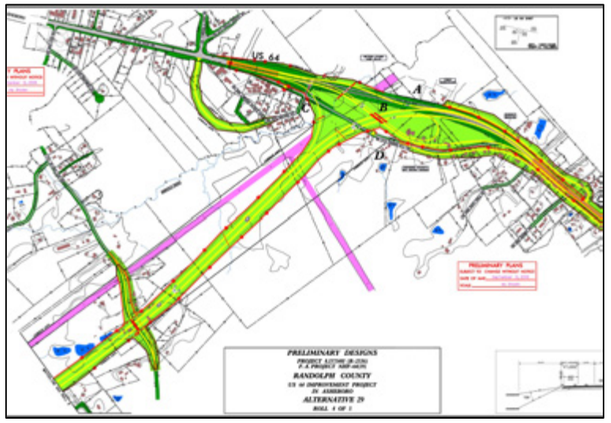


Figure 10

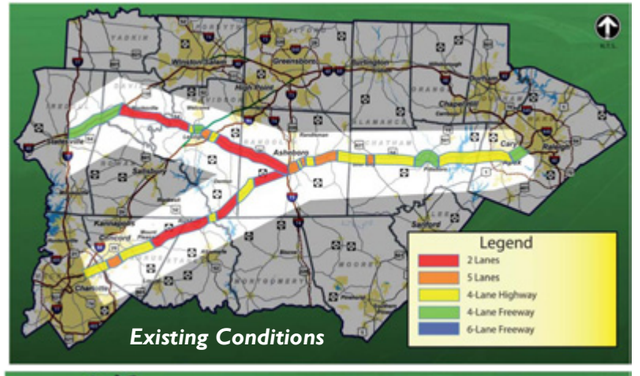
US 64 Bypass Study

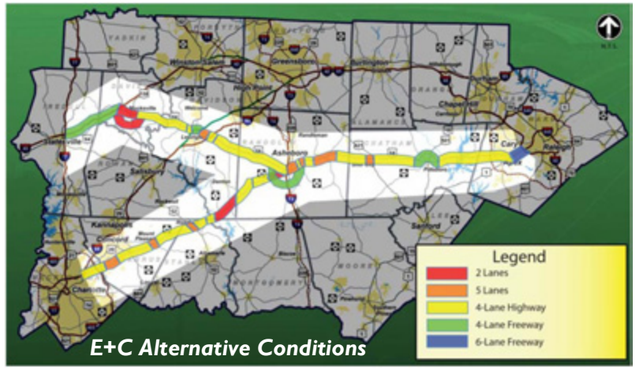
NCDOT completed a study in 2007 to better understand the needs, impacts, and benefits of completing a southern bypass around US 64 and Asheboro. The bypass is intended to improve access around the city, while improving mobility along the US 64 corridor, and provide enhanced access to the North Carolina Zoo. The study included public outreach and a complete environmental impact statement, which are precursors to a final design for the alignment. Based on NCDOT's 2009-15 TIP, right-of-way acquisition for a portion of the corridor could begin as early as 2010-11.



US 64-NC 49 Corridor Study

The US 64-NC49 Corridor Study, conducted by NCDOT Transportation Planning Branch in 2005, focused on the entire US 64-NC49 corridors between Charlotte, Statesville, and Raleigh. The study included extensive public involvement and stakeholder outreach, and ultimately provided a broad vision and strategy for the future of the corridor. Recommendations ranged from implementation of planned and committed projects to converting the entire section to a limited access expressway. This study only represents Phase 1 of the US 64-NC 49 improvements, which is primarily the vision for the corridor. Further study is intended to carry the project from vision to location specific implementation.





2009 Randolph County Growth Management Plan

The Randolph County Growth Management Plan, adopted in July 2009, is a long-range guide for public policy decisions concerning the overall growth and development of the County. The Plan focuses on physical growth and development of the County and policies set forth in the Plan are designed to balance economic vitality, environmental protection, and rural quality of life.

The Plan divides the County into six growth management areas: Primary Growth, Secondary Growth, Rural Growth, Watershed Environmental, Zoological Park Environmental, and Municipal Growth. The US 64 study area and surrounding areas fall into the Primary Growth and Municipal Growth Management Areas. Policies in these areas focus on minimizing retail strip development, increasing buffering and screening, identifying prime economic development sites, encouraging planned business/industrial parks, providing a mix of land uses, improving intergovernmental planning for land use, transportation, and economic development, and providing efficient infrastructure.

Recommendations set forth in this study shall provide guidance and strategies to achieve policies established in the 2009 Randolph Growth Management Plan.

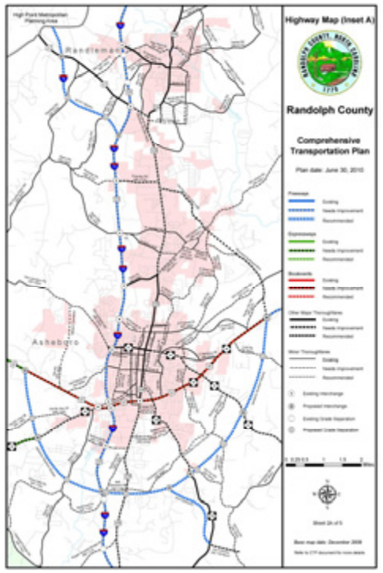
Asheboro 2020 Land Development Plan

The 2020 Land Development Plan was adopted in July 2000 and updated in August 2009. It serves as a long-range guide for the community in making land development decisions and providing for orderly growth and development of the City.

Participants in the development of the Plan identified Land Use and Growth Management Controls as their biggest concern. Participants were dissatisfied with overall development patterns and discussed where growth should be located and what it should look like. Residents also commented on likes and dislikes of community features. Comments such as "visual clutter," "ugly strip development," "too many access drives," "no trees/little landscaping," "ugly parking in front," and "feels like nowhere/anywhere" describes participants' views of commercial and industrial anchors in the City. Policies created to address these issues focused on promoting economic development, managing growth, enhancing the appearance of the built environment, environmental stewardship, and providing cost effective and efficient infrastructure.

This study will be a tool that the City can utilize to further advance policies established in the 2020 Land Development Plan.

Randolph County Comprehensive Transportation Plan



The Randolph County Comprehensive Transportation Plan (CTP) was conducted as a joint effort between NCDOT, the Piedmont Triad Rural Planning Organization, and Randolph County. This planning process was initiated in April 2006, and was formally approved by the NC Board of Transportation in January 2011. The purpose of this plan was to create a set of maps that depict the desired future multimodal transportation network recommendations for the county. Recommendations were developed through a stakeholder process involving all member municipalities as well as through an analysis of current and projected future transportation and land use needs in the county.

This plan calls for improvements to the US 64 corridor as well as several intersecting roadways. The US 64 corridor is identified for conversion to boulevard standards, meaning the current facility would be retrofitted with a median. Roadways denoted as needing improvement include Cox Street, US 220 Business, Dublin Road, Browers Chapel Road, and Luck Road. A bus route is recommended along a portion of the US 64 corridor.

Asheboro 20/20 Strategic Planning Report

The Asheboro 20/20 Strategic Planning Report was adopted in March 2007. The Report was the culmination of an 18 month strategic planning process. Four task forces were created to help in its development: Economic Development; Growth, Annexation, and Infrastructure; Quality of Life; and the North Carolina Zoo. The Report includes policies for preserving and developing the visual appearance of the community, installing wayfinding, developing and implementing a landscape plan at entrance points to the City, and working with NCDOT to improve access to the Zoo.

Asheboro Zoning and Subdivision Ordinances

The Zoning Ordinance and Subdivision Ordinance are the City's two main tools to regulate land development within its jurisdiction. The current versions of the Zoning Ordinance and Subdivision Ordinance were adopted in April 2009 and March 2008, respectively. These ordinances are currently undergoing revisions. As a result, recommendations provided in this study have an opportunity to influence future versions of these ordinances.

Flood Damage Prevention Ordinance

The City adopted a Flood Damage Prevention Ordinance in December 2007 to promote public health, safety, and general welfare and to minimize public and private losses due to flood conditions within flood prone areas. The City allows development within the floodplain; however, a permit is required for land development within Special Flood Hazard Areas. Special Flood Hazard Areas are those areas within the 100-year floodplain (classified as AE or AEFW by Randolph County's GIS maps). The

majority of the study area and area of influence are located outside of the 100-year floodplain. However, the City may want to consider strengthening existing floodplain regulations to preserve environmentally-sensitive lands within the study area as well as other areas of the City.

Small Area Plans

Small area plans were prepared for each of the six subdivisions of Asheboro in association with the development of the Asheboro 2020 Land Development Plan. Each small area plan contains an analysis of key growth factors and issues unique to the area, a description of recommended land use patterns, and a proposed land use map. Two small area plans in particular are of interest to this study: the South-East Small Area Plan and the South-West Small Area Plan. The South-East Small Area Plan focuses on two key issues: the impact of the planned US 64/NC 49 Bypass and the City's agreement to maintain the rural character of the area surrounding the Zoo. The South-West Small Area Plan also discusses ideal land uses in proximity to the corridor.

The recommend land uses in these areas may impact general development recommendations provided later in this study. It is important to note that the City is scheduled to begin updating the proposed land uses over the summer, so recommendations set forth in this plan have an opportunity to influence those updates.

Parks and Recreation Master Plan

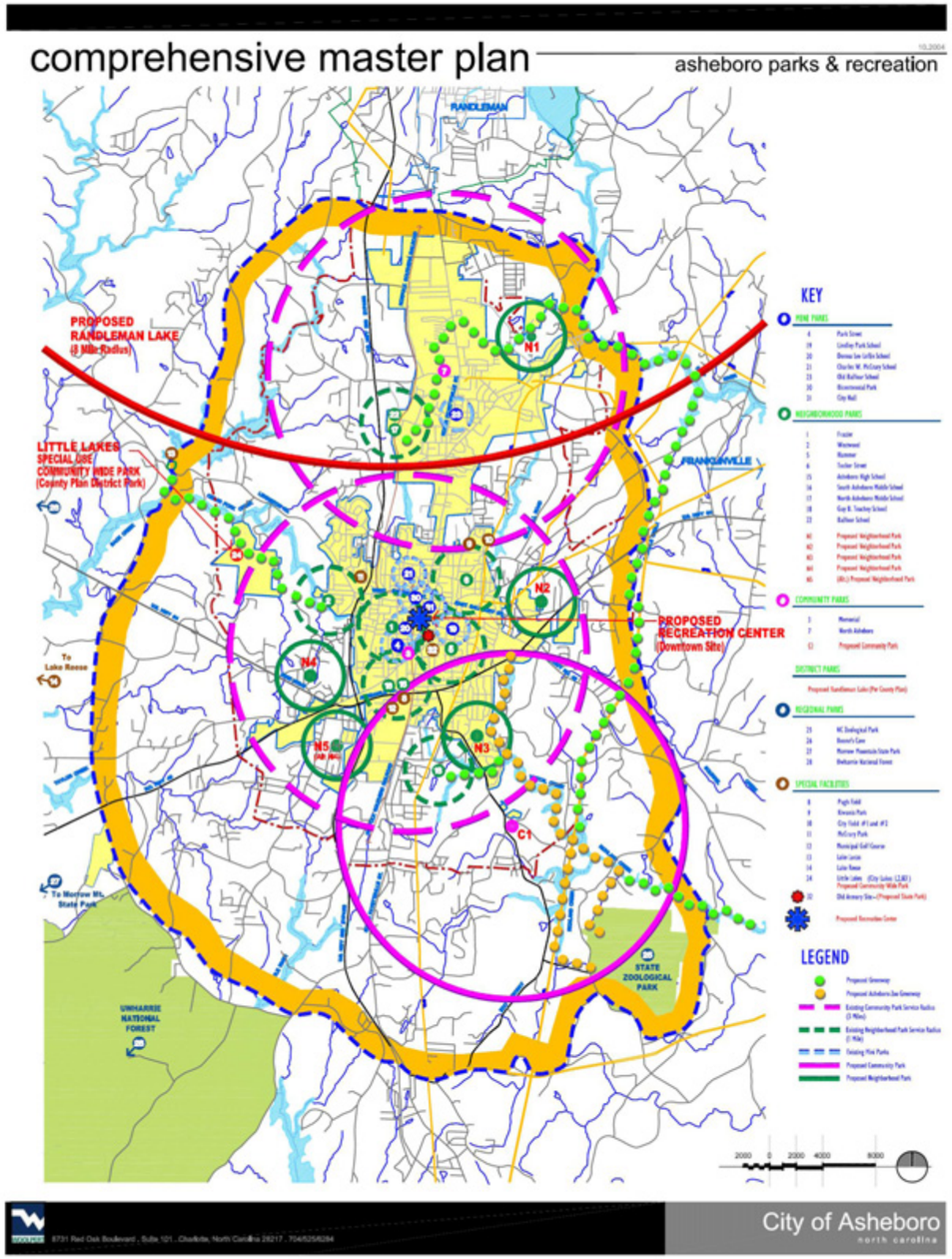
The City of Asheboro completed an update to their 20-Year Comprehensive Parks and Recreation Master Plan in August 2004. The plan assesses the City's existing parks and recreation resources and needed improvements and additions to the system over the next 20 years. The Plan identifies those facilities where the City should focus its short-term financial resources which include greenways and bike routes to help link community resources.

The plan proposes three new neighborhood parks within proximity to the study area. Additionally a greenway is proposed (the Asheboro Zoo Greenway) that will connect US 64 to the Zoo. This study looked for ways to improve connectivity and accessibility to these proposed facilities.

Comprehensive Pedestrian Transportation Plan

The City of Asheboro adopted a Comprehensive Pedestrian Transportation Plan in February 2008 to improve the City's pedestrian transportation system. The Plan's vision is to provide a safe and pleasant pedestrian experience and be accessible to all people by 2030. Several design characteristics are stressed in the plan including connectivity, pedestrian supportive-land use patterns, and accessibility.

Currently, the portion of US 64 within the study area provides a challenge for accommodating pedestrian transportation. There are several proposed sidewalk and intersection improvements along the corridor, that when implemented, will help improve the pedestrian transportation system. The Plan also recommends revisions to the subdivision ordinance that will incrementally make walking along the corridor a more pleasurable experience as businesses change and new development occurs.

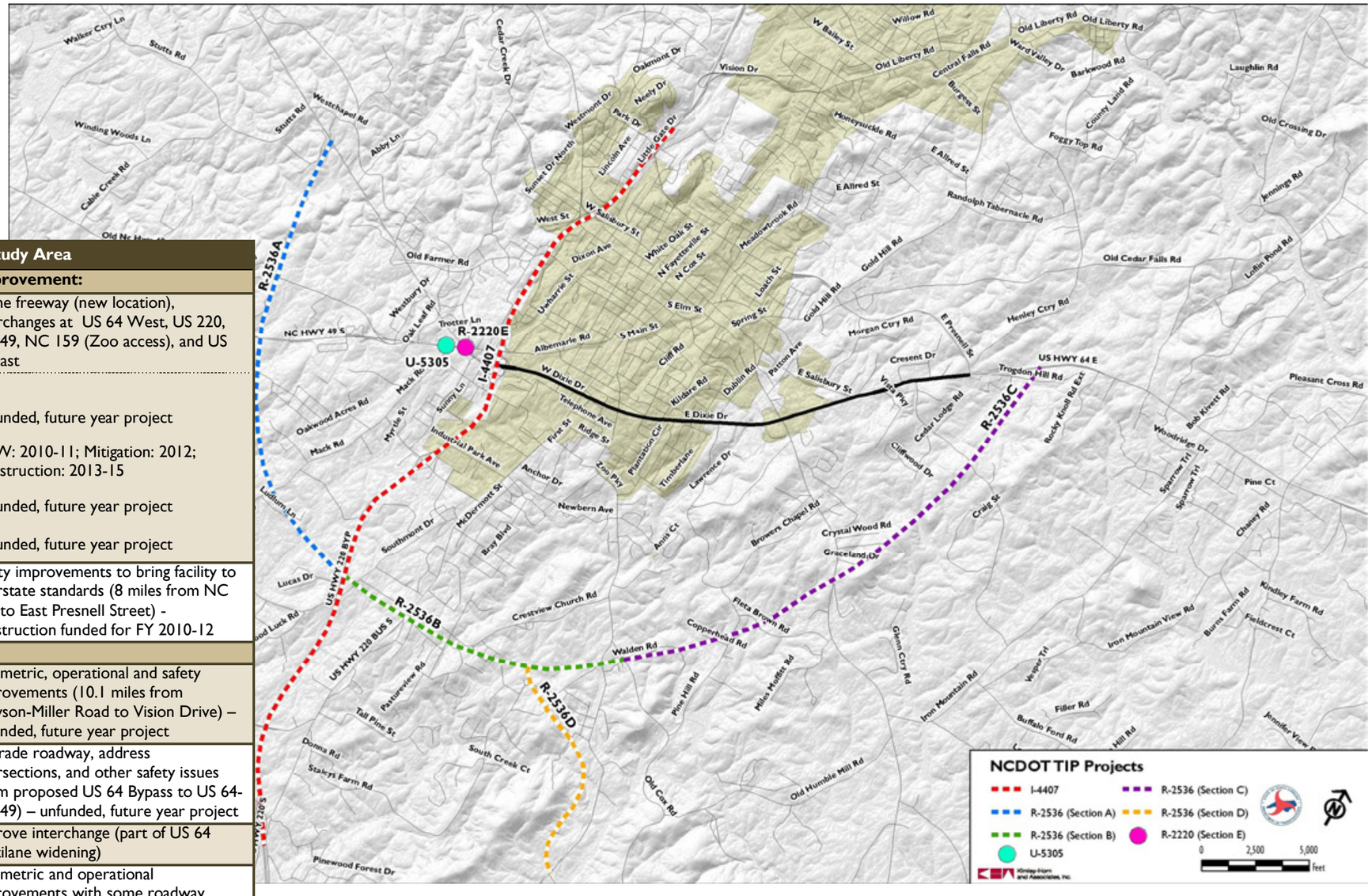


Planned and Committed Improvements

There are a handful of committed projects that will have some type of impact along the US 64 corridor. All of these projects are found in the current NCDOT Transportation Improvement Program (TIP), which covers the 2009-2015 planning horizon. The table below provides more detail about each of these projects. The map to the right shows the approximate location of the TIP projects with dedicated funding.

NCDOT TIP Projects in the Project Study Area

TIP #	Name	Projected Cost	Improvement:
R-2536	Asheboro Southern Bypass	$232,238,000	4-lane freeway (new location), interchanges at US 64 West, US 220, NC 49, NC 159 (Zoo access), and US 64 East
	This TIP project has four distinct sections as indicated below:		
	A) Existing US 64 west of Asheboro to US 220 Bypass		Unfunded, future year project
	B) US 220 Bypass to Old Cox Road		ROW: 2010-11; Mitigation: 2012; Construction: 2013-15
	C) Old Cox Road to existing US 64 (near Luck Road)		Unfunded, future year project
	D) Zoo access Road		Unfunded, future year project
I-4407	US 220 or Future I-73/74	$23,265,000	Safety improvements to bring facility to interstate standards (8 miles from NC 134 to East Presnell Street) - construction funded for FY 2010-12
Unfunded/Future Year Projects			
I-5105	US 220 or Future I-73/74	$345,240,000	Geometric, operational and safety improvements (10.1 miles from Dawson-Miller Road to Vision Drive) – unfunded, future year project
U-5005	US 220 Business	$45,400,000	Upgrade roadway, address intersections, and other safety issues (from proposed US 64 Bypass to US 64-NC 49) – unfunded, future year project
R-2220E	US 64/NC 49 Interchange	$7,400,000	Improve interchange (part of US 64 multilane widening)
U-5305	NC 49/Mack Road Intersection	TBD	Geometric and operational improvements with some roadway relocation and realignment



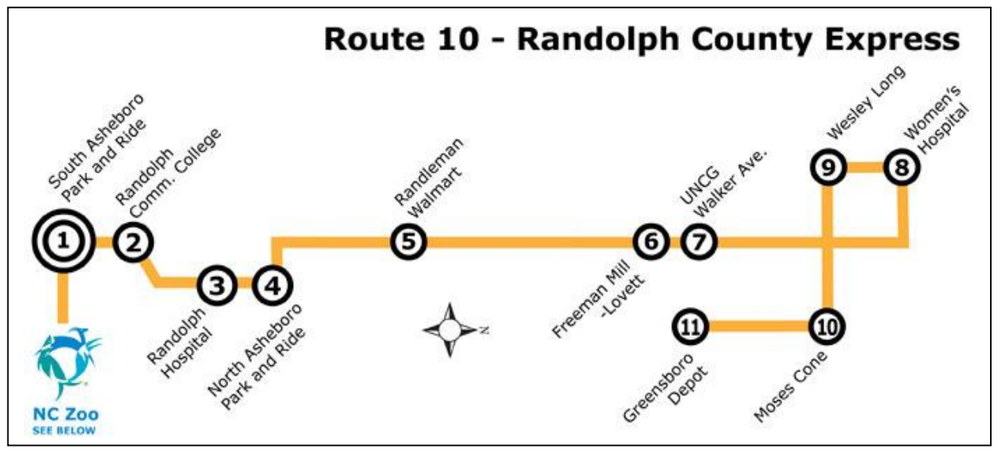
Multimodal Transportation

The US 64 corridor has limited multimodal transportation amenities today. A component of this plan was to identify specific improvements intended to enhance the alternative transportation choices along the corridor. The following sections describe the existing multimodal amenities along the corridor, including transit, pedestrian, and bicycle.

Transit

The US 64 corridor currently is not served by any specific transit routes. In general, the City of Asheboro is served by the Piedmont Authority for Regional Transportation (PART), primarily though an express route between Asheboro and Greensboro. PART provides transit service within Asheboro and throughout the TRIAD area, including Greensboro, Winston-Salem, High Point and several surrounding counties.

Currently, PART provides one route, Route 10 – Randolph County Express Bus Service, connecting major Asheboro destinations with Randleman and Greensboro destinations to the north including the Greensboro Depot where patrons would have the opportunity to utilize other fixed routes. Destinations within Asheboro include the Zoo, Randolph Hospital, and Randolph Community college along with several park and ride locations.



Source: Piedmont Authority for Regional Transportation (PART), http://www.partnc.org/

PART Express Bus

The Asheboro area is also served by the Regional Coordinated Area Transportation System (RCATS) which provides public transportation to Randolph and Montgomery County residents on an advance reservation basis, and can be used by residents living anywhere in Randolph County. This "dial-a-ride" service provides residents with access to local and out of town medical facilities as well as local shopping at Lowes Foods and Wal-Mart. Residents use a schedule of service days and appointment times for their trips, as shown in the table below.

RCATS Service Days and Appointment Times	
Asheboro Residents – Local Medical Appointments	
Monday – Friday	8:30 AM – 2:00 PM
Asheboro Residents – Regularly Scheduled Shopping Trips	
Thursday – Lowes Foods	9:00 AM – 12:00 Noon
Friday – Wal-Mart Center	9:00 AM – 12:00 Noon
Randolph County Residents – Local Medical Appointments (Asheboro)	
Monday – Friday	9:00 AM – 12:00 Noon
Asheboro Residents – Regularly Scheduled Shopping Trips	
Monday and Tuesday - Greensboro	9:00 AM – 12:00 Noon
Wednesday – Salisbury	9:00 AM – 12:00 Noon
Thursday – Winston-Salem	9:00 AM – 12:00 Noon
Friday – Durham	9:00 AM – 12:00 Noon
Monday, Wednesday, Friday – Chapel Hill	9:00 AM – 12:00 Noon

Pedestrian and Bicycle

The provision of a well connected bicycle and pedestrian network is an effective way to complement vehicular demand by providing residents, shoppers, and area visitors with multiple options for reaching their destination. An example of effective connections along the US 64 corridor would be the provision of sidewalks and pedestrian crosswalks between one of the hotels along the corridor and local restaurants. This type of connection would make it more viable for tourists to utilize more of the amenities provided along the corridor, without requiring the use of a personal vehicle. Each personal vehicle removed from the traffic stream in favor of a walking or cycling trip is a step in the right direction towards reducing vehicular congestion and increasing motorist safety. At this time, the corridor has very few amenities to serve the pedestrian or bicycle community.

The pedestrian network typically consists of sidewalks parallel to the corridor and crosswalks (potentially including pedestrian signals at key intersections). These amenities allow for the safe and efficient movement of pedestrians along the corridor. Today, sidewalks are quite limited along the US 64 corridor, as depicted in the map to the right. There are a few segments in the general vicinity of the US 64/NC 42 intersection. Currently there is only one marked crosswalk along the corridor, at the intersection of US 64 (Dixie Drive)/Park St. This crossing has slightly worn marking and pedestrian countdown signals from the southwest to the northwest quadrants and from the northwest to the northeast quadrants.

The bicycle network usually consists of signed or marked routes, wide outside lanes, greenways, or wide multi-use paths adjacent to the corridor. Currently, there is only one bicycle facility within the study area. South Cox Street/Zoo Parkway is designated by NCDOT as a county bike route, with no additional laneage or striping provided as part of the route. No other bicycle facilities have been locally designated in the area.

Pedestrian signal and existing crosswalks at Park Street and US 64

End of sidewalk causes cyclist to walk with bike due to unsafe conditions

The figure at right shows the existing pedestrian and bicycle amenities along the corridor.

Connectivity

Traffic congestion and vehicular crashes can be reduced by applying the principles of proper connectivity along a corridor. There are two specific types of connectivity that aid in reducing congestion and conflicts. The first is cross-connectivity, which is the idea of providing access between adjacent land uses and parcels, ultimately removing the need for motorists to continue to enter and exit the main stream of traffic to reach multiple destinations. The second is collector street connectivity, which provides alternate route choices between major facilities, allowing large volumes of traffic from neighborhoods, office parks, and commercial developments to disperse over multiple routes, rather than enter the main stream of traffic at a single point. This dispersion of traffic can eliminate congestion at major access points, by distributing traffic at various locations along the corridor rather than a single access point.

Cross Connectivity

Cross-connectivity is the provision of secondary access points between adjacent land uses, which provides motorists additional access options beyond re-entering the primary travelway. The provision of cross access is usually accomplished through local planning, design, and development regulations. The benefits of providing cross access include reduced traffic and conflicts on the primary travelway and potential for increased business with the creation of easy access from one parcel to another.

There are good and bad examples of cross connectivity along the US 64 corridor today. The following series of photos highlight some of the existing conditions along the corridor. Although stem lengths and driveway orientation are not designed appropriately in all cases, this section focuses on the cross-connectivity.

Good Example of Cross Access

Businesses Shown:

- Fairfield Inn and Suites
- Rite Aid Pharmacy

These two complementary businesses share a common driveway along US 64. There are two cross access points between the businesses.

Bad Example of Cross Access

Businesses Shown:

- Dixie III
- Cox's Finance & Insurance
- Sir Pizza
- Treasure World Pawn
- Fred's Store
- America's Road House
- Advance Auto Parts

These businesses (located in the northwest, northeast, and southeast quadrants of Shamrock Dr/US 64) are all separated from their adjacent land uses with man-made barriers (e.g. curb and gutter, fencing)

Good Example of Cross Access

Businesses Shown:

- Dixie Express
- Taco Bell
- Wendy's
- Bojangles
- Arby's

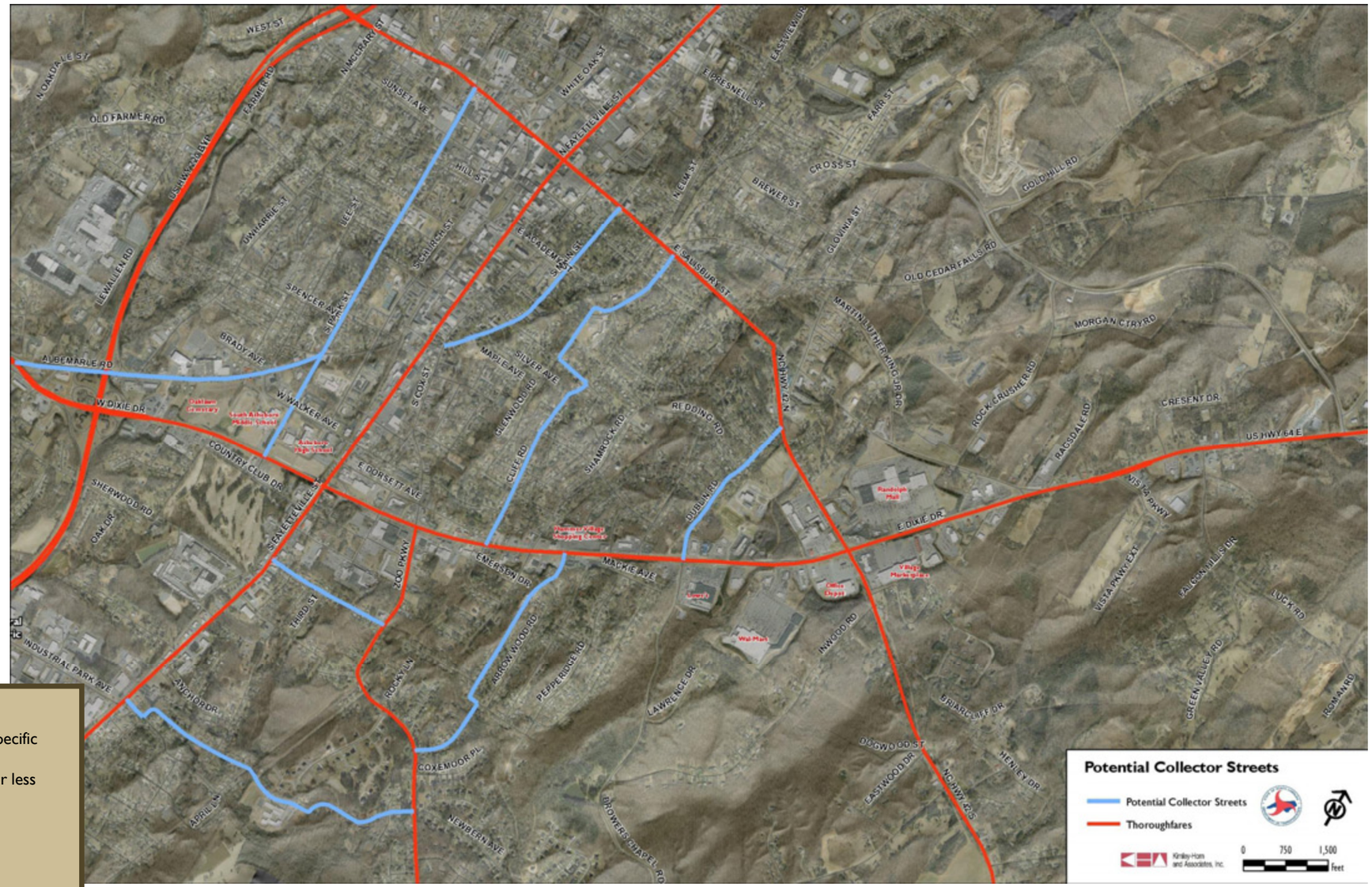
These businesses are all connected via a rear access road (Country Club Drive). While these are not necessarily compatible uses for cross access, they do provide alternative connection. They even connect further east to a Hess gas station and a signalized intersection at Park Street (and further east to US 220).

