



Town of Pittsboro Comprehensive Transportation Plan



December 2015

Town of Pittsboro Comprehensive Transportation Plan

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In Cooperation with: Town of Pittsboro
Chatham County
Triangle Area Rural Planning Organization
N.C. Department of Transportation:
Transportation Planning Branch

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Executive Summary

In July of 2010, the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT), the town of Pittsboro, Chatham County, and the Triangle Area Rural Planning Organization (RPO) initiated a study to cooperatively develop the Pittsboro Comprehensive Transportation Plan (CTP), which includes the town of Pittsboro and the town's extraterritorial jurisdiction (ETJ). This is a long range multi-modal transportation plan that covers transportation needs through 2035. This plan only covers highway planning; all other modes of transportation will be evaluated as part of the Chatham County CTP. This plan does not cover standard bridge replacements, routine maintenance, or minor operations issues. Refer to Appendix A for contact information on these types of issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening and public input, which are detailed in Chapter 1. Figure 1 shows the CTP maps, which were mutually adopted by NCDOT in 2011. Descriptive information and definitions for designations depicted on the CTP maps can be found in Appendix B. Implementation of the plan is the responsibility of the town of Pittsboro, Chatham County, the Triangle Area RPO, and NCDOT. Refer to Chapter 2 for information on the implementation process.

This report documents the recommendations for improvements that are included in the Pittsboro CTP. The major recommendations for improvements are listed below. More detailed information about these and other recommendations can be found in Chapter 2.

Note: Since the adoption of the Pittsboro Comprehensive Transportation Plan, the Strategic Highway Corridor plan was replaced by the Strategic Transportation Corridors (STC) plan. It was adopted by the Board of Transportation on March 4, 2015. The goals of STC are similar to Strategic Highway Corridors, however fewer corridors are identified in STC. Pittsboro's plan was developed under the Strategic Highway Corridor criteria, and US 15-501 is not currently a Strategic Transportation Corridor.

- **US 15-501/NC 87:** Expand from the southern planning boundary to approximately the northern intersection of Old Sanford Road (SR 2219) and US 15-501 to a four lane expressway facility. Provide a four lane expressway on new location from the northern intersection of Old Sanford Road (SR 2219 and US 15-501 to the current US 64 Bypass.
- **New location:** Construct a boulevard south and east of Pittsboro from the northern intersection of Old Sanford Road (SR 2219) to US 15-501 north of Pittsboro across from Russell Chapel Church Road (SR 1520) at US 15-501. This facility should be designed such that it can be converted to a six lane facility when volumes warrant such expansion.

- **US 15-501:** Upgrade the existing facility to a four lane expressway from US 64 to north of the Pittsboro ETJ.
- **US 64:** Upgrade the existing facility to a four lane freeway from the western Pittsboro ETJ to US 64 Business and from US 64 Business to the eastern ETJ

Adopted by:

Town of Pittsboro

Date: August 22, 2011

Chatham County

Date: September 19, 2011

NCDOT

Date: November 3, 2011

Endorsed by:

Triangle Area RPO

Date: August 18, 2011

Recommended by:

Transportation Planning Branch

Date: October 12, 2011

NOTES:

Sheets 3, 4, and 5 not yet developed.



Pittsboro

Chatham County

North Carolina

Comprehensive Transportation Plan

Plan date: July 8, 2011

Sheet 1 **Adoption Sheet**

Sheet 2 **Highway Map**

Sheet 3 **Public Transportation
and Rail Map**


Sheet 4 **Bicycle Map**

Sheet 5 **Pedestrian Map**

 Schools

 Airports

 Roads

 Rivers and Streams

 Water Bodies

 Parks and Game Lands

 Municipal Boundary

 Planning Area Boundary

0 0.5 1 2 Miles

Figure 1
Sheet 1 of 5

Base map date:
August, 2007





Refer to CTP document for more details


Back of Figure

Plan date: July 8, 2011




Expressways

 Existing

 Needs Improvement

 Recommended

Boulevards

	Existing
	Needs Improvement
	Recommended

Other Major Thoroughfares

Existing

Needs Improvement






Recommended

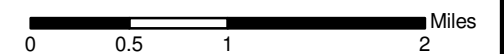
Minor Thoroughfares

———— Existing

———— Needs Improvement

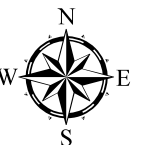
----- Recommended

-  Existing Interchange
-  Improved Interchange
-  Proposed Interchange
-  Existing Grade Separation
-  Proposed Grade Separation

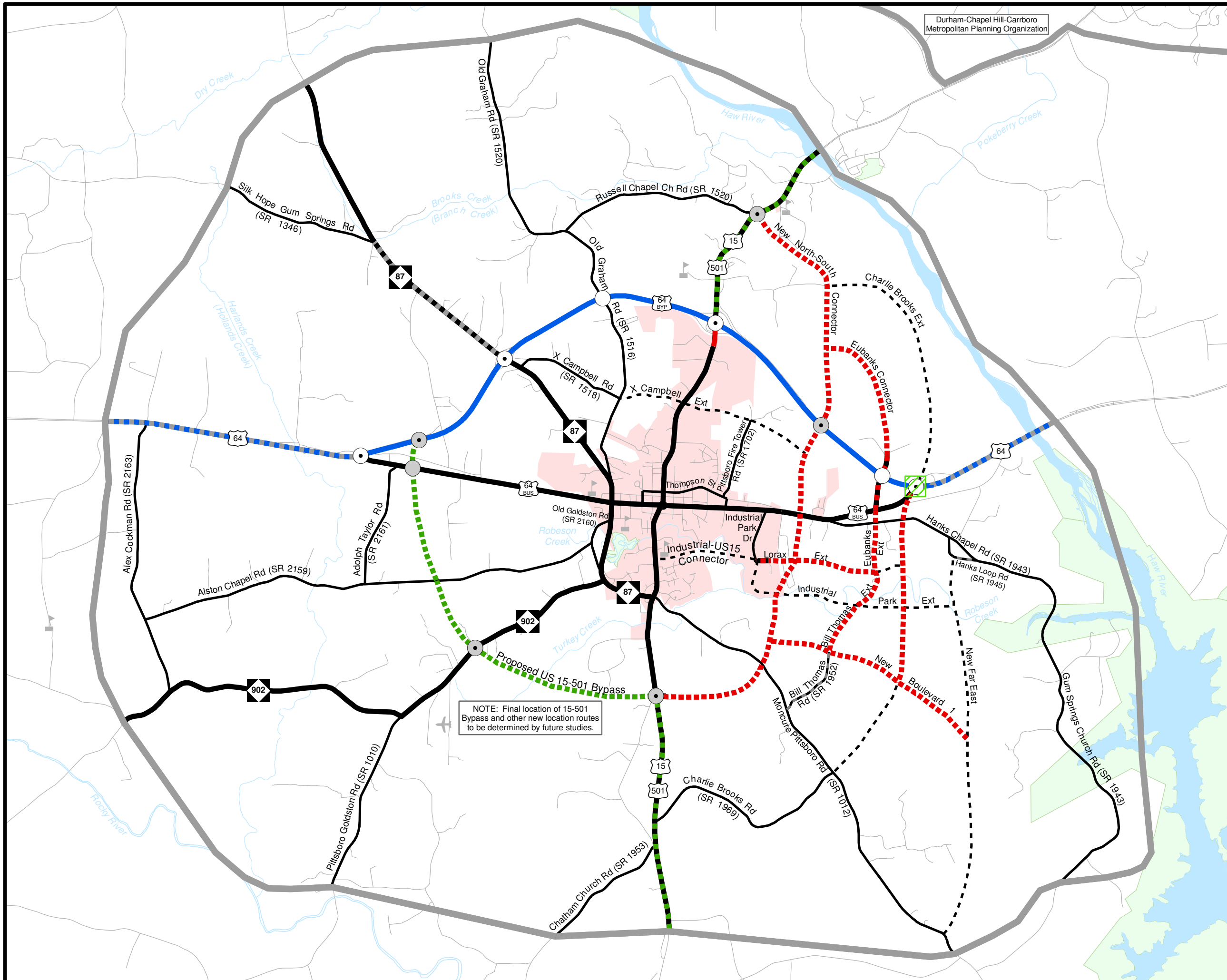


Sheet 2 of 5

Base map date:
August, 2007



Refer to CTP document for more details



Back of Figure

1. Analysis of the Existing and Future Transportation System

A Comprehensive Transportation Plan (CTP) is developed to ensure that the transportation system will meet the needs of the region for the planning period. The CTP serves as an official guide to providing a well-coordinated, efficient, and economical transportation system for the future of the region. This document should be utilized by the local officials to ensure that planned transportation facilities reflect the needs of the public, while minimizing the disruption to local residents, businesses and environmental resources.

In order to develop a CTP, the following are considered:

- ❖ Analysis of the transportation system, including any local and statewide initiatives;
- ❖ Impacts to the natural and human environment, including natural resources, historic resources, homes, and businesses;
- ❖ Public input, including community vision and goals and objectives.

1.1 Analysis Methodology and Data Requirements

Reliable forecasts of future travel patterns must be estimated in order to analyze the ability of the transportation system to meet future travel demand. These forecasts depend on careful analysis of the character and intensity of existing and future land use and travel patterns.

An analysis of the transportation system looks at both current and future travel patterns and identifies existing and anticipated deficiencies. This is usually accomplished through a capacity deficiency analysis, a traffic crash analysis, and a system deficiency analysis. This information, along with population growth, economic development potential, and land use trends, is used to determine the potential impacts on the future transportation system.

Roadway System Analysis

An important stage in the development of a CTP is the analysis of the existing transportation system and its ability to serve the area's travel demand. Emphasis is placed not only on detecting the existing deficiencies, but also on understanding the causes of these deficiencies. Roadway deficiencies may result from inadequacies in pavement widths, intersection geometry, or intersection controls. System deficiencies may result from missing travel links, bypass routes, loop facilities, or radial routes; or improvements needed to meet statewide initiatives.

One of those statewide initiatives is the Strategic Highway Corridor (SHC) Vision Plan¹ adopted by the Board of Transportation on September 2, 2004. The SHC Vision Plan is

¹ For more information on the SHC Vision Plan, go to:
<https://connect.ncdot.gov/projects/planning/Pages/StrategicHighwayCorridors.aspx>.

an initiative to protect and maximize the mobility and connectivity on a core set of transportation corridors throughout North Carolina, 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.

The primary purpose of the SHC Vision Plan is to provide a network of high-speed, safe, reliable highways throughout North Carolina. The primary goal to support this purpose is to create a greater consensus towards the development of a genuine vision for each corridor – specifically towards the identification of a desired facility type (Freeway, Expressway, Boulevard, or Thoroughfare) for each corridor. Individual CTPs shall incorporate the long-term vision of each corridor.

Since the adoption of the Pittsboro Comprehensive Transportation Plan, the Strategic Highway Corridor plan was replaced by the Strategic Transportation Corridors (STC) plan. It was adopted by the Board of Transportation on March 4, 2015. The goals of STC are similar to Strategic Highway Corridors above, however fewer corridors are identified in STC. Pittsboro's plan was developed under the Strategic Highway Corridor criteria.

In the development of this plan, travel demand was projected from 2010 to 2035 using the town of Pittsboro travel demand model. Travel demand models are developed to replicate travel patterns on the existing transportation system as well as to estimate travel patterns for 2035. In addition, local land use plans and growth expectations were used to develop future growth rates and patterns. Refer to Appendix I for more detailed information on growth expectations and the socio-economic data forecasting methodology.

Existing and future travel demand is compared to existing roadway capacities. Capacity deficiencies occur when the traffic volume of a roadway exceeds the roadway's capacity. Roadways are considered near capacity when the traffic volume is at least eighty percent of the capacity. Refer to Figures 2, 3A and 3B for existing and future capacity deficiencies. The 2035 traffic volumes in Figure 3A are an estimate of the traffic volume in 2035 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the 2011 – 2020 Transportation Improvement Program² (TIP).

Capacity is the maximum number of vehicles which have a “reasonable expectation” of passing over a given section of roadway, during a given time period under prevailing roadway and traffic conditions. Many factors contribute to the capacity of a roadway including the following:

- ❖ Geometry of the road (including number of lanes), horizontal and vertical alignment, and proximity of perceived obstructions to safe travel along the road;

² For more information on the TIP, go to: <https://connect.ncdot.gov/projects/planning/Pages/default.aspx>

- ❖ Typical users of the road, such as commuters, recreational travelers, and truck traffic;
- ❖ Access control, including streets and driveways, or lack thereof, along the roadway;
- ❖ Development along the road, including residential, commercial, agricultural, and industrial developments;
- ❖ Number of traffic signals along the route;
- ❖ Peaking characteristics of the traffic on the road;
- ❖ Characteristics of side-roads feeding into the road; and
- ❖ Directional split of traffic or the percentages of vehicles traveling in each direction along a road at any given time.

The relationship of travel demand compared to the roadway capacity determines the level of service (LOS) of a roadway. Six levels of service identify the range of possible conditions. Designations range from LOS A, which represents the best operating conditions, to LOS F, which represents the worst operating conditions.

LOS D indicates “practical capacity” of a roadway, or the capacity at which the public begins to experience delay. The practical capacity for each roadway was developed based on the 2000 Highway Capacity Manual using the NCLOS Program. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C for new facilities. Refer to Appendix E for detailed information on LOS.

Traffic Crash Assessment

Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. A crash analysis was performed for the Pittsboro CTP for crashes occurring in the planning area between January 1, 2008 and December 31, 2010. During this period, a total of 17 intersections were identified as high crash locations as illustrated in Figure 4. Refer to Appendix G for a detailed crash analysis.

Bridge Deficiency Assessment

Bridges are a vital element of a highway system. First, they represent the highest unit investment of all elements of the system. Second, any inadequacy or deficiency in a bridge reduces the value of the total investment. Third, a bridge presents the greatest opportunity of all potential highway failures for disruption of community welfare. Finally, and most importantly, a bridge represents the greatest opportunity of all highway failures for loss of life. For these reasons, it is imperative that bridges be constructed to the same design standards as the system of which they are a part.

The NCDOT Structures Management Unit inspects all bridges in North Carolina at least once every two years. Bridges having the highest priority are replaced as federal and state funds become available. Nine deficient bridges were identified on roads evaluated as part of the CTP and are illustrated in Figure 5. As deficient bridges are replaced, every consideration should be given to proposed CTP recommendation and cross section associated with the recommendation. Table 4 in Appendix F gives a listing of the deficient bridges identified in the CTP and the ID number associated with CTP project proposal.