Collector Street Connectivity
The second type of connectivity that can reduce congestion along the corridor is collector street connectivity, which depends on a well connected network of streets to distribute traffic evenly through the system, rather than at a singular access point along the corridor. The most recent thoroughfare plan update (completed in 2001) did not identify specific collector streets, but there are several roadways in the vicinity of US 64 that operate and function with the characteristics of collector streets.

These connections provide alternative choices between Asheboro's primary thoroughfare network. Based on the typical characteristics of a collector street, the following streets function as collector streets today.

- Albemarle Road
- South Park Street
- South Main Street
- Cliff Road/Glenwood Road
- Dublin Road
- Plantation Circle/Pine Grove Drive
- Ridge Street
- Newbern Avenue/Eldorado Road

Chapter 3, Transportation Framework will discuss collector street connectivity and identify additional roadways and new connections to enhance the collector Street network.



Typical Collector Street Characteristics

Collectors Streets come in all shapes and sizes, but there are specific characteristics that define the street type.

- Speed limit of 25 mph or less residential and 35 mph or less commercial/industrial
- Moderate to high access from adjacent properties
- 12-14 foot travel lanes
- Presence of bicycle and pedestrian connections
- Capacity of 7,000 to 12,000 vehicles per day

Wayfinding and Signage

The US 64 corridor is a dual-designated corridor, also serving as the route for NC 49. This facility connects with two different interstates, a US route, and another primary NC highway. This corridor also serves as a commercial hub and an important connection for people wanting to access the zoo and downtown Asheboro. As a result, highway wayfinding is vital to this corridor. An abundance of regulatory, guidance, and commercial signage along the corridor today can make efficient and safe navigation difficult. Consistent overhead signage delineating the travel lane for certain roadway connections often communicates a clearer message than signs alongside the corridor. To enhance signage and provide clear direction, a combination of these two signage types will likely be the clearest way to communicate this message. The effectiveness of roadway signage is enhanced when unnecessary signs are reduced or removed.

Downtown Asheboro has implemented an attractive and informative wayfinding program that directs motorists, bicyclists, and pedestrians to points of interest around the area. This wayfinding program helps define and enhance the character of Downtown Asheboro. A wayfinding program of this type should be considered for use on the US 64 corridor. The corridor already has some branding elements in place, with a decorative image of the NC Zoo located on road signs. However, other display techniques could enhance the visibility and impact of these key community elements. Employing a wayfinding system while simultaneously controlling other signage elements along the corridor will create a cleaner and more navigable experience. Focus should be given to the clarity of these signs, particularly proper sizing and readability from a reasonable distance.

Decorative corridor banners could be installed on streetlights to promote the significance of the corridor. Larger road signs can be hung from signal span wire or mounted on signal mast arms. These large road signs would make the logo featured on current road signs more prominent. Destination and attraction signage could also be considered to direct motorists to key locations (such as Randolph Mall, Center Point Plaza, North Carolina Zoo, etc.).

North Carolina Zoo Accessibility

The North Carolina Zoo draws over 700,000 visitors on an annual basis. As a result, it is essential to the success of the US 64 Corridor Study to consider the ways people enter and exit this facility. Currently, many people use Zoo Parkway as their primary means of ingress and egress. The distance between the zoo and US 64 on Zoo Parkway is approximately 5.1 miles.

While this is the shortest route in terms of distance, long queues at the intersection of Zoo Parkway and US 64 can cause severe backups lasting several minutes. When motorists leave the zoo, they quickly reach a split on Zoo Parkway that advises them to continue straight. Many people instead elect to continue to their right on the free-flow right-turn lane, heading north on Zoo Parkway, ultimately resulting in the congestion on this roadway. If motorists continue straight, they are directed to travel south on Zoo Parkway until it terminates into US 220 Business. At this time, signage at this intersection directs motorists to head south in order to connect with I-73/I-74/US 220, and to head north to travel on US 220 Business. Consideration should be given to modifying the signage to notify motorists that they can connect with I-73/I-74/US 220 by traveling either north or south.

Traveling this route now gives motorists exiting the zoo two travel options. They can choose to continue on US 220 Business until it intersects with US 64, or they can travel on I-73/I-74/US 220 until it intersects with US 64. Each of these travel routes is about 9.3 miles in length. These travel alternatives are longer than the direct Zoo Parkway route, but involve higher overall travel speeds and fewer delays at their intersection with US 64.

The City of Asheboro and the North Carolina Zoo have been running a pilot program in April 2010, closing the free-flow right-turn lane and forcing motorist to travel to the stop controlled intersection with Zoo Parkway. From this point motorists have the choice to go north or south. According to preliminary data collected as part of the pilot program, approximately 60 percent of the motorists choose to travel north on Zoo Parkway, while the rest choose to go south. This dispersion of traffic has already provided noticeable congestion reduction at the intersection of US 64 and Zoo Parkway.

An optimal solution at this location could be employing a dynamic message sign (DMS) at the Zoo Parkway split that would direct people to the optimal route based on congestion levels, time of day, or overall travel time to reach the preferred destination.

Signalized Intersections

The portion of the US 64 corridor being analyzed in this plan includes eleven signalized intersections. Some of these signalized intersections serve major roadway-to-roadway connections, such as the junction of NC 42 and of Zoo Parkway, while others serve traffic entering and exiting developments including Lowes Foods, Wal-Mart, and Randolph Mall. Each signalized intersection presents an opportunity for additional delay along the US 64 corridor. However, because these signals are coordinated with each other, the amount of delay, vehicular conflict and queuing along the corridor can be minimized. The portion of the US 64 corridor between South Park Street and East Salisbury Street is part of a coordinated signal system. This system currently operates with two timing plans to account for changes in traffic volume distribution at different times of the day, giving preference to certain movements at certain times.

US 64 Corridor Study Signalized Intersection Inventory	
A	W Dixie Dr. (US 64) at Lowes Foods Entrance
B	W Dixie Dr. (US 64) at S Park St.*
C	E Dixie Dr. (US 64) at S Cox St./Zoo Pkwy.*
D	E Dixie Dr. (US 64) at Cliff Rd.*
E	E Dixie Dr. (US 64) at Arrow Wood Rd.*
F	E Dixie Dr. (US 64) at Browers Chapel Rd.*
G	E Dixie Dr. (US 64) at Center Point Plaza/Walmart Entrance*
H	E Dixie Dr. (US 64) at NC 42*
I	E Dixie Dr. (US 64) at Randolph Mall Entrance*
J	E Dixie Dr. (US 64) at E Salisbury St.*
K	E Dixie Dr. (US 64) at E Presnell St.

** = part of coordinated signal timing plan*

Traffic Conditions

The US 64 corridor not only serves as a spine road and commercial center for the City of Asheboro, but also as a Strategic Highway for North Carolina. Due to these various access and mobility needs, a thorough analysis of traffic conditions was performed prior to developing recommendations to improve this corridor. The following sections explore the traffic volumes, delays, and overall intersection and segment levels of service currently facing the US 64 corridor. The map on the following page provides a visual representation of this data.

Historic ADTs

The US 64 corridor has recent annual average daily traffic (AADT) levels ranging between 19,000 (east of NC 42) and 33,000 (between Cliff Road and Shamrock Road) vehicles per day. Historic AADT counts were obtained between 2002 and 2008 at available locations along US 64 and Zoo Parkway. These counts show that the traffic volumes along the US 64 corridor have remained stable over the past seven years. However, Zoo Parkway has seen approximately 10% traffic growth since 2002.

Corridor Level of Service

Based on the historic AADT's described in the previous section and typical segment capacity levels (based on historic traditional five-lane section capacities), a capacity analysis of the corridor was performed to determine which portions of US 64 operate at acceptable and unacceptable levels of service. This analysis is based on a simple volume-to-capacity ratio (V/C), with AADT representing volumes. The corridor sections between US 220 and Park Street, Cliff Road and Shamrock Road, and Shamrock Road and NC 42 all operate below acceptable levels of service based on this analysis.

Intersection Level of Service Analysis

NCDOT performed traffic counts at four different signalized intersections along the US 64 corridor, as well as traffic counts at two intersections along Zoo Parkway. An AM and PM peak hour traffic analysis was conducted for each intersection to determine the level of service (LOS) at each location, as well as the overall delay for each peak hour vehicle. Along US 64, the PM peak hour was found to have more severe delay levels at each intersection analyzed. The worst-performing intersection along US 64 is Park Street, which has a PM delay of over 2 minutes per vehicle. This intersection, along with the intersection of US 64 and NC 42, operate at a LOS F during the PM peak. The intersection of US 64 and S Cox Street/Zoo parkway exhibits moderate levels of congestion. However, this traffic count likely does not represent the peak season operation of the zoo, which could incur much larger delays. During the project charrette in June 2010, further observation of this intersection was conducted to determine congestion issues. The two intersections along Zoo Parkway do not exhibit elevated levels of service. These intersections were also studied in greater detail during the charrette.

Although this analysis considers the performance of select intersections, it may not fully capture the current spillback and queuing issues currently observed along the corridor. Vehicles turning from mid-block driveways often prevent traffic from progressing smoothly through the corridor. Solutions for addressing this issue are presented in the access management sections later in the report.

US 64 Corridor Study Historical Average Annual Daily Traffic (AADT) Counts

Road	Location	2002	2003	2004	2005	2006	2007	2008
W Dixie Drive (US 64)	Between US 220 and Park St.	29,000	34,000	30,000	32,000	31,000	33,000	30,000
W Dixie Drive (US 64)	Between Park St. and Fayetteville St.	26,000	-	31,000	28,000	32,000	29,000	26,000
E Dixie Drive (US 64)	Between Cliff Rd. and Shamrock Rd.	37,000	32,000	34,000	36,000	36,000	36,000	33,000
E Dixie Drive (US 64)	West of NC 42	34,000	32,000	32,000	33,000	32,000	32,000	-
E Dixie Drive (US 64)	East of NC 42	19,000	18,000	19,000	20,000	19,000	19,000	-
Zoo Parkway (NC 159)	North of Ridge St.	9,800	11,000	9,700	11,000	9,700	11,000	9,800
Zoo Parkway (NC 159)	North of Old Cox Rd.	5,800	7,500	6,400	6,600	6,700	7,200	-
Zoo Parkway (NC 159)	South of Old Cox Rd.	3,700	5,300	4,300	4,400	4,500	4,700	4,300

US 64 Segment Levels of Service and V/C

Segment	2007-2008 AADT	Capacity	V/C	LOS
Between US 220 and Park St.	30,000	36,000	0.83	E
Between Park St. and Fayetteville St.	26,000	36,000	0.72	D
Between Cliff Rd. and Shamrock Rd.	33,000	36,000	0.92	E
Between Shamrock Rd. and NC 42	32,000	36,000	0.89	E
Between NC 42 and East Presnell St.	19,000	36,000	0.53	C

US 64 Intersection Levels of Service and Delays

Intersection	Existing Conditions LOS (Delay)	
	AM	PM
US 64 at Park St.	C (29.5)	F (135.3)
US 64 at South Cox St./Zoo Pkwy.	C (29.2)	D (55.0)
US 64 at Walmart/Center Point Plaza	B (10.5)	B (15.7)
US 64/NC 42	D (52.4)	F (103.0)
Zoo Pkwy./Old Cox Rd.	A (9.8)*	B (11.2)*
Zoo Pkwy./Zoo Entrance	B (14.8)*	A (9.8)*

* = *unsignalized intersection*


WEST ST
N OAKDALE ST
OLD FARMER RD
FARMER RD
US HWY 220 BYP
N MCCRARY ST
SUNSET AVE
WHITE OAK ST
N FAYETTEVILLE ST
E PRESNELL ST
EASTVIEW DR
FARR ST
HILL ST
N ELM ST
CROSS ST
BREWER ST
GOLD HILL RD
GLOVINIA ST
UWHARRIE ST
LEE ST
S CHURCH ST
E ACADEMY ST
E SALISBURY ST
OLD CEDAR FALLS RD
LEWALLEN RD
SPENCER AVE
S PARK ST
MARTIN LUTHER KING JR DR
MORGAN CT RYRD
ALBEMARLE RD
W DIXIE DR
W WALKER AVE
S COX ST
MAPLE AVE
SILVER AVE
GLENWOOD RD
CLIFF RD
SHAMROCK RD
REDDING RD
NC HWY 42 N
ROCK CRUSHER RD
RAGSDALE RD
CRESENT DR
US HWY 64 E
COUNTRY CLUB DR
E DORSETT AVE
SHERWOOD RD
OAK DR
S FAYETTEVILLE ST
ZOO PKWY
EMERSON DR
KENNICOTT ST
MACKIE AVE
DUBLIN RD
LAKECREST RD
E DIXIE DR
VISTA PKWY
VISTA PKWY EXT
FALCON HILLS DR
LUCK RD
THIRD ST
INDUSTRIAL PARK AVE
ANCHOR DR
ROCKY LN
ARROW WOOD RD
PEPPERIDGE RD
LAWRENCE DR
INWOOD RD
BRIARCLIFF DR
DOGWOOD ST
EASTWOOD DR
NC HWY 42 S
COXEMOOR PL
APRIL LN
NEWBERN AVE
BROWERS CHAPEL RD
Oakdown Elementary
Asheboro High School
Hunter Village Shopping Center
Randolph Mall
Village Marketplace
Office Depot
Lowe's
Wal-Mart
20000
22000
24000
19000
Existing Levels of Service
Intersection LOS
AM PM
LOS B or Better
LOS C
LOS D
LOS E
LOS F
Segment LOS
LOS C or better
LOS D
LOS E
LOS F
2007 AADT
Kimley-Horn and Associates, Inc.
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Feet

Crash Analysis

In addition to a thorough traffic analysis along the corridor, it is important to also evaluate and understand the nature, frequency, and causational factors associated with vehicular crashes along the US 64 corridor. To perform this analysis, five years of crash data was obtained from NCDOT. The analysis period represents data from February 1, 2005 to January 31, 2010. The map to the right provides a breakdown of this data, including crash frequency at each intersection and crash rates for each segment between intersections.

The following sections provide more detail for intersection and segment safety analyses, as well as a ranking of locations along the corridor.

The following summary statistics provide a better understanding of the overall crash conditions along the US 64 corridor.

- 1,012 total crashes over the five year analysis period (Side street and Y line crashes were not included as part of this analysis. It should be noted that many side street and driveway crashes occur on these approaches and are not referenced to the main corridor.)
- Two fatal crashes
  - One occurring at Arrow Wood Road – a vehicle traveling westbound along US 64 struck a pedestrian
  - One between Kenmore Street and Shannon Road – a vehicle traveling 70 miles per hour struck another vehicle head-on (two additional vehicles were involved)
- 348 non-fatal injury crashes
- Total crash rate of 402.17 crashes per 100 million vehicle miles – which is **10% higher** than the state average crash rate for a similar facility (375.75 crashes per 100 MVM)
- Top crash types:
  - Rear-end – 513 crashes
  - Angle - 138 crashes
  - Sideswipe – 86 crashes
- **70 percent** of crashes occurred at mid-block locations – indicating that an overabundance of driveway access points (and resulting conflicts) and unsafe two-way left turn lane is a problem along the corridor

Intersection Safety Problem Areas

The table on this page provides a ranking of intersections along the corridor, based on a mixture of crash frequency, severity, and AADT on adjacent corridors. The following five intersections were identified as the five worst along the corridor and were evaluated further during the project design charrette to identify potential spot-safety countermeasures to address safety deficiencies.

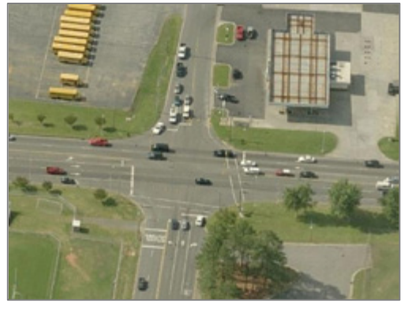
Wal-Mart Driveway

The intersection of US 64 and the Wal-Mart driveway was identified as the worst intersection along the corridor in terms of traffic safety. It expereinced the highest number of crashes (58) and also the highest number of injury crashes (21) along the corridor. The top crash type was rear-end collisions, presumably from stop-start conditions at the intersection.

Salisbury Street

The intersection of US 64 and Salisbury Street was the second ranked intersection for poor traffic safety conditions along the corridor. The location only had 18 crashes, but 11 of those involved sometype of injury. The current intersection geometry is awkward and the free-flow right-turn lane from westbound US 64 could create potential conflicts for vehicles trying to enter Salisbury Street from westbound US 64.

Park Street

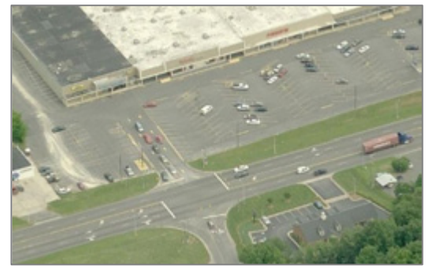


The intersection of Park Street and US 64 was the third ranked intersection along the corridor, with 32 total crashes and 16 injury crashes. This intersection serves the Asheboro schools, access into residential areas west of downtown, and as an exit ramp for vehicles traveling between US 220 and US 64. The high volumes of traffic using this intersetion are a primary cause of the crashes in the area. Special attention needs to be paid to the pedestrian crossings, school bus activity, and general school peaks when developing countermeasures at this location.

Zoo Parkway

The intersection of Zoo Parkway and US 64 was the fourth highest along the corridor, with 42 crashes amd 16 injury crashes. The frequency of crashes at this location is compounded by seasonal congestion issues related to activities at the North Carolina Zoo. Specific recommendations to lessen congestion along Zoo Parkway should provide crash relief at this location.

Arrow Wood Road



The fifth ranked intersection along the corridor is Arrow Wood Road and US 64. This location had 18 total crashes, one fatality, and five injury crashes. The one fatality involved a pedestrian being hit while crossing. The north side of the intersection has a large amount of commercial development, which could generate pedestrian trips from the largely residential southern side of the intersection.

US 64 Intersection Crash Data and Rankings

Rank	Intersection	Crashes	Fatalities	A Injury	B Injury	C Injury	PDO	AADT	EPDO	Most Common Accident Type	Second Most Common Accident Type
1	Wal-Mart	58	0	1	6	14	37	32000	281.8	Rear End, Slow or Stop	Left Turn, Same Roadway
2	SR 2237/Salisbury St.	18	0	1	2	8	7	19000	167.8	Left Turn, Same Roadway	Rear end, slow or stop
3	Park St./SR 1451/SR1156	32	0	1	1	14	16	36400	218.8	Rear End, Slow or Stop	Angle
4	Zoo Pkwy./Cox St./SR 2327/NC 159	42	0	0	1	15	26	39300	160.4	Rear End, Slow or Stop	Angle
5	Arrow Wood Rd.	18	1	0	2	3	12	33000	130.8	Rear End, Slow or Stop	Angle
6	Zoo Pkwy.&Atlantic Ave./SR 2800	9	0	0	0	4	5	9800	38.6	Rear End, Slow or Stop	Left Turn, Different Roadways
7	Randolph Mall	13	0	0	1	5	7	19000	57.4	Rear End, Slow or Stop	Sideswipe, Same Direction & Angle
8	Cliff/SR 2203	24	0	0	2	6	16	35000	83.2	Rear End, Slow or Stop	Left Turn, Same Roadway & Angle
9	3rd St./SR 2808	21	0	0	0	6	15	29500	65.4	Rear End, Slow or Stop	Angle
10	NC 42	27	0	0	1	5	21	35850	71.4	Rear End, Slow or Stop	Angle
11	Shannon Rd.	9	0	0	0	6	3	33000	53.4	Rear End, Slow or Stop	Sideswipe, Same Direction
12	Dublin Rd./Browers Chapel Rd.	17	0	0	0	5	12	33750	54	Rear End, Slow or Stop	Angle
13	Presnell St./SR 2345	9	0	0	1	2	6	19000	31.2	Fixed Object	Left Turn, Different Roadway
14	Kenmore St.	8	0	0	0	4	4	33000	37.6	Rear End, Slow or Stop	Left Turn, Different Roadway
15	Fayetteville St./US 220B	7	0	0	0	3	4	26000	29.2	Rear End, Slow or Stop	-
16	Luck Rd./SR 2604	3	0	1	1	0	1	20500	86.2	Left Turn, Same Roadway	Left Turn, Different Roadway
17	Executive Way	10	0	0	0	3	7	32000	32.2	Rear End, Slow or Stop	Other non-collision
18	Zoo Pkwy.&Ridge St./SR 2915	8	0	0	0	1	7	13200	15.4	Left Turn, Different Roadways	Rear End, Slow or Stop
19	Shamrock Rd.	11	0	0	0	2	9	33000	25.8	Rear End, Slow or Stop	Left Turn, Different Roadway
20	US 220	4	0	0	0	2	2	33750	18.8	Rear End, Slow or Stop	-
21	Crescent Dr./SR 2213	1	0	0	1	0	0	19160	8.4	Left Turn, Same Roadway	-
22	1st St./SR 2912	1	0	0	0	1	0	27350	8.4	Rear End, Slow or Stop	-

*Crashes reported for mainline only. A Y line distance of zero (0) feet was specified for the crash report.

Segment Problem Areas

The table on this page provides a ranking of segments along the corridor, based on a mixture of crash frequency, severity, and AADT on adjacent corridors. The following five segments were identified as the worst crash locations along the corridor and were evaluated further during the project design charrette to identify potential spot-safety countermeasures to address safety deficiencies.

From US 220 to Park Street

This segment is six tenths of a mile long and had 169 total crashes, 54 of which resulted in an injury. This segment has 23 driveway openings, which contribute to left-turn and rear-end conflict conditions.

From Zoo Parkway to Cliff Road

This segment is two tenths of a mile long and had 68 total crashes, 25 of which resulted in injuries. This relatively short segment has 39 driveway openings, with only 16 parcels adjacent to the corridor. This over-abundance of driveway openings needs to be addressed during the recommendations phase of the study.

From Executive Way to Wal-Mart Driveway

This segment is three tenths of a mile long and had 49 total crashes, 13 of which resulted in injuries. There are only three dedicated driveway openings in this segment. Crashes in this segment may be attributed to speeding, vertical curvature, and the capacity of traffic at the Wal-Mart driveway signal.

From Wal-Mart Driveway to NC 42

This segment is a little over a tenth of a mile long and had 43 total crashes, 12 of which resulted in injuries. There are only six dedicated driveway openings in this segment. Much like the previous segment, crashes in this segment may be attributed to speeding, vertical curvature, and the capacity of traffic at the Wal-Mart driveway signal.

From Dublin Road to Executive Way

This segment is a little over a tenth of a mile long and had 40 total crashes, 11 of which resulted in injuries. There are only six dedicated driveway openings in this segment. Crashes in this may be attributed to speeding and the overall traffic capacity.

US 64 Segmental Crash Data and Rankings

Rank	From	To	Length	Crashes	Fatalities	A Injury	B Injury	C Injury	PDO	AADT	EPDO	Most Common Collision Type	Second Most Common Collision Type
1	US 220	Park St./SR 1451/SR1156	0.6	169	0	1	10	43	115	33750	1061.67	Rear End, Slow or Stop	Angle
2	Zoo Pkwy./Cox St./SR 2327/NC 159	Cliff/SR 2203	0.23	68	0	0	1	24	43	39300	1100.00	Rear End, Slow or Stop	Sideswipe, Same Direction
3	Executive Way	Wal-Mart	0.27	49	0	0	3	10	36	32000	537.78	Rear End, Slow or Stop	Angle
4	Wal-Mart	NC 42	0.14	43	0	0	1	11	31	32000	941.43	Rear End, Slow or Stop	Sideswipe, Same Direction
5	Dublin Rd./Browers Chapel Rd.	Executive Way	0.14	40	0	0	1	10	29	33750	867.14	Rear End, Slow or Stop	Angle
6	Cliff/SR 2203	Shamrock Rd.	0.16	40	0	0	1	12	27	35000	851.25	Rear End, Slow or Stop	Sideswipe, Same Direction & Angle
7	Shamrock Rd.	Arrow Wood Rd.	0.11	39	0	0	1	11	27	33000	1161.82	Rear End, Slow or Stop	Angle
8	Shannon Rd.	Dublin Rd./Browers Chapel Rd.	0.11	38	0	0	1	12	25	33000	1220.00	Rear End, Slow or Stop	Sideswipe, Same Direction
9	NC 42	Randolph Mall	0.17	36	0	0	3	11	22	35850	821.18	Rear End, Slow or Stop	Angle
10	Park St./SR 1451/SR1156	Fayetteville St./US 220B	0.23	31	0	0	0	6	25	36400	327.83	Rear End, Slow or Stop	Sideswipe, Same Direction & Angle
11	3rd St./SR 2808	Zoo Pkwy./Cox St./SR 2327/NC 159	0.13	27	0	0	1	8	18	29500	720.00	Rear End, Slow or Stop	Sideswipe, Same Direction
12	Randolph Mall	SR 2237/Salisbury St.	0.43	24	0	0	2	7	15	19000	210.70	Rear End, Slow or Stop	Angle
13	Arrow Wood Rd.	Kenmore St.	0.15	23	0	0	2	8	13	33000	646.67	Rear End, Slow or Stop	Sideswipe, Same Direction
14	Zoo Pkwy.&Atlantic Ave./SR 2800	Dixie Dr./US 64	0.26	18	0	0	0	7	11	9800	268.46	Rear End, Slow or Stop	Angle
15	SR 2237/Salisbury St.	Crescent Dr./SR 2213	0.49	16	0	1	2	2	11	19000	247.76	Animal	Rear End, Slow or Stop
16	Luck Rd./SR 2604	Presnell St./SR 2345	0.47	12	0	1	1	3	7	20500	249.79	Rear End, Slow or Stop	Sideswipe, Same Direction & Backing Up
17	Kenmore St.	Shannon Rd.	0.1	10	1	0	0	1	8	33000	932.00	Rear End, Slow or Stop	Head On
18	1st St./SR 2912	3rd St./SR 2808	0.13	9	0	0	0	5	4	27350	353.85	Rear End, Slow or Stop	Sideswipe, Same Direction
19	Crescent Dr./SR 2213	Luck Rd./SR 2604	0.11	4	0	1	0	0	3	19160	725.45	Animal	-
20	Zoo Pkwy.&Ridge St./SR 2915	Zoo Pkwy.&Atlantic Ave./SR 2800	0.1	4	0	0	1	3	0	9800	336.00	Rear End, Slow or Stop	-
21	Fayetteville St./US 220B	1st St./SR 2912	0.08	3	0	0	0	2	1	26000	222.50	Rear End, Slow or Stop	-

*Crashes reported for mainline only. A Y line distance of zero (0) feet was specified for the crash report.

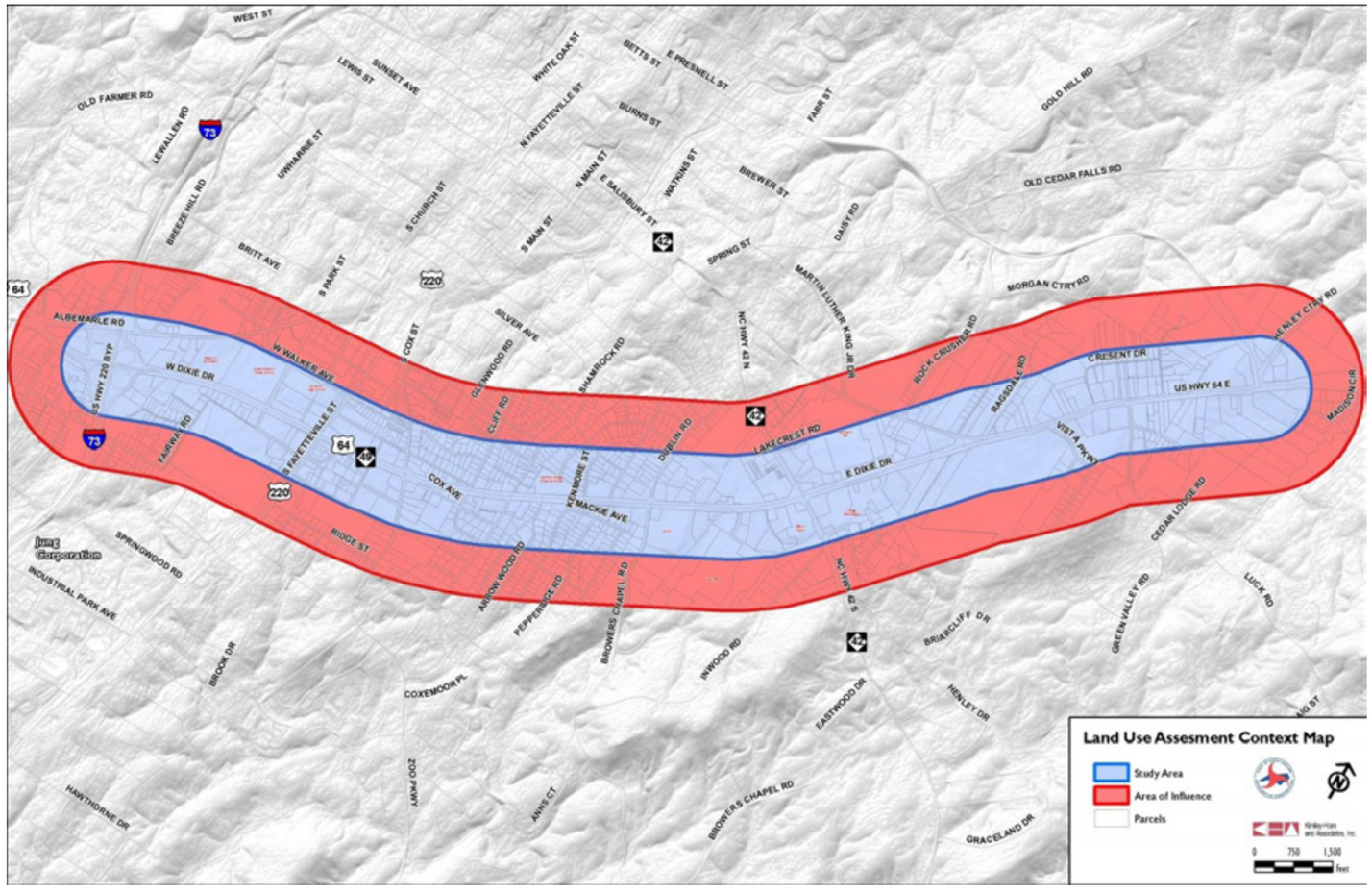
General Development

There is an inherent relationship between land use, transportation, and urban form. Combined, they determine how and where people move through places in a community and have profound impacts on the design and performance of the transportation system. Only through an acknowledgement of this relationship can a City better prepare for the future and promote the desired outcomes identified in local and regional plans. For this reason, the US 64 Corridor Study included an evaluation of existing development patterns and included recommendations to better integrate land use, urban form, and transportation decision-making.

Study Area

The study area generally consists of those properties between East Presnell Street and the US 220 Bypass within 1,000 feet of US 64. For the purposes of the land use analysis, the study area was expanded to include all properties within 2,000 feet of US 64 to account for external forces impacting the study corridor. This area was referred to as "the area of influence." Potential impacts to areas just beyond the study area were considered during the planning process.

Together, the study area and area of influence were referred to as the area, and are shown in the context map to the right.



Community Character

The study area is characterized by a decentralized growth pattern where land use intensity decreases as distance from the corridor increases. Decentralized growth favors low-density development and the segregation of land uses. Large suburban commercial centers, in the form of strip commercial developments and large big box retail, develop adjacent to major transportation corridors and are designed to be accessible primarily by the automobile. Buildings are typically set back from the road by large surface parking lots with little to no connectivity within and between developments.

This type of growth pattern encourages sprawl or "leapfrog" development that results in consumption of sensitive land for development, a linear development pattern, costly expansion of public infrastructure, and increasing traffic congestion.

The corridor is also largely dominated by franchise architecture used by national and regional chain stores to reinforce their image and brand. Franchise architecture is a visual cue to customers that reassures them they will find the same products and services no matter the location of the store. Although an effective level of branding for franchises, it often creates occupant challenge when the franchise vacates the building and adaptive reuse at the facility is attempted. Franchise architecture often results from the absence of design standards that request distinctive and site-specific building architecture with lasting value.

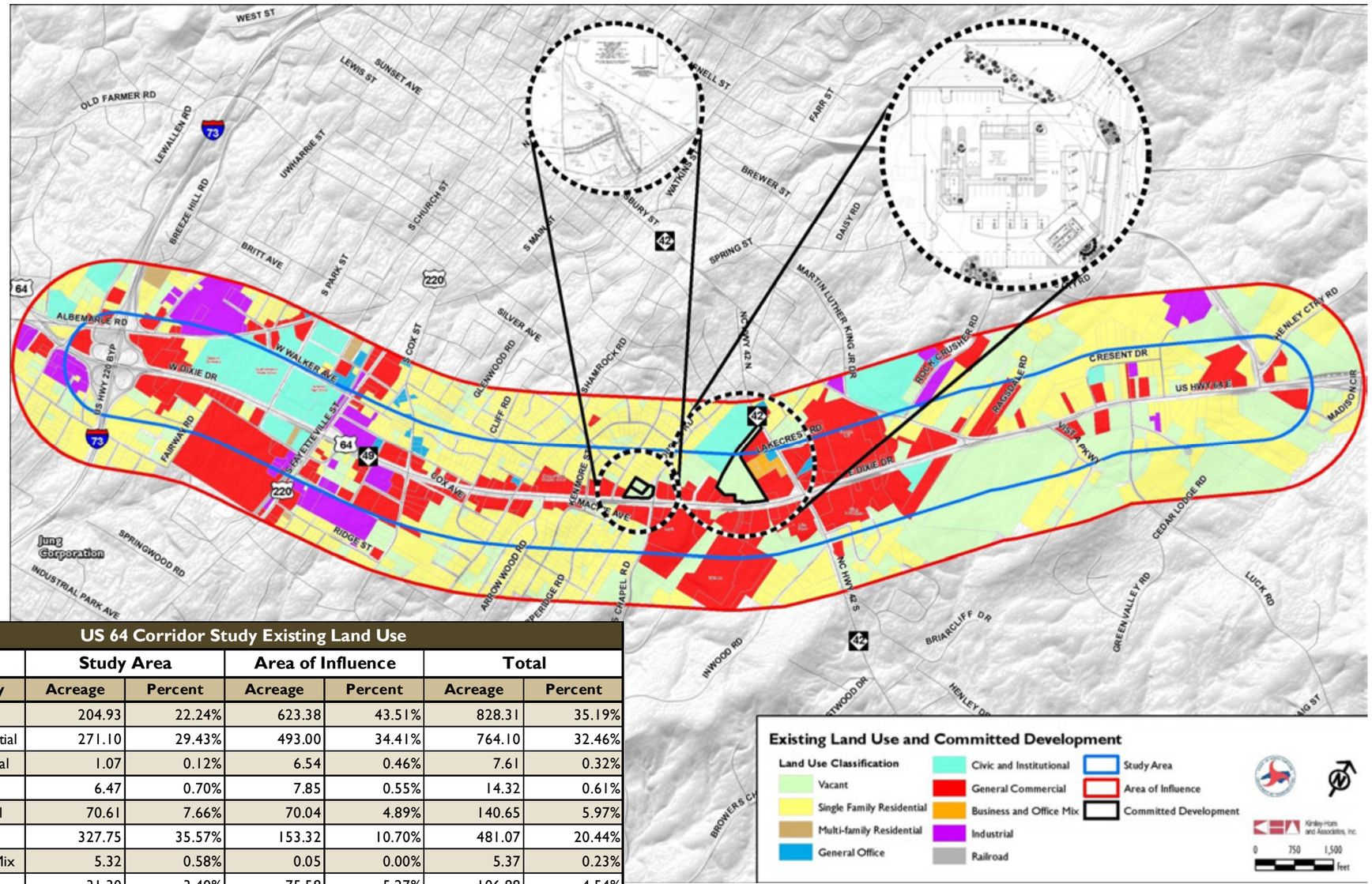
Existing Land Use Profile

Existing land uses in the study area were documented using aerial photography, geographic information systems (GIS) data, windshield surveys, and staff/local knowledge. Development in the study area is influenced by several factors including proximity to a major commercial center, location on a major commuter corridor, and regional travel movements.

The area includes a diverse mix of uses including schools, churches, big box retail and strip commercial developments, car dealerships, fast food restaurants, a regional mall, cemetery, and a golf course. The western portion of the study area is largely developed. Some building vacancies exist, but few large vacant tracts of land are available for development. The greatest potential for greenfield development is in the eastern portion of the study area, where many large vacant land parcels are present.

The study area is comprised mostly of commercial and single family residential land uses, 35.6% and 29.4% respectively. Slightly less than one quarter of land in the study area is vacant, while the majority of the area of influence is vacant, 43.5%. Single family residential and commercial land uses are also prominent, comprising slightly more than 50% of the land area within the area of influence. Commercial development in this area has primarily developed in a strip pattern, decreasing the efficiency and capacity of the corresponding roads and reducing the ability to effectively serve properties beyond the main corridor frontage.

The table provides a breakdown of land uses in the study area and area of influence. The Existing Land Use figure displays the location of these land uses in the area.



US 64 Corridor Study Existing Land Use

	Study Area		Area of Influence		Total	
Land Use Category	**Acreage**	**Percent**	**Acreage**	**Percent**	**Acreage**	**Percent**
Vacant	204.93	22.24%	623.38	43.51%	828.31	35.19%
Single Family Residential	271.10	29.43%	493.00	34.41%	764.10	32.46%
Multi-family Residential	1.07	0.12%	6.54	0.46%	7.61	0.32%
General Office	6.47	0.70%	7.85	0.55%	14.32	0.61%
Civic and Institutional	70.61	7.66%	70.04	4.89%	140.65	5.97%
General Commercial	327.75	35.57%	153.32	10.70%	481.07	20.44%
Business and Office Mix	5.32	0.58%	0.05	0.00%	5.37	0.23%
Industrial	31.30	3.40%	75.58	5.27%	106.88	4.54%
Railroad	2.75	0.30%	3.06	0.21%	5.81	0.25%
TOTAL	921.30	100.00%	1,432.82	100.00%	2,354.12	100.00%

Areas Highly-Constrained for Development

According to local data, several streams traverse the area including Gabriel's Creek, Cedar Fork Creek, Penwood Branch, and various unnamed tributaries. Floodplains in the area were identified along all three named creeks/branches and along the unnamed tributary running between Browers Chapel Road and NC 42. Additionally some small water bodies are scattered throughout the area.

The City established a Flood Damage Prevention Ordinance in 2007. Although development is allowed in the floodplain, a permit is required for land development within Special Flood Hazard Areas. The permit requires structures located in the floodplain to be elevated. The City's Zoning Ordinance does not require riparian buffers along major streams; however, they do defer to the North Carolina Division of Water Quality's (DWQ) stream buffer requirements established in select river basins.

Those areas where the City precludes development are deemed areas highly-constrained for development. In the City of Asheboro, these include streams and water bodies. These areas create challenges for roadway improvements and new developments and are considered unlikely to develop or undevelopable.

These areas are depicted on the Environmental Features Map found on page 5.

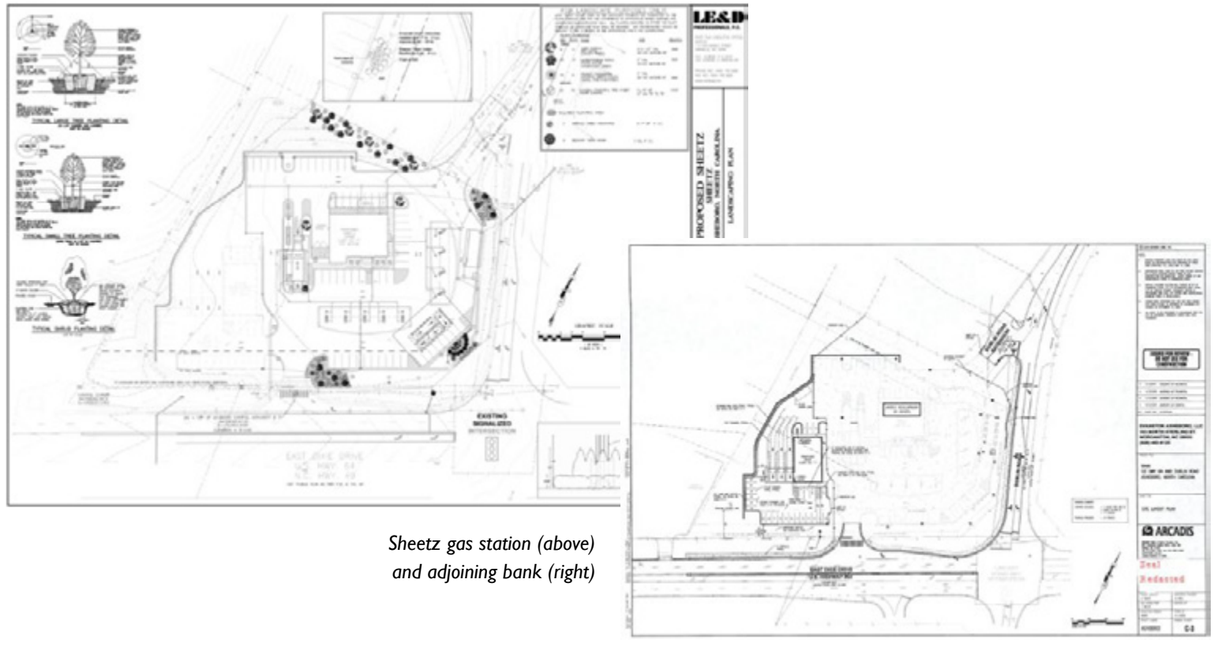
Committed Development

Committed development includes those projects that have been approved by the City, but have not yet been built. Identifying these developments is critical to ensuring the accuracy of the General Development Map described later in the study. These projects are assumed to continue as shown on their approved development plans in the future. As of May 2010, there were three committed development projects in the study area, all located in the center of the corridor between Shannon Road and NC 42 (as seen on the existing land use map on the previous page). Combined, these developments comprise slightly less than 17 acres (16.86 acres) in the study area.

The first development, Starmount Commercial Development, includes 7 lots on 13.34 acres. City Council approved a Special Use Permit (SUP) for a Commercial Planned Unit Development at this location. The City was awaiting final plat submittal by the developer before any development permits were to be issued.

The additional two developments are an adjoining bank and gas station with carwash on a total of 3.52 acres. The proposed bank is 4,000 square feet and contains three drive-thru bays. The proposed Sheetz gas station is approximately 5,000 square feet and includes 18 gasoline pumps and a single bay automatic car wash. These developments will share access off of US 64.

Starmount Commercial Development

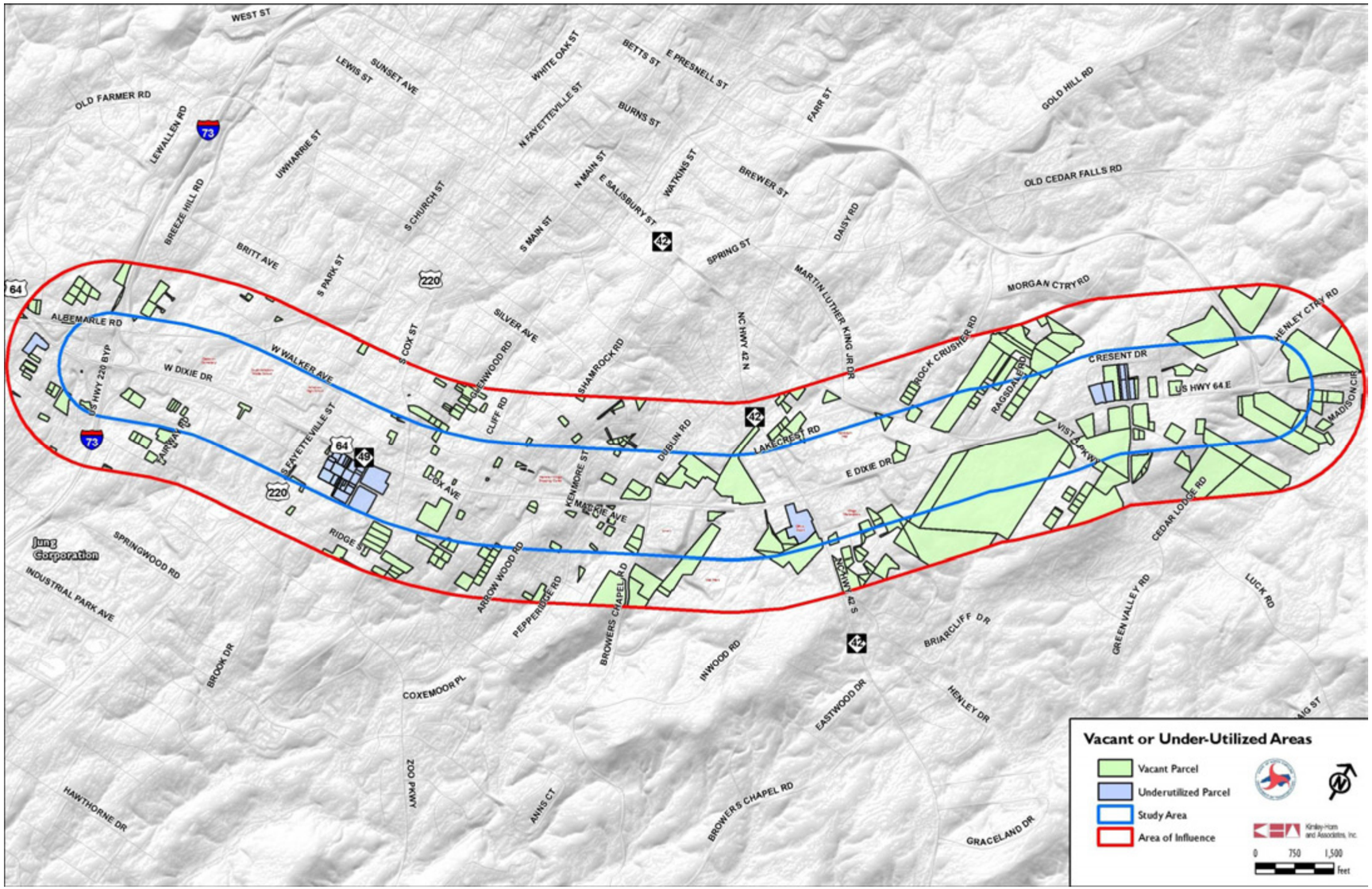


Sheetz gas station (above) and adjoining bank (right)

Redevelopment Potential

There are several parcels in the study area that could be characterized as ripe for redevelopment. They exhibit the following characteristics: vacant structures or high vacancy rates, aging structures or buildings approaching their useful life, and underdeveloped or underutilized properties.

Properties characterized as ripe for redevelopment are shown on the Vacant and Underutilized Properties figure to the right.



Chapter 2 – Best Practices Toolbox

The ***US 64 Corridor Study*** supports economic growth and diversification on and around the corridor by planning strategic investments for a connected, multimodal transportation network. While the heart of the study includes an integrated set of multimodal transportation recommendations, the study also serves as a resource for policy-makers and citizen advocates. Sustained growth brings benefits (new cultural, recreational, and economic opportunities) and creates challenges (additional traffic congestion, pollution, safety concerns, loss of open space, impacts to quality of life). One aim of the study is to provide local planners and administrators with a set of tools to respond to these challenges. The Best Practices Toolbox provides background information and guiding principles on access management, complete streets, collector street planning, bicycle and pedestrian planning, and transit planning. This information sets the stage for the multimodal recommendations that follow in subsequent chapters.

Access Management

As US 64 (Dixie Drive) continues to attract development, protecting the pass-through capacity becomes essential for the efficiency of the transportation system and continued growth. Access management balances the needs of motorists traveling through a corridor with the need to maintain access to developments located along the corridor. Given the scarcity of transportation dollars, access management is more than a good policy directive — it is essential to ensuring the longevity of transportation investments. Without access management, the function and character of major roadway corridors can deteriorate rapidly and adjacent properties can suffer from declining property values and high turnover.

The Federal Highway Administration (FHWA) defines access management as "the process that provides access to land development while simultaneously preserving the flow of traffic on the surrounding system in terms of safety, capacity, and speed." According to the Access Management Manual, access management results from a cooperative effort between state and local agencies and private land owners to systematically control the "location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway."[1] Access management requires cooperation between government agencies and private land owners. FHWA produced a document titled "Safe Access is Good for Business" to clearly outline the benefits an access managed corridor can have for neighboring commercial properties. This document describes different access management techniques and provides a resource for business owners trying to understand the short and long-term effects of access management solutions.[2]

[1] Access Management Manual, Transportation Research Board, National Academy of Sciences, Washington DC, 2003

[2] Safe Access is Good for Business, http://ops.fhwa.dot.gov/publications/amprimer/access_mgmt_primer.htm, Federal Highway Administration, US Department of Transportation,2006

Access Management Overview

Poor access management directly affects the livability and economic vitality of commercial corridors, ultimately discouraging potential customers from entering the area. A corridor with poor access management lengthens commute times, creates unsafe conditions, lowers fuel efficiency, and increases vehicle emissions. Signs of a corridor with poor access management include:

- Increased crashes between motorists, pedestrians, and cyclists
- Worsening efficiency of the roadway
- Congestion outpacing growth in traffic
- Spillover cut-through traffic on adjacent residential streets
- Limited sustainability of commercial development

Access management has wide-ranging benefits to a variety of users as shown in **Table 2.1.**

Table 2.1 - Benefits of Corridor Access Management

User	Benefit
Motorists	▪ Fewer delays and reduced travel times ▪ Safer traveling conditions
Bicyclists	▪ Safer traveling conditions ▪ More predictable motorist movements ▪ More options in a connected street network
Pedestrians	▪ Fewer access points and median refuges increase safety ▪ More pleasant walking environment
Transit Users	▪ Fewer delays and reduced travel times ▪ Safer, more convenient trips to and from transit stops in a connected street and sidewalk network
Freight	▪ Fewer delays and reduced travel times lower cost of delivering goods and services
Business Owners	▪ More efficient roadway system serves local and regional customers ▪ More pleasant roadway corridor attracts customers ▪ Stable property values
Government Agencies	▪ Lower costs to achieve transportation goals and objectives ▪ Protection of long-term investment in transportation infrastructure
Communities	▪ More attractive, efficient roadways without the need for constant road widening

As development continues along Dixie Drive, protecting the pass-through capacity will be important for the well being of the transportation system and economic vitality of the region.

Access Management Strategy Toolkit

Access management is not a one-size fits all solution to corridor congestion. A diversity of techniques will be required along the US 64 corridor and its surrounding facilities. The toolkit that follows provides a general overview of the various strategies available to manage congestion and its negative effects. A comprehensive access management program includes evaluation methods and supports the efficient and safe use of the corridors for all transportation modes. The purpose of the toolkit is to provide local engineering and planning officials with access management techniques as well as an overview of their application.

The access management solutions outlined in this chapter can be divided into four major categories: site access treatments, median treatments, intersection and minor street treatments, and intelligent transportation systems. **Tables 2.2 and 2.3** detail the specific tools included in each of these categories, the benefits of implementing each solution, best practices, agencies, and costs (where available). An overview of these four major categories is also included here.

Site Access Treatments

Improvements that reduce the total number of vehicle conflicts should be a key consideration during the approval of redeveloped sites along corridors identified for access management programs. Site Access Treatments include:

- Improved On-Site Traffic Circulation
- Number of Driveways
- Driveway Placement/Relocation
- Cross Access to Adjacent Sites

Median Treatments

Segments of a corridor with sufficient cross access, backdoor access, and on-site circulation may be candidates for median treatments. A median-divided roadway improves traffic flow, reduces congestion, and increases traffic safety — all important goals of access management. While medians restrict some left-turn movements, overall traffic delays are reduced by removing conflicting vehicle movements from the corridor. Landscaping and gateway features incorporated into median treatments improve the aesthetics of the corridor, in turn encouraging investment in the area and contributing to the overall quality of the surrounding environment.

Median Treatments include:

- Non-Traversable Median
- Median U-Turn Treatment
- Directional Cross (Left-Over Crossing)
- Left-Turn Storage Bays
- Offset Left-Turn Treatment

Intersection and Minor Street Treatments

The operation of signalized intersections can be improved by reducing driver confusion, establishing proper curb radii, and ensuring adequate laneage of minor street approaches. Intersection and Minor Street Treatments include:

- Skip Marks (Dotted Line Markings)
- Intersection and Driveway Curb Radii
- Minor Street Approach Improvements

Intelligent Transportation Systems

Intelligent Transportation Systems (ITS) have many potential benefits when implemented as part of an overall transportation management strategy. ITS solutions use communications and computer technology to manage traffic flow to reduce crashes, mitigate environmental impacts such as fuel consumption and emissions, and reduce congestion from normal and unexpected delays. Successful systems include a variety of solutions that provide surveillance capabilities, remote control of signal systems components, seamless sharing of traveler information with the public, and even allow emergency vehicles to have priority to proceed safely through signalized intersections. Intelligent Transportation Systems include:

- Signalization
- Progressive-Controlled Signal System
- Dynamic Message Signs (DMS)
- Closed Circuit Television (CCTV) Traffic Monitoring
- Emergency Vehicle Preemption

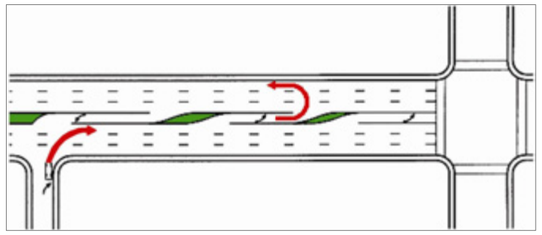
Table 2.2 - Corridor Access Management Tools (Site Access and Median Treatments)

Treatment	Benefit	Best Practice Action	Responsible Agency	Estimated Cost
Site Access Treatments				
Improved On-Site Traffic Circulation	▪ Congestion Relief ▪ Safety Improvement ▪ Aesthetic Enhancement	▪ Throat length of at least 100' to avoid spillback ▪ Create a "gateway" feel to retail area entrances	▪ Private development	▪ Varies
Optimize Number of Driveways	▪ Congestion Relief ▪ Safety Improvement ▪ Bike/Ped Mobility	▪ Provide minimum number of driveway connections necessary for reasonable access ▪ Implement shared access easements	▪ Private development	▪ Varies
Driveway Placement/Relocation	▪ Congestion Relief ▪ Safety Improvement	▪ Relocate or close driveways within 100' of intersections	▪ Private development ▪ City of Asheboro	▪ Varies
Cross-Access	▪ Congestion Relief ▪ Economic Benefit ▪ Emergency Service Access	▪ Internal site traffic circulation connecting numerous businesses ▪ Backdoor site access away from main road	▪ Private development	▪ Varies
Median Treatments				
Non-Traversable Median	▪ Safety Improvement ▪ Aesthetic Enhancement ▪ Bike/Ped Mobility ▪ Congestion Relief	▪ Separate opposing vehicle flows ▪ Provide sufficient spacing and locations for U-turn and left-turn traffic	▪ NCDOT ▪ City of Asheboro ▪ PTCOG	▪ Varies
Median U-Turn Treatment	▪ Safety Improvement ▪ Congestion Relief ▪ Bike/Ped Mobility ▪ Emergency Service Access	▪ Locate with sufficient space for U-turn movements ▪ Consider weaving distance and avoid excessive travel distance	▪ NCDOT ▪ City of Asheboro ▪ PTCOG	▪ Varies
Directional Crossover (Left-Over)	▪ Congestion Relief ▪ Safety Improvement	▪ Locate in areas with high traffic volumes on the major road, lower through traffic on the cross road ▪ Divert some left turns from intersections to reduced conflict point	▪ NCDOT ▪ City of Asheboro ▪ PTCOG	▪ Varies
Left Turn Storage Bays	▪ Congestion Relief ▪ Safety Improvement ▪ Emergency Service Access	▪ Include storage lengths to accommodate forecasted traffic levels ▪ Minimize right-of-way needs by constructing within existing median	▪ NCDOT ▪ City of Asheboro ▪ PTCOG	▪ Varies
Offset Left-Turn Treatment	▪ Congestion Relief ▪ Safety Improvement	▪ Shift left-turn lanes adjacent to the innermost lane of oncoming through traffic to improve visibility and reduce crossing time ▪ Inexpensive retrofit of median with sufficient width	▪ NCDOT ▪ City of Asheboro ▪ PTCOG	▪ Varies

Table 2.3 - Corridor Access Management Tools (Intersection/Minor Street Treatments and ITS)

Treatment	Benefit	Best Practice Action	Responsible Agency	Estimated Cost
Intersection and Minor Street Treatments				
Skip Marks (Dotted Line Markings)	▪ Safety Improvement	▪ Ideal for offset, skewed, or multi-legged intersections ▪ Consider for intersections with multiple turn lanes ▪ Design to avoid driver confusion in adjacent or opposing lanes	▪ NCDOT ▪ City of Asheboro	▪ Varies
Intersection and Driveway Curb Radii	▪ Safety Improvement ▪ Bike/Ped Mobility ▪ Emergency Service Access ▪ Aesthetic Enhancement	▪ Size curb radii for area context and likely vehicular usage ▪ Consider existing and desired travel speeds	▪ Private development ▪ NCDOT ▪ City of Asheboro	▪ Varies
Minor Street Approach Improvements	▪ Congestion Relief ▪ Bike/Ped Mobility	▪ Reallocate or optimize signal timing to reduce major street delay ▪ Consider laneage improvements on minor street approaches	▪ NCDOT ▪ City of Asheboro	▪ Varies
One-Way Frontage Roads	▪ Congestion Relief ▪ Safety Improvement ▪ Economic Benefit	▪ Convert two-way service roads to one-way with slip ramps ▪ The addition of back door collector street access may be needed prior to one-way conversion	▪ NCDOT ▪ City of Asheboro	▪ $1 million per mile
Intelligent Transportation Systems (ITS)				
Signalization	▪ Safety Improvement ▪ Bike/Ped Mobility ▪ Congestion Relief	▪ Consider signal spacing before adding to the system ▪ Reduce delay and safety issues without adversely affecting major roadway operations	▪ NCDOT ▪ City of Asheboro	▪ $60,000 per signal
Progressive-Controlled Signal System	▪ Safety Improvement ▪ Congestion Relief ▪ Bike/Ped Mobility ▪ Emergency Service Access	▪ Space and synchronize traffic signals to allow for continuous flow along the corridor ▪ Continuously collect traffic volumes to alter signal timing and phasing to serve real-time traffic levels	▪ City of Asheboro ▪ NCDOT	▪ $250,000 per system ▪ $10,000 per intersection ▪ Add training costs
Dynamic Message Signs (DMS)	▪ Congestion Relief ▪ Safety Improvement	▪ Give delay or incident information to alert motorists of conditions ▪ Inform drivers so they can select alternate routes if needed	▪ NCDOT ▪ City of Asheboro	▪ Varies
Closed Circuit Television (CCTV) Monitoring	▪ Congestion Relief ▪ Safety Improvement ▪ Emergency Service Access	▪ Collect traffic volume and flow information to use in traffic management centers ▪ Facilitates quick response to reduce the effect of incidents	▪ NCDOT ▪ City of Asheboro	▪ $20,000 per location
Emergency Vehicle Preemption	▪ Safety Improvement ▪ Emergency Service Access	▪ Stops conflicting movements to improve emergency vehicle response time and safety	▪ City of Asheboro ▪ NCDOT	▪ $5,000-$7,000 per intersection ▪ $2,000 per vehicle

Corridor Access Management Tools



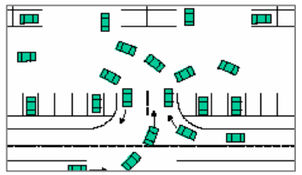
Median U-Turn Treatment

Emergency Vehicle Preemption

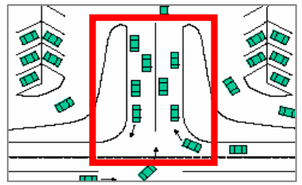
CCTV Camera

Directional Crossover (Left-Over)

Before



After

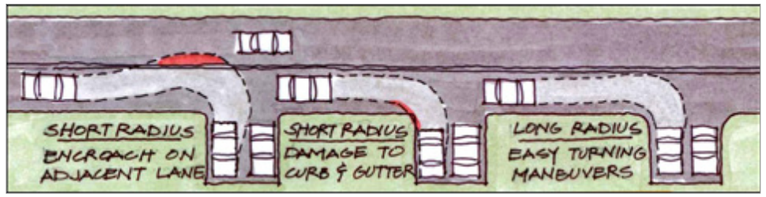


Driveway Throat

Offset Left-Turn Treatment

Left-Turn Storage Bay

Dynamic Message Sign



Intersection and Driveway Curb Radii

Non-Traversable Median

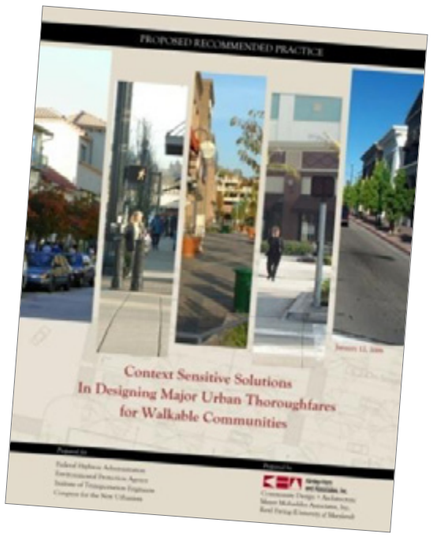
Shared Driveway Access and Cross-Access Connection

Complete Streets

"Complete streets" describes the transformation of vehicle-dominated thoroughfares to community-oriented streets with safe, convenient accommodations for all modes of travel. Through the public feedback process, the need for a complete streets approach was expressed for Dixie Drive. Members of the public pointed to speeding motorists and unsafe and unpleasant conditions for pedestrians and bicyclists as reason this approach is needed for the corridor. The complete streets approach complements and enhances the other elements of this Best Practices Toolbox.