**2035 Volumes
and
Capacity Deficiencies
No Build
Pittsboro
Comprehensive
Transportation Plan**

Legend

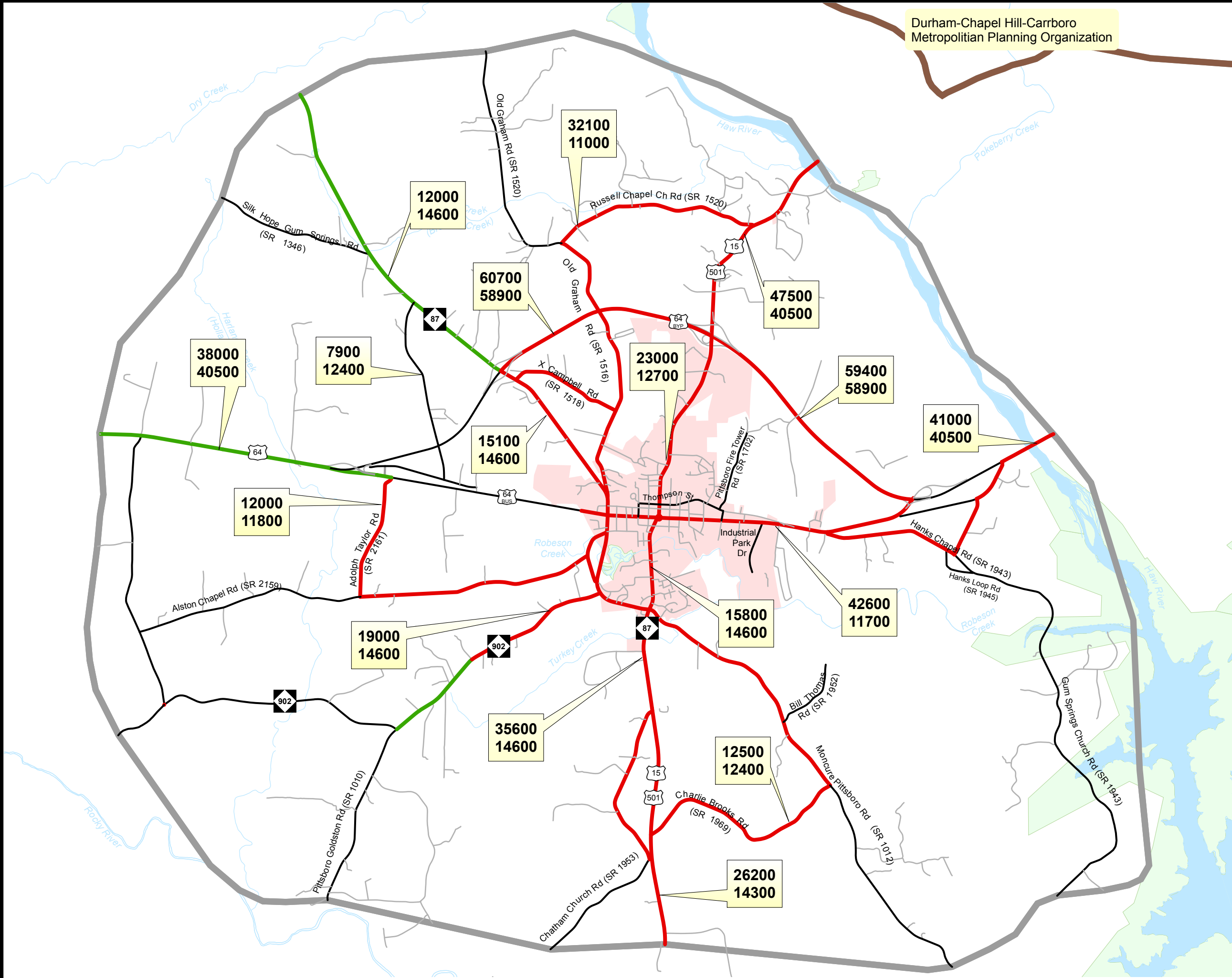
- 2035 Volumes
2008 Capacity**
- Other Roads
 - Near Capacity
 - Over Capacity
 - Network Roads
 - Pittsboro Municipal Limits
 - DCHC MPO Boundary
 - Planning Area Boundary



0 0.5 1 2 Miles

Figure 3A

Refer to CTP document for more details



Back of Figure

2035 Volumes
2035 with CTP Capacity

-



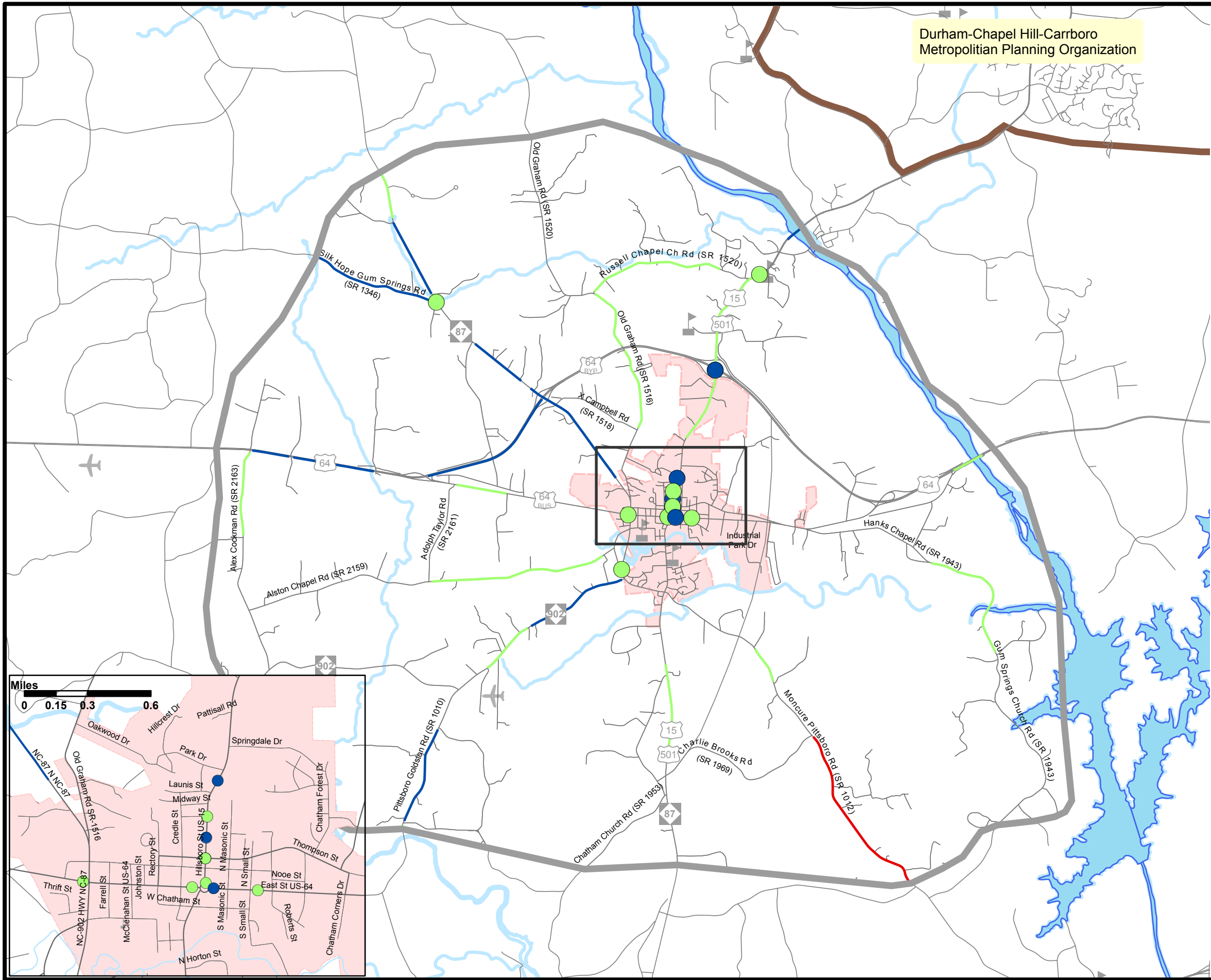


FIGURE 4
Pittsboro
Comprehensive
Transportation Plan
HIGH FREQUENCY
CRASH LOCATIONS

January 1, 2007 to
December 31, 2011

Crash Intersections

- 50 and above
- 40 to 49
- 30 to 39
- 20 to 29
- 10 to 19
- 4 to 9

Crash Sections

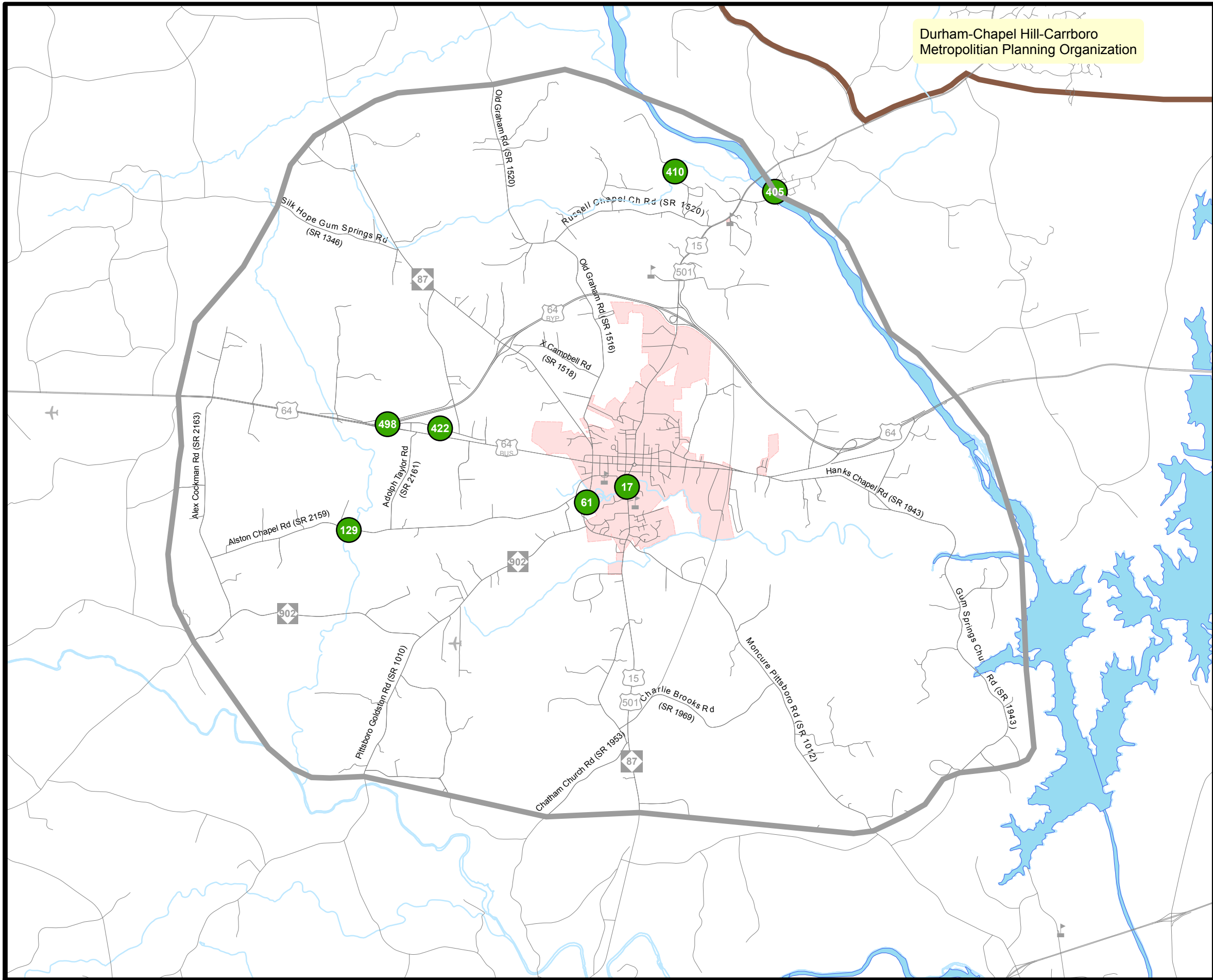
- 50 and above
- 40 to 49
- 30 to 39
- 20 to 29
- 10 to 19
- 4 to 9

- Study Roads
- Roads
- Schools
- Ferry
- Airports
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundaries
- County Boundary

0 0.5 1 2 3 Miles



Base map date: October 7, 2011



Public Transportation and Rail

Public transportation and rail are vital modes of transportation that give alternatives for transporting people and goods from one place to another.

Public Transportation

North Carolina's public transportation systems serve more than 50 million passengers each year. Five categories define North Carolina's public transportation system: community, regional community, urban, regional urban and intercity.

- ❖ Community Transportation - Local transportation efforts formerly centered on assisting clients of human service agencies. Today, the vast majority of rural systems serve the general public as well as those clients.
- ❖ Regional Community Transportation - Regional community transportation systems are composed of two or more contiguous counties providing coordinated / consolidated service. Although such systems are not new, single-county systems are encouraged to consider mergers to form more regional systems.
- ❖ Urban Transportation – There are currently nineteen urban transit systems operating in North Carolina, from locations such as Asheville and Hendersonville in the west to Jacksonville and Wilmington in the east. In addition, small urban systems provide service in three areas of the state. Consolidated urban-community transportation exists in five areas of the state. In those systems, one transportation system provides both urban and rural transportation within the county.
- ❖ Regional Urban Transportation - Regional urban transit systems currently operate in three areas of the state. These systems connect multiple municipalities and counties.
- ❖ Intercity Transportation - Intercity bus service is one of a few remaining examples of privately owned and operated public transportation in North Carolina. Intercity buses serve many cities and towns throughout the state and provide connections to locations in neighboring states, Amtrak passenger station and throughout the United States and Canada. Greyhound and Amtrak Thruway service operate in North Carolina. However, community, urban and regional transportation systems are providing increasing intercity service in North Carolina.

All recommendations for public transportation were covered by the Chatham County CTP. All recommendations for public transportation were coordinated with the local governments and the Public Transportation Division of NCDOT. Refer to Appendix A for contact information for the Public Transportation Division.

Rail

Today North Carolina has 3,684 miles of railroad tracks throughout the state. There are two types of trains that operate in the state, passenger trains and freight trains.

Intercity passenger service is provided by Amtrak which currently operates six passenger services daily in or through North Carolina serving 16 cities across the state. Five of the services are interstate (Crescent, Palmetto, Silver Meteor, Silver Star, and Carolinian passenger trains) and one service (Piedmont passenger train) operates exclusively within North Carolina. In addition to the six passenger services mentioned, Amtrak also operates its Auto Train service which passes through North Carolina but does not make any stops. Amtrak ridership demand has been on a rise in the state. In 2010 ridership was 840,000 and increased to 975,645 passengers in 2013.

The North Carolina Department of Transportation sponsors two passenger trains, the Carolinian and Piedmont. The Carolinian runs between Charlotte and New York City, while the Piedmont train carries passengers from Raleigh to Charlotte and back every day. However, no passenger trains operate over the rail line from High Point that dead ends at Asheboro or over the rail line that runs from Gulf, NC to Greensboro. Combined, the Carolinian and Piedmont carry more than 300,000 passengers each year.

There are two major freight railroad companies that operate in North Carolina, CSX Transportation and Norfolk Southern Corporation. Also, there are more than 17 smaller freight railroads, known as shortlines.

All recommendations for rail were covered by the Chatham County CTP. Rail recommendations were coordinated with the local governments and the Rail Division of NCDOT. Refer to Appendix A for contact information for the Rail Division.

Bicycles & Pedestrians

Bicyclists and pedestrians are a growing part of the transportation system in North Carolina. Many communities are working to improve mobility for both cyclists and pedestrians.

NCDOT's Bicycle Policy, updated in 1991, clarifies responsibilities regarding the provision of bicycle facilities along the 77,000-mile state-maintained highway system. The policy details guidelines for planning, design, construction, maintenance, and operations pertaining to bicycle facilities and accommodations. All bicycle improvements undertaken by NCDOT are based upon this policy.

The 2000 NCDOT Pedestrian Policy Guidelines specifies that NCDOT will participate with localities in the construction of sidewalks as incidental features of highway improvement projects. At the request of a locality, state funds for a sidewalk are made available if matched by the requesting locality, using a sliding scale based on population.

NCDOT's administrative guidelines, adopted in 1994, ensure that greenways and greenway crossings are considered during the highway planning process. This policy was incorporated so that critical corridors which have been adopted by localities for future greenways will not be severed by highway construction.

All recommendations for bicycle and pedestrian facilities were covered by the Chatham County CTP. All recommendations for bicycle and pedestrian facilities were coordinated with the local governments and the NCDOT Division of Bicycle and Pedestrian Transportation. Refer to Appendix A for contact information for the Division of Bicycle and Pedestrian Transportation.

Land Use

G.S. §136-66.2 requires that local areas have a current (less than five years old) land development plan prior to adoption of the CTP. For this CTP, the 2001-2020 town of Pittsboro Land Use Plan was used to meet this requirement.

Land use refers to the physical patterns of activities and functions within an area. Traffic demand in a given area is, in part, attributed to adjacent land use. For example, a large shopping center typically generates higher traffic volumes than a residential area. The spatial distribution of different types of land uses is a predominant determinant of when, where, and to what extent traffic congestion occurs. The travel demand between different land uses and the resulting impact on traffic conditions varies depending on the size, type, intensity, and spatial separation of development. Additionally, traffic volumes have different peaks based on the time of day and the day of the week. For transportation planning purposes, land use is divided into the following categories:

- ❖ Residential: Land devoted to the housing of people, with the exception of hotels and motels which are considered commercial.
- ❖ Commercial: Land devoted to retail trade including consumer and business services and their offices; this may be further stratified into retail and special retail classifications. Special retail would include high-traffic establishments, such as fast food restaurants and service stations; all other commercial establishments would be considered retail.
- ❖ Industrial: Land devoted to the manufacturing, storage, warehousing, and transportation of products.
- ❖ Public: Land devoted to social, religious, educational, cultural, and political activities; this would include the office and service employment establishments.
- ❖ Agricultural: Land devoted to the use of buildings or structures for the raising of non-domestic animals and/or growing of plants for food and other production.
- ❖ Mixed Use: Land devoted to a combination of any of the categories above.