The ideal complete street accommodates every travel mode – pedestrians, bicyclists, motorists and transit riders of all ages and abilities. These streets give citizens choices and are designed and operated so they work for all users. When residents have the opportunity to walk, bike, or take transit, they have more control over their transportation expenses. Instituting a complete streets policy ensures transportation planners and engineers consistently design and operate the entire roadway for a diversity of users.

Transforming an arterial such as US 64 into a complete street is complicated and requires a diverse skill set and broad community support. Fortunately, other metropolitan areas have demonstrated success stories that have been translated into guiding documents. The most detailed guidance comes from a joint effort of the Institute of Transportation Engineers and Congress for the New Urbanism. With funding from the U.S. Department of Transportation and the U.S. Environmental Protection Agency, best practices have been published as "Context-Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities."



Successful complete street transformations require community support and leadership as well as coordination between various disciplines. Common goals for complete streets are economic revitalization, business retention and expansion, and public safety. Typical skill sets needed to retrofit complete streets include urban planning, urban design, landscape architecture, roadway design, utility coordination, traffic engineering, transportation planning, transit planning, architecture, graphic art, and land redevelopment.

Guiding Principles

The following principles embody the most important aspects of a successful complete streets program:

- Achieve community objectives.
- Blend street design with the character of the area served.
- Capitalize on a public investment by working diligently with property owners, developers, economic development experts, and others to spur private investment in the area. Many communities have observed a return-on-investment of $3 private for every $1 of public investment that is made. In some cases the return ratio is has high as 10:1 or more.
- Design in balance so that traffic demands do not overshadow the need to walk, bicycle, and ride transit safely, efficiently, and comfortably. The design should encourage people to walk.
- Empower citizens to create their own sense of ownership in the success of the street and its numerous characters.

Caveats

Street transformations require a tremendous effort by many stakeholders. Several factors contribute to the successful implementation of a complete streets transformation, including:

- **An interconnected network of major and minor streets** with some redundancy in traffic capacity on parallel major streets. Concern over a "loss" of traffic capacity can be tempered with "surplus" capacity elsewhere.
- **A demonstrated and well-defined problem that can be addressed with a complete street transformation.** The community should agree that the problem demands a solution and enough citizens feel compelled to show up, stand up, and speak up in support. It never will be possible to get everyone to agree with each detail of the new design, but near universal agreement on the problem definition is critical.
- **A non-profit group to create an agenda for change.** During the early phases of the transformation project, a non-profit group can help facilitate change and participate in design meetings to make sure that designers continue to pursue solutions and decisions that will ultimately achieve the community objective.

Policy Support

Beyond the support generated through the ***US 64 Corridor Study***, the other important policy documents that should reflect complete street policies or enabling language include:

- City or County Comprehensive Plans
- Area Plans (for the applicable area served by the complete street)
- Park Master Plans (if adjacent to the corridor)
- Economic Revitalization/Development Strategies

Elements of Complete Streets

Complete streets include four distinct street realms that foster interaction between different modes of travel and adjacent land uses. The four basic zones or realms, discussed below in **Table 2.4**, are the context, pedestrian, travelway, and intersection realms. As a whole, these elements determine how the built environment and the different ways people travel directly influence the livability of a corridor. Cross-sections provided in **Chapter 3** reflect many of these principles.

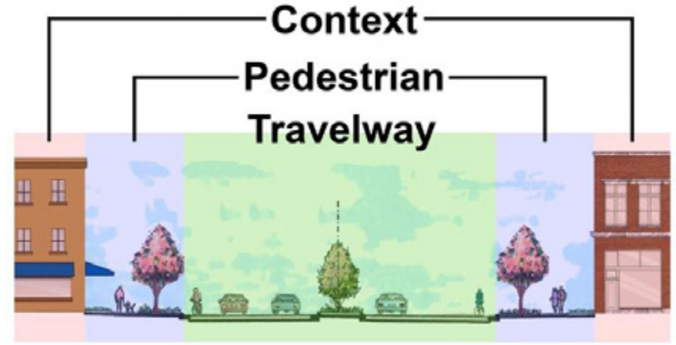
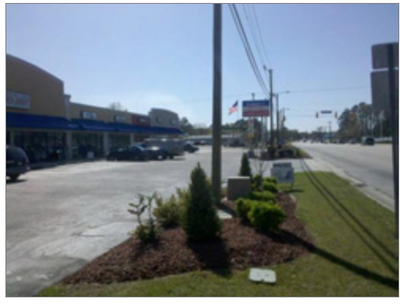


Table 2.4 – Realms of a Complete Street

Context Realm

- Defined by the buildings that frame the major roadway
- Stresses context-specific treatment for four primary areas:
  - Building form and massing
  - Architectural elements
  - Transit integration
  - Site design

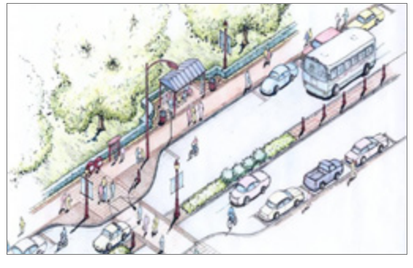


Pedestrian Realm

- Extends between the outside edge of the sidewalk and the face-of-curb located along the street
- Quality of the pedestrian realm is achieved through four primary areas:
  - Continuous pedestrian facilities (on both sides of the road if possible) to maximize safety and mobility needs
  - High-quality buffers between pedestrians and moving traffic
  - Safe and convenient opportunities to cross the street
  - Consideration for shade and lighting needs

Travelway Realm

- Defined by the edge of pavement or curb line that traditionally accommodates the travel or parking lanes needed for vehicles in the transportation corridor
- Travelway realm focuses on two objectives:
  - Achieve greater balance between travel modes sharing the corridor
  - Promote human scale for the street and minimize pedestrian crossing distance
- Recommendations focus on modes of travel and medians

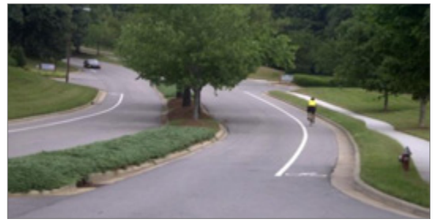


Intersection Realm

- Defined as major intersections within the transportation system, serving multiple travel modes
- Improvements within the intersection realm focus on two areas:
  - Operations
  - Geometric design

Collector Streets

The role of a collector street in a balanced transportation system is to collect traffic from neighborhoods and distribute it to the network of arterials. As such, these streets provide relatively less mobility but higher overall accessibility compared to higher level streets. The lower design speeds and multimodal amenities make these streets attractive for bicyclists and pedestrians. The proper design and spacing of collector streets is critical to serving the future needs of residents and businesses along Dixie Drive.



Policy Considerations

The design of the collector street network must respect present and future conditions, the public's vision for the future, and how the network can best balance the natural environment, connectivity, access, mobility, and safety.

Natural Environment

With the network of streams and tributaries in the Asheboro area, local planners face challenges related to the natural environment. The local geography impacts land use and transportation decisions and affects how the community develops, where streets can be constructed and maintained, and where connections between streets can be made. Collector streets, as part of the development process, must respect the natural environment.

Street Spacing and Access

Local officials must also consider street spacing guidelines that promote the efficient development of an expanding transportation system. Ultimately, these street spacing guidelines could be used as "rules of thumb" during the development review process. Different spacing standards are necessary for different development types and intensities. Understanding this principle, a theoretical model largely influenced by land use intensity ranges shows the desired collector street spacing for different intensities (See **Table 2.5** and the graphics on this page). In addition to these recommended street spacing standards, individual driveway access to collector streets should be limited to local streets when possible.

Design Elements

As most communities' largest collection of public space, streets need to reflect the values of the community and reinforce a unique "sense of place" to be enjoyed by citizens — whether in urban, suburban, or rural contexts. This is especially true for a collector street system that serves as the backbone for local mobility, property access, and non-vehicular transportation modes. As such, the complete streets concepts examined in this chapter should be considered and incorporated into collector street planning and design. Applying the complete streets concept in collector street planning will help balance the mobility, safety, and aesthetics priorities for the surrounding area.

Table 2.5 – Collector Street Spacing Standards

Land Use/ Type of Collector Street	Intensity (dwelling units per acre)	Access Function	Approximate Street Spacing
Very Low Intensity Residential	Less than 2	High	3,000 to 6,000 feet
Low Intensity Residential	2 to 4	High	1,500 to 3,000 feet
Medium and High Intensity Residential	More than 4	High	750 to 1,500 feet
Activity Center	Mixed-use	Medium	750 to 1,500 feet

Future Collector Street Network

To fully address the needs of the US 64 corridor, improvements are needed not only to the major arterial but also to its supporting collector streets. Collector streets are recommended to improve the general connectivity of the regional road network. The collector street system provides critical connections by bridging the gap between arterials and locals and reducing the reliance on the arterial (Dixie Drive) for nearly all trips in the vicinity of the corridor.

Recommended collector streets connect some of the key roadways, neighborhoods, and activity centers around the US 64 corridor. These proposed collector streets are envisioned to have two lanes and often have exclusive left turn lanes at intersections with principal and minor arterials and less frequently at intersections with other collectors. The actual design of a collector street will depend upon the surrounding land use context. The preferred access plan illustrated in **Chapter 3** includes existing and proposed collector streets.

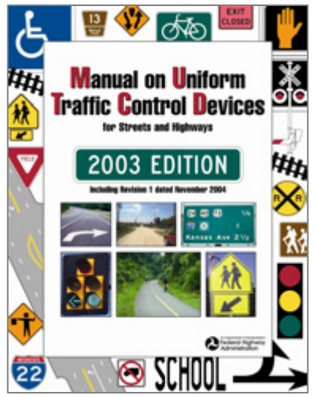
Bicycle and Pedestrian Planning

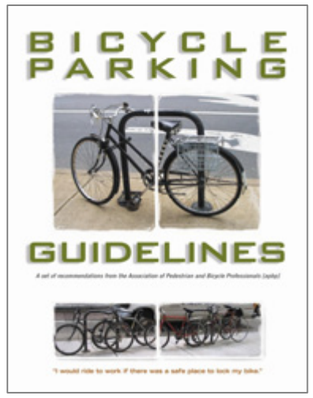
Transportation plans once focused solely on roadway solutions, with planners and local officials concentrating on commuter traffic and travel patterns. Livable communities balance travel between modes by accommodating pedestrians and cyclists for both recreational and utilitarian trips. The increasing demand for bicycle and pedestrian facilities as expressed by the public has culminated in an enhanced focus on these modes during the transportation planning process. This focus includes the background information for the multi-modal recommendations in **Chapter 3**.

Throughout the nation, places are turning to cycling and walking as a viable means of transportation. Sometimes commuters find cycling more efficient, affordable, and convenient than traveling by automobile on congested urban streets. Although most people in the United States choose to travel by automobile, cycling and walking remains the only option for some people. Bicycling and walking can be an appealing alternative to traveling by car when considering it:

- **Is environmentally-friendly** — A shift from automobile travel to cycling or walking conserves fuel, improves air quality, and reduces noise.
- **Promotes good health practices** — In 2008, the Trust for America's Health reported approximately two-thirds of adults are either overweight or obese. At 29.4%, the same source placed North Carolina 10th in the nation in its list of states with the highest percentage of obese adults. The United States Surgeon General advises Americans to get 30 to 60 minutes of exercise 4 to 6 times per week. Bicycling and walking are low-impact ways to exercise and can improve a person's health by lowering blood pressure, strengthening muscles, lowering stress levels, burning fat, increasing metabolism, and increasing the size, strength, and efficiency of the heart and cardiovascular system.
- **Saves money** — According to the *Consumer Expenditures Annual Report* conducted by the Bureau of Labor Statistics, typical American households in 2007 spent an average of $8,758 on transportation costs, including insurance, repair, maintenance, fuel costs, taxes, and other fees — a significant annual investment. The average cyclist spends only $120 per year on bicycle costs. Choosing to ride a bicycle rather than to use a personal automobile could save one person thousands of dollars in a single year.
- **Eases congestion** — Since a bicyclist takes up about a quarter of the physical space of the average car and a pedestrian even less, both can maneuver more easily through traffic in urban areas. Often, cyclists and pedestrians can use dedicated bicycle lanes, greenways or sidewalks, allowing for an even more efficient trip.
- **Represents the livability of a place** — A bikeable and walkable place protects the environment, encourages a healthy, active community, saves money, and increases the mobility of all users. This adds up to a livable community with strong social interaction.
- **Can be viable** — In a 1995 National Personal Transportation Survey, analysts found approximately 40% of all trips to be less than 2 miles from origin to destination. The average person can make this trip by bicycle in about 10 minutes.

Despite these benefits, the transition from potential use of non-motorized transportation to its reality is not easy. Throughout the public involvement process for the ***US 64 Corridor Study***, residents noted a need for improved bicycle and pedestrian facilities along the corridor, in an effort to serve students from nearby schools as well as residential and commercial development. As pedestrian facilities are planned and designed, it is important to consider accessibility and American Disability Act (ADA) guidelines. The Bicycle and Pedestrian Planning toolbox presents an overview of users and facilities as well as programs and policies available to local officials. The bicycle and pedestrian recommendations presented in **Chapter 3** build on these tools.





A variety of resources are available to guide the design of on-street bicycle facilities as well as ancillary facilities and amenities.

Users and Facilities

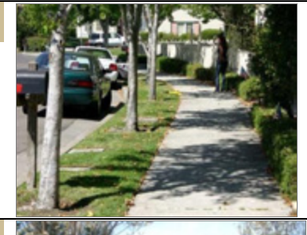
In order to develop and integrate the recommended bicycle and pedestrian network into the overarching vision for the transportation system, the types of users, facilities, and programs must be understood. For bicycling, the most effective set of recommendations addresses the needs and expectations of all advanced, basic adult, and child bicyclists.

- **Advanced —** Usually the most experienced on the road, advanced cyclists have the ability to safely ride in typical arterial conditions of higher traffic volume and speeds. Most advanced cyclists prefer shared roadways in lieu of striped bike lanes and paths, but may be more willing to accept striped bike lanes when the street gutter is cleaned regularly. Although this group represents approximately 20% of all cyclists, they account for nearly 80% of annual bicycle miles traveled.
- **Basic Adult** — Due to being less secure in their ability to ride in traffic without special accommodations, basic cyclists are casual or new adult/teenage riders who typically prefer multi-use paths or bike lanes. Such facilities reduce basic cyclists' exposure to fast-moving and heavy traffic. Surveys of the cycling public indicate that about 80% of cyclists can be categorized as basic cyclists.
- **Child Bicyclists** — The children on bicycles that make up this group have a limited field of vision while riding and generally keep to neighborhood streets, sidewalks, and multi-use paths. Near busier streets, this group is likely to stay on sidewalks or off-street facilities that protect them from traffic. While in general riding on sidewalks should be discouraged, the comfort level of child and basic cyclists may warrant riding on sidewalks provided they yield to pedestrians.

Like drivers, cyclists gain experience over time by riding. As cyclists ride and become more comfortable operating in traffic, they graduate from basic to advanced cyclists. This transition ensures that the needs of all three types of cyclists must be constantly evaluated and accommodated. Roadways need to be designed with an eye toward both the intended use by cyclists and pedestrians and how the facility fits into a system-wide network. **Table 2.6** summarizes the major bicycle and pedestrian facilities.

Design considerations should also be given to ancillary bicycle facilities and amenities such as bike racks, bikes on buses and bike amenities at transit stops, and bike-friendly drainage inlets. For pedestrians, attention must be given to curb ramps as well as marked crosswalks and enhancements such as raised crosswalks, pedestrian refuge island, and curb extensions.

Table 2.6 – Bicycle and Pedestrian Facility Overview

Striped Bike Lanes **Description** ▪ Exclusive-use area adjacent to the outer most travel lane ▪ Typical width: 4' to 5'		**Target User** ▪ Basic and Intermediate Cyclists **Estimated Cost** ▪ $18,000 per mile (striping only)
Wide Outside Lane **Description** ▪ Extra width in outermost travel lane ▪ Best on roadways with speed limits of 35 mph or higher and moderate to high daily traffic volumes ▪ Typical width: 14' outside lane preferred		**Target User** ▪ Advanced Cyclists **Estimated Cost** ▪ $18,000 per mile (striping only)
Multi-Use Path **Description** ▪ Separated from traffic and located in open space (greenway) or adjacent to road with more setback and width than sidewalks (sidepath) ▪ Typical width: 10' preferred; 8' in constrained areas		**Target User** ▪ All Cyclists; Pedestrians **Estimated Cost** ▪ $600,000 per mile (includes clearing, grubbing, grading, and construction)
Sidewalk **Description** ▪ Dedicated space within right-of-way for pedestrians ▪ Should include a landscaped buffer from roadway ▪ Typical width: 5' preferred		**Target User** ▪ Pedestrians **Estimated Cost** ▪ $150,000 per mile
Unpaved Trail **Description** ▪ Formal/informal hiking trail made of dirt, mulch, or pea gravel ▪ Typically connects recreational and environmental features of a community ▪ Typical width: 5-8' footpath; 8-10' bike trail		**Target User** ▪ Off-Road Cyclists; Pedestrians; Hikers **Estimated Cost** ▪ $10,000 to $20,000 per mile

Programs and Policies

The friendliest areas for bicyclists and pedestrians balance the Five E's — Engineering, Education, Encouragement, Enforcement, and Evaluation. The facilities described above must be supplemented with coordinated programs and policies that instruct and encourage bicyclists and pedestrians in the full and proper use of the non-motorized transportation network.

Engineering

Engineering refers to the network of pathways that must be planned, designed, and constructed. A well-planned bicycle and pedestrian system can enhance user safety and enjoyment and may increase the attraction of each mode. Bicycle and pedestrian facility projects can be divided into two types: independent and incidental projects. Independent projects are separate from scheduled highway projects, while incidental projects are constructed as a part of a highway project. A combination of both types of projects is necessary to develop a well-connected and user-friendly network. The bicycle and pedestrian facilities recommended as part of this plan are discussed in **Chapter 3**.

Education

Once the pathways are in place, new and experienced cyclists and pedestrians must be made aware of their locations and the destinations that can be reached by using them. Bicyclists, pedestrians, and motorists must be educated on the "rules of the road" to ensure everyone's safety while operating on and adjacent to the bicycle and pedestrian facilities. Education programs can be initiated from a variety of sources. Local governments can host workshops and bike rodeos, law enforcement officers can launch school-based education programs, and local advocacy groups can distribute educational materials.

Encouragement

People need to be encouraged to bicycle and walk. Encouragement should become easier as the network of pathways on and surrounding the US 64 corridor make the area more bicycle and pedestrian friendly. Encouragement becomes more critical as these facilities are constructed to justify the investment. Popular encouragement programs include Safe Routes to School, Walk/Bike to School Days, Bicycle to Work Week, Bicycle Rodeos, and Bicycle Mentor Programs.

Enforcement

To ensure the safety of all users and the long-term sustainability of the bicycle and pedestrian system, the formal and informal "rules of the road" must be heeded by all. Effective enforcement programs ensure consistent enforcement of traffic laws affecting motorists and bicyclists. These programs include bicycle licensing/registration efforts and positive reinforcement programs implemented by local law enforcement.

Evaluation

Though often overlooked, evaluation is a critical component of bicycle and pedestrian planning. The friendliest communities for cyclists and pedestrians have a system in place to assess existing programs and outline steps for future expansion.

Bicycle and Pedestrian Recommendations for US 64

The bicycle and pedestrian recommendations presented in **Chapter 3** focus on a system of routes on and around the US 64 corridor. It should be noted that the inclusion of bicycle and pedestrian facilities on upgrades of existing roadways and newly constructed roadways will contribute to friendliness of the study area to bicyclists and pedestrians.

Source: www.pedbikeimages.org

Transit Planning

The idea is to create a transportation system whose primary motive is to move people rather than cars.

Within the context of the transportation system, transit has two overarching objectives. First, transit expands the reach of those without access to other means of travel. Second, transit provides viable transportation alternatives to decrease dependence on the automobile and in-turn lessens the demand on the existing transportation system. The idea is to create a transportation system whose primary motive is to move people rather than cars. One way to encourage transit use is to ensure that each stop has a safe, comfortable customer delivery system with attractive and convenient amenities. Since most regular transit users walk or bike to and from the stop, a network of sidewalks, safe street crossings, bike facilities, multi-use paths, and pedestrian-level lighting should accompany the amenities provided at the stop. The efficiency of transit also depends on an interconnected system of roads and highways that provide access to transit stops.

While the immediate future of Dixie Drive and Asheboro may not include traditional fixed route transit service, the planning practices put in place now will have a significant impact on the viability of transit once implemented. Transit is a mode of transportation which cannot be considered in isolation. The information presented here also supports improvements to the larger transportation system that aim to move the region's citizens safely and conveniently between destinations.

Transit and Urban Form

Many people agree that they would use transit if service was fast, frequent, dependable, and easy to use. While such criteria are required of the entire transportation network, transit also must provide connections to the places people need or want to go at a time when they need to get there. As a result, transit enhancements must occur within a framework of transit-supportive urban form. Two development types that maximize potential transit ridership include transit-oriented development and transit-ready development.

Transit-oriented developments (TODs) provide a mixture of residential and commercial uses focused around transit stations or bus stops. The transit stop is surrounded by relatively high density development that spreads out as you move away from the center. The scale of a TOD generally is limited to an area ¼- to ½-mile in diameter to establish the walkability of the neighborhood. This design maximizes access to transit and supports walking and biking between destinations. In locations that lack existing transit facilities or demand to support a TOD, regulations and guidelines supporting transit-ready development should be enforced. Transit-ready development describes the coordinated design of new neighborhoods and activity centers that supports future transit expansion, and exhibits many of the same characteristics of a TOD.

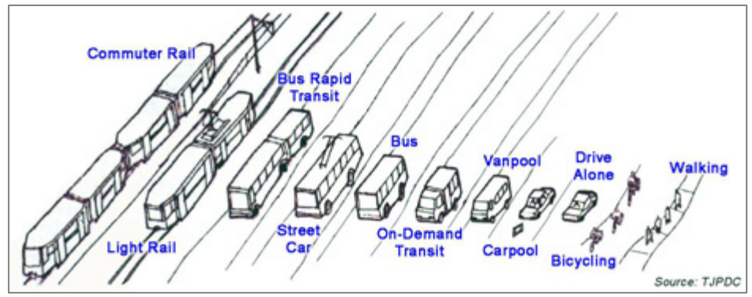
Transit-Oriented Development

While transit-oriented and transit-ready developments represent ideal urban form for transit destinations, many existing single-use locations along the US 64 corridor may be viable long-term facilities for transit service. Shopping centers, grocery stores, and business parks are just a few examples of vital destinations for many residents. Likewise, visitors may use transit to frequent the NC Zoo and other local parks and historic sites. While the urban design of such places may not be ideal for transit, these locations are places where access to public transportation continues to be an important priority.

Transit Technologies

A sustainable transit system results from a plan that identifies strategic corridors for transit as well as the proper technology as determined by land use conditions and ridership trends. Often, successful plans allow the system to mature by laying the groundwork with simpler, more cost-effective technology such as shuttles or buses and as demand increases implementing more extensive technology. Some of these strategies include:

A range of transportation options should be made available, including different types of transit.



- **Paratransit and Other Services** — Paratransit systems provide critical dial-a-ride (on-demand) services to persons with disabilities, the elderly, and others who do not live near a fixed bus route. Other services include neighborhood shuttles, employment center shuttles, Special Transportation Services, and vanpool and carpool services.
- **Buses** — Local fixed route bus networks are the workhorses of many transit systems. Buses operating on local streets with curbside bus stops provide a flexible transit technology capable of responding to the evolution of land use types and intensities.
- **Trolleys** — These modern interpretations of the 20th century streetcar are smaller and lighter than LRT vehicles. Trolleys operate similar to buses (in terms of frequent stops along the street) but can hold more passengers than the typical bus.
- **Light Rail Transit (LRT)** — These overhead electric powered lightweight trains typically operate in exclusive rights-of-way but also can mix with traffic. Transit stations can be spaced as close as one mile apart.
- **Bus Rapid Transit (BRT)** — Like LRT, bus rapid transit vehicles can operate on exclusive rights-of-way (busways) or travel through neighborhoods to serve passengers at local stops. On-line stations and off-vehicle ticketing combined with the busways create fast, convenient service.
- **Commuter Rail** — This service provides scheduled service along railroad tracks, typically between a city center and its suburbs. Service often is limited to peak hour and shares the rail with other passenger or freight rail providers.

Chapter 3 – Transportation Framework

This chapter summarizes transportation network recommendations along the US 64 corridor, including high-level planning strategies for the outlying study area and specific design improvements within the travelway. General recommendation types are discussed for application across the area. Corridor specific recommendations follow and include specific access management strategies as well as intersection and corridor improvements. As a part of this element, specific design considerations that would need to be addressed for certain improvements have been identified. The chapter concludes with planning-level strategies and recommendations for bicycle and pedestrian improvements, and transit enhancements.

The Transportation Framework consists of the following sections:

- Recommendations Development Process
- Recommended access Plan (Traffic Signals, Access Management Improvements, and Connectivity)
- Bicycle, Pedestrian, and Transit
- Conceptual Designs
- Guiding Principles

Recommendations Development Process

The development of recommendations for the ***US 64 Corridor Study*** was an iterative process that included input from numerous stakeholders, policy makers, business owners, development community, and the general public. Generally, recommendations are based on input from the community and stakeholders and vetted by the project team to ensure they efficiently address existing problems and create a sustainable future for the corridor and the Asheboro community. **Chapter 1** details the planning process undertaken to establish a vision for the corridor and develop recommendations.

Chapter 1 also describes the various forms of public outreach and interaction that were employed to build consensus and gather information during the planning process. Tools such as a three-day charrette and a project newsletter were employed to get feedback from the public and keep participants abreast of the progress. Input from all of these public outreach methods was considered during the formulation of project recommendations. Once a preliminary set of recommendations were developed, they were refined through the help of the Advisory Committee. A second public workshop helped to further refine the recommendations and address some of the concerns of the citizenry. The recommendations that follow are a result of this iterative process and represent a community-driven approach to improving the US 64 corridor.

Recommended Access Plan

Figure 3.1 illustrates the corridor wide recommended access plan. The recommended access plan provides the planning-level access management recommendations for the entire corridor, including islands, signals, connectivity, and other median openings. The recommended access plan is the primary planning tool to evaluate community-wide access decisions along US 64. The development of the recommended access plan was the first step in the creation of a conceptual design for the corridor. Before developing the recommended access plan, a set of spacing guidelines were developed specific to the US 64 corridor, primarily from NCDOT and City of Asheboro guidelines. The spacing standards used to develop the recommended access plan and the overall corridor recommendations were 1,200 to 1,800 feet for median openings (with shorter spacing between openings in the more urban western section) and 1,500 feet for signals. Driveway spacing for future site connections is recommended as 300 feet.

Traffic Signals

At this time, 11 intersections are signalized along the US 64 corridor. The majority of these intersections are not recommended to have significant operational modifications. Two of the signalized intersections are proposed for modifications. In addition, three new signalized intersections are proposed within the vicinity of the US 64 corridor. To the west of the study area, TIP project U-5305 proposes intersection improvements for NC 49 and Mack Road. Existing and proposed signal locations in the study area are noted in **Figure 3.1**. The modified or new signalized intersections are:

- **US 64 and the access road to Center Point (Walmart) Shopping Center**. An additional left-turn lane is proposed for the westbound approach to accommodate traffic movements. Signal modifications will be needed to accommodate this new lane.
- **US 64 and Zoo Parkway**. Additional turn lanes are proposed from northbound Zoo Parkway. These additional lanes will necessitate signal modifications.
- **US 220/I-73 interchange**. Modifications are being considered to this interchange, which is currently unsignalized. With these modifications, two signals would be added to the new interchange to accommodate traffic movements for both directions. This interchange and its associated improvements are a part of an independent recommendation for the US 220/Future I-73 (TIP # I-4407) that is discussed further in subsequent sections of this chapter.
- **Fayetteville Street and Country Club Drive**. An improved connection is proposed to be added between US 64 and Fayetteville Street, which would come in at the intersection with Country Club Drive. With the addition of this fourth leg and the resulting increased traffic levels, a signal is proposed for this location.

In addition to these intersection-based signal improvements, this plan recommends revisiting the current signal system performance along the US 64 corridor. Signal retiming and phasing could be employed to improve the overall flow of traffic along the corridor. With the addition of new signals, some level of retiming will take place. However, a corridor-wide effort could have a greater impact.

Figure 3.1 – Recommended Access Plan

The Recommended Access Plan attempts to address the diverse variety of needs along the US 64 corridor. This plan considers the need for a variety of intersection treatments, the desire for enhanced connectivity, and the support for both local and regional priorities. Recommended improvements can be implemented as a set or as individual projects. The integration of these recommendations with the existing and future land use conditions is discussed in **Chapter 4**.

The improvements recommended as a part of the Recommended Access Plan can be divided into the following categories:

Intersection Treatments

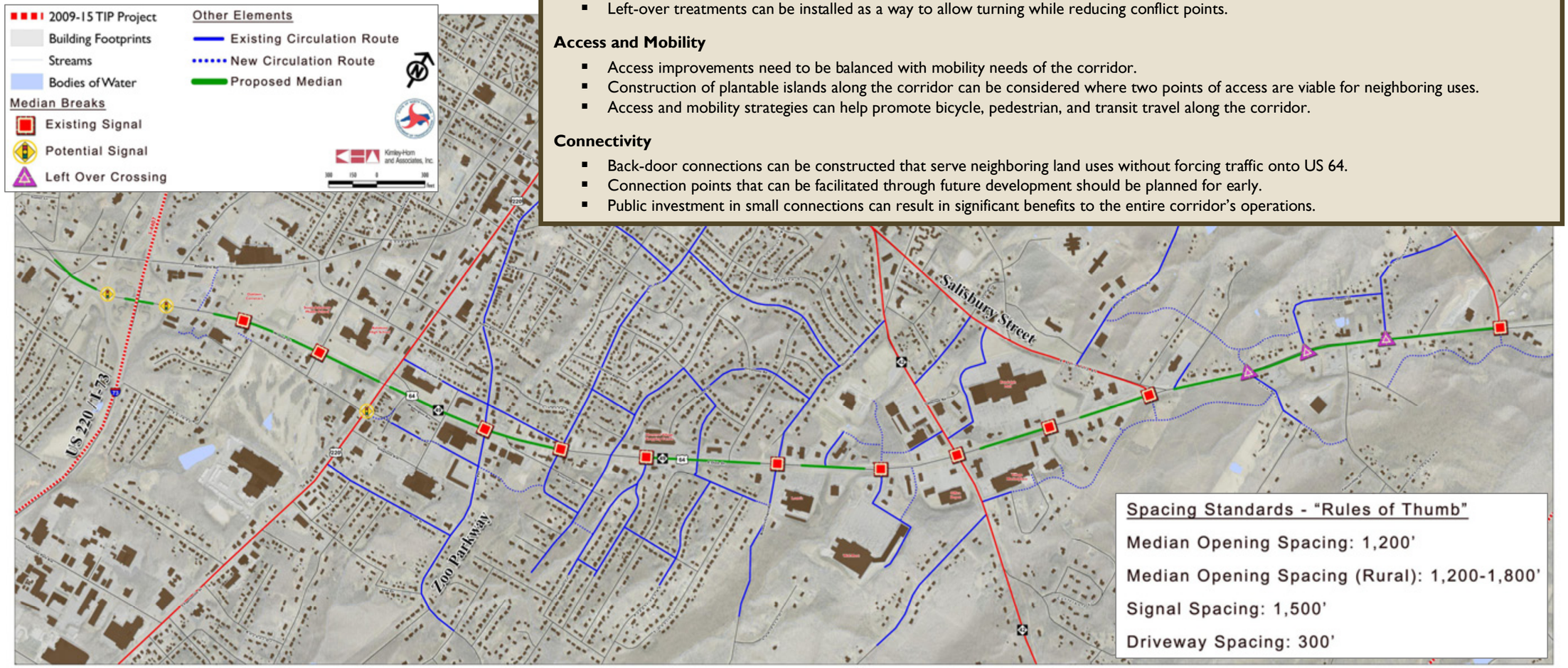
- Installing future traffic signals and modifying existing signals will lead to more efficient traffic flow.
- Adding turn lanes in critical high-volume locations will reduce queuing and delays.
- Left-over treatments can be installed as a way to allow turning while reducing conflict points.

Access and Mobility

- Access improvements need to be balanced with mobility needs of the corridor.
- Construction of plantable islands along the corridor can be considered where two points of access are viable for neighboring uses.
- Access and mobility strategies can help promote bicycle, pedestrian, and transit travel along the corridor.

Connectivity

- Back-door connections can be constructed that serve neighboring land uses without forcing traffic onto US 64.
- Connection points that can be facilitated through future development should be planned for early.
- Public investment in small connections can result in significant benefits to the entire corridor's operations.



Access Management and Safety Improvements

The recommended access plan also guides access management and safety improvements at non-signalized intersections and mid-block segments along the corridor. In general, the access management recommendation is to convert much of the continuous two-way left turn lane to a well-defined, durable raised and plantable refuge island to improve safety and aesthetics along the corridor. The recommended access plan (**Figure 3.1**) shows the locations of the proposed island. An effort was made to provide these improvements within the existing right-of-way of US 64.

Due to the US 64 corridor's role as the commercial heart of the Asheboro area, significant consideration was given to where plantable islands would make sense in this area. Before an island was considered in a segment, the access opportunities of the neighboring properties were considered. The objective of this analysis was to ensure that two access routes existed for each major development. Through the implementation of the spacing standards discussed earlier in this chapter, full-movement intersections were left in place to help facilitate these options. Small segments around certain intersections are recommended to remain open to accommodate turning movements. The connectivity enhancements discussed later in this chapter will also help create a more robust network of access alternatives for the surrounding land uses.

If a plantable island is installed along the corridor, it can be combined with modified intersection treatments that facilitate key turning movements while improving safety. For those intersections that will remain unsignalized, limited movement (left-over and/or right-in/right-out) treatments are recommended. Left-turn movements from the minor leg would be required to turn right and make a left turn or u-turn at the next convenient intersection. Left-over treatments are proposed at three locations. The locations are:

- Vista Parkway
- Cresent Drive
- Northview Drive

These improvements are described further in the following sections.

Example of left-over treatment.

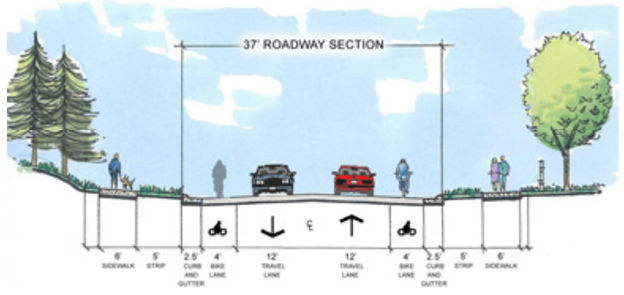
Connectivity

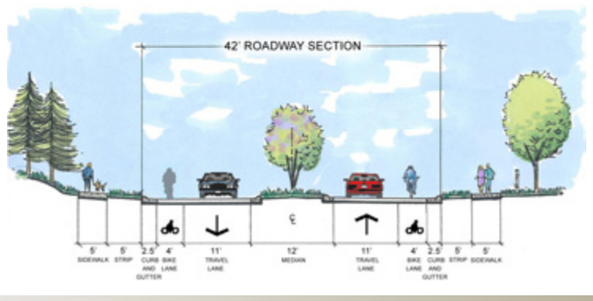
Connectivity is a key consideration in developing a corridor that truly addresses the access and mobility needs of its users. With a well-connected supporting network, users have the option to choose side roads or minor connections to reach their destinations, rather than depending exclusively on US 64. Before looking at the roadway network in the area, it is important to consider the types of facilities already in place. US 64, NC 42, Salisbury Street, US 220 Business/Fayetteville Street, and Presnell Street are all arterial facilities. US 220/Future I-73 is a controlled-access freeway facility. While these facilities carry large amounts of traffic volume, too much reliance on the arterial and freeway system can result in congestion and increased delays. Collector streets serve as the mid-level roadway facility type connecting local streets to arterials. As such, the collector street network can play a critical role in overall system connectivity. Collector street standards, uses, and definitions are provided in **Chapter 2** of this report.

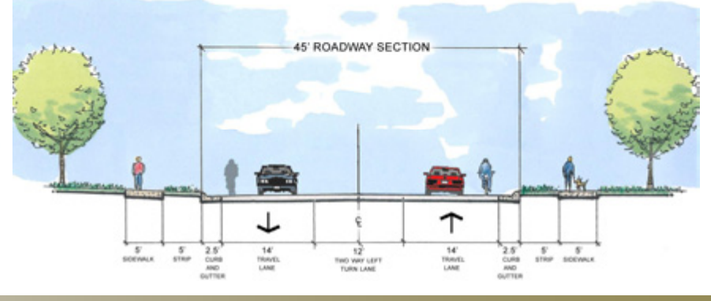
Collector Streets

At the outset of this project, the existing network of collector streets around the US 64 corridor was identified. Through the recommended access plan (**Figure 3.1**), this was taken further to identify not only existing collector streets, but also existing streets that could function as collectors in the future and proposed collector streets. During the charrette recommendations and prioritization process, proposed collector streets were further separated into developer-driven initiatives and public funding potential. The latter of the two will be discussed in more detail later in this chapter. Proposed collector streets were recommended in areas with limited connectivity that could be modified with future development, as well as areas where small collector street connections could link existing roadways.

The graphics on this page provide example typical collector street cross sections. Collector streets should be designed to not only accommodate vehicle traffic, but also bicycle and pedestrian needs.







Bicycle, Pedestrian, & Transit

The current bicycle and pedestrian network along the US 64 corridor is not adequate for a sustained level of riding or walking. Sidewalks exist along the corridor only by the NC 42 intersection. While these sidewalks are set back from the curb to enable secure pedestrian travel, their limited distance makes pedestrian travel unrealistic for much of the corridor. Additionally, only one intersection along the corridor (Park Street at US 64) includes pedestrian crosswalks and signals. The lack of these crossing opportunities further limits the ability of the pedestrian to fully utilize the corridor. Despite the limitations in the network, pedestrian use prevails along the corridor as evidenced by worn foot paths on the side of the roadway. With no dedicated bicycle facilities available, traffic volumes and speeds make bicycle use very prohibitive along the corridor.

Planning-level recommendations (**Figure 3.2**) were developed for the bicycle and pedestrian realms. The recommendations generally complete portions of the system already in place while providing alternative routing for those citizens interested in non-vehicular trips. For pedestrians, the high level of commercial activity and residences along and near the corridor supports the need for better walkability than currently provided.

Proposed sidewalk improvements include constructing a sidewalk beginning to the west of the US 220/US 64 interchange, and extending through the Salisbury Street intersection. These sidewalk improvements would create a continuous sidewalk along the southern side of the corridor, with accompanying sidewalks on the northern side where pedestrian movements are anticipated to be the heaviest. These recommendations will incorporate the current sidewalks surrounding the NC 42/US 64 intersection. Additionally, sidewalks are recommended along Park Street by Asheboro High School, crossing US 64 to the south and extending eastbound onto Country Club Drive.

The pedestrian recommendations also include crosswalks and pedestrian signals at seven locations and improving existing crosswalks at one location. The crosswalk areas should include high visibility crosswalk markings, pedestrian signal heads with countdowns, and push button activation for pedestrian light engagement. The graphic to the right provides a typical intersection configuration, while the image at right shows a typical pedestrian crossing signal.

The main focus for bicycle improvements was to provide alternative routes. The use of US 64 as a bicycle facility is not ideal, given the speeds and volumes of traffic. As an alternative, a series of bicycle routes are recommended to connect some of the key locations around the corridor.

The existing bicycle route along Zoo Parkway/Cox Street would be complemented by facilities along Park Street, Browers Chapel Road, and Salisbury Street to the Randolph Mall.

In addition to the proposed bicycle routes, a series of greenway connections are proposed along several streams, tributaries, and key connections along the US 64 corridor (see **Figure 3.2**). Ten-foot multi-use paths in these areas would provide tie-ins between some of the residential areas surrounding the corridor to the commercial centers. One of these recommendations would use the pedestrian crossing going under US 64 near the high school, and extend it to Country Club Road. Other recommended paths would serve both recreational and functional uses.

Table 3.1 – Proposed Crosswalk Improvements along US 64

Intersection	Existing or Proposed
W Dixie Dr. (US 64) at Lowe's Foods entrance	Proposed
W Dixie Dr. (US 64) at S Park St.	Existing
E Dixie Dr. (US 64) at S Cox St./Zoo Pkwy.	Proposed
E Dixie Dr. (US 64) at Arrow Wood Rd.	Proposed
E Dixie Dr. (US 64) at Browers Chapel Rd.	Proposed
E Dixie Dr. (US 64) at Center Point Plaza/Walmart Entrance	Proposed
E Dixie Dr. (US 64) at NC 42	Proposed
E Dixie Dr. (US 64) at Randolph Mall Entrance	Proposed

As discussed in **Chapter 1**, no fixed-route transit service exists along the US 64 corridor. This corridor is unique in Asheboro not only for containing a large share of the community's commercial and retail sites but also serving the region's primary destination point. As a result, implementation of a limited transit service in the area seems likely to attract some interest. The corridor recommendations discussed later in this chapter highlight two transit alternatives proposed by the Triad RPO and reinforced by this study – a park-and-ride shuttle service between the corridor and the North Carolina Zoo, and a shuttle/fixed route serving the major commercial destinations along the corridor. Balancing the initial capital cost and subsequent operational needs with the potential usage, these services could represent a cost-effective solution for reducing automobile traffic along the US 64 corridor. Consideration could be given to running these services only during peak seasons (i.e. summertime for the zoo, holiday season for the commercial shuttle) to serve the greatest number of people effectively.

The combination of these bicycle, pedestrian, and transit strategies with the roadway strategies results in a balanced set of solutions for all users.

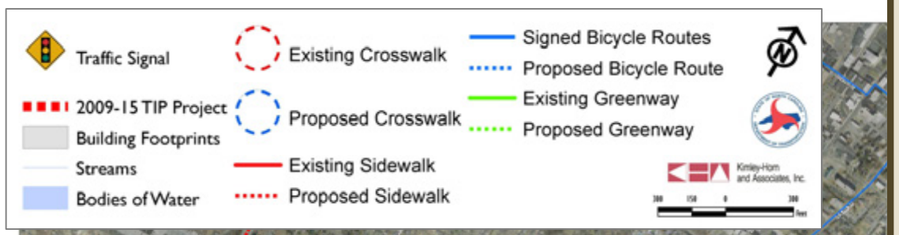


Figure 3.2 – Recommended Bicycle and Pedestrian Facilities

A set of bicycle and pedestrian facilities have been proposed for the US 64 corridor area. The intent of these recommendations is not only to improve mobility of these modes along the corridor, but also the access to commercial and residential areas surrounding the corridor. These infrastructure recommendations should be paired with a set of education and encouragement measures to maximize the effectiveness of the improved network.

Recommendations can be divided into the following categories:

Pedestrian Facilities

- Sidewalk facilities are proposed along much of the corridor.
- Crosswalks and pedestrian signals at key signalized intersections will create safer roadway crossing conditions.

Bicycle Facilities

- Proposed signed bicycle routes will augment existing routes on identified intersecting roadways.

Greenways

- Streams, easements, and other connections should be identified to link residential areas with destination points.
- Greenways should be put in place to serve both recreational and functional uses.

Conceptual Designs

This section provides more detail regarding the specific recommendations, including intersection improvements and access management strategies. A set of overall corridor recommendations are discussed. For the recommended sections, each area is accompanied by a graphic that depicts the proposed improvements. Full corridor improvements can be seen in the Conceptual Design Plans at the end of this document. The improvements described in this section begin in the western portion of the corridor and progress to the east. If an intersection or segment is not mentioned in this section, it is an indication that the current laneage, geometry, or signalization features were kept in place.

Overall Corridor Recommendations

As a part of the recommendation process, a set of improvements were identified for consideration across the entire US 64 corridor. Each recommendation is listed below, along with a description of the improvement type and the need for modification.

- **Construct plantable islands and gateway improvements at strategic locations along the US 64 corridor. There is a preference to have secondary access to adjacent properties unless safety is the primary concern with no other alternative countermeasure for improvement.** As discussed previously in the chapter, a plantable island can help improve corridor safety, improve aesthetics, and enhance mobility. Installation of island sections must be balanced with access needs for surrounding properties.

- **Improve the corridor signal system and the flow of traffic to limit stop-and-go traffic conditions.** This improvement, discussed earlier in the chapter, would incorporate the individual intersection signal modifications while addressing overall corridor signal progression and timing. The intent would be to create an up-to-date and cohesive system that efficiently progresses traffic while serving the heaviest travel movements effectively. It should be noted that signal system effectiveness can be reduced by lack of access management, specifically a high number of driveway openings and center two-way left turn lanes.

- **Construct cross access connections between complimentary businesses along the US 64 corridor.** In addition to the roadway connectivity discussed earlier, site connectivity is an effective way to provide system users an alternative to US 64. With driveway connections between similar land uses, a potential patron can access multiple businesses without having to get back onto US 64. These connections can facilitate a greater number of pass-by trips and can help improve the business conditions of all the establishments involved.

- **Control the number of new signals along the US 64 corridor to limit congestion and stop-and-go traffic.** By making smart decisions about the location of future signalized intersections, proper intersection spacing can be maintained and travel progression can be continued.

- **Provide enhanced signage and wayfinding for visitors coming to and from the North Carolina Zoo.** A combination of static signs and ITS tools can be employed to help direct visitors to the least congested routes and available parking.

- **Construct 10-foot greenway connections along community streams and tributaries for recreational purposes and connectivity between residential neighborhoods and commercial shopping centers.** A number of stream tributaries run parallel or perpendicular to the US 64 corridor. These features, in addition to the utility easements in the area, provide an excellent opportunity for creating greenway connections. The detailed roadway section recommendations highlight some pilot greenway projects recommended for implementation.

- **Study the feasibility of fixed route/shuttle service to destination/activity nodes along the US 64 corridor. Chapter 1** clearly communicates the lack of regular fixed-route transit service along the US 64 corridor. Based on previous planning efforts by the Triad RPO, the creation of a shuttle in this area would help to build synergy between the restaurants and retail facilities along the corridor. Providing centralized parking facilities would bolster this shuttle service by giving patrons the option to park once for all their needs. Clear route designation and reliable scheduling would need to be put in place for maximum program success.

  Realistically, transit service may not be feasible today. However, with proper ridership justification and marketing, opportunities for transit service may present themselves over the next 10-15 years.

- **Study the feasibility of a park and ride traveling between the US 220/US 64 interchange and the North Carolina Zoo.** This recommendation would pair off-site parking with a shuttle service to serve zoo patrons during peak periods. Locating this parking in the otherwise undevelopable US 64/US 220 interchange area is an effective way to use the land available. Additionally, this parking will be easily identifiable and accessible to out-of-town visitors. A shuttle service would reduce congestion along the corridor as well as delays entering and exiting the zoo.

Roadway Design Section 1 – US 64 at US 220

The westernmost section of the US 64 corridor improvements includes the crossing of US 64 and NC 49, the interchange of US 220/Future I-73 with US 64, the signalized Lowe's Foods entrance at US 64, and the intersection of Park Street with US 64. Along with the provision of the overall corridor recommendations discussed in the previous section, the recommendations in this section include connectivity enhancements, aesthetic improvements, and intersection improvements. The interchange of US 64 and US 220 is discussed separately (see box at right).

Country Club Road Improvements

Country Club Road provides a convenient backdoor access route for several different businesses along Restaurant Row. Extending this roadway west to the Lowe's Foods shopping center will provide access to additional businesses as well as the signalized intersection onto US 64. The pavement for these improvements already exists in large part. To create this facility, some current parking facilities may need to be reorganized.

South Park Street at US 64/ Lowe's Foods Entrance at US 64

No major geometric or laneage changes are proposed at these two intersections. The only proposed changes respond to the need for improved pedestrian safety between the school area and the restaurant, retail, and residential uses to the south. Improvements include high visibility crosswalks and pedestrian countdown signal heads. In addition, vegetation and shrubbery placed along the island sections will prevent students from crossing mid-block. The ultimate goal is to direct students to safer crosswalks, rather than more dangerous mid-block crossings.

Sidewalk/Greenway Connections from Schools to Restaurant Row

A greenway facility along with an underpass currently exists to connect the schools with the other side of the street. Extending this greenway will allow users to access the restaurants in this area much more easily. In addition, pedestrian enhancements along Park Road and Country Club Road will provide another option for traveling across the US 64 corridor.

US 64/ US 220 Interchange Modifications

US 220 currently has a cloverleaf interchange with US 64, as well as a partial access interchange just to the north with Albemarle Road. Since the US 220 corridor has been designated as future Interstate 73, improvements will need to be considered for this interchange configuration in order to meet design standards. As a part of the *US 64 Corridor Study*, the needs of this interchange were considered in order to identify an option that best meets the needs of traffic in the area. The identified set of improvements shown in the rendering here, would result in the creation of a split diamond interchange. The northern two loops of the current interchange would be removed to eliminate three dangerous weave movements, instead extending the access currently serving Albemarle Road all the way to US 64. The entrance/exit points of the interchange at US 64 would become full movement, necessitating the installation of two-phase traffic signals.

Improvements to this interchange would ultimately be designed and constructed through NCDOT's planned improvements to the I-73 corridor. While this interchange has a significant impact on the operations of US 64, recommendations will not be included as a part of the implementation plan in this document.

Roadway Design Section 2 – South Fayetteville Street to Dublin Road

The second section of the US 64 corridor improvements includes the intersections of US 64 with Fayetteville Street, Third Street, Zoo Parkway, Cliff Road, Shamrock Road, and Arrow Wood Road. Along with the provision of the overall corridor recommendations discussed in the previous section, a series of intersection enhancements are recommended for this portion of the corridor. Other improvements in this section include enhanced roadway and site connectivity, aesthetic improvements, and multimodal improvements.

Zoo Parkway

Currently, Zoo Parkway experiences heavy congestion, particularly during the high tourism season. Traffic backups are frequent both along the roadway itself as well as at the intersection of US 64 with Zoo Parkway. To address this, a second lane is recommended on Zoo Parkway traveling southbound. To serve this lane, a second left turn lane is proposed for westbound US 64. On Zoo Parkway itself, additional turn lanes are not recommended. However, redesignating the center lane from a through-only movement to a through-left movement could help facilitate this heavy travel pattern. In addition to these capacity improvements, a series of pedestrian safety improvements are recommended to create a safer crossing environment for non-motorized users.

Arrow Wood Road Intersection

A series of improvements are recommended for this intersection to promote non-motorized travel. Pedestrian enhancements such as high-visibility crosswalks, pedestrian signals, and pedestrian-level lighting are recommended for all four intersection approaches. Proposed sidewalk facilities recommended for the corridor would further enhance the pedestrian mobility in the area.

Connectivity Enhancements

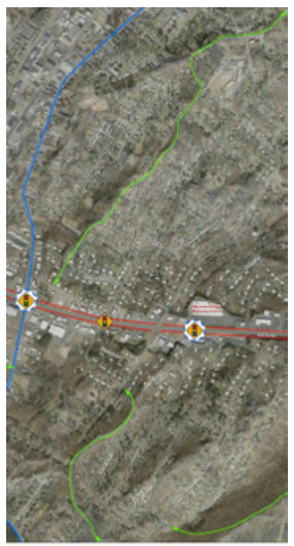
On the southern side of the US 64 corridor, Atlantic Avenue already serves as an alternative access route for some of the land uses. However, this roadway lacks continuity at major intersections. The corridor recommendations encourage enhancing Atlantic Avenue in several ways. First, the connection between this road and 1st Street would be modified to let 1st serve as a true intersection feeder route for the Fayetteville Street ramp system. Atlantic would be brought in at a 90-degree angle, improving safety for both facilities. 1st Street would also be slightly realigned to come in at a true four-way intersection with Country Club Drive and Fayetteville Street. With this realignment, a new traffic signal will likely be required at this location.

The intersection of Atlantic Avenue and Third Street would be significantly modified through the installation of a single-lane roundabout. This roundabout would not only address the alignment issues currently plaguing the intersection, but would also help revitalize this area. Interest has already been expressed by some area property owners in an enhanced intersection treatment. Finally, Atlantic Avenue would be extended eastward from its current terminus at Zoo Parkway. This extension would tie into Cliff Road, opening up the properties in this area to development opportunities.

Other connectivity improvements in this area would include an eastward extension of Mackie Avenue, and a collector street connection between Shamrock Road and Plantation Circle.

Unsignalized Intersection Improvements

Along the US 64 corridor, the potential installation of a plantable island will help result in a series of modifications to the unsignalized intersections. Through a consideration of traffic volumes and priorities, a set of treatment options have been recommended for some of these intersections. The intersection of US 64 and 3rd Street would include a westbound left-turn lane from US 64, while the intersection of Kenmore Street and US 64 would include no left turn movements. The intersection of US 64 and Shamrock Road would remain full movement. The final access treatments at all of these locations would be determined during the development review process.



Greenway Connections

Two greenway facilities could be considered as pilot projects. A greenway running parallel to Fayetteville Street would be a functional route linking residential areas to the commercial hub. A greenway running parallel to Plantation Circle could serve a more recreational purpose between neighborhoods in the area. Both proposed greenways would use existing stream tributaries.

Roadway Design Section 3 –Dublin Road to Salisbury Street

The third section of the US 64 corridor improvements includes the intersections of US 64 with Browers Chapel Road, Center Point Plaza, NC 42, Randolph Mall, and E. Salisbury Street. Along with the provision of the overall corridor recommendations discussed in the previous section, this section focuses on issues such as site and roadway connectivity, intersection enhancements, multimodal improvements, and aesthetic enhancements.

Center Point Plaza Intersection

Center Point Plaza is one of the large commercial attractors along the US 64 corridor. With a single left-turn lane accessing this development, this movement currently experiences significant delays. Recommendations for this intersection include adding a second left-turn lane into Center Point Plaza. In addition to this, anticipation of future development to the north of this intersection would necessitate the construction of an eastbound left-turn lane on US 64, as well as a modification of the movement configuration traveling out of Center Point Plaza. A set of pedestrian enhancements would also provide greater accessibility to nonmotorized travelers.

Center Point Plaza Accessibility

To better serve the heavy traffic volumes accessing Center Point Plaza, an additional entrance is proposed for this development off of US 64. With an island installed, this would be a limited movement intersection. An additional connection is proposed to link this development to NC 42, creating a four-way intersection at Skyline Drive. These added connections would give potential patrons many different options to access Center Point Plaza.

Skyline Drive Connectivity

Running parallel to US 64 for a short time, Skyline Drive currently serves as an access point for residential uses. The additional access point for Center Point Plaza serving NC 42 would essentially extend Skyline Drive westward to this shopping center. As future development occurs, Skyline Drive could also be extended eastward. This proposed connection, running behind some of the existing commercial uses on US 64 and ultimately connecting with E. Salisbury Street, would be a significant parallel route that could serve future traffic needs in this area.

Improvements to Skyline Drive could be made as development interests come into this area. Portions of these improvements could be used today to serve as back door access points to the Aldi Shopping Center. Ultimately, creating this connection would result in a significant parallel facility, giving travelers another option to access their destinations.

Signalized Intersection Improvements

At this time, none of the signalized intersections along this section of the US 64 corridor have amenities in place for pedestrians wishing to cross the street. Limited sidewalks exist around the US 64/NC 42 intersection. However, the remainder of the corridor does not include sidewalks. This section of the corridor contains numerous commercial centers that could serve as an attractor for non-motorized travel.