Anticipated future land development is, in general, a logical extension of the present spatial land use distribution. Locations and types of expected growth within the planning area help to determine the location and type of proposed transportation improvements. With this in mind, growth in the Pittsboro area is likely to occur along the major corridors of US 15-501 and US 64 Business. The existing and future land use plan maps for the town of Pittsboro are shown in Figures 6 and 7.

1.2 Consideration of Natural and Human Environment

Environmental features are a key consideration in the transportation planning process. Section 102 of the National Environmental Policy Act³ (NEPA) requires consideration of impacts on wetlands, wildlife, water quality, historic properties, and public lands. While a full NEPA evaluation was not conducted as part of the CTP, every effort was made to minimize potential impacts to these features utilizing the best available data. Any potential impacts to these resources were identified as a part of the project recommendations in Chapter 2 of this report. Prior to implementing transportation recommendations of the CTP, a more detailed environmental study would need to be completed in cooperation with the appropriate environmental resource agencies.

A full listing of environmental features that are typically examined as a part of a CTP study is shown in Tables 1 and 2. Environmental features occurring within the town of Pittsboro is shown in Figure 8.

³ For more information on NEPA, go to: <http://ceq.hss.doe.gov/>.

Table 1 – Environmental Features

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">• Air Quality Pollution Discharge Points• Ambient Water Quality Monitoring Sites• Anadromous Fish Spawning Areas• Animal Operation Permits• Artificial Marine Reefs• Beach Access Sites• Benthic Monitoring Results• Bottom Sediment Sampling Sites• Cemeteries• Churches• Citizen Water Quality Monitoring Sites• Closed Shellfish Harvesting Areas• Coastal Reserves• Conditionally Approved Shellfish Harvesting Areas• Conservation Easements, US Fish & Wildlife Service• Conservation Tax Credit Properties• Discharger Coalitions' Monitoring Sites• Ecosystem Enhancement Program (EEP) Local Watershed Plans, 2004• Ecosystem Enhancement Program (EEP) Targeted Local Watersheds, 2004• Federal Land Ownership• Fish Community Sampling Sites• Fisheries Nursery Areas• Game Lands – Wildlife Resources Commission• Groundwater Incidents, unverified• Groundwater Recharge/Discharge• Hazardous Substance Disposal Sites | <ul style="list-style-type: none">• Hazardous Waste Facilities• Heavy Metal & Organic-Rich Mud• Pollutant Sample Sites• High Quality Water and Outstanding• Resource Water Management Zones• Hurricane Storm Surge Inundation Areas• Land Trust Conservation Properties• Land Trust Priority Areas• Lands Managed for Conservation & Open Space• Macrosite Boundaries• Megasite Boundaries• National Pollutant Discharge Elimination System Sites (NPDES) – Major and Minor• National Wetlands Inventory• North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)Public Water Supply Water Sources• Recreation Projects – Land and Water• Conservation Fund• Shellfish Strata• Significant Aquatic Endangered• Species Habitats• Solid Waste Facilities• State Parks• Submersed Rooted Vasculars• Surface Water Intakes• Trout Streams (DWQ)• Water Distribution Systems – Water Treatment Plants• Water Supply Watersheds• Well Ground Water Intakes |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Additionally, the following environmental features were also considered but are not mapped due to restrictions associated with the sensitivity of the data.

Table 2 – Restricted Environmental Features

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none">• Archaeological Sites• Dedicated Nature Preserves and Registered Heritage Areas• Historic National Register Districts• Historic National Register Structures | <ul style="list-style-type: none">• Historic Study List Districts History Study List Structures• Managed Areas National Heritage Element Occurrences• Significant Natural Heritage Areas |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

1.3 Public Involvement

Public involvement is a key element in the transportation planning process. Adequate documentation of this process is essential for a seamless transfer of information from systems planning to project planning and design.

The Triangle Area RPO requested the development of a comprehensive transportation plan for the town of Pittsboro through a prioritized list of regional needs. A meeting was held with the town of Pittsboro officials in July 2010 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on area transportation needs.

Throughout the course of the study, the Transportation Planning Branch and CDM Smith cooperatively worked with a Steering Committee, which included representatives from the town of Pittsboro, Chatham County, Triangle Area RPO, NCDOT, and members of the public, to provide information on current local plans, to develop transportation vision and goals, to discuss population and employment projections, and to develop proposed CTP recommendations. Refer to Appendix H for detailed information on the vision statement, the goals and objectives survey and a listing of committee members.

The public involvement process included holding two public drop-in sessions in the town of Pittsboro to present the proposed Comprehensive Transportation Plan to the public and solicit comments. The first meeting was held on January 6, 2011 at Central Carolina Community College; the second meeting was held on May 31, 2011 at the Chatham County Agricultural Building. Each session was publicized in the local newspaper and was held from 5:00 PM until 8:00 PM. Four comment forms were submitted during the session held on January 6, 2011. One comment form was submitted during the session held on May 31, 2011.

On September 22, 2010, a meeting was held with a group of concerned citizens. This group had been meeting on a somewhat regular schedule prior to the beginning of the CTP process, in order to discuss future development on the east side of Pittsboro. At this meeting a presentation was shared with the group, introducing them to the CTP process, and sharing opportunities in which they could become involved.

An online comment website was posted using Survey Monkey. A total of 5 responses were submitted online. These results are included in Appendix H.

A public hearing was held on August 22, 2011 during the Pittsboro Board of Commissioners meeting. The purpose of this meeting was to discuss the final plan recommendations and to solicit further input from the public. The CTP was adopted during this meeting.

The Triangle Area RPO endorsed the CTP on August 18, 2011. The North Carolina Board of Transportation voted to mutually adopt the Pittsboro CTP on November 3, 2011.

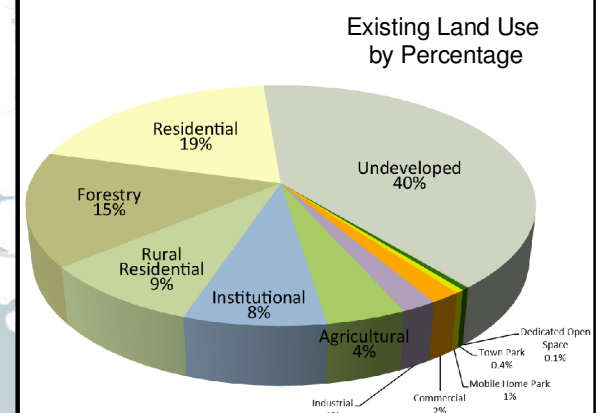
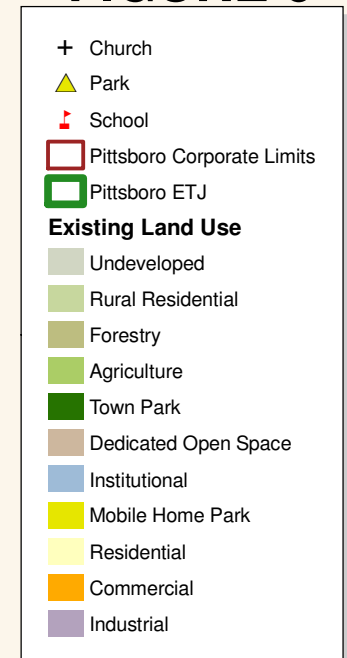
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PITTSBORO, NC

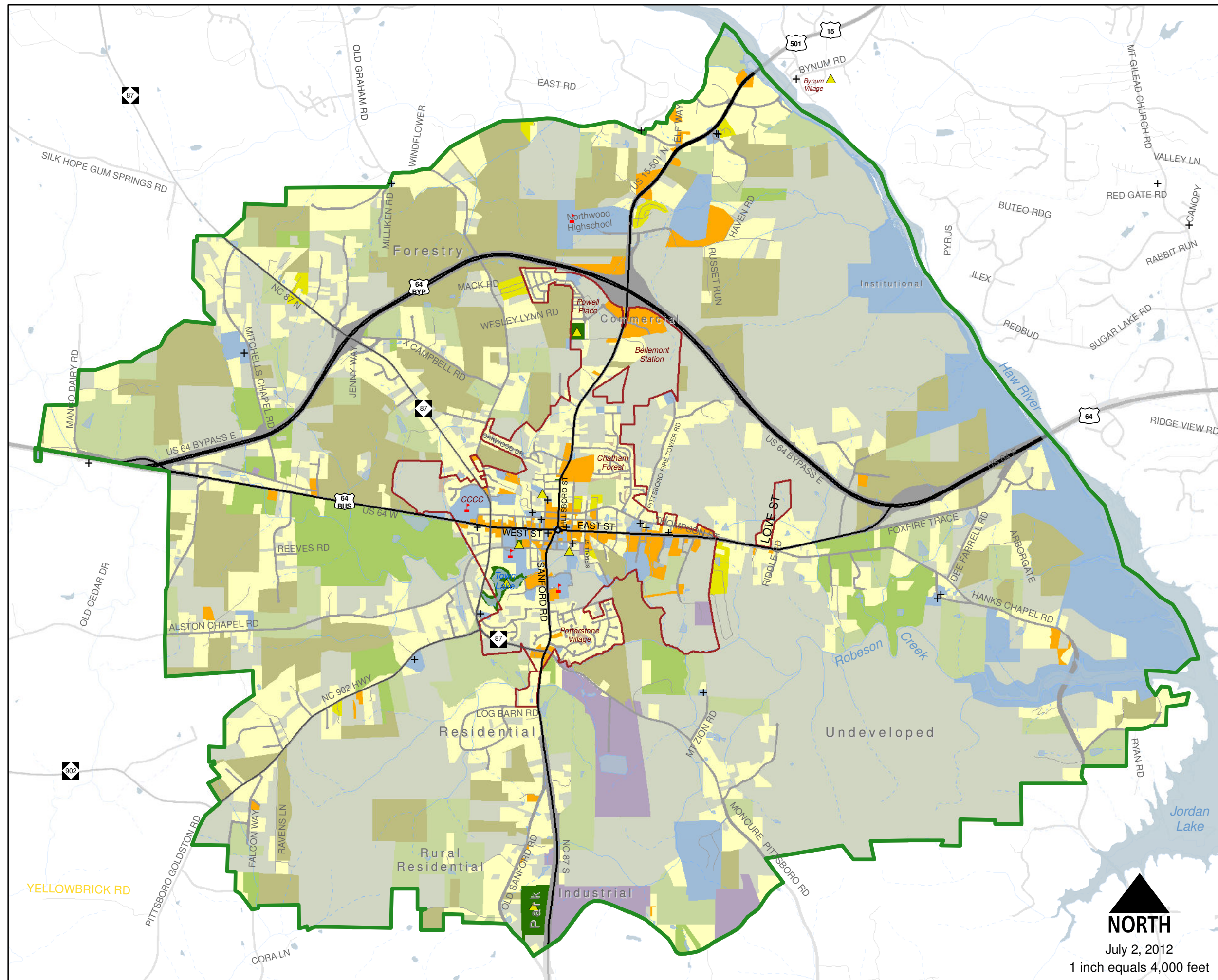
Land Use Plan

Map 3: Existing Land Use

FIGURE 6



TOWN OF PITTSBORO



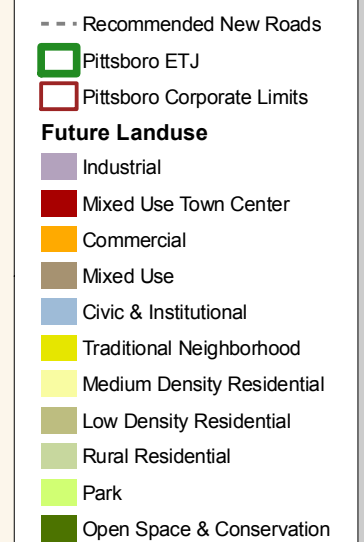
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PITTSBORO, NC

Land Use Plan

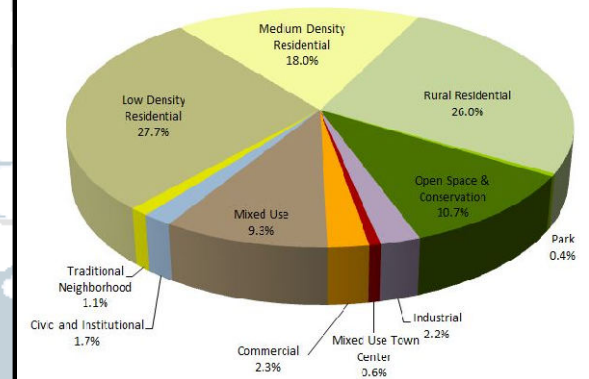
Map 9: Future Land Use

FIGURE 7

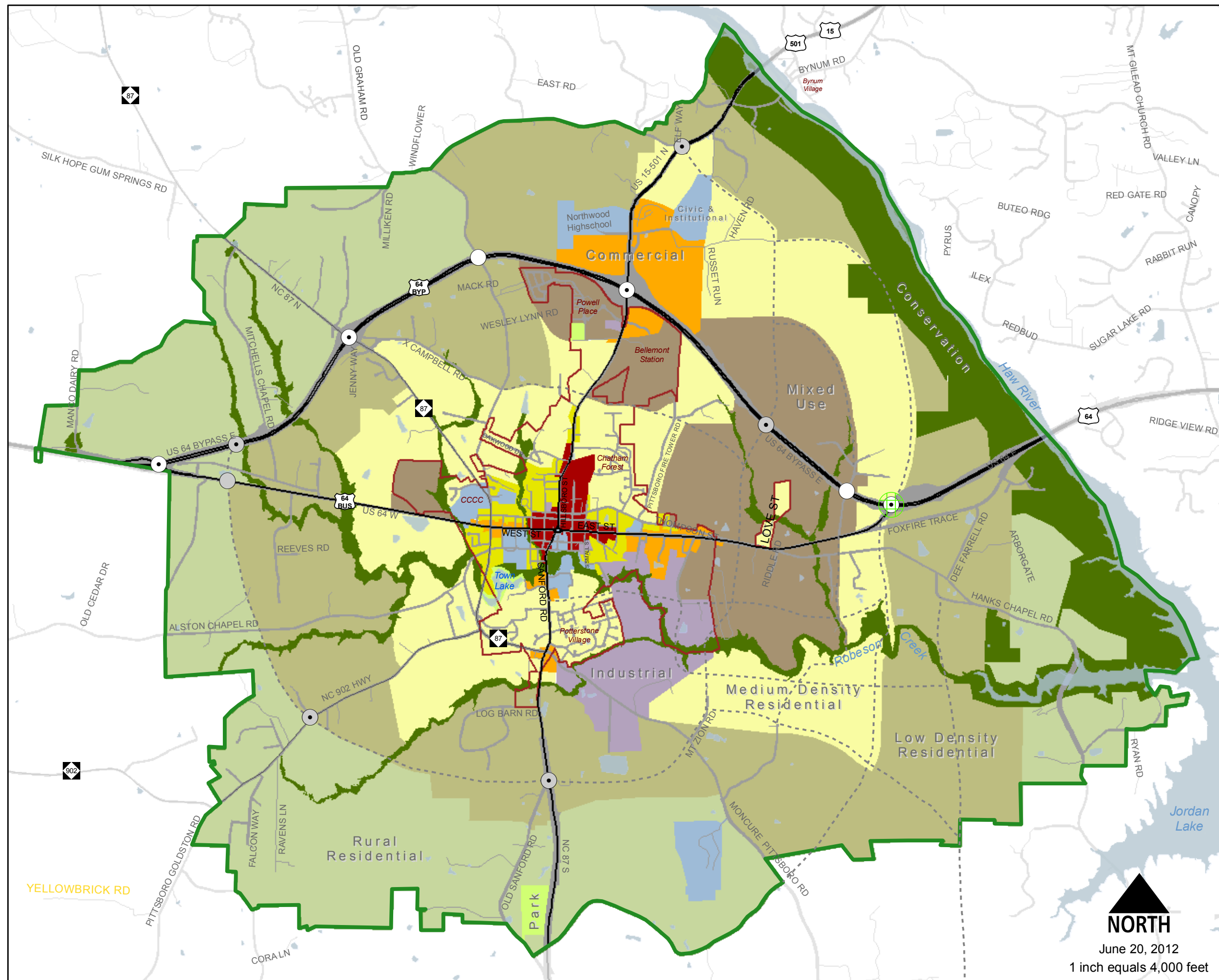


The Highways Map provides details on the proposed roadways.