As a result, this plan advocates the installation of a series of pedestrian improvements at the following intersections:

- US 64 at Browers Chapel Road
- US 64 at Center Point Plaza
- US 64 at NC 42
- US 64 at Randolph Mall
- US 64 at E. Salisbury Street

Proposed pedestrian improvements would include high visibility crosswalks, pedestrian countdown signals, and pedestrian-level lighting. Sidewalks are also recommended for construction along both sides of US 64 for the majority of this section. Proper phasing of the intersection-level improvements would require the advance or simultaneous construction of supporting sidewalk facilities.

Roadway Design Section 4 – E. Salisbury Street to E. Presnell Street

The easternmost section of the US 64 corridor improvements includes the intersections of US 64 with Vista Parkway, Cresent Drive, Luck Road, Northview Drive, and E. Presnell Street. Along with the provision of the overall corridor recommendations discussed in the previous section, this section focuses on intersection enhancements, site and roadway connectivity improvements, and overall mobility needs.

Vista Parkway Extension

Currently, Vista Parkway connects with US 64, and then turns into a residential service road. Prior to most of the residential access, the road makes a 90-degree turn to head directly south. If Vista Parkway were to be extended at this bend to intersect with Luck Road, it would provide another opportunity to open up new areas for development. This extended route would also improve overall system connectivity and allow for a back-door route in this area.

Connectivity Enhancements

This section of the US 64 corridor is less densely developed than its counterparts to the west. Beyond the frontage of the corridor itself, there are quite a few areas that exhibit potential for future greenfield development. A collector street is proposed that would build upon the expansion of Skyline Drive. This collector street could link with Vista Parkway to give potential users easier access to US 64. North of US 64, a collector street is proposed to link Cresent Drive with E. Salisbury Street, with a connection to Vista Parkway. Additional connections would link Crestwood Lane with US 64, as well as the intersection of US 64 and E. Presnell Street. The result of these connectivity enhancements would be the creation of parallel routes along most of this corridor section. Future development potential would be enhanced through these connections, which could ultimately be funded by developer contributions as the land use characteristics begin to change.

Unsignalized Intersection Enhancements

This section of the US 64 corridor features a lower density of land use development, as well as fewer major intersecting roadways. However, safety and accessibility can still encounter difficulties if these driveway and intersection interactions are not controlled or safeguarded in some way. To address this issue, this corridor section features a series of left-overs at key intersections. This intersection treatment allows for left turns to be made from the major roadway (US 64) onto the minor roads, but would guide people on these minor roadways to use u-turns to make a left turn movement. Left-overs reduce conflict points at intersections by limiting direct interaction between different directional movements. With the robust network of collector streets being proposed in this area, businesses along the corridor will still have several different access possibilities available to them. Left-overs are being proposed at the following intersections:

- US 64 at Vista Parkway
- US 64 at Cresent Drive
- US 64 at Northview Drive

Since the intersection of Luck Road and US 64 is so closely located between Cresent Drive and Northview Drive, this intersection is not recommended for left-over access. These intersection treatments limit the need for installing additional traffic signals, while still improving the overall safety and mobility of the corridor.

Guiding Principles

During the preparation of the corridor recommendations, it was important to consider how each recommended improvement fit within the overall vision and objectives for the US 64 corridor. These defining metrics, outlined in **Chapter 1**, were created during the public charrette and subsequent advisory committee meetings to shape the priorities of this study and address a wide range of public and agency concerns. The five objectives established for this study are included below, along with some of the recommendations being made to address them.

Objective 1 – Balance access and mobility in the corridor.

- The recommendations in the recommended access plan were established in large part to address the competing needs of access and mobility along US 64. Recommendations such as plantable islands and coordinated signal system improvements help to address the need for improved mobility along the corridor. These recommendations were balanced with intersection improvements and network connectivity to facilitate site access in the area. The intersection- and corridor-level bicycle and pedestrian recommendations seek to improve both access and mobility conditions for non-motorized users.

Objective 2 – Address corridor safety concerns.

- Many of the recommendations contained within this chapter will help to address safety concerns in the area. Intersection enhancements such as left-overs or improved signalized intersections help reduce conflict points and congested intersections. Limiting turning along the corridor to certain intersections also helps to address some of the safety concerns that are inherent in roadways with center turn lanes. The multimodal recommendations present a series of engineering and education improvements that will help address safety through improved facilities and enhanced knowledge.

Objective 3 – Identify potential aesthetic improvements.

- Roadway improvements such as plantable islands, gateway treatments, and intersection enhancements will create a more aesthetically pleasing corridor. These can be combined with the land use, signage, and branding recommendations included in **Chapter 4** to achieve the overall vision for the corridor.

Objective 4 – Integrate with planned development.

- The recommendations contained in **Chapters 3 and 4** have been closely coordinated to help establish a clear corridor plan.

Objective 5 – Develop functional and implementable recommendations.

- In order to realize this objective, the recommendations contained throughout this plan have to be prioritized and analyzed. **Chapter 5** takes this set of vetted plan recommendations and considers implementation priorities, funding sources, responsible parties, and next steps.

Chapter 4 — General Development

This technical memorandum acknowledge the inherent relationship between land use (demand), urban form (design), and transportation (supply) while advocating for a long-term view on development — defined by efficient land use patterns, distinctive architecture, enhanced multi-modal transportation opportunities and high quality-of-life — for attracting new residents, businesses, and visitors to the corridor. This viewpoint reinforces community-based initiatives to link development and mobility and improve community cohesiveness and economic vitality. Recommendations in this memo represent the components necessary to implement the community's vision for more sustainable development patterns and improved sense of place in the study area.

It will be critical to ensure development and transportation decisions made in the short- and mid-term are compatible with the long-term vision for the US 64 Corridor. Patience may be needed for some recommendations in the chapter, as it may be 15 or 20 years before they are realized. It is only when sufficient local, regional, and state support comes together with private investment that development and redevelopment of properties along the corridor will reinforce the common vision.

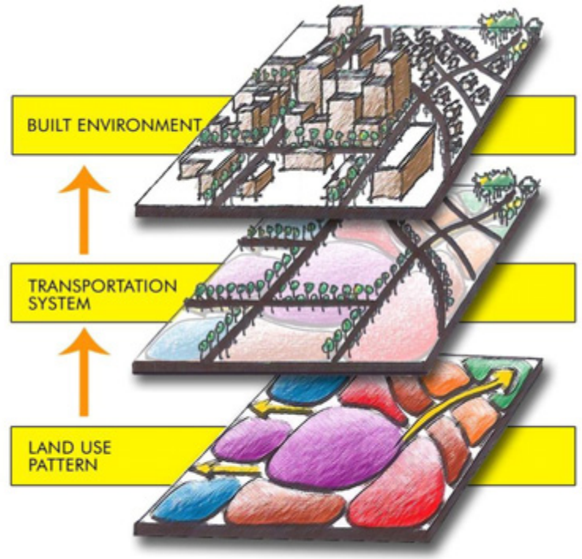
The discussion of general development in the study area follows eight general headings: guiding principles, study area, community inventory and assessment, general development map, preferred development patterns, place-making (creating a sense of community character), review of existing codes and ordinances, and summary of recommendations.

Guiding Principles

The consultant team worked with the project advisory committee, key stakeholders, and members of the general public in attendance at the multi-day design charrette to prepare guiding principles for influencing the general development chapter. These principles support and encourage the community's vision to link development with mobility and improve community cohesiveness and economic vitality in the corridor.

Guiding principles for new development and redevelopment in the study area include:

- We need to keep Dixie Highway (US 64) a viable corridor for both regional tourism and local commercial activities. It needs to remain a destination within the community.
- Balance recommendations for increased mobility and improved safety with local concerns for business development and economic vitality.
- The number, spacing, and location of driveways and traffic signals in the corridor significantly impacts driver attention and levels of congestion. Include recommendations in the chapter for new collector streets, cross access and shared use driveways, secondary access points, and improved internal circulation to reinforce improvements recommended to the highway.
- Dixie Highway needs a branding strategy to distinguish it in the marketplace. It must be apparent in every facet of the corridor, including elements of streetscape, gateway signage, building architecture, and overall site design.
- Update the City of Asheboro Land Development Plan and supporting policies and ordinances to implement recommendations from the *US 64 Corridor Study*.



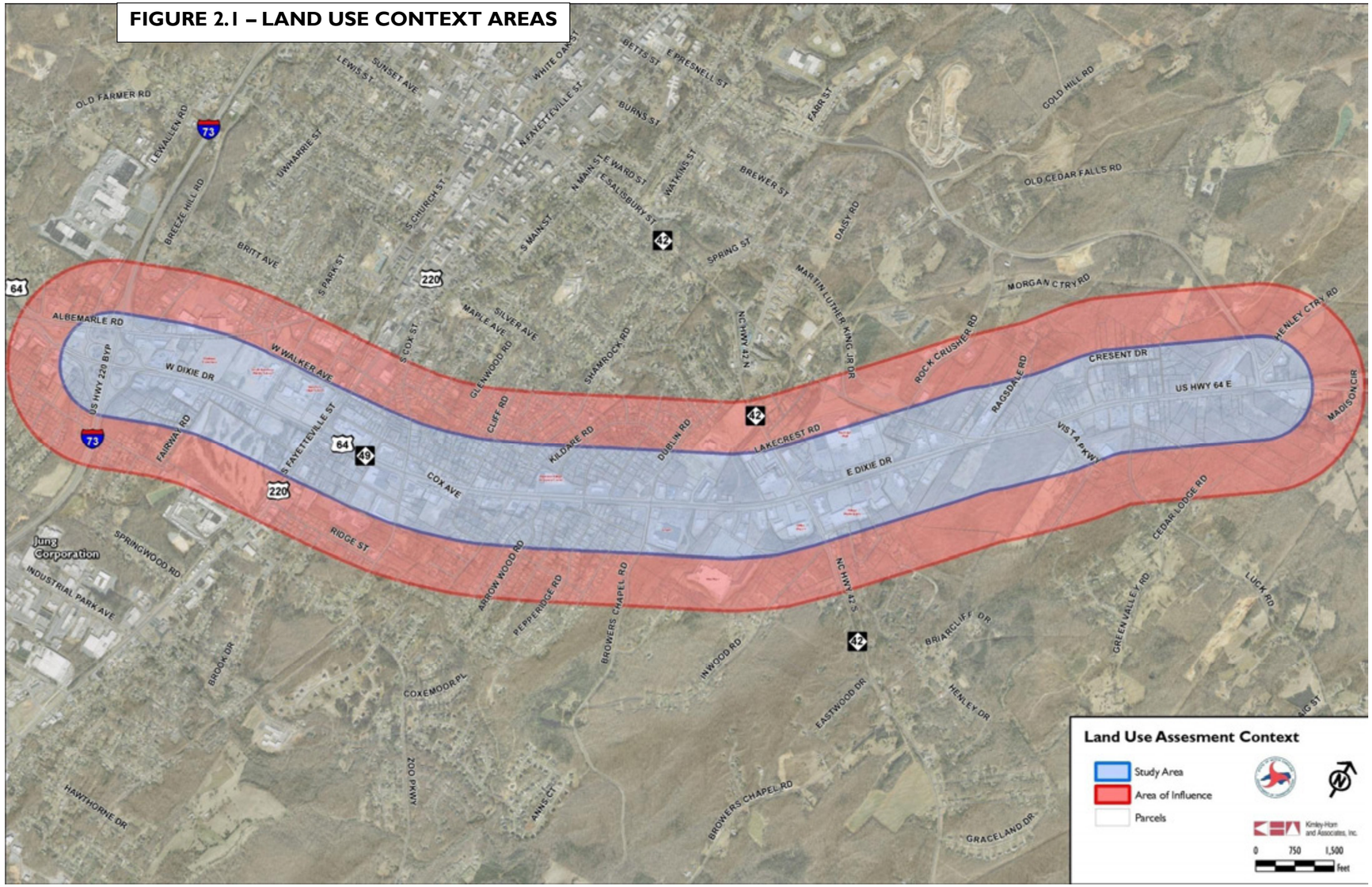
Study Area

The study area for the *US 64 Corridor Study* focuses on the high-growth area between Presnell Street and US 220 Bypass/Interstate 73. The highway is a five-lane, undivided facility with eleven traffic signals and many driveways. It is generally regarded as serving multiple roles in the city, such as a strategic highway connecting Raleigh and Charlotte; a local street serving residents' daily needs and activities; and a front door to the North Carolina Zoo. Increasing traffic over the years has meant less mobility for Asheboro citizens and those traveling through the region. Excessive congestion and driver behavior also contribute to a significant number of accidents on the highway (both in frequency and severity) compared to state averages.

The study area for the general development chapter includes two districts: the corridor and the area of influence. The corridor includes property within 1,000 feet of US 64, including all those that have (or will have) direct access to the highway. Businesses, employment centers, schools, and residential neighborhoods are all present in the corridor. Continued build out of undeveloped land in the suburban corridor could significantly increase traffic, congestion, and safety concerns. The corridor includes approximately 921 acres.

The area of influence extends 1,000 feet beyond the corridor in all directions. It represents development potential likely to generate secondary impacts on the highway; especially additional traffic at signalized intersections. Land use patterns and development intensities in the area of influence generally match conditions observed in the corridor; including vast amounts of undeveloped land east of NC 42. The area of influence includes approximately 1,433 acres. These areas are shown in **Figure 2.1**.

FIGURE 2.1 – LAND USE CONTEXT AREAS



Community Inventory & Assessment

The pages that follow represent a comprehensive inventory and assessment of conditions and community features noted in the study area. It communicates how land is organized, used, and designed to reinforce a sense of place.

Existing Development Patterns

Existing development patterns in the study area were documented using aerial photography, geographic information system (GIS) data, windshield surveys, and local knowledge of the study area. Generally speaking, development in the study area is influenced by several factors, including pass-by traffic on US 64, proximity to the US 220 Bypass/Interstate 73 interchange, relatively affordable land prices, current zoning and subdivision requirements, and topography. Limited access to water and sewer service in the study area (generally east of Salisbury Street) reduces development potential in some areas.

The most concentrated area of development in the study area is located between US 220 Bypass/Interstate 73 and Salisbury Street. It supports big box retail and strip commercial shopping centers, the Randolph Mall, car dealerships, fast food restaurants, schools, churches, a cemetery, and a golf course. Low density, single-family residential neighborhoods exist both north and south of the highway.

The area east of Salisbury Street is largely undeveloped, except for businesses and employment centers (i.e., body shops, car dealerships, mobile home sales, and equipment rental and sales) generally oriented toward US 64. Residential uses in the area range from mobile home to single–family dwelling unit.

Table 2-1 summarizes existing development in the study area by general land use category. **Figure 2.2** displays the type, pattern, and location of existing development in the study area.

FIGURE 2.2 – EXISTING LAND USE AND COMMITTED DEVELOPMENT

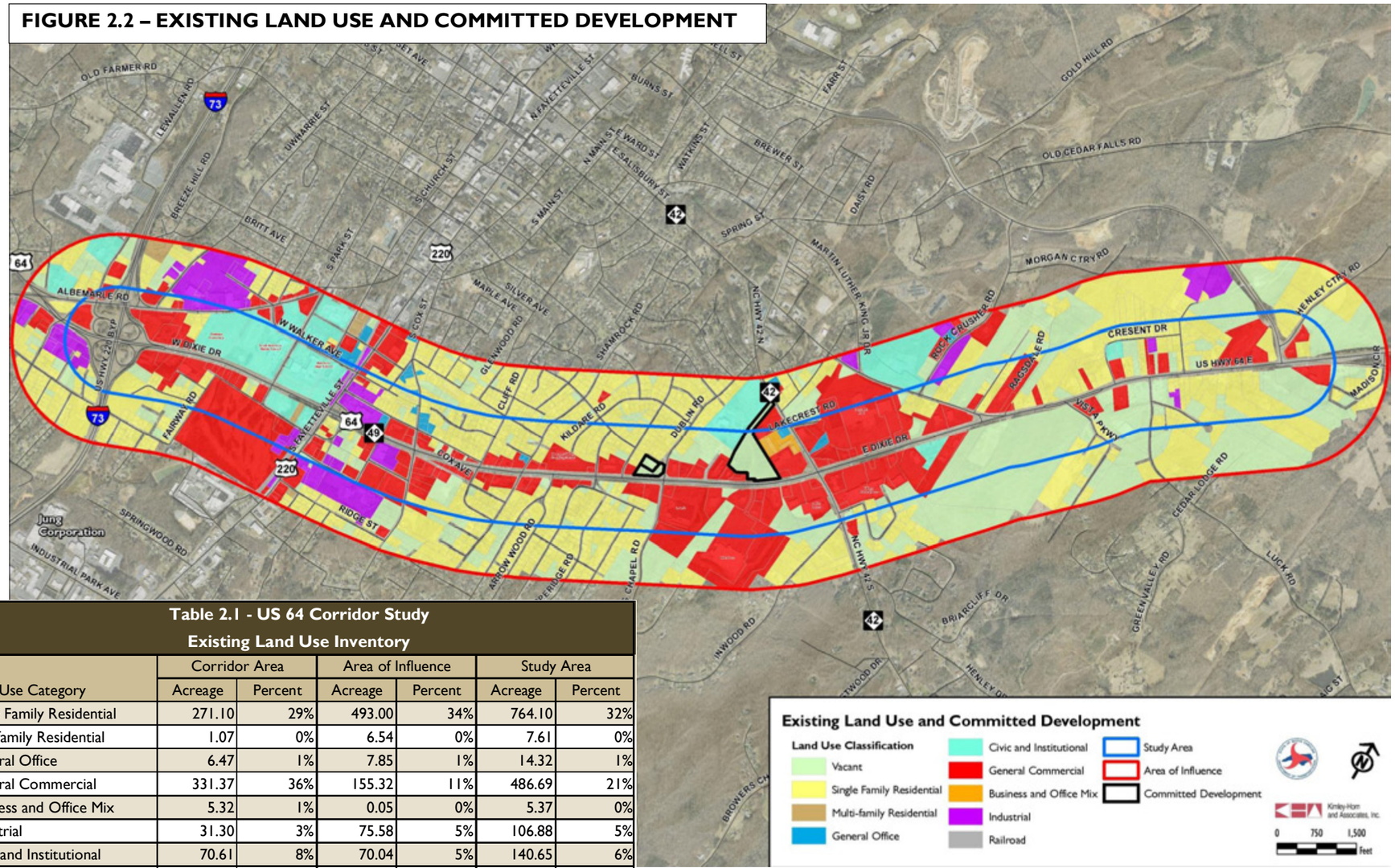


Table 2.1 - US 64 Corridor Study
Existing Land Use Inventory

	Corridor Area		Area of Influence		Study Area	
Land Use Category	Acreage	Percent	Acreage	Percent	Acreage	Percent
Single Family Residential	271.10	29%	493.00	34%	764.10	32%
Multifamily Residential	1.07	0%	6.54	0%	7.61	0%
General Office	6.47	1%	7.85	1%	14.32	1%
General Commercial	331.37	36%	155.32	11%	486.69	21%
Business and Office Mix	5.32	1%	0.05	0%	5.37	0%
Industrial	31.30	3%	75.58	5%	106.88	5%
Civic and Institutional	70.61	8%	70.04	5%	140.65	6%
Vacant	205.97	22%	623.38	44%	829.35	35%
Total	923.21	100%	1431.76	100%	2,354.97	100%

Committed Development

Committed development includes those projects in the study area that have been approved by the City of Asheboro but not yet been built. These projects are assumed to continue and be built in the future according to their approved development plans. As of May 2010, there were three committed development projects noted in the study area, all located between Shannon Road and NC 42. Combined, these projects represent 16.86 acres in the study area.

The first committed development, Starmount Commercial Development, is a commercial planned unit development (CPUD) with seven lots. Primary access will be from US 64 via a new entrance road. A secondary access will be stubbed out at the western edge of the property, ultimately connecting to Executive Way (north of the Hampton Inn Hotel) with build out of other undeveloped properties in the area.

The second committed development, Sheetz Gas Station, is located on US 64, immediately west of Dublin Road. It includes a 5,000-square foot convenience center, 18 gasoline pumps, and a single bay automatic car wash. Access to the gas station will be from both US 64 and Dublin Road.

The third committed development is a drive-through bank building immediately west of the new Sheetz Gas Station. The 4,000-square foot building will support three drive-through bays. Access to the bank will be limited to two internal driveways connected with the new the Sheetz Gas Station.

Remaining Development Potential

Build out of undeveloped land in the study area will significantly increase traffic, congestion, and safety concerns for US 64. A build-out analysis was performed for the corridor (i.e., not including the area of influence) to forecast the amount of additional development that could impact traffic conditions along the highway.

The analysis assumed build out under current zoning categories assigned to vacant parcels in the corridor. Average residential density or average non-residential intensity (i.e., floor-area-ratio, FAR) for each zoning category was assigned based on existing development observed in the surrounding area for the same zoning category. A site efficiency factor was applied to parcels greater than 20 acres in size to account for land typically dedicated to on-site improvements (e.g., internal streets, storm water retention, utility easements, and open space) necessitated by new development.

Total development forecasted for the corridor represents existing development plus committed development plus build out of vacant land under current zoning. Based on this analysis, the corridor could support 476 dwelling units and 3.7 million square feet of non-residential development.

This is an increase of 73 dwelling units (15.3%) and 876,715 square feet of non-residential square footage (23.7%) compared to existing conditions. The results of the build out analysis are summarized in **Table 2.2**. **Figure 2.3** highlights the location of vacant parcels in the study area.

Redevelopment Potential

Redevelopment of existing properties will be a crucial and integral part of long-term, sustainable plans to increase business development and improve economic vitality in the corridor. Some areas along US 64 are already experiencing decline for varying reasons, including failure to keep up personal property, buildings that are approaching the end of their useful life, poor access, or market pressures. Priority for redevelopment in the corridor should be on aging areas with high-vacancy rates, lack of identity, and underutilized parcels.

Aging commercial centers in the corridor are encouraged to develop or redevelop as mixed-use activity nodes, supporting a park once mentality and/or walking between complementary land uses in and around the development.

Figure 2.3 highlights the location of underutilized parcels in the study area.

Areas Highly Constrained for Development

Several streams traverse the study area including Gabriel's Creek, Cedar Fork Creek, Penwood Branch, and various unnamed tributaries. Floodplains in the area were identified along all the named creeks/branches and along the unnamed tributary running between Browers Chapel Road and NC 42. Some small water bodies are also scattered through the area.

The City established a Flood Damage Prevention Ordinance in 2007. Although development is allowed in the floodplain, a permit is required for land development within Special Flood Hazard Areas. The permit requires structures located in the floodplain to be elevated. The City's Zoning Ordinance does not require riparian buffers along major streams; however, they do defer to the North Carolina Division of Water Quality's (DWQ) stream buffer requirements established in select river basins.

Those areas where the City precludes development are deemed as highly constrained. In the City of Asheboro, these include streams and water bodies. These areas create challenges for roadway improvements and new developments and are considered unlikely to develop.

These areas are depicted on the Environmental Features Map found in Technical Memorandum #1.

Table 2.2 - US 64 Corridor Study
Remaining Build Out Potential in the Corridor

	Existing Development			Committed Development			Vacant Land[C, D, E, F]			Total		
	Acreage	Dwelling Units	Square Footage	Acreage	Dwelling Units	Square Footage	Acreage	Dwelling Units	Square Footage	Acreage	Dwelling Units	Square Footage
Residential Zoning												
Low Density Residential (R-40)[A]	99.20	91	-	-	-	-	37.35	27	-	136.55	118	0
Low Density Single Family Residential (R-15)[A]	49.85	82	-	-	-	-	6.36	9	-	56.21	91	0
Medium Density Residential (R-10)[A]	62.80	106	-	-	-	-	16.70	29	-	79.50	135	0
Medium Density Residential (R-7.5)[A]	78.02	94	-	-	-	-	3.07	7	-	81.09	101	0
High Density Residential (RA-6)[A]	3.32	6	-	-	-	-	0.30	1	-	3.62	7	0
Conditional Use High Density Residential (CURA-6)[A]	2.03	3	-	-	-	-	0.00	0	-	2.03	3	0
Residential Agricultural (RA)[B]	0.00	0	-	-	-	-	2.87	0	-	*2.87*	0	0
Subtotal	*295.22*	*382*	*0*	*0.00*	*0*	0	66.65	73	*0*	361.87	455	0
Non-Residential Zoning												
Office and Institutional (O-I)[A]	0.00	-	0	-	-	-	0.02	-	-	0.00	0	0
Neighborhood Business (B-1)[A]	0.00	-	0	-	-	-	0.50	-	-	435.25	0	0
General Business (B-2)[A]	330.68	-	2,349,373	11.43	-	106,896	102.33	-	760,819	59.95	0	3,217,089
Conditional Use General Business (CUB-2)[A]	29.21	-	100,315	3.27	-	9,000	30.74	-	-	23.96	0	109,315
Light Industrial (I-1)[A]	17.48	-	152,728	-	-	-	0.00	-	-	25.01	0	152,728
General Industrial (I-2)[A]	17.87	-	69,089	-	-	-	5.29	-	-	8.67	0	69,089
Conditional Use General Industrial (CUI-2)[A]	8.67	-	149,459	-	-	-	0.00	-	-	0.44	0	149,459
Highway Commercial (HC)[B]	0.00	-	0	-	-	-	0.44	-	-	0.00	0	0
Subtotal	*403.91*	*0*	*2,820,965*	*14.70*	*0*	115,896	139.32	*0*	760,819	*915.15*	0	3,697,680
Mixed-Use Zoning												
Office/Apartment High Density (OA-6)[A]	4.70	21	5,883	-	-	-	-	-	-	5.19	21	5,883
Subtotal	*4.70*	*21*	*5,883*	*0.00*	*0*	0	0.00	0	0	*5.19*	21	5,883
Totals	**703.83**	**403**	**2,826,848**	**14.70**	**0**	**115,896**	**205.97**	**73**	**760,819**	**923.21**	**476**	**3,703,563**

Notes:

[A] = Zoning district described in the City of Asheboro Zoning Ordinance.

[B] = Zoning district described in the Randolph County Unified Development Ordinance.

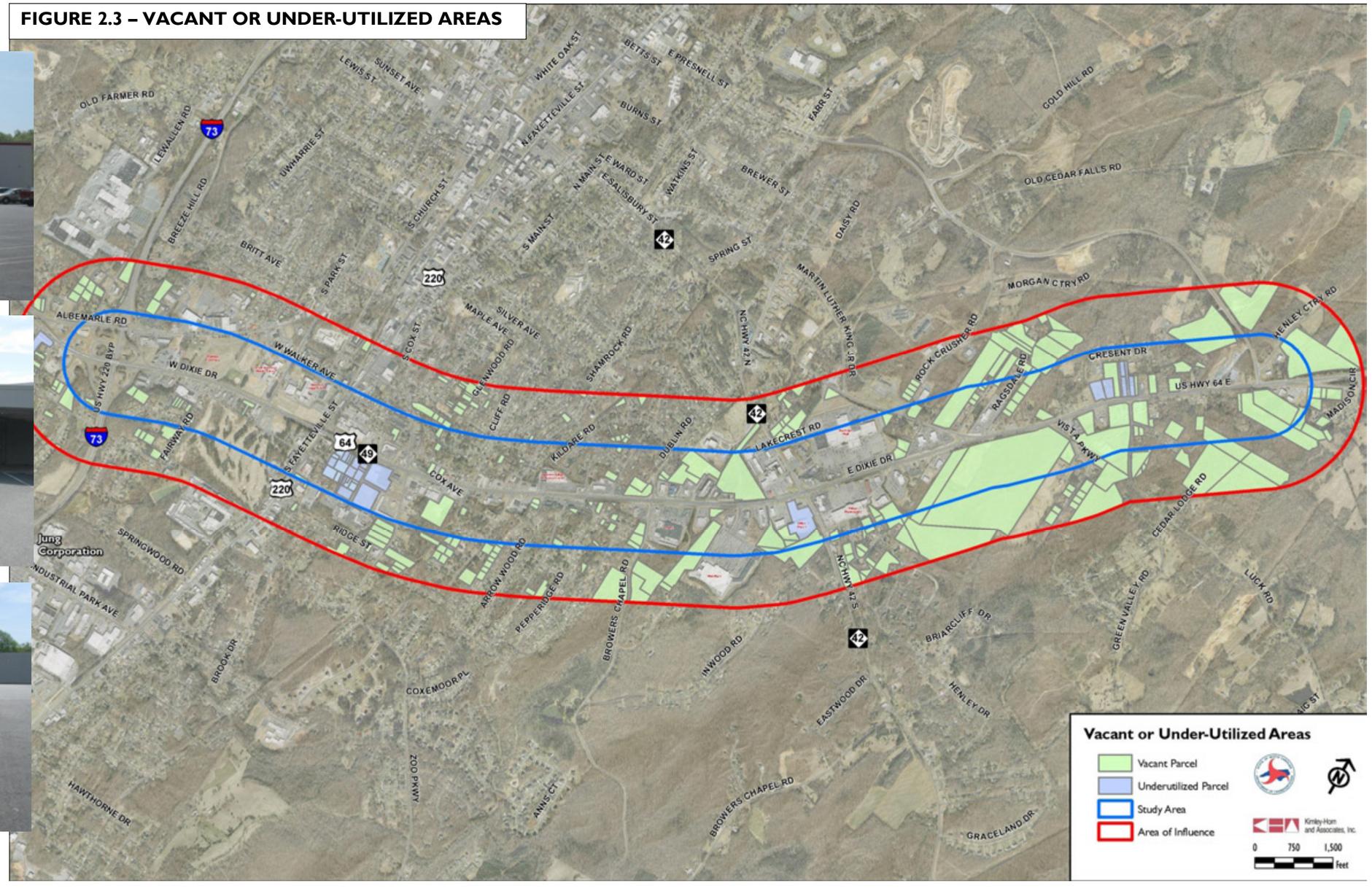
[C] = Build out conditions assume current zoning categories assigned to vacant parcels in the corridor.

[D] = A site efficiency factor was applied to parcels greater than 20 acres in size to account for land typically dedicated to on-site improvements (e.g., internal streets, storm water retention, utility easements, and open space) necessitated by new development.

[E] = Site efficiency factors were applied as follows: R-40 (95%), R-15 (85%), R-10 (88%), R-7.5 (93%), RA-6 (95%), CURA-6 (95%), RA (25%), O-I (85%), B-1 (85%), B-2 (85%), CUB-2 (85%), I-1 (70%), I-2 (70%), CUI-2 (70%), HC (85%), and OA-6 (85%).

[F] = Average residential density or average non-residential intensity (i.e., floor-area-ratio, FAR) for each zoning category was assigned based on existing development observed in the surrounding area for the same zoning category.

FIGURE 2.3 – VACANT OR UNDER-UTILIZED AREAS



Development Compatibility

Existing development patterns observed in the study area (as well as current zoning for undeveloped parcels in the study area) reinforce conditions for a typical suburban-scale, commercial corridor. Decentralized growth favors single-use, low-density development that is generally isolated, or not well-connected. This means that most residents and visitors to the corridor spend significant amounts of time and money moving around to accomplish daily needs and activities. The physical distance between complementary land uses in a suburban setting tends to promote automobile travel, particularly since safe, convenient facilities are not easily available for pedestrians and bicyclists. The corridor's lack of connectivity between adjacent properties also forces traffic traveling between developments to use US 64, thus contributing towards congestion. Increased traffic means less mobility for Asheboro citizens and others traveling through the region.

Community Design

Community design is a term used to communicate the architectural style or vernacular of an area, its sense of place. Many areas of the country have a distinct style that naturally evolved given the popularity of designs and trends en vogue at the time when the community underwent their predominant growth.

Most agree that the study area is a suburban-scale, commercial corridor; and that most development does little to promote a cohesive identity for the community. Many at the design charrette expressed displeasure with the lack of investment in architectural details, the absence of landscaping, inefficient site layout for internal circulation and access to adjacent collector streets, and the visual clutter of signage. These considerations are important as most participants also agree that US 64 is a gateway to the larger community. It represents the first and last impression of visitors and is the place where local residents spend considerable time traveling, working, and shopping. Some even argue that the corridor is the most important space in the community; yet, it has received the least amount of attention regarding community design.

In other areas of the country, developers and community leaders have sought to create unifying themes for development with the expressed purpose of creating a distinct and memorable experience and as a means to brand the area with a particularity identity.

When coordinated and well executed, the result can be a unifying theme that results in a collective and shared experience that often represents the history of an area or a future vision.

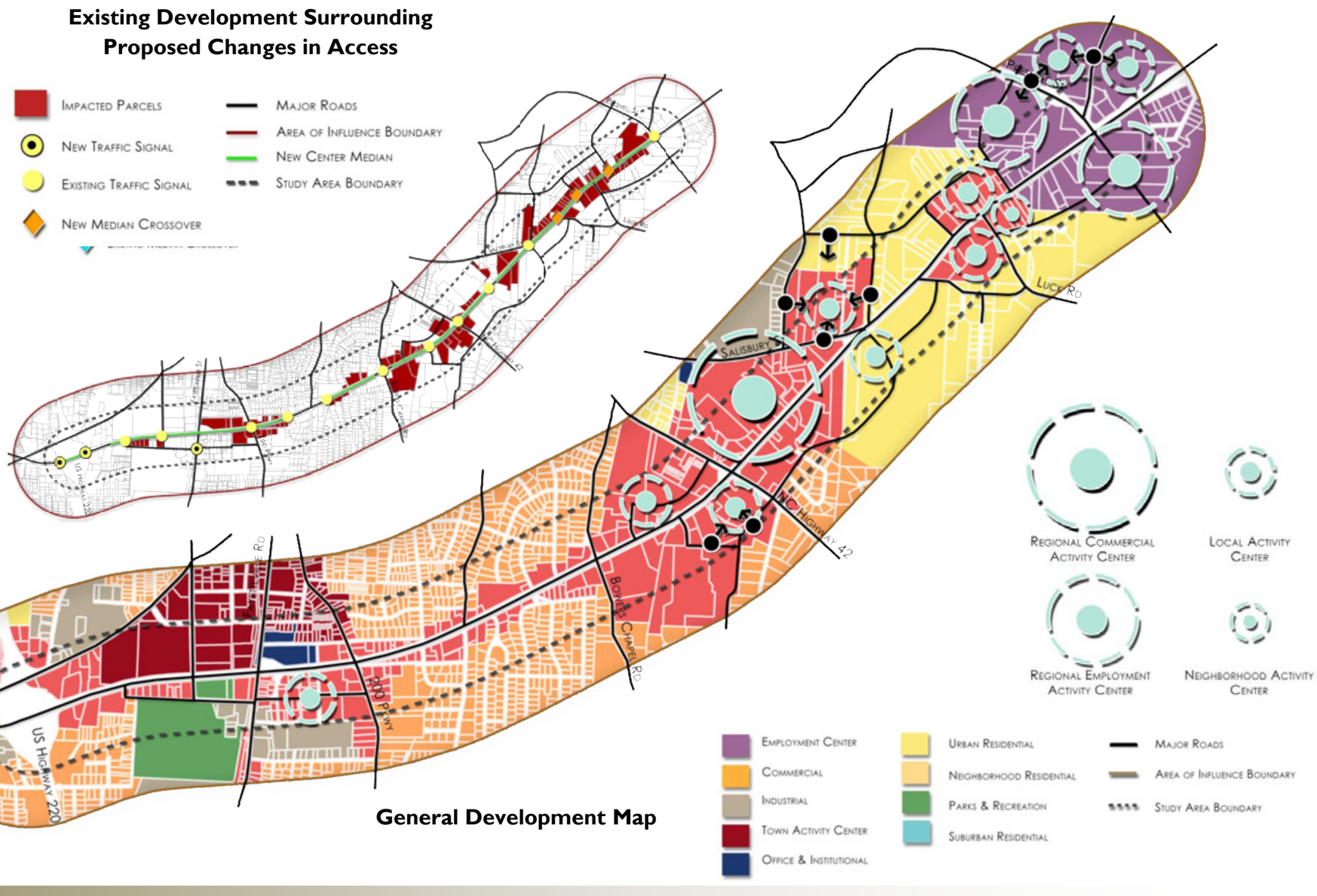
General Development Map

The general development map (a.k.a. the future land use map) represents preferred development types, patterns, and intensities for the study area. Input used to develop the map was provided throughout the planning process, including stakeholder interviews, the public design charrette, and interaction with the project advisory committee. Recommendations in the map also consider the access management strategy (i.e., the center median concept) discussed during the public charrette.

Information depicted on the general development map should be a guide for amendments to the City of Asheboro Land Development Plan or supporting policies and ordinances. Patience may be needed for some recommendations made on the map as it may be 15 or 20 years before they are fully realized.

Existing Development Considerations Map

Some existing development along the corridor would be directly impacted by the proposed access management strategy. Concerns for these land owners may include internal circulation or reasonable access to the site. Officials for the City of Asheboro and the North Carolina Department of Transportation should evaluate these concerns as plans move forward to retrofit US 64 with a center median.



Preferred Development Principles

The following development principles support implementation of the general development map prepared for the study area. New development or redevelopment should incorporate these principles to better link development with mobility and improve community cohesiveness and economic vitality in the corridor. Officials for the City of Asheboro may need to implement one or more of these development principles through revisions to the Land Development Plan or supporting policies and ordinances.

1. Promote New Mixed-Use Development Activity Centers

   One type of development gaining popularity throughout the state is mixed-use development. Integrating uses in a central location creates places where people live, work, and play as a cohesive community. Mixed-use developments further the vitality and sustainability of an area, the efficiency of utilities and transportation serving the area, and the sense of community experienced by residents, business owners, and visitors to the area. Mixed-use developments become new activity centers in the suburban landscape.

2. Redevelop Existing Strip Development as Activity Centers

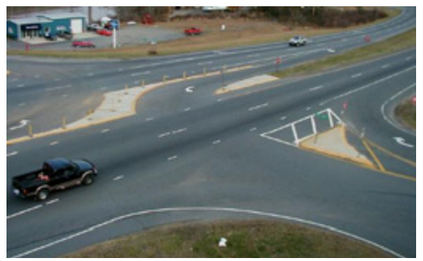
   Transforming development from linear strips along major thoroughfares to commercial activity centers promotes more human-scale development and improves transportation efficiency. Redevelopment of existing strip development centers in the study would promote pedestrian-friendly environments and allow visitors to access multiple businesses in one trip. In addition, shared parking, improved connectivity within and adjacent to the site, and fewer curb cuts would helps conditions along US 64.

3. Support Efforts to Increase Connectivity Within and Between Development

   A well-design transportation system includes several options for entering or exiting the site. Whenever possible, these options should favor access from secondary roads or shared-use driveways over direct access from US 64. Stub-outs should be encouraged to accommodate future street extensions and/or driveway connections with adjacent parcels. Regulations should also encourage minimum street spacing and design standards to support improved internal site circulation.

4. Manage Access and Reduce Congestion Levels on Major Roads

   Long-term needs for mobility and accessibility in the US 64 corridor will require implementation of access management standards. From a development perspective, standards are needed to limit the number, location, and spacing of driveways. Efforts to promote shared-use driveways or cross-access agreements will also keep short trips off the highway. Minimum lot frontage requirements for new development along the corridor could also manage the frequency of driveways along US 64.



   Additional information of the access management strategy recommended for US 64 will be included in the final recommendations for this study.

5. Maintain Viability of the US 64 Corridor After Construction of the Proposed Bypass

   While not yet a funded project, the US 64 Bypass will have a significant impact on Asheboro and its surrounding environs. In particular, it is possible that certain businesses or employment centers on US 64 will want to move to the new bypass. Officials for the City of Asheboro should move quickly to limit new development along the bypass to proposed interchange locations. This initiative will help protect the economic vitality of US 64 Business well into the future.

6. Provide a Variety of Transportation Choices

   The general development map advocates for a reorganization of land use and urban form throughout the study area to support a more efficient transportation system. Linking land use, urban form, and transportation decision-making processes promotes livability of local communities and efficiency of the regional transportation system. Priorities should be to shorten commuting distances between complementary uses and to provide infrastructure that supports multiples modes of transportation (i.e., sidewalks, bicycle lanes, transit infrastructure).

Place-Making

Place-making embodies the movement to create more livable communities with identifiable character. It has the potential to influence the attraction of private investment, the quality of future development, and the value of properties in the corridor. The process of place-making celebrates the uniqueness of a community and identifies the physical improvements or planning initiatives necessary to instill 'a sense of place' for the corridor.

General recommendations for design principles important to the US 64 corridor were formulated with participants at the design charrette. They should be considered general recommendations for balancing concerns of mobility, economic vitality, community cohesiveness, and quality-of-life in the corridor. A detailed set of design standards supportive of these design principles should be developed after adoption of the *US 64 Corridor Study*. Business owners and other interests in the study area should be included in the planning process to develop specific design standards for the corridor.

General design principles important to the community are summarized on the following pages: branding and image, building architecture, franchise architecture, and site design.

Branding and Image

An identity for the US 64 corridor comes from its surrounding environment, tradition, and culture. A branding of that identity represents the pride of community members, and a promise made to visitors for what to expect when they arrive. In its simplest terms, the brand distinguishes the corridor in the marketplace. It must be apparent in every facet of the corridor, including elements of the streetscape, gateway signage, building architecture, and overall site design.

There was overwhelming support during the design charrette to develop a brand for the US 64 corridor. The consultant team worked with business owners, civic leaders, and residents to encapsulate the corridor's identity, develop a branding strategy, and identify initial opportunities to apply the brand.

Participants volunteered several themes to represent the corridor, the community, and the surrounding region: rolling topography, natural materials (i.e., clay, granite, and large boulders), native vegetation, gateway to the Uwharrie Mountains, and home to the North Carolina Zoo. A branding strategy was developed for the corridor using these themes. Components of the branding strategy included message size and font type, preferred color palette, and appropriate building materials (see image, "Branding and Logo Design Development Concepts"). The consultant team received valuable feedback from charrette participants during the week that led to the refinement and support of the branding strategy recommended for the corridor (see images on the following page).

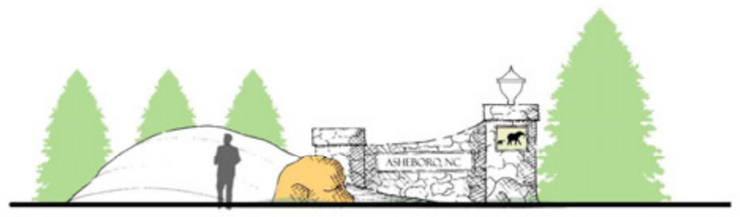
Community leaders should build on the momentum from this concept to complete a comprehensive branding program for the US 64 corridor. Next steps might include: revisions to local zoning and subdivision ordinances to support preferred design elements (i.e., building architecture, signage, landscaping, and site design), identify appropriate locations for gateway signage, continue outreach to local property owners in the corridor, develop detailed construction documents, and identify available funding sources.

"Design with Nature"

Primary Landmark Gateway Monument

Secondary Landmark Gateway Monument

Key Development Monument



Neighborhood Monument

Building Architecture

Building architecture is a critical component for quality development. Architectural design standards are intended to promote compatibility within a development and its surrounding environment, allow creativity and diversity of design, protect property values and neighborhood quality, and provide a safe and attractive environment for residents and visitors alike to destinations in the community.

The following elements of building architecture were identified as important to the community: building material and color, building articulation, rooftop equipment screening, roof articulation, signage, and architectural unity.

Site Design

Overall site design is a critical component for quality development. Site design guidelines are intended to promote compatibility within a development and its surrounding environment, allow creativity and diversity of design, protect property values and neighborhood quality, and provide a safe and attractive environment for residents and visitors alike to destinations in the corridor.

The following elements of site design were identified as important to the community: outdoor storage, exterior lighting, landscaping, parking, tree preservation and buffer areas.

Franchise Architecture

For a half century, national and regional chain stores have used franchise architecture to reinforce their image and brand. It is likely that you easily recall what certain chain stores look like. This replication of building style by chains is such a part of our culture, you can probably tell what store you are approaching, even if you are not familiar with the locale you are in and even if you are unable to read the store's sign. This replication is part of the "place-product-packaging" strategy of business. It is a visual cue to customers that reassures them they will find the same products and services within every store, no matter where that store may be. This level of branding is often so effective that finding another use for a former franchise building is often difficult if not impossible because it is so strongly tied to the branded image of the original occupant. It is this type of homogenous franchise architecture in the built environment that can weaken a community's character.

Though they may report otherwise, corporations and franchise businesses will modify image architecture standards in response to specific conditions, concerns, or preferences raised by the community. The key is negotiating power, which is defined for the community as a strong market and an effective design standards ordinance that regulates franchise architecture. Many communities across the country acknowledge the absence of a design standards ordinance as the primary reason corporations might refuse to alter a franchise building prototype. Community leaders should be persistent in requesting distinctive and site-specific building architecture for new development and redevelopment in the US 64 Corridor.

Variations in Franchise Architecture — McDonald's Restaurants in North Carolina

Review of Existing Codes & Ordinances

Implementation of the recommendations included in this chapter may require revisions to some local plans, programs, policies, or ordinances administered by the City of Asheboro. Collectively, these revisions provide valuable information to the North Carolina Department of Transportation and private development interests alike as to the minimum acceptable development and design standards envisioned for the corridor.

The consultant reviewed three documents as part of the assessment of existing plans and ordinances administered in the study area, including:

- City of Asheboro Land Development Plan
- City of Asheboro Zoning Ordinance
- City of Asheboro Subdivision Ordinance

A brief narrative for each document includes a list of rules, policies, or regulations that may impact recommendations in this chapter.

City of Asheboro Land Development Plan

The City of Asheboro Land Development Plan provides a blueprint for orderly growth and development in the study area. Information in the plan is organized around six major elements: introduction and overview, existing conditions, future conditions, community values, land development plan, and plan implementation. Text portions of the document were adopted in 2009; maps in the document are yet to be adopted.

Recent updates to the plan shift the emphasis from accommodating land development applications on a reactive basis, to providing a more strategic, proactive vision of how and where the community hopes to grow over time. Several goals and policies in the Land Development Plan reinforce recommendations in the *US 64 Corridor Study*, including:

Economic Development

The City's tourism-hospitality zoning district could be a tool for attracting new tourism-based businesses in the US 64 corridor that support activities at the North Carolina Zoo.

Growth Management

Growth management policies in the plan support more sustainable development patterns and improved community character. A new citywide, adaptive reuse program contemplated by the City could expedite infill development or redevelopment activities in the study area. Recommendations for increased street connectivity, improved design standards, and mixed-use, compact development centers could reduce traffic demand on US 64 and overall reliance on the automobile for mobility in the study area.

Community Appearance

Quality design in the study area is reinforced by recommendations in the plan for efficient site development and attractive building architecture. The following items were identified as important to ensuring new development or redevelopment is compatible with the design of surrounding land uses: building setback requirements, permitted construction materials, building orientation, parking areas, pedestrian access, landscaping and signage.

Infrastructure

The City will encourage and support improvements to US 64 (Dixie Highway), including actions that encourage common access points and service roads and discourage frequent driveway cuts.

The City's Land Development Plan also includes a toolkit for measuring and evaluating development applications consistent with the goal and policy framework. Land development categories described in the plan reinforce recommendations in the *US 64 Corridor Study* for more sustainable development patterns and improved community character. New "activity centers" depicted in the proposed land use map (and the intent to minimize the expansion of strip commercial development throughout the city) should reduce vehicle trip generation for new development or redevelopment; shorten trip distance between complementary land uses; and increase opportunities for multi-modal transportation in the study area. Preferred design principles presented in the plan reinforce development in new activity centers as compact, mixed-use, walkable, and interconnected with surrounding land uses.

City of Asheboro Zoning Ordinance

The City of Asheboro Zoning Ordinance enforces rules and regulations that protect health, safety, and welfare in the community. The document includes a list of permitted uses, minimum lot size, maximum building height, setback requirements, and other building and development controls for fifteen traditional zoning districts. Supplemental regulations in the ordinance address buffers and screening, landscaping, off-site parking, and administrative procedures.

The following rules and standards should be studied in further detail and potentially refined to support recommendations in the *US 64 Corridor Study*:

Conditional Use Zoning

Conditional use zoning is used to impose special conditions on a site where the rules and requirements associated with the traditional district might be inappropriate. This tool would be useful in the short term for development applications that want to include mixed-use, walkable neighborhoods or town centers; relaxing more suburban-scale standards and requirements in the current zoning ordinance.

Zoning Districts

There are sixteen different zoning districts in the study area, including three approved conditional use zoning districts. Most promote single use, suburban-scale development patterns, which significantly increase reliance on the automobile for daily needs. Several new zoning categories are needed to implement mixed-use, compact development principles recommended in the City's Land Development Plan.

New zoning districts recommended for the study area include: village center, neighborhood center, commercial activity center, and employment center. Small area development studies should be completed in the future for each new zoning category to validate recommended development criteria.

Design Standards

The zoning ordinance includes general design standards for building materials, buffers, dumpster screening, outdoor storage, and accessory buildings or structures. Requirements vary by zoning district. Additional requirements should be considered in some zoning districts for landscaping, parking lot design, signage, non-vehicular site circulation, building massing and character, building façade treatments, and architectural unity on a site.

Priority for additional design standards should be placed on office and institutional (O & I), neighborhood business (B-1), and general business (B-2) zoning districts in the study area. City officials may want to implement new design standards in the corridor using a corridor overlay district, similar to the US 220 Bypass Zone in current zoning ordinance.

Access Management Standards

Access management standards along US 64 (Dixie Highway) would balance reasonable, convenient, and suitable access to adjacent development with preserving mobility, improving safety, and increasing capacity in the corridor.

The North Carolina Department of Transportation regulates the location, design, construction, and maintenance of street and driveway connections to Dixie Highway pursuant to G.S. 136-18(29). The Policy on Street and Driveway Access to North Carolina Highways (published by North Carolina Department of Transportation) establishes minimum criteria for granting access connections to the US highway; however, a provision in the policy manual defers evaluation of a street and driveway access permit to criteria established by the local government when they are deemed more restrictive than NCDOT requirements.

The City should amend the local zoning ordinance to include access management standards and tools that are consistent with the conceptual design plan presented the recommendations of this study.

City of Asheboro Subdivision Ordinance

The City of Asheboro Subdivision Ordinance establishes standards and procedures for development and subdivision of land in the study area. The document includes provisions for the dedication or reservation of land for public purpose, access to the transportation system, and adequate public facilities and services needed to support new development. Several provisions in the ordinance implement recommendations in the *City of Asheboro Land Development Plan* or other planning studies completed for the study area (e.g., *City of Asheboro Thoroughfare Plan* or *US 64 Corridor Study*).

The following rules and standards should be studied in further detail and potentially refined to support recommendations in the *US 64 Corridor Study*:

Traffic Impact Study

A traffic impact study (TIS) is not required to accompany major subdivision applications. It would be appropriate to include a traffic impact study as "engineering data" required to supplement the preliminary plat application for a major subdivision. City officials should also expand requirements for a traffic impact study to include all rezoning or site plan applications.

Criteria should be prepared jointly by the City of Asheboro and North Carolina Department of Transportation to determine when a traffic impact study would be required as part of a major subdivision application. The *US 64 Corridor Study* recommends a traffic impact study when the expected gross trip generation for a development is 500 vehicles or more (entering/exiting combined) in a 24-hour period or 100 vehicles or more (entering/exiting combined) during either the adjacent road's peak hour or the development's peak hour. In addition, one or more of the following conditions should be considered in determining the need for a traffic impact study:

- Traffic generated from a non-residential development will significantly impact adjacent residential neighborhoods.
- Traffic operation problems for current and/or future years on nearby streets are expected to be substantially aggravated by traffic generation from the new development.
- Affected major thoroughfares in the *City of Asheboro Thoroughfare Plan* and experiencing noticeable delay.
- Traffic safety issues exist at intersections or streets that would serve the proposed development.
- The proposed land use differs significantly from that contemplated in the City's adopted *Land Development Plan*.
- The internal street system or access points are not anticipated to accommodate the expected traffic generation.
- The proposed site plan includes a building with a drive-through window.

Compliance with Official Plans

A proposed subdivision that includes any part of a thoroughfare designated in the Thoroughfare Plan for the City of Asheboro must dedicate right-of-way for the facility in the location shown in the Plan. This requirement should be expanded to include collector streets depicted in the *US 64 Corridor Study* and defined in Article V, Section II of the Subdivision Ordinance. City officials should also expand requirements for right-of-way dedication to include all rezoning or site plan applications.

Bicycle and Pedestrian Accommodations

Rules and standards are generally missing for bicycle and pedestrian accommodations throughout the ordinance. Street design standards and accompanying typical street cross sections do not include bicycle or pedestrian facilities. Sidewalks are not required in a subdivision. Pedestrian crosswalks are only required where deemed necessary by the Planning Board or City Council.

The subdivision ordinance should *require* bicycle and pedestrian accommodations internally and along adjacent thoroughfares. Exceptions to new requirements should be limited to concerns for topography or environmentally-sensitive lands. Other revisions to the ordinance should reinforce recommendations in the City's *Comprehensive Pedestrian Transportation Plan* completed in 2008.

Minimum Block Length Requirements

Blocks in a subdivision may not be less than 400 feet nor more than 1,300 feet in length. The minimum length requirement could negatively impact some mixed-use, walkable development nodes contemplated for the study area; especially in town center style developments.

Street Arrangement and Connectivity

The proposed street layout within a major subdivision should be coordinated with the existing street system of the surrounding area and existing streets extended. It would be appropriate to supplement these requirements with a street connectivity index (i.e., the number of street segments divided by the number of street nodes) to improve internal site circulation. Minimum street spacing and design standards could also improve mobility within the site and access to the surrounding transportation system.

Cross access requirements between adjacent non-residential development should also be implemented to encourage shared parking and shared driveways on public streets.

Coordination with NCDOT

The City's planning director routinely shares copies of the sketch design plat and all accompanying materials required for a major subdivision with public officials and agencies concerned with development in the study area; including the North Carolina Department of Transportation (NCDOT). No response received within fifteen days from the date information was issued for review is recorded as "no comment" for the application.

City officials should consider establishing a procedure manual to provide a consistent basis from which Asheboro and the NCDOT evaluate transportation impacts associated with major subdivisions. Included in this manual should be requirements for report format, technical aspects and procedures for completing a study, standard review periods, and minimum submittal requirements.

Summary of Recommendations

Recommendations in the General Development Chapter for implementing the community's vision for sustainable development and improved community character in the study area are summarized below:

1. *Update the City of Asheboro Land Development Plan to implement recommendations from the US 64 Corridor Study.*

   The Planning Department should use the general development map presented herein as a guide for amending the future land use map included in the *City of Asheboro Land Development Plan*. Other recommendations in the chapter should be considered for revisions to goals or policies presented in the document.

   Officials for the City of Asheboro and the North Carolina Department of Transportation should refer to the general development map and supporting recommendations when contemplating development applications in the study area.

2. *Make development decisions predictable, fair, and cost-effective.*

   Making development decisions predictable, fair, and cost-effective encourages developers to build in a community. The City and NCDOT should consider streamlining the development review process, amending development regulations, and investing in infrastructure to support recommendations in the *US 64 Corridor Study*.

3. *Redevelop existing strip development in the corridor as new activity centers.*

   Redevelopment of existing strip development centers in the study to become pedestrian-friendly environments that allow visitors access to multiple businesses in one trip. In addition, shared parking, improved connectivity within and adjacent to the site, and fewer curb cuts would helps conditions along US 64.

4. *Promote development in the study area that supports a variety of transportation choices.*

   The general development map advocates for a reorganization of land use and urban form throughout the study area to support a more efficient transportation system. Linking land use, urban form, and transportation decision-making processes promotes livability of local communities and efficiency of the regional transportation system. Priorities should be to shorten commuting

distances between complementary uses and to provide infrastructure that supports multiples modes of transportation (i.e., sidewalks, bicycle lanes, transit infrastructure).

5. *Implement a branding strategy for the US 64 Corridor.*

   Build on the momentum from the branding concept presented in this chapter to complete a comprehensive branding program for the US 64 corridor. Next steps should include: revisions to local zoning and subdivision ordinances to support preferred design elements (i.e., building architecture, signage, landscaping, and site design), identify appropriate locations for gateway signage, continue outreach to local property owners in the corridor, develop detailed construction documents, and identify available funding sources.

6. *Revise local land development regulations to allow mixed-use activity centers without the need for a planned development district designation.*

   The City should consider creating one or more new zoning district(s) that encourage compact, mixed-use development comprised of residential and non-residential uses (e.g., single-family detached, townhomes, apartments, business, professional office, civic and institutional, or hotel). The design and scale of mixed-use developments should support active living, human scale, and the principles of sustainable development described throughout the chapter.

7. *Revise local land development regulations to implement access management standards for the US 64 Corridor.*

   Long-term needs for mobility and accessibility in the US 64 corridor will require implementation of access management standards. From a development perspective, standards are needed to limit the number, location, and spacing of driveways. Efforts to promote shared-use driveways or cross-access agreements will also keep short trips off the highway. Minimum lot frontage requirements for new development along the corridor could also manage the frequency of driveways along US 64.

8. *Revise local land development regulations to increase minimum design standards for building architecture and site design in the corridor.*

   Additional requirements should be considered in some zoning districts for landscaping, parking lot design, signage, non-vehicular site circulation, building massing and character, façade treatments, and architectural unity on a site. Priority for additional design standards should be placed on office and institutional (O & I), neighborhood business (B-1), and general business (B-2) zoning districts in the study area. City officials may also want to implement new design standards using a corridor overlay district similar to the US 220 Bypass Zone in the current zoning ordinance.

9. *Revise local land development regulations to include access management standards that are consistent with the conceptual design plan presented in this study.*

   The City should amend the local zoning ordinance to include access management standards that are consistent with the conceptual design plan presented in this study.

10. *Revise local land development regulations to require traffic impact studies for major subdivisions.*

    A traffic impact study should be required to accompany major subdivision applications. It would be appropriate to include a traffic impact study as "engineering data" required to supplement the preliminary plat application for a major subdivision. Criteria should be prepared jointly by the City of Asheboro and North Carolina Department of Transportation to determine when a traffic impact study would be required as part of the development application.

11. *Revise local land development regulations to require right-of-way dedication for new thoroughfares or collector streets depicted in official plans.*

    This requirement to dedicate right-of-way in a subdivision should be expanded to include collector streets depicted in the *US 64 Corridor Study* and defined in Article V, Section II of the Subdivision Ordinance. City officials should also expand requirements for right-of-way dedication to include all rezoning or site plan applications.

12. *Revise local land development regulations to improve bicycle and pedestrian accommodations internally and adjacent to thoroughfares for all major subdivisions.*

    The subdivision ordinance should require bicycle and pedestrian accommodations internally and along adjacent thoroughfares. Exceptions to new requirements should be limited to concerns for topography or environmentally-sensitive lands. Other revisions to the ordinance should reinforce recommendations in the City's Comprehensive Pedestrian Transportation Plan completed in 2008.

13. *Revise local land development regulations to increase street connectivity adjacent to, and mobility within, a development site.*

    The proposed street layout within a major subdivision should be coordinated with the street system of the surrounding area and existing streets extended. It is appropriate to supplement these requirements with a street connectivity index (i.e., the number of street segments divided by the number of street nodes) to improve internal site circulation. Regulations should also encourage minimum street spacing and design standards to improve internal site circulation.

    Cross access requirements between adjacent non-residential developments should be implemented to encourage shared parking and shared driveways on public streets.