Proposed Future Land Use by Percentage



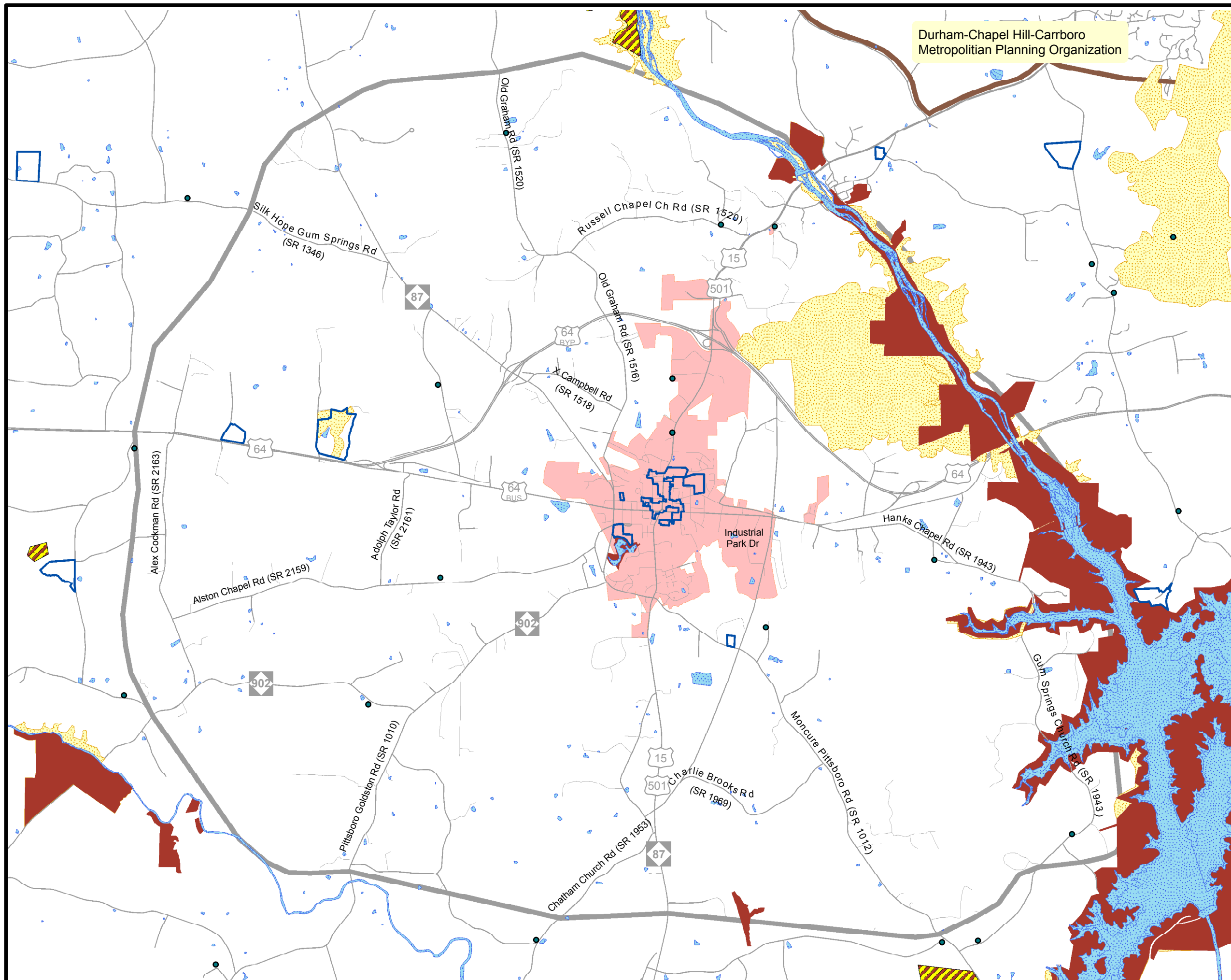
TOWN OF PITTSBORO













June 20, 2012
1 inch equals 4,000 feet

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Figure 8:
Environmental
Features
Map
Pittsboro
Planning Area
Comprehensive
Transportation Plan















Legend

-  Conservation Tax Credit Prop.
-  Historic Resources Areas
-  Hydrography Areas
-  Managed Areas
-  Significant Natural Heritage Areas
-  Pittsboro Planning Area Boundary
-  DCHCMPO Boundary
-  Roads
-  Railroads
-  Municipal Boundaries

0 0.25 0.5 1 1.5 Miles









Legend

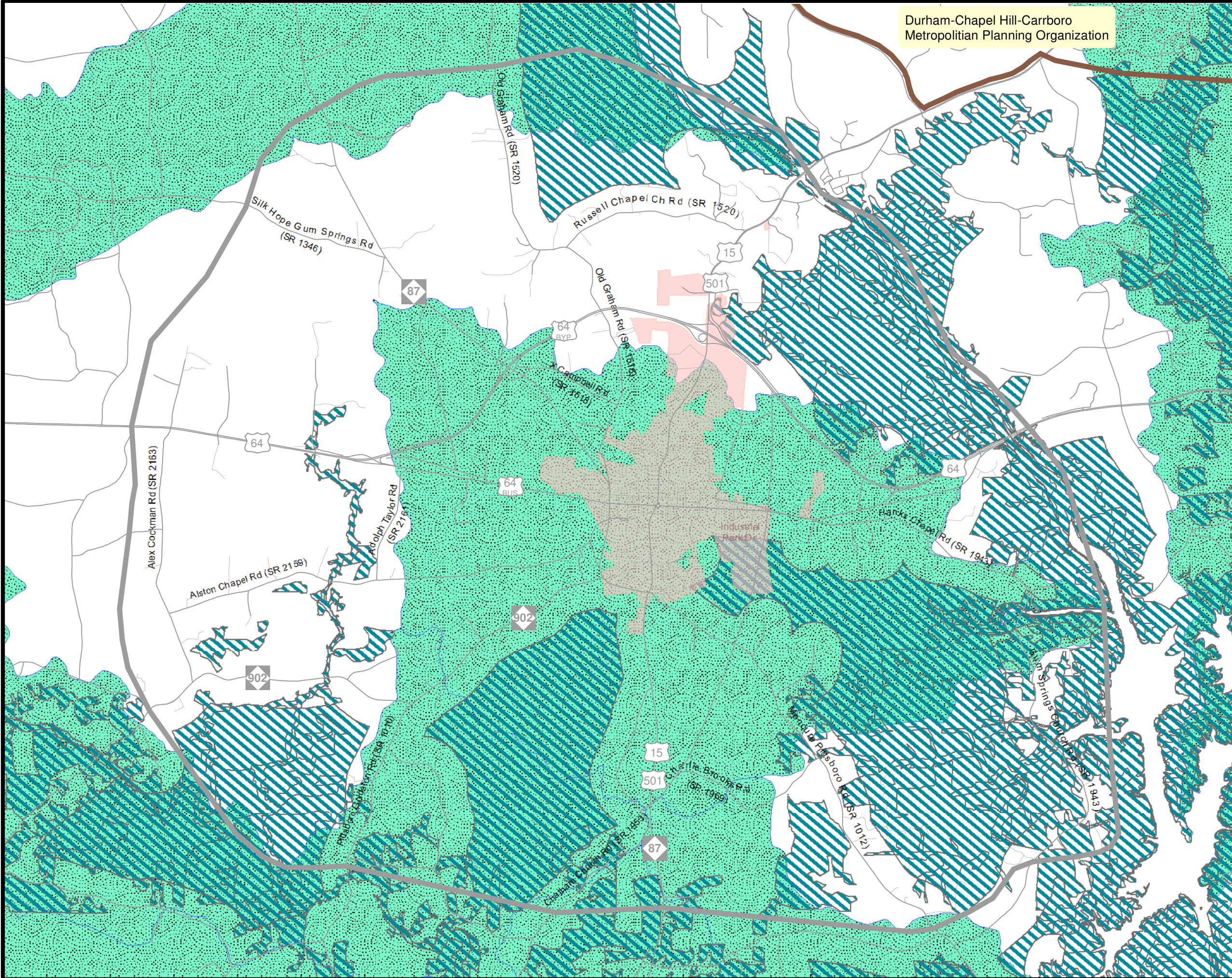
-  Churches & Cemeteries
-  Schools
-  Historic Resources Sites
-  24k Hydro Lines
-  Land & Water Conservation Funds
-  National Wetland Inventory
-  State Parks
-  Pittsboro Planning Area Boundary
-  DCHCMPOBoundary
-  Roads
-  Railroads
-  Municipal Boundaries

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Figure 8:
Environmental
Features
Map
Pittsboro
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Legend

-  Landscape Habitat Indicator Guilds
-  Target Local Watersheds - EEP
-  Pittsboro Planning Area Boundary
-  DCHCMPO Boundary
-  Roads
-  Municipal Boundaries



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2. Recommendations

This chapter presents recommendations for each mode of transportation in the 2011 Pittsboro CTP as shown in Figure 1. More detailed information on each recommendation is tabulated in Appendix C. Refer to Appendix I for documentation of project alternatives and scenarios that were studied, but are not included in the adopted CTP. For information on areas that were not included as a part of this CTP and/or for information on recommendations from existing transportation plans that were incorporated as a part of this CTP but not documented in this report, refer to Appendix J.

NCDOT adopted a "Complete Streets"¹ policy in July 2009. The policy directs the Department to consider and incorporate several modes of transportation when building new projects or making improvements to existing infrastructure. Under this policy, the Department will collaborate with cities, towns and communities during the planning and design phases of projects. Together, they will decide how to provide the transportation options needed to serve the community and complement the context of the area. The benefits of this approach include:

- making it easier for travelers to get where they need to go;
- encouraging the use of alternative forms of transportation;
- building more sustainable communities;
- increasing connectivity between neighborhoods, streets, and transit systems;
- improving safety for pedestrians, cyclists, and motorists.

Complete streets are streets designed to be safe and comfortable for all users, including pedestrians, bicyclists, transit riders, motorists and individuals of all ages and capabilities. These streets generally include sidewalks, appropriate bicycle facilities, transit stops, right-sized street widths, context-based traffic speeds, and are well-integrated with surrounding land uses. The complete street policy and concepts were utilized in the development of the CTP. The CTP proposes projects that include multi-modal project recommendations as documented in the problem statements within this chapter. Refer to Appendix C for recommended cross sections for all project proposals and Appendix D for more detailed information on the typical cross sections.

2.1 Unaddressed Deficiencies

The following deficiencies were identified during the development of the CTP, but remain unaddressed. This area is projected to have considerable development, so major deficiencies were addressed in this CTP effort and the area will be monitored for future CTP recommendations. Figure 3B shows the capacities deficiencies with the proposed CTP recommendations.

These areas are expected to exceed the existing (or proposed) capacity in 2035.

- US 15/501 (small sections just north and south of US 64 Bypass)

¹ For more information on Complete Streets, go to: <http://www.completestreetsnc.org/>

- US 64 (section west of connection with US 64 Business)
- US 64 Business – various sections throughout the length of the planning area.
- US 64 Bypass (New North-South Connector – US 15/501)
- NC 87 (Silk Hope Gum Springs Road (SR 1346) – US 64 Bypass)
- New North-South Connector (US 64 Bypass- Moncure Pittsboro Road (SR 1012))

These areas are expected to be near the existing (or proposed) capacity in 2035. Near capacity is considered 80-99% of the roadway capacity.

- US 15/501 (many sections between the northern planning boundary and the proposed connection with the proposed North-South Connector)
- US 64 (section east of the western planning boundary, and section between the eastern planning boundary and US 64 Bypass)
- US 64 Business – various sections throughout the length of the planning area.
- US 64 Bypass (New North-South Connector – US 15/501)
- NC 87 (Silk Hope Gum Springs Road (SR 1346) – US 64 Bypass)
- New North-South Connector (US 64 Bypass- Moncure Pittsboro Road (SR 1012))

2.2 Implementation

The CTP is based on the projected growth for the planning area. It is possible that actual growth patterns will differ from those logically anticipated. As a result, it may be necessary to accelerate or delay the implementation of some recommendations found within this plan. Some portions of the plan may require revisions in order to accommodate unexpected changes in development. Therefore, any changes made to one element of the CTP should be consistent with the other elements.

Initiative for implementing the CTP rests predominately with the policy boards and citizens of the town of Pittsboro. As transportation needs throughout the state exceed available funding, it is imperative that the local planning area aggressively pursue funding for priority projects. Projects should be prioritized locally and submitted to the Triangle Area RPO for regional prioritization and submittal to NCDOT. Refer to Appendix A for contact information on regional prioritization and funding. Local governments may use the CTP to guide development and protect corridors for the recommended projects. It is critical that NCDOT and local governments coordinate on relevant land development reviews and all transportation projects to ensure proper implementation of the CTP. Local governments and NCDOT share the responsibility for access management and the planning, design and construction of the recommended projects.

Recommended improvements shown on the CTP map represents an agreement of identified transportation deficiencies and potential solutions to address the deficiencies. While the CTP does propose recommended solutions, it may not represent the final location or cross section associated with the improvement. All CTP recommendations are based on high level systems analyses that seek to minimize impacts to the natural and human environment. Prior to implementing projects from the CTP, additional analysis will

be necessary to meet the National Environmental Policy Act (NEPA) or the North Carolina (or State) Environmental Policy Act² (SEPA). During the NEPA/SEPA process, the specific project location and cross section will be determined based on environmental analysis and public input. This CTP may be used to support transportation decision making and provide transportation planning data in the NEPA/SEPA process.

2.3 Problem Statements

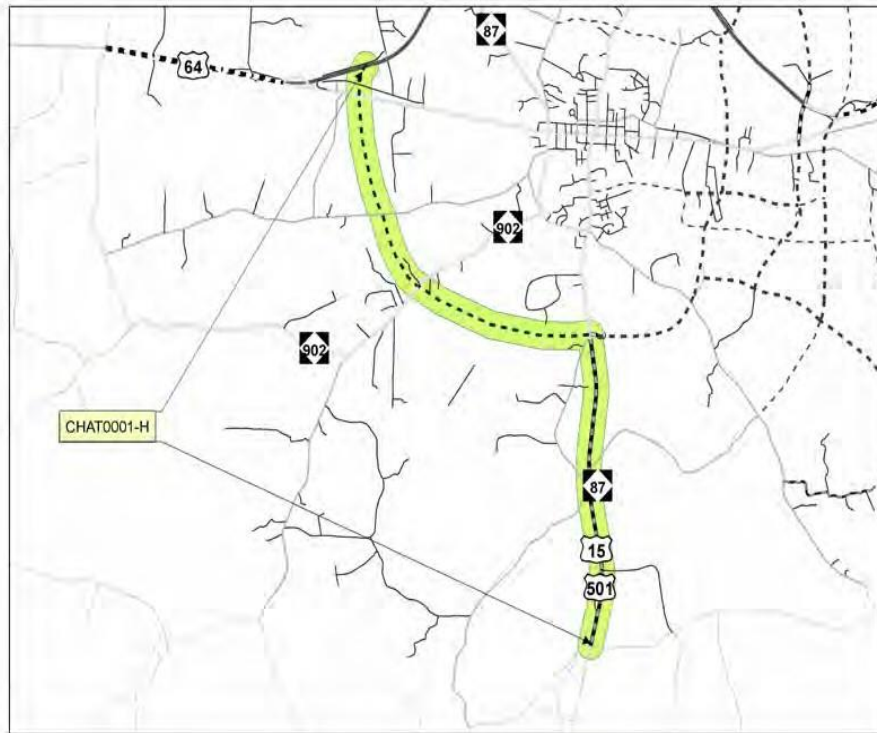
The following pages contain problem statements for each recommendation, organized by CTP modal element. The information provided in the problem statement is intended to help support decisions made in the NEPA/SEPA process. A full, minimum or reference problem statement is presented for each recommendation, with full problem statements occurring first in each section. Full problem statements are denoted by a gray shaded box containing project information. Minimum problem statements are more concise and less detailed than full problem statements, but include all known or readily available information. Reference problem statements are developed for TIP projects where the purpose and need for the project has already been established.

²For more information on SEPA, go to: <http://www.doa.nc.gov/clearing/faq.aspx>.