14. *Improve coordination with NCDOT to review transportation impacts associated with major subdivision applications.*

    City officials should consider establishing a procedure manual to provide a consistent basis from which Asheboro and the NCDOT evaluate transportation impacts associated with major subdivisions. The manual should include requirements for report format, technical procedures for completing a study, standard review periods, and minimum submittal requirements.

15. *Maintain viability of the US 64 Corridor after construction of the proposed bypass.*

    While not yet a funded project, the US 64 Bypass will have a significant impact on Asheboro and its surrounding environs. In particular, it is possible that certain businesses or employment centers on US 64 will want to move to the new bypass. Officials for the City of Asheboro should move quickly to limit new development along the bypass to proposed interchange locations. This initiative will help protect the economic vitality of US 64 Business well into the future.

16. *City officials should continually monitor new development and public investments in the study area to ensure fulfillment of the community's vision for sustainable development and improved sense of place.*

    Stakeholders should continually monitor and evaluate implementation of recommendations presented in the *US 64 Corridor Study*. The Planning Department should summarize progress in the study area in a formal two-year implementation status report (the "report card") for presentation to the Asheboro City Council.

Chapter 5 – Inviting Success

Successful implementation of the ***US 64 Corridor Study*** will depend to a great extent on the ability for local, state, and private entities to work together. The intent of the implementation plan or "Action Plan" is two-fold; first, it must provide decision-makers with an implementation blueprint that will enable them to track progress and schedule future year improvements. Second, clearly defined action items will enable the City of Asheboro, NCDOT, and the Piedmont Triad Council of Governments (PTCOG) to identify public and private investment opportunities that are healthy, sustainable, and achievable through well-guided transportation and land use policies that encourage quality design and support economic vitality.

The approach is simple – provide opportunities to take advantage of both small and large funding programs. This will allow for quick return on our investment. With this in mind, the following implementation or "Action" Plan identifies a strategy to systematically implement key short- and long-term transportation improvements for the Asheboro community. The implementation strategy includes four key elements that will provide decision-makers with a clear direction for pursuing the objectives of the *US 64 Corridor Study*. These elements include:

1. ***General Action Items*** – Providing a sequence of action items needed to carry the momentum gained during the development of this plan towards implementation. This will enable elected officials and staff with a "tool" for implementing critical transportation needs (i.e., intersection treatments, safety improvements, access modifications, etc.) in a defined timeframe.
2. ***Policy Measures*** – Identifying administrative and regulatory policy measures and strategies to ensure compliance with local and state programs.
3. ***Short- and Long-Term Infrastructure Improvements*** – Providing a step-by-step process for implementing small and large projects. Each project reflects an independent utility with a defined probable cost, priority need, and associated timetable.
4. ***Financial Strategies*** – Identifying potential local and state funding programs as well as grant opportunities that can be used to implement transportation programs and infrastructure.

As history has it, most small to mid-sized communities in North Carolina do not have a mechanism to construct roads and are not associated with the responsibility of transportation infrastructure other than maintenance. Urbanizing communities can play an instrumental part in setting regional transportation priorities. US 64 is designated as a Strategic Corridor by the State of North Carolina. In accordance with the State's vision: ***"the Strategic Highway Corridors (SHC) initiative represents a timely effort to preserve and maximize the mobility and connectivity on a core set of highway corridors, while promoting environmental stewardship through maximizing the use of existing facilities to the extent possible, and fostering economic prosperity through the quick and efficient movement of people and goods."*** For NCDOT and the City of Asheboro, this means that a local and State partnership can be formed to communicate and foster a vision that strategically expands the region's transportation infrastructure while enhancing the economic vitality of the Asheboro community. Equally important is the acknowledgement that traffic and congestion know no jurisdictional boundaries. For this reason, the community of Asheboro (working with the NC Zoo, NCDOT, and RPO) can assist with efforts to coordinate a cooperative strategy to deal with growing transportation demand and the increased competition for transportation resources.

Not all recommendations of this plan have to be agreed upon by all stakeholders to move the vision of this plan forward. Some recommendations will be championed by local agencies or stakeholders that are more interested in implementing a gateway treatment, sidewalk improvement, or an intersection safety improvement. Others may be work to secure funding for a connectivity improvement or access management treatment.

Today's Paradigm Shift

Some of the comments received at the public workshops suggest we simply wait for the US 64 Bypass to be built to address the mobility and safety problems on Dixie Drive (existing US 64). The reality is that the Bypass has not received full funding. Without a definitive construction date for this project, existing US 64 will continue to degrade and become more problematic. In turn, this will have a dramatic effect on the economic viability and tax-base reliance of this commercial corridor for the City of Asheboro. US 64 already is experiencing unexpected transition and turn-over of commercial property. The citizens of Asheboro have reached a tipping point. No longer can we rely on the status quo to resolve these complicated transportation problems. Yet, the citizens of Asheboro are tired of waiting and demand a response.

In today's economy and considering limited funding resources, implementation can be challenging and time-consuming. With this in mind, the policy recommendations and action plan have been developed specifically to help local staff and state representatives focus their efforts and identify strategic opportunities to expedite the implementation of this plan. With the funding shortfalls and weak economy, we must consider a new approach for successful implementation. The *US 64 Corridor Study* will direct implementation strategies toward smaller, more cost-effective allocation of our resources, balanced by larger infrastructure improvements. The Implementation Plan recognizes the effect various improvements can have on travel safety and mobility, commerce, development patterns, and the visual appeal of the area – all key elements expressed during the public outreach and stakeholder interview process. Some improvements will be implemented through the development review process, while major infrastructure improvements likely will require state, federal, or municipal funding. Funding for these major projects is limited and competition for it spirited. Completion of the *US 64 Corridor Study* represents an important initial step toward creating a safe, efficient multimodal transportation system. The Implementation Plan provides a blueprint for the necessary steps to ensure its vision is fulfilled.

Partnerships & Responsibilities

To implement key aspects of the plan, NCDOT and the Asheboro community must work proactively with stakeholders such as:

- Citizens and businesses
- Randolph County
- US 64 Advisory Team (AC)
- NC Zoo
- Asheboro/Randolph Chamber of Commerce
- Piedmont Triad Council of Governments (PTCOG)
- Private development industry
- Elected leadership in the North Carolina General Assembly

Action Plan

The Action Plan discusses the appropriate steps for local and State leaders to implement the recommendations of this plan and identifies key agencies that should be involved with the task. It is not expected that every item listed would be completed over the next several years. However, the process should be initiated to best take advantage of the momentum gained with the development of this plan as well as the local champions involved in the process.

To more clearly understand the actions that need to be taken to effectively implement this plan, recommendations have been separated into Phase I (1-10 year) and Phase II (11-25 year) horizons.

With this in mind, the following Action Plan identifies next step items for each category described and summarized in the Transportation Framework (**Chapter 3**) and General Development (**Chapter 4**) recommendations of this report. Specific categories include recommendations for General Procedures, Land Use and Policy; Interim & Long-term Transportation (Highway, Bike & Pedestrian, and Transit), and Funding Strategies. Ultimately, these recommendations can be administered concurrently or as priorities and regional initiatives present the opportunity to do so.

General Considerations

The following recommendations apply to the overall vision for the corridor as expressed by the local planning and engineering staff, NCDOT, Advisory Team and elected officials. These recommendations can be initiated throughout the planning process and prior to any physical infrastructure improvements.

- Use this plan as a tool to review proposed development projects and plans as they locate and are implemented within the US 64 study area.
- Integrate future bikeways, greenway, and trail networks (i.e., greenway) with the US 64 study area to create an interconnected network.
- As the transportation corridor is improved and expanded, minimize impacts that negatively affect the character and integrity of adjacent neighborhoods by introducing gateways or traffic calming improvements.
- Promote alternative modes of transportation through better street design and developer participation.
- Promote interconnectivity and cross-access between existing and proposed developments.
- Configure site driveways to minimize negative effects of traffic flow along the corridor. For new developments, this can be accomplished through good site design and by limiting the number of new access points along the roadway.
- Consolidate the flow of traffic to and from select existing sites by closing one or more driveways. This can be accomplished by promoting interconnectivity and cross-access between existing and proposed developments.

Right-of-Way Requirements

Generally, the recommendations presented here can be accomplished within available right-of-way, with three exceptions.

1. The proposed cross-access improvements (see recommended access plan) along the US 64 impact several businesses. Most likely these improvements only will be realized through redevelopment and rezoning opportunities (i.e., as a requirement of the rezoning process).

2. New collector/connector streets (i.e., 2-lane facilities) as seen in **Chapter 3** would be required as a part of the development review process, ultimately providing an interconnected system of well-design streets. In some cases, stub-outs of the new connections will be constructed to adjoin with adjacent undeveloped property. These stub-outs should be signed as "future street connection" to avoid confusion and ensure future connections.

3. Planting street trees along US 64/Dixie Drive and constructing the multi-use path (greenway system) along tributaries within the surrounding neighborhoods would not necessarily require additional right-of-way to be purchased by the City. Instead, these improvements would

require an agreement (i.e., easement) between the City and the adjacent land owners that allows the City to utilize this portion of the property. The concession should require the City to maintain the facilities following construction.

Probable Construction Costs

As part of the corridor planning process, probable cost estimates were developed for each major element of the corridor improvements. These cost estimates were prepared in year 2010 dollars and do not include right-of-way costs. The probable construction cost figures are based on unit cost values provided by NCDOT. The cost associated with development and redevelopment activities is not included in this estimate. The total cost estimate for each element included the following categories:

- Roadway and pavement
- Landscaping
- Traffic signal upgrades
- Pedestrian level improvements
- Design services
- Contingency

A summary of construction by phased improvement is provided in the Action Plan.

Responsible Agencies

The agency responsible for implementing the recommended corridor improvements also was identified. Some of the proposed improvements within the study area cross over right-of-way that is owned by different public and private agencies. Some improvements will occur as a result of development opportunities. In some cases, the City may elect to use public dollars to implement an intersection improvement or gateway treatment. The State may desire a Spot Safety improvement project for a section of US 64 or a connectivity enhancement. Whatever the desired need, the majority of responsibility for implementing the boulevard infrastructure and access management improvements along the US 64 corridor will be a coordinated effort between NCDOT, the City, and the County. Since this is a state-maintained facility, NCDOT has the responsibility to address locations that may be suffering from safety problems, regardless of other congestion or corridor concerns. This responsibility must remain a consideration when prioritizing and addressing corridor improvements. Some connectivity improvements will be the responsibility of private property owners looking to redevelop land.

Construction Phasing

The timeframe needed for implementation was a consideration for the study area improvements. Factors that can affect the timeframe may include:

- Funding availability
- Permitting
- Right-of-way acquisition
- Public support or opposition

Not all of the improvements can be made at one time. Also, what's important to local stakeholders may not be as important to State officials and vice versa. When preparing construction documents for the recommended improvements, City and County officials still may want to consider design treatments for select intersections (such as curb-casing around corners) to protect their investment from heavy truck traffic that remains in the corridor for serving local destinations (e.g., delivery trucks for area businesses). Signalized side street intersections should be considered for incorporation of additional turn lanes. Turn lane capacity on these roadways would help move cars more quickly through these intersections, thereby minimizing needed green times for the minor legs. Other considerations such as defined edge lines in areas where gutters have been paved into or bulbouts to accommodate freight traffic in certain areas should also be evaluated on an as-needed basis for proposed improvements.

The following ***Action Plan*** provides a framework for making transportation decisions along US 64. Each project can be represented as a "stand alone" improvement with independent utility. Some projects should be implemented as a part of another, like the plantable island. That is, some connectivity improvements will have to be made prior to constructing the island to provide more than one way to access a property. The following information provides the proposed timeframe of implementation. The timeframe of project recommendations is addressed in two phases. Projects in Phases I are identified for short to near-term implementation prior to 2021. Phase II projects are identified for long-term implementation and may require investment by the development community.

Table 5.1 – Action Plan Matrix – Policy & Regulatory Items

	Cost Estimate[A]	Timeframe[B]	Responsible Party
Adopt the US 64 Corridor Study	N/A	2011	Asheboro/NCDOT/RPO
Continue to require developers to fund roadway improvements that are rational and proportional to the impact created by development	N/A	2011(initiate)	Asheboro/NCDOT
Balance the corridor mobility needs with other priorities such as the function of the street, corridor relationship to land use, urban design, and the promotion of alternate modes	N/A	2011 (initiate)	Asheboro/NCDOT/RPO
Review land development and redevelopment applications to identify opportunities to connect bikeways, greenways, and sidewalks with adjacent neighborhoods, parks, schools, offices, shops, and public spaces as identified in the Bicycle and Pedestrian improvements (Cpt 3)	N/A	2012 (initiate)	Asheboro
Consider revising the posted speed limit on US 64 (Dixie Drive) between: 1) Mack Road/Fisher Circle and Presnell Street to 45 mph	N/A	2012	NCDOT
Control the number of new signals along the US 64 corridor to limit congestion and stop-and-go traffic	N/A	2012 (initiate)	Asheboro/NCDOT
Work cooperatively with the City and NCDOT during the next update of their Capital Improvement Program (CIP) and Transportation Improvement program to incorporate the high priority improvements of this study	N/A	2012	Asheboro/NCDOT
Consider the creation of an overlay ordinance. The ordinance will provide a legal framework for the City to administer and enforce consistent access management standards and sustainable design along the corridor as depicted in this study. The ordinance should contain rules and requirements for the "core" components of the Concept Design Plans, including minimum spacing standards for traffic signals, connectivity, and driveways; and provisions for corner clearance. The ordinance also should require cross access between adjacent commercial properties, consolidation/elimination of excessive driveways, and retrofitting site access to the side and rear portions of the site	N/A	2013	Asheboro
Construct cross access connections between complimentary businesses along the US 64 corridor	N/A	2013 (initiate)	Asheboro/NCDOT
Update City ordinances to clarify design guidance for sidewalk, greenways, and multi-use paths	N/A	2014	Asheboro
Revise local land development regulations to improve bicycle and pedestrian accommodations internally and adjacent to thoroughfares for all major subdivisions	N/A	2015	Asheboro

[A] Cost estimate includes estimated design cost and twenty percent contingency. Probable construction cost estimate is engineer's approximation in current year dollars and is subject to change based on increased construction materials, design, or time of implementation.

[B] Timeframe for implementation is an estimate based on project need and available funding. Actual timeframe may vary based on externalities. All projects and "Action Items" have been vetted through a collaborative process which included the following agencies: City of Asheboro, NCDOT, Triad RPO and Randolph County

	Cost Estimate[A]	Timeframe[B]	Responsible Party
City officials should continually monitor new development and public investments in the study area to ensure fulfillment of the community's vision for sustainable development and improved sense of place.	N/A	2011 (initiate)	Asheboro
The Planning Department should use the general development map presented herein as a guide for amending the future land use map included in the *City of Asheboro Land Development Plan*.	N/A	2011(initiate)	Asheboro
Revise local land development regulations to require traffic impact studies for major subdivisions.	N/A	2012	Asheboro
Revise local land development regulations to increase street connectivity adjacent to, and mobility within a development site.	N/A	2013 (initiate)	Asheboro
Redevelop existing strip development centers within the study area to become pedestrian-friendly environments that allow visitors access to multiple businesses in one trip.	N/A	2013 (initiate)	Asheboro
Build on the momentum from the branding concept presented in this chapter to complete a comprehensive branding program for the US 64 corridor.	N/A	2015 (initiate)	Asheboro
The City should consider creating one or more new zoning district(s) that encourage compact, mixed-use development comprised of residential and non-residential uses.	N/A	2015 (initiate)	Asheboro
Officials for the City of Asheboro should move quickly to limit new development along the bypass to proposed interchange locations. This initiative will help protect the economic vitality of US 64 Business well into the future.	N/A	2016 (initiate)	Asheboro/NCDOT
Revise local land development regulations that consider in some zoning districts - landscaping, parking lot design, signage, non-vehicular site circulation, building massing and character, façade treatments, and architectural unity on a site.	N/A	2017 (initiate)	Asheboro
Revise local land development regulations to implement access management standards for the US 64 Corridor.	N/A	2019	Asheboro/NCDOT

[A] Cost estimate includes estimated design cost and twenty percent contingency. Probable construction cost estimate is engineer's approximation in current year dollars and is subject to change based on increased construction materials, design, or time of implementation.

[B] Timeframe for implementation is an estimate based on project need and available funding. Actual timeframe may vary based on externalities. All projects and "Action Items" have been vetted through a collaborative process which included the following agencies: City of Asheboro, NCDOT, Triad RPO and Randolph County

Table 5.2 – Action Plan Matrix – Roadway Items

Interim (2010-2020)	Cost Estimate	Timeframe	Responsible Party
Walmart Intersection Improvements — Construct additional left turn lane into shopping center, crosswalks and signal upgrades.	$490,000	2012	Asheboro/NCDOT/Walmart
Restaurant Row — Improve access, extend Country Club Drive, modify signal.	$410,000	2014	Asheboro/NCDOT
South Park Street Intersection Improvements — Enhance bicycle/pedestrian improvements at intersection (e.g. high visibility crosswalks, pedestrian countdown signals, pedestrian-level lighting, sidewalks, etc.).	$170,000	2015 (initiate)	Asheboro/NCDOT
Zoo Parkway — Improve operation and capacity through additional left turn lanes, widen southbound Zoo Parkway to 2-lanes.	$490,000	2015	Asheboro/NCDOT
Pursue Enhancement Funds, Safe Routes to School and other grant programs to fully fund and implement the following sidewalk improvements to US 64/Dixie Drive. See **Conceptual Design Plans** (end of document). 1. NC 49 to South Park Street – 4,800' (Probable Construction Cost ***$240,000***) 2. Park Street to Zoo Parkway – 5,600' (Probable Construction Cost ***$280,000***) 3. Zoo Parkway to Browers Chapel Road – 9,200' (Probable Construction Cost ***$450,000***) 4. Browers Chapel Road to Salisbury Street – 12,400' (Probable Construction Cost ***$600,000***) 5. Salisbury Street to Presnell Street – 11400' (Probable Construction Cost ***$560,000***)	$2.13 million	2016 (initiate)	Asheboro/RPO/Randolph County Schools
Zoo Parkway Widening — Widen Zoo Parkway (2000') southbound to 2-lanes.	$1.6 million	2016	NCDOT
Provide enhanced signage and wayfinding for visitors coming to and from the NC Zoo.	$7.1 million	2017	Asheboro/NCDOT/Zoo
Signal System — Improve signal system and the flow of traffic to limit "stop-n-go" traffic conditions.	$400,000	2018	NCDOT
Atlantic Ave/ Cliff Road Connector — Construct new 2-lane connection (1150') from Zoo Parkway to Cliff Road to enhance traffic circulation and ingress/egress options for Zoo and local traffic.	$1.1 million	2018 (initiate)	NCDOT
Walmart/ NC 42 Connector — Construct additional access improvements to NC 42 (1250').	$1.2 million	2020 (initiate)	Asheboro/NCDOT/Walmart
Construct backdoor access (parallel to US 64) between S. Fayetteville St and Shamrock Road to enhance access to businesses.	N/A	2020 (initiate)	Asheboro

Long -Term (2021-2035)	Cost Estimate	Timeframe	Responsible Party
Aggressively pursue full funding and implementation of the following streetscape/median priority roadway improvements (plantable island, streetscape, laneage and resurfacing)*. See **Conceptual Design Plans** (end of document). A. NC 49 to South Park Street. (Probable Construction Cost ***$3.6 million***) B. S. Park Street to Zoo Parkway. (Probable Construction Cost ***$2.3 million***) C. Zoo Parkway to Browers Chapel Road. (Probable Construction Cost ***$3.7 million***) D. Browers Chapel Road to Salisbury Street. (Probable Construction Cost ***$5.0 million***) E. Salisbury Street to Presnell Street. (Probable Construction Cost ***$4.6 million***)	$19.2 million	2021 (initiate)	NCDOT
Construct backdoor access (parallel to US 64) between NC 42 (at Skyline Drive) and E. Salisbury Street. Enhance access to businesses.	N/A	2021(initiate)	Asheboro
Extend Mack Road from NC 49 to US 64 and close existing cross-access.	$700,000	2023	NCDOT
Vista Parkway extension – extend Vista Parkway to Luck Road for enhanced connectivity.	$780,000	2026	Asheboro/NCDOT
Complete the collector street network identified in the Recommended Access Plan (Figure 4.4) to provide slower-speed, lower-volume "Complete Streets" suitable for pedestrians and many cyclists.	N/A	2030	Asheboro

[A] Cost estimate includes estimated design cost and twenty percent contingency. Probable construction cost estimate is engineer's approximation in current year dollars and is subject to change based on increased construction materials, design, or time of implementation.

[B] Timeframe for implementation is an estimate based on project need and available funding. Actual timeframe may vary based on externalities. All projects and "Action Items" have been vetted through a collaborative process which included the following agencies: City of Asheboro, NCDOT, Triad RPO and Randolph County

[*] There is a preference to have secondary access unless safety is the primary concern with no other alternative countermeasure for improvement.

Table 5.3 – Action Plan Matrix – Bicycle & Pedestrian Items	Cost Estimate	Timeframe	Responsible Party
Pursue Enhancement Funds, Safe Routes to School and other grant programs to fully fund and implement the following sidewalk improvements to US 64/Dixie Drive. See **Conceptual Design Plans** (end of document). 1. NC 49 to South Park Street – 4,800' (Probable Construction Cost ***$240,000***) 2. Park Street to Zoo Parkway – 5,600' (Probable Construction Cost ***$280,000***) 3. Zoo Parkway to Browers Chapel Road – 9,200' (Probable Construction Cost ***$450,000***) 4. Browers Chapel Road to Salisbury Street – 12,400' (Probable Construction Cost ***$600,000***) 5. Salisbury Street to Presnell Street – 11400' (Probable Construction Cost ***$560,000***)	$2.13 million	2011 (initiate)	Asheboro/Randolph County
Pursue connectivity for pedestrians and cyclists with pathways in places where street connections are not feasible or acceptable.	N/A	2012 (initiate)	Asheboro
Enhance crosswalks and pedestrian signals at the following priority locations along US 64: ✓ South Park Street – existing upgrade ✓ S Cox Street/Zoo Parkway ✓ Arrow Wood Road ✓ Browers Chapel Road ✓ Center Point Plaza/Walmart Entrance ✓ NC 42 ✓ Randolph Mall Entrance	$7,000 (per location)	2013 (initiate)	Asheboro
Sponsor a Bicycle Rodeo and Ride-a-bout to promote bicycle use and proper bicycling techniques.	N/A	2014 (initiate)	Asheboro/RPO
Use federal and state grants to implement infrastructure-related and non-infrastructure projects and programs associated with walking and bicycling to all public schools located within the US 64 study area. This should include: conduct in-school training for fourth-grade students about bike and pedestrian safety, Train the Trainers with adult training in bike and pedestrian safety, and conduct a "Walking School Bus", "Bike Rodeo" or "Bicycle Train" with students.	N/A	2014 (initiate)	Asheboro/Randolph County
Consider a new Police program to distribute "coupons" to Asheboro youth for demonstrating responsible bicycling in a "Catch'em biking right" campaign.	N/A	2015	Asheboro Police Dept.
Implement a "Bicycle Awareness Program" to educate kids on the proper cycling "rules of the road", helmet laws, and safety measures.	N/A	2017 (initiate)	Asheboro/Randolph County
Conduct a feasibility study to evaluate the suitability, relative impacts and costs associated with a proposed greenway along the residential tributaries as identified in Figure 3.2. A ten foot wide multi-use path would provide an additional access to the corridor and allow non-vehicular mobility to and from numerous neighborhood connections in the central study area. (Study Cost ***$100,000*** – Probable Construction Cost ***$1 million***).	$100,000	2018	Asheboro

Table 5.4 – Action Plan Matrix – Transit and ITS Items	Cost Estimate	Timeframe	Responsible Party
Study the feasibility of deviated fixed route/shuttle service to destination/activity nodes along the US 64 corridor. Study should utilize a statistically valid survey to identify demand and cost feasibility.	$80,000	2018	Asheboro/NCDOT/RPO
Study Park-n-Ride and Express Bus services feasibility as identified in the Piedmont Triad RPO transit recommendations. Long-term services may improve peak seasonal traffic flow to/from the NC Zoo.	$80,000	2020	Asheboro/NCDOT/RPO
Install Intelligent Transportation System infrastructure commonly referred to as Advanced Traveler Warning System: ✓ Installation of new closed circuit television (CCTV) cameras at key intersections like Zoo Parkway and NC 42 (Cost *$20,000* per camera) ✓ Installation of new dynamic message signs, including one on the eastbound US 64 (at US 220) approach, one on the westbound US 64 approach near NC 42 to facilitate better traveler information during peak Zoo season (Cost *$75,000* per DMS)	$190,000	2020	NCDOT
Construct bus "pullout" stops along US 64 as a part of the "long-term" median and corridor construction phasing. The following locations are identified on the Conceptual Design Plans (end of document): ✓ South Park Street ✓ S Cox Street/Zoo Parkway ✓ Arrow Wood Road ✓ Browers Chapel Road ✓ Center Point Plaza/Walmart Entrance ✓ NC 42 ✓ Randolph Mall Entrance	N/A	2021 (initiate)	NCDOT

Table 5.5 – Action Plan Matrix – Funding Items	Responsible Party
Lobby NCDOT and members of the State Board of Transportation (BOT) to include partial funding of the design and implementation of recommended improvements in the next Transportation Improvement Program (TIP).	Asheboro/Randolph County/RPO
Leverage NCDOT District funding allocations for "spot safety" improvement monies to implement safety improvements at key intersections along the US 64 corridor. See **Chapter 3** recommendations for intersection priority list.	Asheboro/NCDOT
Solicit NCDOT Division Hazard Elimination, Governor's Highway Safety Program (GHSP), Small Construction and Contingency funds improvement monies to implement corridor access and safety improvements at key intersections and segments along the US 64 corridor.	Asheboro/NCDOT
Pursue Enhancement Grants to construct bike, pedestrian and streetscape improvements as outlined in **Chapter 3** recommendations. State and federal grants can play an important role in implementing strategic elements of the transportation network. Several grants have multiple applications, including Transportation Enhancement Grants as well as State and Federal Transit Grants. The Enhancement Grant program, established by Congress in 1991 through the Intermodal Surface Transportation Efficiency Act (ISTEA), ensures the implementation of projects not typically associated with the road-building mindset. While the construction of roads is not the intent of the grant, the construction of bicycle and pedestrian facilities is one of many enhancements that the grant targets and could play an important role in enhancing the pedestrian safety and connectivity along the US 64 corridor.	Asheboro/RPO
Aggressively pursue Safe Routes to School (SRTS) funding to enhance bicycle and pedestrian improvements in proximity to the public schools along the US 64 corridor. SRTS is a program receiving federal funding through the newest SAFETEA-LU legislation. The program provides funding for individual schools to create route plans or develop facilities that create a safer walking and biking environment for their students. North Carolina has a yearly application program for which any school, school district, municipality or other governmental body, or non-profit association may apply. For more information, visit www.saferoutesinfo.org/. Projects funded through the SRTS program receive 100% federal funding.	Asheboro/Randolph County
Consider passing a Transportation Bond referendum to potentially fund the US 64 recommendations. Projects that historically have been funded through transportation bonds include sidewalks, road extensions, intersection treatments, new road construction, and streetscape enhancements.	Asheboro
Aggressively pursue Recreational Trails Program to construct portions of the greenway system in accordance with this Study. According to the FHWA, "the Recreational Trails Program (RTP) provides funds to the States to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. The RTP is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA). Federal transportation funds benefit recreation including hiking, bicycling, in-line skating, equestrian use, cross-country skiing, snowmobiling, off-road motorcycling, all-terrain vehicle riding, four-wheel driving, or using other off-road motorized vehicles."	Asheboro/Randolph County/RPO

The City Council and County Board of Commissioners, in partnership with the Piedmont Triad RPO, should explore the feasibility of implementing one or more of the preferred funding strategies (Table 5.5) identified by the community planning participants. Initial considerations for implementing the various funding strategies should include:

- The feasibility of implementing the specific funding strategy in the City of Asheboro, including required state authority, regulatory limitations, or political feasibility.
- The extent of the political jurisdiction that would be subject to the provisions of the new funding strategy (e.g., study area or county-wide).
- The amount of revenue that can be generated from the funding strategy.
- The level of local funding match that may be required.
- A list of eligible projects or planning initiatives that could be implemented with the funding source.

Envisioning Success

A primary purpose of the US 64 Corridor Study is to communicate the framework for developing sustainable transportation with consideration to the multimodal, mobility, and economic development aspects of the corridor. Through the adoption of local policies and procedures, the incremental construction of improvements can effectively occur.

With the high development potential of this strategic corridor, the City of Asheboro, Randolph County, and NCDOT should expect a fair share of the improvements to be funded by the development community. The level to which developers will be required to aid in the construction of facilities affected by residential and commercial growth will be determined in the application and development review process. Public-private venture agreements also can be leveraged to implement a specific improvement, especially if there are identified benefits or incentives for both parties. Inevitably, some improvements will not be funded by the development community and fall upon the responsibility of the City, County, and NCDOT. Although funds are limited and generally programmed well in advance, a few funding categories are potential sources for financing these improvements. Some funding options require local matching funds.

An incremental funding approach would be possible, but is not as attractive because the full benefit of the collective improvements would not be realized for quite some time. Alternative funding sources for expediting construction include special assessments and/or a locally-adopted bond referendum or tax incentives.

Through the development of this strategic corridor planning initiative, several key stakeholders were collaborated with to establish our guiding principles for the US 64 Corridor Study. Property owners, elected officials, developers, business owners and civic leaders came together to establish a corridor vision – "***To create a Plan that enhances the safety, mobility, and "gateway" appearance of the US 64 corridor that promotes quality development, connectivity and economic vitality, while protecting the community character***". This collective vision will move forward through the efforts of those engaged with the planning process or champions of the plan. In collaboration with state and local officials, their collective efforts will lead to a safe, multimodal corridor that supports sustainable development opportunities through the heart of Asheboro's commercial gateway.