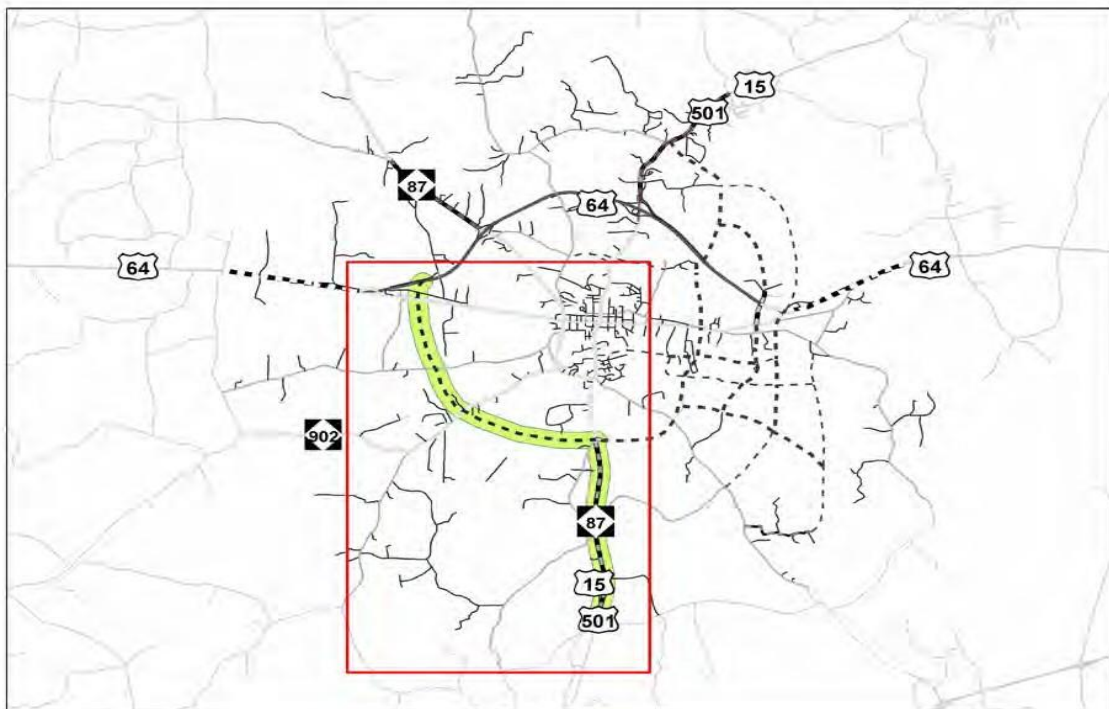
HIGHWAY

US 15-501 Bypass

Local ID: CHAT0001-H



US 15-501 Bypass Project Location Map



IDENTIFIED PROBLEM

Note: Since the adoption of the Pittsboro Comprehensive Transportation Plan, the Strategic Highway Corridor plan was replaced by the Strategic Transportation Corridors (STC) plan. It was adopted by the Board of Transportation on March 4, 2015. The goals of STC are similar to Strategic Highway Corridors, however fewer corridors are identified in STC. Pittsboro's plan was developed under the Strategic Highway Corridor criteria, and US 15-501 is not currently a Strategic Transportation Corridor.

Traffic along the existing US 15-501 currently exceeds LOS D, with traffic volumes expected to increase in the future. Furthermore, US 15-501, designated as a Strategic Highway Corridor (see note above) within the Pittsboro CTP planning area boundary, is recommended to be a minimum of an expressway cross section south of US 64.

Justification of Need

US 15-501 is a major facility within Pittsboro, Chatham County, and central North Carolina. The facility is vital in moving people and goods through North Carolina, connecting Sanford in the south with Chapel Hill and Durham in the north, and providing access to US 1, US 64, I-40, and I-85.

US 15-501 is currently a two lane cross-section from the southern end of the planning area boundary to US 64 in the north of the planning area boundary. The facility travels directly through downtown Pittsboro and intersects with US 64 Business in the center of town at a single lane roundabout. Widening the current facility to an expressway would have significant impacts to businesses and property along the corridor, as well as to the town's signature courthouse, which sits in the middle of the traffic circle. Per the 2004 Strategic Highway Corridor Vision Plan (see note above), US 15-501 is ultimately envisioned to be an expressway with limited access in order to improve regional and statewide mobility and connectivity. It is part of the statewide tier of the NC Multimodal Investment Network (NCOMIN).

There are currently 11,000 vehicles per day that travel along US 15-501, creating LOS E conditions. Average daily traffic demand attempting to pass through downtown Pittsboro along US 15-501 is expected to exceed 25,000 vehicles per day by the year 2035 (if capacity is not a constraint). This is over double the currently available capacity. Furthermore, traffic west of downtown along US 64 Business is expected to exceed 20,000 vehicles per day, which is approximately 75 percent over existing capacity. The proposed project will alleviate congestion along these two corridors.

Community Vision and Problem History

The town of Pittsboro is expected to experience a significant amount of growth in the next 30 years (detailed in Appendix I). The bulk of this growth is currently forecast to be on the eastern side of the planning area. Members of the community repeatedly expressed the desire to have interconnected, walkable, and bikeable development and were not receptive to a freeway/expressway facility on the east side of the central business district (CBD) that would serve as a barrier to non-motorized transportation.

Additionally, the community wanted to avoid the expansion of US 15-501 through the CBD, which would have significant impact to existing residences and businesses.

The 2004 Strategic Highway Corridor Vision Plan (see note on previous page) calls for US 15-501 to be a minimum of an expressway section south of US 64. The 1996 unadopted Chatham County Thoroughfare Plan did not identify the US 15-501 Bypass as a recommended new facility. Previous planning efforts have considered a variety of routes, with the majority of routes located on the eastern side of the Pittsboro CBD due to the more direct alignment between US15-501 north and south of Pittsboro. However, these planning efforts have not resulted in an adopted Comprehensive Transportation Plan or Thoroughfare Plan due to the lack of community consensus, primarily on the location of the US 15-501 Bypass.

Given the community's concerns about barriers to non-motorized transportation as well as the desire to limit construction impacts to the CBD, the western side of the CBD remains as the only other area that there is community consensus on this proposal.

CTP Project Proposal

Project Description and Overview

The CTP proposal (Local ID CHAT0001-H) is to expand the existing two lane facility south of Pittsboro from the southern planning area boundary to approximately the northern intersection of Old Sanford Road (SR 2219) and US 15-501 to a four lane expressway facility, and to provide a four lane expressway facility on new location southwest of Pittsboro. The new facility would connect US 15-501 from just north of Old Sanford Road (SR 2219) to the US 64 Bypass. Unsignalized at-grade intersections are proposed at NC 902 and Alston Chapel Road (SR 2159). This project may require the reconstruction of the western US 64 Bypass/US 64 Business interchange to accommodate the additional roadway.

The CTP project proposal for US 15-501 would accommodate the goals and objectives in the Strategic Highway Corridor Vision Plan by providing a high speed, expressway-level connection between US 15-501 north and south of Pittsboro. By constructing this facility on the western side of the CBD, the proposed roadways on the eastern side of the CBD can be constructed in a more pedestrian and bicycle friendly manner, meeting the goals and objectives of the local community. This location will also avoid the significant impacts that expanding the current facility within the CBD would cause. The CTP recommendation would provide for LOS B and D or better along the US 15-501 Bypass and US 15-501, respectively.

Natural & Human Environmental Context

In the development of the 2011 Pittsboro CTP, 19 options were studied for US 15-501 improvements. The project alignment was reviewed against GIS layers that included hydrological features, wetlands, endangered species, and other environmental features. A new location route was chosen on the western side of the CBD due to substantial human impacts to businesses and residents if the existing facility were to be widened.

Furthermore, the local desire to have greater pedestrian and bicycle route alternatives on the eastern side of the CBD would conflict with the improved US 15-501 facility design. The proposed project alignment includes various streams and ponds that will need to be avoided, and an historic property west of the US 64/US 64 Business western interchange that may be impacted by the interchange modification. Even though no major environmental impacts were identified by the GIS layer review, no environmental agencies were contacted for detailed input on the potential natural and human environmental impacts of this project. As such, the selected CTP alternative may have the potential to impact the natural and human environment. The 19 studied options for the new location route on the eastern and western sides of the CBD are documented in Appendix I.

Relationship to Land Use Plans

There are significant commercial and residential developments planned on the eastern side of Pittsboro. The community desires that these developments be constructed with accommodations for pedestrians and cyclists and that these developments provide connectivity with the CBD in order to help foster continued growth and investment in downtown Pittsboro.

While there are few currently identifiable development projects in the western portion of the planning area, the natural drainage patterns in this area allow for gravity flow sewer. As such, the potential exists for significant development on the western side of the CBD, but this development will likely occur in a timeframe later than the developments on the eastern side of town.

The CTP proposal for an expressway facility would ensure the new facility meets the Strategic Highway Corridor Vision Plan (see note on Page 2-5) and provides a long-term solution for high speed north-south access through the region. This facility will work in concert with other recommended facilities, specifically the proposed north-south connector (CHAT0002-H) to provide safe and efficient flow in the area and will allow Pittsboro to develop in a manner consistent with the town of Pittsboro Land Use Plan 2001-2020, vision of the general public, Pittsboro Planning Board, and Pittsboro Board of Commissioners and by the comments received from the public at various meetings held throughout the planning process. It is anticipated that future land development projects along the proposed US 15-501 Bypass may build portions of this project.

Linkages to Other Plans and Proposed Project History

The proposed upgrade and new location of US 15-501 is an important link to many of the recommendations in the Pittsboro CTP. It directly connects to the proposed North-South Connector (CHAT0002-H), forming a complete loop around the Pittsboro CBD. The construction of this facility as an expressway also allows for the facilities on the eastern side of the planning area to be constructed as boulevards, by providing an alternate route and by satisfying the Strategic Highway Corridor Vision Plan (see note on Page 2-5). This facility is also listed as part of the statewide tier on the North Carolina Multi-modal Investment Network (NCMIN). This facility was considered as an alternative as part of the US 15-501 Corridor Improvements Project (TIP Project No. R-2628). R-

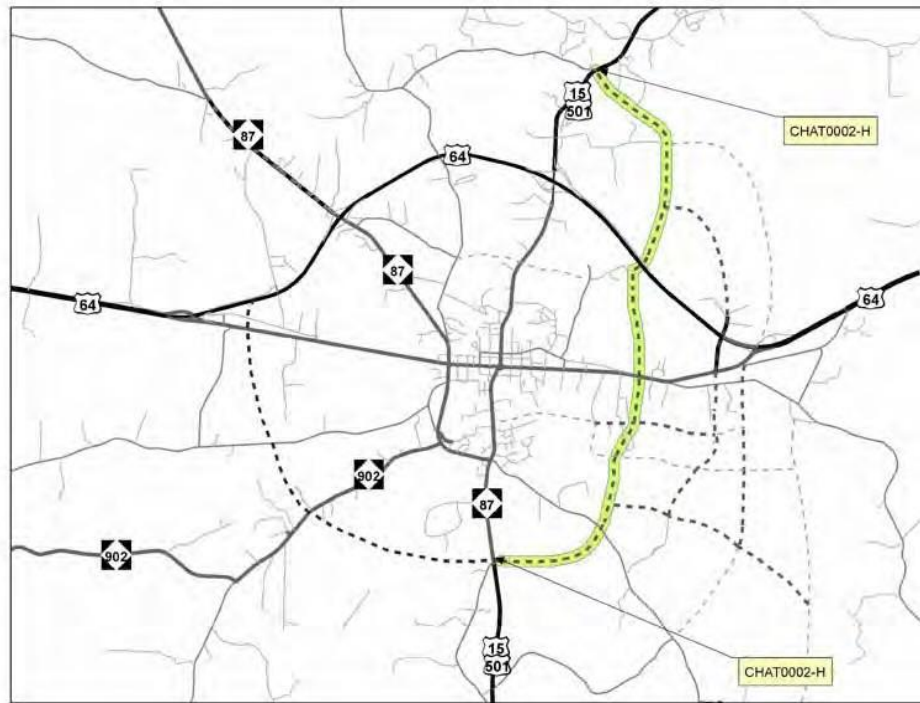
2628 is unfunded in the 2012 Transportation Improvement Program or the 2011-2020 Program and Resource Plan. The environmental study and evaluation of alternatives has been discontinued.

Multi-modal Considerations

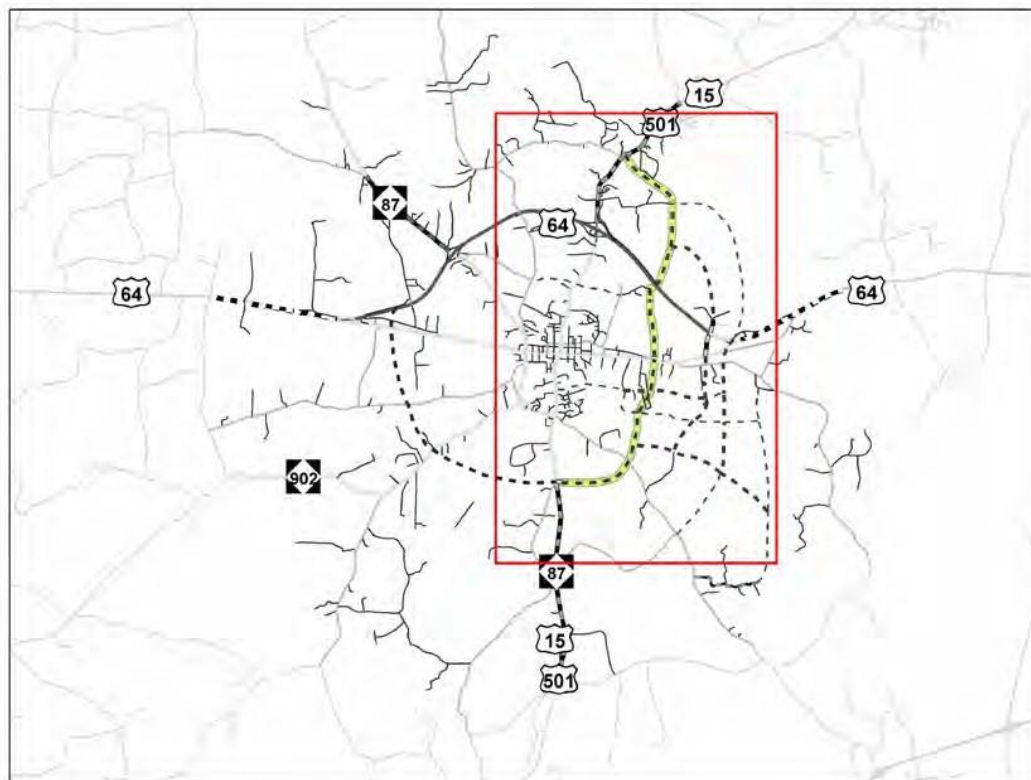
This plan does not yet include specific recommendations for bicycle, pedestrian and public transportation facilities in the Pittsboro area. However, by constructing the expressway facility on the western side of the planning area, the roadway facilities on the eastern side of the study area can be constructed in a more pedestrian, bicycle, and transit friendly manner due to the lower volumes. The ongoing Chatham County Comprehensive Transportation Plan study will address multi-modal considerations for the entire county, including Pittsboro.

Public/ Stakeholder Involvement

As part of developing the CTP recommendation for US 15-501, multiple options were considered by the Pittsboro CTP Steering Committee and the Pittsboro Board of Commissioners (see Appendix H). These groups analyzed multiple corridor options in detail, considering transportation needs and impacts to the natural and human environment, before recommending the proposed corridor shown on the Pittsboro CTP. From public meetings and other comment opportunities, the primary public concern was that any expressway facility should be placed on the western side of town so as not to create a barrier for bicycle and pedestrian activity between proposed developments on the east side of town and the CBD and to not create an impediment for future development due to the access limitations of an expressway facility. No significant negative public comments were received regarding the selected (final) option for this project. The public involvement efforts performed as part of this planning process are detailed in Appendix H.



North-South Connector Project Location Map



IDENTIFIED PROBLEM

Significant travel demand is forecast to exist for north-south movements within and through Pittsboro by 2035, with traffic along US 15-501 expected to exceed LOS D (and LOS E) by 2035.

Justification of Need

The current predominant pattern of the Pittsboro roadway network within the Planning Area Boundary (PAB) is a radial system with most major roadways converging in downtown Pittsboro at a single lane roundabout. There is currently no way of traveling from southeastern Pittsboro to any other location without passing through downtown.

Future major development in eastern Pittsboro will create significant additional regional and local demand as discussed in Appendix I of this report. Given the current configuration of the road network in the area, all traffic traveling from northeast Pittsboro to southeast Pittsboro would need to utilize some portion of US 15-501. US 15-501 can only be accessed from eastern Pittsboro by way of US 64, US 64 Business, and Moncure-Pittsboro Road (SR 1012). The current lack of north-south roadways to accommodate local and regional travel will need to be remedied as these developments come online. Additionally, the construction of the US 15-501 Bypass (CHAT0001-H) will not alleviate the significant traffic congestion forecasted for eastern Pittsboro, nor does it serve as an effective bypass in interim years when congestion is low due to the shorter length of the North-South connector.

There are currently 11,000 vehicles per day that travel along US 15-501, creating LOS E conditions. Projected traffic along US 15-501 is to exceed 45,000 vehicles per day at multiple locations within the study area without additional roadway improvements, far exceeding current capacity. US 64 east of US 15-501 is expected to reach 64,500 vehicles per day by the year 2035, which will far exceed current capacity. Traffic along US 64 Business east of downtown Pittsboro is expected to reach 40,000 vehicles per day by 2035, which is more than three times the existing capacity. Traffic along Moncure-Pittsboro Road (SR 1012) is expected to reach 50,000 vehicles per day by 2035, which is over five times the existing capacity. The proposed project will alleviate future congestion along US 64, US 64 Business, and Moncure-Pittsboro Road (SR 1012), as well as mitigate congestion on US 15-501 by providing an additional north-south connection on the eastern side of Pittsboro. This project is expected to form the back bone of a denser grid street system in eastern Pittsboro.

Community Vision and Problem History

The town of Pittsboro is expected to experience a significant amount of growth in the next 30 years. The bulk of this growth is currently forecast to be on the eastern side of the planning area. Members of the community repeatedly expressed the desire to have interconnected, walkable, and bikeable development and were not receptive to an expressway level facility on the east side of the central business district (CBD) that would serve as a barrier to non-motorized transportation. Additionally, the community wanted to

avoid the expansion of US 15-501 through the CBD, which would have significant impact to existing residences and businesses.

The 1996 unadopted Chatham County Thoroughfare Plan identified the North-South Connector as a recommended new Urban Expressway facility. The 2004 Strategic Highway Corridor Vision Plan (which has been replaced with Strategic Transportation Corridors) calls for the US 15-501 Bypass to be a minimum of an expressway section south of US 64, and a boulevard north of US 64. Previous planning efforts have considered a variety of routes, with the majority of routes located on the eastern side of the Pittsboro CBD due to the more direct alignment between 15-501 north and south of Pittsboro. However, these planning efforts have not resulted in an adopted Comprehensive Transportation Plan or Thoroughfare Plan due to the lack of community consensus, primarily on the location of the US 15-501 Bypass.

Given the community's concerns about barriers to non-motorized transportation as well as the desire to limit construction impacts to the CBD, the western side of the CBD remains as the only other area available for construction (See CHAT0001-H).

However, a US 15-501 bypass on the western side of the CBD does little to accommodate the traffic volumes on the east side. As such, a series of boulevard facilities are needed on the eastern side (see discussions about CHAT0001-H) with the subject project being the primary north-south boulevard. This facility can and should be constructed with pedestrian and bicycle accommodations in accordance with the community's vision.

CTP Project Proposal

Project Description and Overview

The CTP project proposal is to construct a boulevard facility south and east of Pittsboro from approximately the northern intersection of Old Sanford Road (SR 2219) at US 15-501 to north of Pittsboro immediate across from Russell Chapel Church Road (SR 1520) at US 15-501. This facility should be initially constructed as a four lane median divided facility. This facility should be designed such that it can be converted to a six lane facility when volumes warrant such expansion. Interchanges should be planned at the connections with US 15-501 north of Pittsboro, US 64, and the proposed US 15-501 Bypass (CHAT0001-H) south of Pittsboro. No driveways should be allowed, and at-grade signalized intersections should be planned only at US 64 Business, Moncure- Pittsboro Road (SR 1012), and the proposed Eubanks Connector (CHAT00011-H). All other at-grade intersections should be unsignalized. These access restrictions will allow the facility to maintain mobility as growth occurs in the area. The facility should be constructed with pedestrian and bicycle accommodations. The CTP recommendation would provide for LOS D along the facility. The proposed project, in combination with proposed US 64 improvements (CHAT0004-H), would provide for LOS E or better along US 64 and US 64 Business, and LOS C along Moncure-Pittsboro Road (SR 1012).

Natural & Human Environmental Context

In the development of the 2011 Pittsboro CTP, various options were studied for new north-south facilities on the east and west sides of the planning area. The project alignment was reviewed against GIS layers that included hydrological features, wetlands, endangered species, and other environmental features. A new location route for a north-south facility was chosen on the eastern side of the CBD due to substantial human impacts to businesses and residents if the existing facility was widened. The proposed project alignment includes various streams, water channels, and ponds that will need to be avoided, a historic property along Moncure-Pittsboro Road (SR 1012) between All Our Children Lane and Mt. Zion Road (SR 1951), and small pockets of rare/endangered species that should be easy to avoid. Even though no major environmental impacts were identified by the GIS layer review, no environmental agencies were contacted for detailed input on the potential natural and human environmental impacts of this project. As such, the selected CTP alternative may have the potential to impact the natural and human environment. Several options for the new location route on the eastern and western sides of the CBD were studied and are documented in Appendix I.

Relationship to Land Use Plans

There are significant commercial and residential developments planned on the eastern side of Pittsboro. The community desires that these developments be constructed with accommodations for pedestrians and cyclists, as well as connectivity with the CBD in order to help foster continued growth and investment in downtown Pittsboro. The proposed facility will work in concert with other recommended facilities, specifically the proposed US 15-501 Bypass (CHAT0001-H) to provide safe and efficient flow in the area and will allow Pittsboro to develop in a manner consistent with town of Pittsboro Land Use Plan 2001-2020, the vision of the general public, Pittsboro Planning Board, and Pittsboro Board of Commissioners, and by the comments received from the public at various meetings held throughout the planning process. It is anticipated that future land development projects along the proposed North-South Connector may build portions of this project.

Linkages to Other Plans and Proposed Project History

The proposed facility is an important link to many of the recommendations in the Pittsboro CTP. It directly connects to the proposed US 15-501 Bypass (CHAT0001-H) forming a complete loop around the Pittsboro CBD. The construction of this facility as a boulevard complements the expressway planned for the western side of the planning area and is supported by additional north-south facilities planned to the east of this facility. This facility generally follows the route that is indicated on the Strategic Highway Corridor Vision Plan (see note on Page 2-5). This facility was considered as an alternative as part of the US 15-501 Corridor Improvements Project (TIP Project No. R-2628). R-2628 is unfunded in the 2012 Transportation Improvement Program or the 2011-2020 Program and Resource Plan. The environmental study and evaluation of alternatives has been discontinued.

Multi-modal Considerations

This plan does not yet include specific recommendations for bicycle, pedestrian and public transportation facilities in the Pittsboro area. However, the community desired that the facilities constructed on the eastern side of the study area be constructed in a more pedestrian, bicycle, and transit friendly manner to connect potential future developments with the CBD and to establish Pittsboro as a multi-modal community. The ongoing Chatham County Comprehensive Transportation Plan study will address multi-modal considerations for the entire county, including Pittsboro.

Public/ Stakeholder Involvement

As part of developing the CTP recommendation for north-south facilities, multiple options were considered by the Pittsboro CTP Steering Committee and the Pittsboro Board of Commissioners. These groups analyzed multiple corridor options in detail, considering transportation needs and impacts to the natural and human environment, before recommending the proposed corridor shown on the Pittsboro CTP. From public meetings and other comment opportunities, the primary public concern was that any facilities constructed on the east side of town be constructed with bicycle and pedestrian facilities and allow cross connections so as not to create an impediment for future development due to the access limitations of an expressway facility. The public involvement efforts performed as part of this planning process are detailed in Appendix H.



IDENTIFIED PROBLEM

Note: Since the adoption of the Pittsboro Comprehensive Transportation Plan, the Strategic Highway Corridor plan was replaced by the Strategic Transportation Corridors (STC) plan. It was adopted by the Board of Transportation on March 4, 2015. The goals of STC are similar to Strategic Highway Corridors, however fewer corridors are identified in STC. Pittsboro's plan was developed under the Strategic Highway Corridor criteria, and US 15-501 is not currently a Strategic Transportation Corridor.

Traffic along US 15-501 north of US 64 is expected to exceed LOS D by 2035. US 15-501 is designated in the 2004 Strategic Highway Corridor Vision Plan as a boulevard section north of US 64.

Justification of Need

US 15-501 is the major north-south corridor in Chatham County, connecting the county seat of Pittsboro with other municipal centers, such as Chapel Hill to the north and Sanford to the south. The facility is a vital thoroughfare in moving people and goods through North Carolina, connecting Virginia to the north and South Carolina to the south. The subject section of US 15-501 in the Pittsboro area is vital to the movement of vehicles, goods and services through Chatham County and between Orange and Chatham Counties.

US 15-501 currently varies between a 2 lane and four lane cross-section, in the Pittsboro area, from US 64 to the northern Pittsboro CTP Planning Area Boundary. This section of US 15-501 is envisioned to be a boulevard, per the 2004 Strategic Highway Corridor Vision Plan (see note above), in order to improve regional and statewide mobility and connectivity. It is part of the statewide tier of the NC Multimodal Investment Network (NCMIN).

There are currently 14,000 vehicles per day that travel along US 15-501 north of US 64, creating LOS C conditions. Traffic traveling along US 15-501 north of US 64 is expected to reach 47,000 vehicles per day by 2035, which will exceed existing capacity by approximately 50 percent. A four lane boulevard segment, as planned by the Strategic Highway Corridor Vision Plan (see note above), will be insufficient to handle the projected traffic. The proposed project will alleviate future congestion along US 15-501 north of US 64.

Community Vision and Problem History

Due to Chatham County's close proximity to the Research Triangle Region, it is expected to continue experiencing growth through the 2035 planning period related to Orange, Durham, and Wake Counties. It is expected that the greatest residential and commercial growth in the area will occur north and east of Pittsboro

US 15-501 is currently the only major north-south crossing route between Chatham and Orange Counties. Most of the north-south traffic between Pittsboro and Orange County must use the section of US 15-501 from US 64 to the planning area boundary.

The 1996 unadopted Chatham County Thoroughfare Plan designated US 15-501 as an existing Urban Major Thoroughfare and recommended improvements to a four-lane divided freeway facility.

CTP Project Proposal

Project Description and Overview

The CTP project proposal (Local ID CHAT0003-H) is to provide a four lane expressway facility on existing location US 15-501 in the Pittsboro area, from US 64 to the planning area boundary . An interchange is proposed at the connection with the proposed north-south connector (CHAT0002-H). The CTP project contributes towards the Strategic Highway Corridors (see note on previous Page) primary purpose “to provide a network of high-speed, safe, reliable highways throughout North Carolina,” and exceeds the boulevard designation. It would provide for a LOS D or better along US 15-501 from US 64 to the planning area boundary.

Natural & Human Environmental Context

In the development of the 2011 Pittsboro CTP, improvement options for the existing facility were studied for US 15-501 improvements. The project alignment was reviewed against GIS layers that included hydrological features, wetlands, endangered species, and other environmental features. The selected CTP alternative utilizes the existing US 15-501 right-of-way limits, minimizing the impacts to homes, businesses, high quality wetlands, and watersheds. No environmental agencies were contacted for input on the potential natural and human environmental impacts of this project.

Relationship to Land Use Plans

There are significant commercial and residential developments planned on the northern and side of Pittsboro (Appendix I). The CTP proposal to upgrade portions of US 15-501 to an expressway facility would ensure limited access in future growth areas and allow Pittsboro to develop in a manner consistent with the Town of Pittsboro Land Use Plan 2001-2020.

Linkages to Other Plans and Proposed Project History

The upgraded facility proposal for US 15-501 is an important link to many of the recommendations in the Pittsboro CTP and meets the criteria set forth in the 2004 Strategic Highway Corridor Vision Plan (see note on previous Page). It is also listed as part of the statewide tier on the North Carolina Multimodal Investment Network (NCMIN).

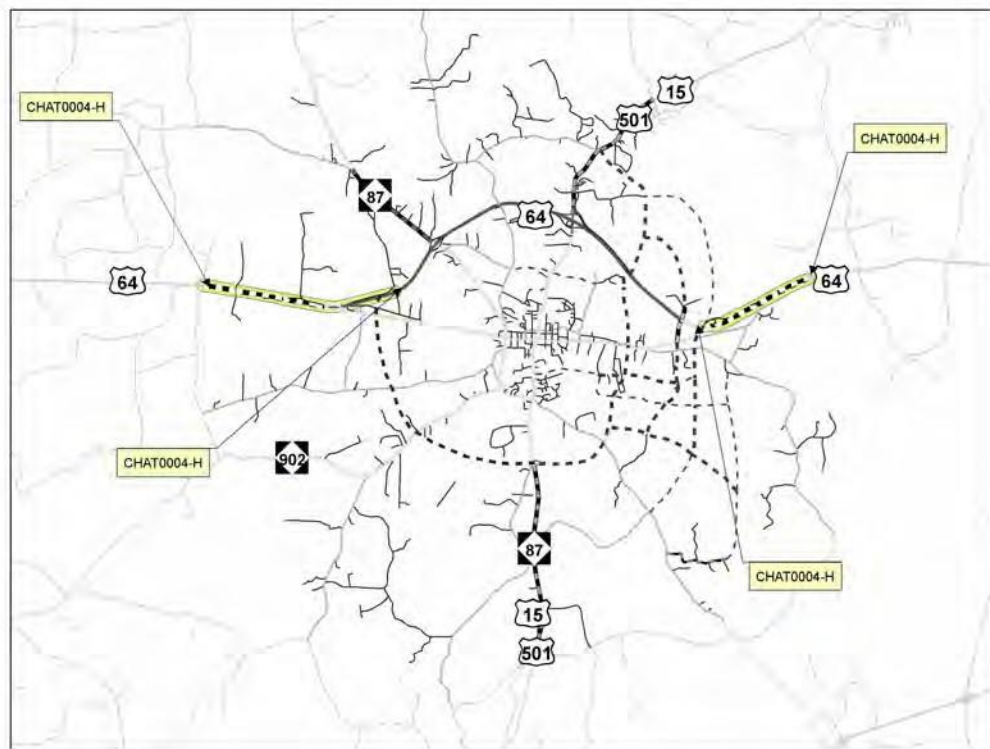
It directly connects to the proposed north-south connector (CHAT0002-H); there is an interchange recommended at this connection. This project is not identified in the 2011-2020 Program and Resource plan or the 2012 Transportation Improvement Program.

Multi-modal Considerations

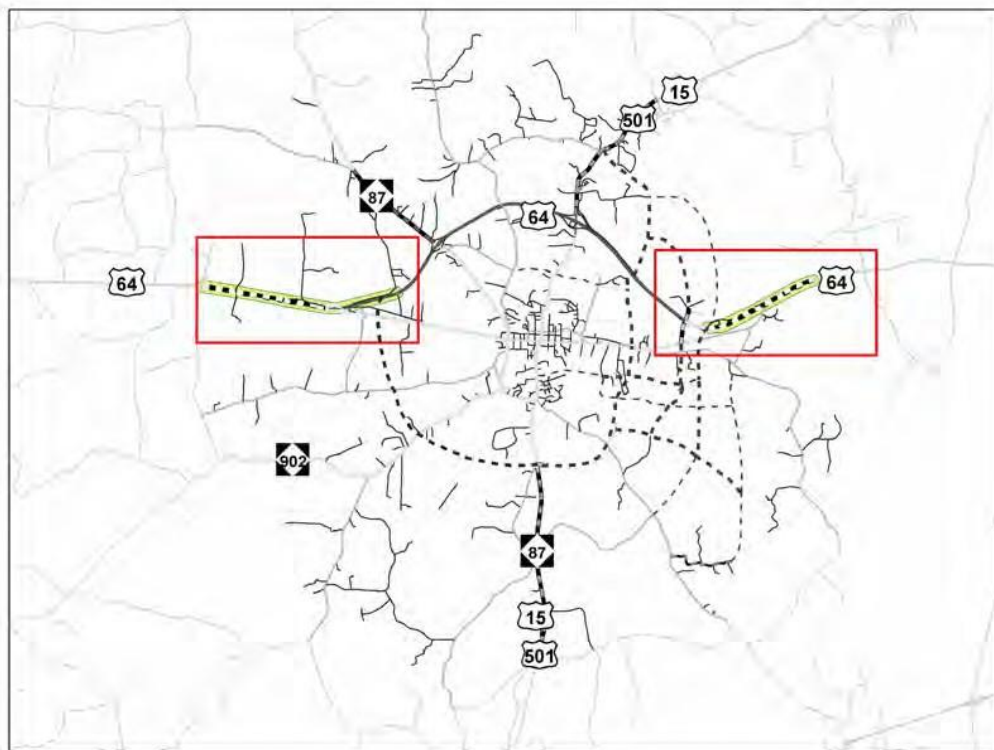
This plan does not yet include specific recommendations for bicycle, pedestrian and public transportation facilities in the Pittsboro area. However, the community desired that the facilities constructed on the eastern side of the study area be constructed in a more pedestrian, bicycle, and transit friendly manner to connect potential future developments with the CBD and to establish Pittsboro as a multi-modal community. The ongoing Chatham County Comprehensive Transportation Plan study will address multi-modal considerations for the entire county, including Pittsboro.

Public/ Stakeholder Involvement

As part of developing the CTP recommendation for US 15-501, improvement options for the existing facility were considered by the Pittsboro CTP Steering Committee. Based on information gathered from public meetings and other comment opportunities, the public agreed with the recommendations for US 15-501 and did not note any concerns. The public involvement efforts performed as part of this planning process are detailed in Appendix H.



US 64 Project Location Map



IDENTIFIED PROBLEM

Note: Since the adoption of the Pittsboro Comprehensive Transportation Plan, the Strategic Highway Corridor plan was replaced by the Strategic Transportation Corridors (STC) network. It was adopted by the Board of Transportation on March 4, 2015. The goals of STC are similar to Strategic Highway Corridors. Pittsboro's plan was developed under the Strategic Highway Corridor criteria with defined cross sections. US 64 is identified as a Strategic Transportation Corridor, however the cross section for US 64 is no longer defined as a freeway.

Traffic along US 64 east of US 64 Business is expected to exceed LOS D by 2035. Traffic along US 64 west of US 64 Business is expected to reach LOS D by 2035. Furthermore, US 64 is designated as a Strategic Highway Corridor (see note above) within the Pittsboro CTP planning area boundary, ultimately recommended to be a minimum of a freeway cross-section.

Justification of Need

US 64 is the major east-west corridor in Chatham County, connecting the county seat of Pittsboro with other municipal centers, such as Siler City to the west and Apex to the east. The facility as a whole is vital in moving people and goods through North Carolina, connecting Manteo on the coast to Murphy in the mountains, ultimately connecting to Tennessee. The section of US 64 in the Pittsboro area is vital to the movement of vehicles, goods and services through Chatham County and across Jordan Lake.

US 64 is currently an expressway (four lane cross-section), in the Pittsboro area, from west of US 64 Business (ETJ Limits) to US 64 Business and east of US 64 Business (ETJ Limits) to US 64 Business. US 64 is ultimately envisioned to be a freeway with full access control, per the Strategic Highway Corridor Vision Plan (see note above), in order to improve regional and statewide mobility and connectivity. It is part of the statewide tier of the NC Multimodal Investment Network (NCMIN).

There are currently 12,000 vehicles per day that travel along US 64 east of US 64 Business, creating LOS B conditions. Traffic is expected to reach 43,000 vehicles per day by the year 2035. This will be approximately seven percent below capacity and will function at LOS E.

There are currently 11,000 daily vehicles that travel along US 64 west of US 64 Business, creating LOS B conditions. Traffic is expected to reach 38,000 vehicles per day by 2035. This will be approximately 17 percent below capacity and will function at or near LOS D.

This project is expected to alleviate congestion along both sections of US 64.

Community Vision and Problem History

Due to Chatham County's close proximity to the Research Triangle Region, it is expected to continue experiencing growth through the 2035 planning period related to Orange, Durham, and Wake Counties. It is expected that the greatest residential and commercial growth will occur north and east of Pittsboro.

US 64 is currently the only east-west crossing of Jordan Lake directly east of the Pittsboro area, and nearly all east-west traffic between Pittsboro and Wake County must use this section of US 64. This crossing is one of only two east-west crossings of Jordan Lake in Chatham County; the other crossing is Farrington Point Road (SR 1108), north of the Pittsboro area.

CTP Project Proposal

Project Description and Overview

The CTP proposed project (Local ID CHAT0004-H) is to provide a four lane, freeway facility on existing US 64 in the Pittsboro area, both east and west of US 64 Business. The CTP project contributes towards the Strategic Highway Corridors primary purpose (see note on page 2-19) "to provide a network of high-speed, safe, reliable highways throughout North Carolina." The CTP recommendation would provide for a LOS D or better along US 64.

Natural & Human Environmental Context

In the development of the 2011 Pittsboro CTP, improvement options for the existing facility were studied for US 64 improvements. The project alignment was reviewed against GIS layers that included hydrological features, wetlands, endangered species, and other environmental features. The selected CTP alternative utilizes the existing US 64 right-of-way limits, minimizing the impacts to homes, businesses, high quality wetlands, and watersheds. There are some historic properties along US 64, west of US 64 Business that may experience minimal impacts. Given the use of existing right-of-way limits, no environmental agencies were contacted for input on the potential natural and human environmental impacts of this project.

Relationship to Land Use Plans

There are significant commercial and residential developments planned on the eastern side of Pittsboro. Development in the western part of Pittsboro is not limited by natural environmental resources, though it is not expected to develop within the CTP timeframe. The CTP proposal to upgrade portions of US 64 to a freeway facility would ensure control of access in future growth areas and allow Pittsboro to develop in a manner consistent with the town of Pittsboro Land Use Plan 2001-2020.

Linkages to Other Plans and Proposed Project History

The upgraded facility proposal for US 64 is an important link to many of the recommendations in the town of Pittsboro CTP. It directly connects to the proposed US

15-501 Bypass (CHAT0001-H) and Charlie Brooks Road (CHAT0007-H); there are interchanges recommended at each of these locations. This facility is shown as a freeway facility on the 2004 Strategic Highway Corridor Vision Plan (see note on page 2-19) and is part of the statewide tier of the NC Multimodal Investment Network (NCMIN). This facility is also shown to be upgraded to a freeway in the US 64 Corridor Study Phase IIA Report. This project is not listed in the 2012 Transportation Improvement Program or the 2011-2020 Program and Resource Plan.

Multi-modal Considerations

This plan does not yet include specific recommendations for bicycle, pedestrian and public transportation facilities in the Pittsboro area. However, the community desired that the facilities constructed on the eastern side of the study area be constructed in a more pedestrian, bicycle, and transit friendly manner to connect potential future developments with the CBD and to establish Pittsboro as a multi-modal community. The ongoing Chatham County Comprehensive Transportation Plan study will address multi-modal considerations for the entire county, including Pittsboro.

Public/ Stakeholder Involvement

As part of developing the CTP recommendation for US 64, improvement options for the existing facility were considered by the town of Pittsboro CTP Steering Committee. Based on information gathered from public meetings and other comment opportunities, the public agreed with the recommendations for US 64 and did not note any concerns.

EASTERN CONNECTIVITY AND DEVELOPMENT

There are significant commercial and residential developments planned on the eastern side of Pittsboro within the CTP timeframe; however, this area is severely lacking in facilities that offer connectivity and capacity for the projected traffic volumes. The following improvements will provide new or upgraded access routes that will help to safely and efficiently accommodate future traffic. Together, these projects create a grid network that will serve the future growth in the area and allow Pittsboro to develop in a manner consistent with the town of Pittsboro Land Use Plan 2001-2020.

Bill Thomas Extension from New Boulevard 1 to US 64 Business. Local ID: CHAT0008-H

Bill Thomas Extension is a proposed new location four lane, north-south boulevard that would serve residents in southeastern Pittsboro. Bill Thomas Extension directly connects to the proposed New Boulevard 1 (CHAT0012-H), Industrial Park Extension (CHAT0013-H), Lorax Extension (CHAT0016-H), and Eubanks Road (CHAT0010-H) CTP projects.

Charlie Brooks Extension from Moncure-Pittsboro Road (SR 1012) to New North-South Connector. Local ID: CHAT0007-H

Charlie Brooks Extension is a proposed new location north-south facility that would serve residents in eastern Pittsboro. The new route would be constructed with the following cross-sections: a two lane facility from Moncure-Pittsboro Road (SR 1012) to New Boulevard 1 (CHAT0012-H), a four lane divided facility from New Boulevard 1 (CHAT0012-H) to US 64, and a two lane facility from US 64 to New North-South Connector (CHAT0002-H). Charlie Brooks Extension directly connects to the proposed New Boulevard 1 (CHAT0012-H), Industrial Park Extension (CHAT0013-H), Lorax Extension (CHAT0016-H), and New North-South Connector (CHAT0002-H) CTP projects.

Eubanks Connector from Prince Creek to New North-South Connector, Local ID: CHAT00011-H

Eubanks Connector is a proposed new location four lane, north-south boulevard that would serve residents in northeastern Pittsboro. Eubanks Connector directly connects to the proposed Eubanks Road (SR 1572) improvements (CHAT0010-H) and New North-South Connector (CHAT0002-H) CTP projects.

Eubanks Road (SR 1572) from US 64 Business to Prince Creek, Local ID: CHAT0010-H

Eubanks Road is an existing two lane, north-south facility that serves residents in northeastern Pittsboro. The CTP proposal is to improve Eubanks Road (SR 1572) to a four lane divided facility and improve the grade separation over US 64 Bypass. The improvement proposal for Eubanks Road (SR 1572) directly connects to the proposed Bill Thomas Extension (CHAT0008-H), Lorax Extension (CHAT0016-H), and Eubanks Extension (CHAT0011-H) CTP projects.

Industrial/US 15-501 Connector from US 15-501 to Lorax Lane, Local ID: CHAT0014-H

Industrial/US 15-501 Connector is a proposed new location two lane, east-west street that would serve residents in southeastern Pittsboro. Industrial/US 15-501 Connector directly connects to the proposed Industrial Park Extension (CHAT0013-H) and Lorax Extension (CHAT0016-H) CTP projects.

Industrial Park Extension from Lorax Lane to New Far East, Local ID: CHAT0013-H

New Boulevard 1 is a proposed new location two lane, east-west facility that would serve residents in eastern Pittsboro. Industrial Park Extension directly connects to the proposed Industrial/US 15-501 Connector (CHAT0014-H), Lorax Extension (CHAT0016-H), New North-South Connector (CHAT0002-H), Bill Thomas Extension (CHAT0008-H), Charlie Brooks Extension (CHAT0007-H), and New Far East (CHAT0005-H) CTP projects.

Lorax Extension from New North-South Connector to Charlie Brooks Extension. Local ID: CHAT0016-H

Lorax Extension is a proposed new location east-west facility that would serve residents in southeastern Pittsboro. The new route would be constructed with the following cross-sections: a four lane divided facility from New North-South Connector (CHAT0002-H) to Bill Thomas Extension (CHAT0008-H) and a two lane facility from Bill Thomas Extension (CHAT0008-H) to Charlie Brooks Extension (CHAT0007-H). Lorax Extension directly connects to the proposed Lorax Lane improvements (CHAT0015-H), New North-South Connector (CHAT0002-H), Bill Thomas Extension (CHAT0008-H), and Charlie Brooks Extension (CHAT0007-H) CTP projects.

Lorax Lane from Industrial Park Drive to New North-South Connector. Local ID: CHAT0015-H

Lorax Lane is an existing two lane, east-west facility that serves residents in southeastern Pittsboro. The improvement proposal for Lorax Lane directly connects to the proposed Industrial/US 15-501 Connector (CHAT0014-H), Industrial Park Extension (CHAT0013-H), and New North-South Connector (CHAT0002-H) CTP projects.

New Boulevard 1 from Mt. Zion Road (SR 1951) to New Far East. Local ID: CHAT0012-H

New Boulevard 1 is a proposed new location four lane divided east-west facility that would serve residents in southeastern Pittsboro. New Boulevard 1 directly connects to the proposed New North-South Connector (CHAT0002-H), Bill Thomas Extension (CHAT0008-H), Charlie Brooks Extension (CHAT0007-H), and New Far East (CHAT0005-H) CTP projects.

New Far East from Moncure-Pittsboro Road (SR 1012) to Hank's Loop Road (SR 1945). Local ID: CHAT0005-H

New Far East is a proposed new location two lane, north-south facility from Moncure-Pittsboro Road (SR 1012) to Hank's Loop Road (SR 1945) that would serve residents in eastern Pittsboro. New Far East directly connects to the proposed Industrial Park Extension (CHAT0013-H) and New Boulevard 1 (CHAT0012-H) CTP projects.

NORTHERN CONNECTIVITY

There are significant commercial and residential developments planned on the northern side of Pittsboro within the CTP timeframe, which are causing some facilities to be projected to exceed Level of Service (LOS) D in 2035. The following improvements will provide new or upgraded access routes that will help to safely and efficiently accommodate future traffic. These projects will serve the future growth in the area and allow Pittsboro to develop in a manner consistent with the Town of Pittsboro Land Use Plan 2001-2020.

NC 87 from US 64 to Silk Hope Gum Springs Road (SR 1346). Local ID: CHAT0017-H

NC 87 is an existing four lane, north-south facility that serves residents in northwestern Pittsboro. It is projected to exceed LOS D in 2035 from US 64 to Silk Hope Gum Springs Road (SR 1346). The CTP proposal is to improve this section of NC 87 by adding turn lanes at major intersections, thereby improving safety and mobility on the facility.

X Campbell Extension from New North-South Connector to Old Graham Road (SR 1567). Local ID: CHAT0018-H

US 64 Business in downtown Pittsboro is projected to exceed LOS D in 2035 in the majority of the planning area. However, it is preferred to avoid upgrading this facility due to historical restraints and the desire to maintain the current cross section throughout downtown. X Campbell Extension is a proposed new location two lane, east-west facility that would serve residents in northern Pittsboro as well as users of US 64 Business. The CTP proposal to construct X Campbell Extension would provide relief to the congestion on US 64 Business by offering an alternate route for east-west travel, thereby improving connectivity and mobility in the area.

ROADWAY SURFACING

The following improvements such as turn lanes, minor widening, and/or surfacing are ideal for better mobility and more streamlined facilities as growth occurs.

Bill Thomas Road (SR 1952) from Moncure-Pittsboro Road (SR 1012) to Bill Thomas Extension. Local ID: CHAT0009-H

The proposed Bill Thomas Extension (CHAT0008-H) will connect to Moncure-Pittsboro Road (SR 1012) via Bill Thomas Road (SR 1952) which is currently a 2- lane unpaved facility between Moncure-Pittsboro Road (SR 1012) and the proposed Bill Thomas Extension (CHAT0008-H). Given the proposed Bill Thomas Extension (CHAT0008-H) and connection to the New Boulevard 1 (CHAT0012-H), the CTP project proposal is to provide a surfaced, 24-foot cross section suitable for public traffic use.

Hanks Loop Road (SR 1945) from Hanks Chapel Road (SR 1943) to US 64. Local ID: CHAT0006-H

The proposed New Far East facility will connect to US 64 Business via Hanks Loop Road (SR 1945) and Hanks Chapel Road (SR 1943). Hanks Loop Road (SR 1945) is currently only partially paved between its endpoints at Hanks Chapel Road (SR 1943). The CTP project proposal is to provide a surfaced, 24- foot cross section suitable for public traffic use.

APPENDICES

Appendix A Resources and Contacts

Local Planning Organization

Triangle Rural Planning Organization (www.tarpo.org)

Contact the RPO for information on long-range multi-modal planning services.

PO Box 12276 Research Triangle Park, NC 27709 (919) 558-9397

North Carolina Department of Transportation

Customer Service Office

Contact information for other units within the NCDOT that are not listed in this appendix is available by calling the Customer Service Office or by visiting the NCDOT directory:

1-877-DOT-4YOU (1-877-368-4968) <http://www.ncdot.gov/contact/>

Secretary of Transportation (<http://www.ncdot.org/about/leadership/secretary.html>)

1501 Mail Service Center Raleigh, NC 27699-1501 (919) 707-2800

Board of Transportation (<http://www.ncdot.gov/about/board/>)

1501 Mail Service Center Raleigh, NC 27699-1501 (919) 707-2820

Highway Division 8 (<https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx>)

902 N Sandhills Boulevard Aberdeen, NC 28315 (910) 944-2344

Contact the Highway Division with questions concerning NCDOT activities within each Division and for information on Small Urban Funds.

Contact the following NCDOT divisions and units¹ for:

<u>Transportation Planning Branch (TPB)</u>	Information on long-range multi-modal planning services. 1554 Mail Service Center Raleigh, NC 27699 (919) 707-0900
<u>Strategic Planning Office</u>	Information concerning prioritization of transportation projects. 1501 Mail Service Center Raleigh, NC 27699 (919) 707-4740
<u>Project Development & Environmental Analysis (PDEA)</u>	Information on environmental studies for projects that are included in the TIP. 1548 Mail Service Center Raleigh, NC 27699 (919) 707-6000
<u>State Asset Management Unit</u>	Information regarding the status for unpaved roads to be paved, additions and deletions of roads to the State maintained system and the Industrial Access Funds program. 1535 Mail Service Center Raleigh, NC 27699 (919) 707-2500

¹ Unit websites are hyperlinked and can also be accessed at <https://connect.ncdot.gov/Pages/default.aspx>.

<u>Program Development Branch</u>	<i>Information concerning Roadway Official Corridor Maps, Feasibility Studies and the Transportation Improvement Program (TIP).</i> 1542 Mail Service Center Raleigh, NC 27699 (919) 707-4610
<u>Public Transportation Division</u>	<i>Information on public transit systems.</i> 1550 Mail Service Center Raleigh, NC 27699 (919) 707-4670
<u>Rail Division</u>	<i>Rail information throughout the state.</i> 1553 Mail Service Center Raleigh, NC 27699 (919) 707-4700
<u>Division of Bicycle and Pedestrian Transportation</u>	<i>Bicycle and pedestrian transportation information throughout the state.</i> 1552 Mail Service Center Raleigh, NC 27699 (919) 707-2600
<u>Structures Management Unit</u>	<i>Information on bridge management throughout the state.</i> 1581 Mail Service Center Raleigh, NC 27699 (919) 707-6400
<u>Roadway Design Unit</u>	<i>Information regarding design plans and proposals for road and bridge projects throughout the state.</i> 1582 Mail Service Center Raleigh, NC 27699 (919) 707-6200
<u>Transportation Mobility and Safety Division</u>	<i>Information regarding crash data throughout the state.</i> 1561 Mail Service Center Raleigh, NC 27699 (919) 773-2800

Other State Government Offices

Department of Commerce – Division of Community Assistance

Contact the Department of Commerce for resources and services to help realize economic prosperity, plan for new growth and address community needs.

<http://www.nccommerce.com/cd>

Appendix B

Comprehensive Transportation Plan Definitions

This appendix contains descriptive information and definitions for the designations depicted on the CTP maps shown in Figure 1.

Highway Map

The “NCDOT Facility Type –Control of Access Definitions” document provides a visual depiction of facility types for the following CTP classification.

Facility Type Definitions

❖ Freeways

- Functional purpose – high mobility, high volume, high speed
- Posted speed – 55 mph or greater
- Cross section – minimum four lanes with continuous median
- Multi-modal elements – High Occupancy Vehicles (HOV)/High Occupancy Transit (HOT) lanes, busways, truck lanes, park-and-ride facilities at/near interchanges, adjacent shared use paths (separate from roadway and outside ROW)
- Type of access control – full control of access
- Access management – interchange spacing (urban – one mile; non-urban – three miles); at interchanges on the intersecting roadway, full control of access for 1,000ft or for 350ft plus 650ft island or median; use of frontage roads, rear service roads
- Intersecting facilities – interchange or grade separation (no signals or at-grade intersections)
- Driveways – not allowed

❖ Expressways

- Functional purpose – high mobility, high volume, medium-high speed
- Posted speed – 45 to 60 mph
- Cross section – minimum four lanes with median
- Multi-modal elements – HOV lanes, busways, very wide paved shoulders (rural), shared use paths (separate from roadway but within ROW)
- Type of access control – limited or partial control of access;
- Access management – minimum interchange/intersection spacing 2,000ft; median breaks only at intersections with minor roadways or to permit U-turns; use of frontage roads, rear service roads; driveways limited in location and number; use of acceleration/deceleration or right turning lanes
- Intersecting facilities – interchange; at-grade intersection for minor roadways; right-in/right-out and/or left-over or grade separation (no signalization for through traffic)
- Driveways – right-in/right-out only; direct driveway access via service roads or other alternate connections

❖ **Boulevards**

- Functional purpose – moderate mobility; moderate access, moderate volume, medium speed
- Posted speed – 30 to 55 mph
- Cross section – two or more lanes with median (median breaks allowed for U-turns per current NCDOT *Driveway Manual*)
- Multi-modal elements – bus stops, bike lanes (urban) or wide paved shoulders (rural), sidewalks (urban - local government option)
- Type of access control – limited control of access, partial control of access, or no control of access
- Access management – two lane facilities may have medians with crossovers, medians with turning pockets or turning lanes; use of acceleration/deceleration or right turning lanes is optional; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
- Intersecting facilities – at grade intersections and driveways; interchanges at special locations with high volumes
- Driveways – primarily right-in/right-out, some right-in/right-out in combination with median leftovers; major driveways may be full movement when access is not possible using an alternate roadway

❖ **Other Major Thoroughfares**

- Functional purpose – balanced mobility and access, moderate volume, low to medium speed
- Posted speed – 25 to 55 mph
- Cross section – four or more lanes without median (*US and NC routes may have less than four lanes*)
- Multi-modal elements – bus stops, bike lanes/wide outer lane (urban) or wide paved shoulder (rural), sidewalks (urban)
- Type of access control – no control of access
- Access management – continuous left turn lanes; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
- Intersecting facilities – intersections and driveways
- Driveways – full movement on two lane roadway with center turn lane as permitted by the current NCDOT *Driveway Manual*

❖ **Minor Thoroughfares**

- Functional purpose – balanced mobility and access, moderate volume, low to medium speed
- Posted speed – 25 to 55 mph
- Cross section – ultimately three lanes (no more than one lane per direction) or less without median
- Multi-modal elements – bus stops, bike lanes/wide outer lane (urban) or wide paved shoulder (rural), sidewalks (urban)
- ROW – no control of access

- Access management – continuous left turn lanes; for abutting properties, use of shared driveways, internal out parcel access and cross-connectivity between adjacent properties is strongly encouraged
- Intersecting facilities – intersections and driveways
- Driveways – full movement on two lane with center turn lane as permitted by the current NCDOT *Driveway Manual*

Other Highway Map Definitions

- ❖ **Existing** – Roadway facilities that are not recommended to be improved.
- ❖ **Needs Improvement** – Roadway facilities that need to be improved for capacity, safety, operations, or system continuity. The improvement to the facility may be widening, increasing the level of access control along the facility, operational strategies (including but not limited to traffic control and enforcement, incident and emergency management, and deployment of Intelligent Transportation Systems (ITS) technologies), or a combination of improvements and strategies. “Needs improvement” does not refer to the maintenance needs of existing facilities or the replacement or rehab of structures.
- ❖ **Recommended** – Roadway facilities on new location that are needed in the future.
- ❖ **Interchange** – Through movement on intersecting roads is separated by a structure. Turning movement area accommodated by on/off ramps and loops.
- ❖ **Grade Separation** – Through movement on intersecting roads is separated by a structure. There is no direct access between the facilities.
- ❖ **Full Control of Access** – Connections to a facility provided only via ramps at interchanges. No private driveway connections allowed.
- ❖ **Limited Control of Access** – Connections to a facility provided only via ramps at interchanges (major crossings) and at-grade intersections (minor crossings and service roads). No private driveway connections allowed.
- ❖ **Partial Control of Access** – Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways. Private driveway connections shall be defined as a maximum of one connection per parcel. One connection is defined as one ingress and one egress point. These may be combined to form a two-way driveway (most common) or separated to allow for better traffic flow through the parcel. The use of shared or consolidated connections is highly encouraged.
- ❖ **No Control of Access** – Connections to a facility provided via ramps at interchanges, at-grade intersections, and private driveways.

Public Transportation and Rail Map

- ❖ **Bus Routes** – The primary fixed route bus system for the area. Does not include demand response systems.
- ❖ **Fixed Guideway** – Any transit service that uses exclusive or controlled rights-of-way or rails, entirely or in part. The term includes heavy rail, commuter rail, light rail,

monorail, trolleybus, aerial tramway, included plane, cable car, automated guideway transit, and ferryboats.

- ❖ **Operational Strategies** – Plans geared toward the non-single occupant vehicle. This includes but is not limited to HOV lanes or express bus service.
- ❖ **Rail Corridor** – Locations of railroad tracks that are either active or inactive tracks. These tracks were used for either freight or passenger service.
 - Active – rail service is currently provided in the corridor; may include freight and/or passenger service
 - Inactive – right of way exists; however, there is no service currently provided; tracks may or may not exist
 - Recommended – It is desirable for future rail to be considered to serve an area.
- ❖ **High Speed Rail Corridor** – Corridor designated by the U.S. Department of Transportation as a potential high speed rail corridor.
 - Existing – Corridor where higher-speed rail service (over 79 mph) is provided or a corridor that is officially designated by FRA to run higher speed trains in the future. There is currently one federally designated high-speed rail corridor in North Carolina - The Southeast High Speed Rail Corridor.
 - Recommended – Proposed corridor for higher speed rail service.
- ❖ **Rail Stop** – A railroad station or stop along the railroad tracks.
- ❖ **Multimodal Connector** - A location where more than one mode of transportation meet such as where light rail and a bus route come together in one location. (NOTE- intermodal refers to two or more modes that transfer the same cargo unit-like 40' shipping container from ship to train or truck); multimodal is the transfer of people/cargo between two or more modes and in NC is used in public transit settings i.e. Charlotte Multimodal Station)
- ❖ **Park and Ride Lot** – A strategically located parking lot that provides commuters connections to transit or carpools.
- ❖ **Existing Grade Separation** – Locations where existing rail facilities are physically separated from existing highways or other transportation facilities. These may be bridges, culverts, or other structures.
- ❖ **Proposed Grade Separation** – Locations where rail facilities are recommended to be physically separated from existing or recommended highways or other transportation facilities. These may be bridges, culverts, or other structures.

Bicycle Map

- ❖ **On Road-Existing** – Conditions for bicycling on the highway facility are adequate to safely accommodate cyclists.
- ❖ **On Road-Needs Improvement** – At the systems level, it is desirable for **an existing** highway facility to accommodate bicycle transportation; however, highway improvements are necessary to create safe travel conditions for the cyclists.

- ❖ **On Road-Recommended** – At the systems level, it is desirable for a **recommended** highway facility to accommodate bicycle transportation. The highway should be designed and built to safely accommodate cyclists.
- ❖ **Off Road-Existing** – A facility that accommodates only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way.
- ❖ **Off Road-Needs Improvement** – A facility that accommodates only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way that will not adequately serve future bicycle needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment.
- ❖ **Off Road-Recommended** – A facility needed to accommodate only bicycle transportation and is physically separated from a highway facility either within the right-of-way or within an independent right-of-way.
- ❖ **Multi-use Path-Existing** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- ❖ **Multi-use Path-Needs Improvement** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic that will not adequately serve future needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment. Sidewalks should not be designated as a multi-use path.
- ❖ **Multi-use Path-Recommended** – A facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that is needed to serve bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- ❖ **Existing Grade Separation** – Locations where existing “Off Road” facilities and “Multi-use Paths” are physically separated from existing highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.
- ❖ **Proposed Grade Separation** – Locations where “Off Road” facilities and “Multi-use Paths” are recommended to be physically separated from existing or recommended highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.

Pedestrian Map

- ❖ **Sidewalk-Existing** – Paved paths (including but not limited to concrete, asphalt, brick, stone, or wood) on both sides of a highway facility and within the highway right-of-way that are adequate to safely accommodate pedestrian traffic.
- ❖ **Sidewalk-Needs Improvement** – Improvements are needed to provide paved paths on both sides of a highway facility. The highway facility may or may not need improvements. Improvements do not include re-paving or other maintenance activities but may include: filling in gaps, widening sidewalks, or meeting ADA (Americans with Disabilities Act) requirements.
- ❖ **Sidewalk-Recommended** – At the systems level, it is desirable for a recommended highway facility to accommodate pedestrian transportation **or** to add sidewalks on an existing facility where no sidewalks currently exist. The highway should be designed and built to safely accommodate pedestrian traffic.
- ❖ **Off Road-Existing** – A facility that accommodates only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way.
- ❖ **Off Road-Needs Improvement** – A facility that accommodates only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way that will not adequately serve future pedestrian needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), improved horizontal or vertical alignment, and meeting ADA requirements.
- ❖ **Off Road-Recommended** – A facility needed to accommodate only pedestrian traffic and is physically separated from a highway facility usually within an independent right-of-way.
- ❖ **Multi-use Path-Existing** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.
- ❖ **Multi-use Path-Needs Improvement** – An existing facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that serves bicycle and pedestrian traffic that will not adequately serve future needs. Improvements may include but are not limited to, widening, paving (not re-paving or other maintenance activities), and improved horizontal or vertical alignment. Sidewalks should not be designated as a multi-use path.
- ❖ **Multi-use Path-Recommended** – A facility physically separated from motor vehicle traffic that is either within the highway right-of-way or on an independent right-of-way that is needed to serve bicycle and pedestrian traffic. Sidewalks should not be designated as a multi-use path.

- ❖ **Existing Grade Separation** – Locations where existing “Off Road” facilities and “Multi-use Paths” are physically separated from existing highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.
- ❖ **Proposed Grade Separation** – Locations where “Off Road” facilities and “Multi-use Paths” are recommended to be physically separated from existing or recommended highways, railroads, or other transportation facilities. These may be bridges, culverts, or other structures.

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Appendix C

CTP Inventory and Recommendations

Assumptions/ Notes:

- ❖ **Local ID:** This Local ID is the same as the one used for the Prioritization Project Submittal Tool. If a TIP project number exists it is listed as the ID. Otherwise, the following system is used to create a code for each recommended improvement: the first 4 letters of the county name is combined with a 4 digit unique numerical code followed by ‘-H’ for highway, ‘-T’ for public transportation, ‘-R’ for rail, ‘-B’ for bicycle, ‘-M’ for multi-use paths, or ‘-P’ for pedestrian modes. If a different code is used along a route it indicates separate projects will probably be requested. Also, upper case alphabetic characters (i.e. ‘A’, ‘B’, or ‘C’) are included after the numeric portion of the code if it is anticipated that project segmentation or phasing will be recommended.
- ❖ **Jurisdiction:** Jurisdictions listed are based on municipal limits, county boundaries, and MPO Metropolitan Planning Area Boundaries (MAB), as applicable.
- ❖ **Existing Cross-Section:** Listed under ‘Total Width (ft)’ is the approximate width of the roadway from edge of pavement to edge of pavement and under ‘Lane Width (ft)’ is the approximate width of a single lane based on centerline/ edge line markings. Listed under ‘Lanes’ is the total number of lanes, with ‘D’ if the facility is divided, and ‘OW’ if it is a one-way facility.
- ❖ **Existing ROW:** The estimated existing right-of-way is based on data from the Chatham County GIS group. These right-of-way amounts are approximate and may vary.
- ❖ **Existing and Proposed Capacity:** The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed using the NCLOS Methodology as documented in Chapter 1.
- ❖ **Existing and Proposed Volumes,** given in vehicles per day (vpd), are estimates only based on a systems-level analysis. The ‘2035 Volume E+C’ is an estimate of the volume in 2035 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the Transportation Improvement Program (TIP). The ‘2035 Volume with CTP’ is an estimate of the volume in 2035 with all proposed CTP improvements assumed to be in place. The ‘2035 Volume with CTP’ is shown in bold if it exceeds the proposed capacity, indicating an unmet need. For additional information about the assumptions and techniques used to develop the AADT volume estimates, refer to Chapter 1.
- ❖ **Proposed Cross-section:** The CTP recommended cross-sections are listed by code; for depiction of the cross-section, refer to Appendix D. An entry of ‘ADQ’ indicates the existing facility is adequate and there are no improvements recommended for the given mode as part of the CTP.
- ❖ **CTP Classification:** The CTP classification is listed, as shown on the adopted CTP Maps (see Figure 1). Abbreviations are F= freeway, E= expressway, B= boulevard, Maj= other major thoroughfare, Min= minor thoroughfare.

- ❖ **Tier:** Tiers are defined as part of the North Carolina Multimodal Investment Network (NCMIN). Abbreviations are Sta= statewide tier, Reg= regional tier, Sub= subregional tier.
- ❖ **Proposals for Other Modes:** If there is an improvement recommended for another mode of transportation that relates to the given recommendation, it is indicated by an alphabetic code (H= highway, T= public transportation, R= rail, B= bicycle, P= pedestrian, and M= multi-use path).

CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																					
Local ID	Facility	Section		Jurisdiction	Dist. (mi)	2008 Existing System								2035 Proposed System					CTP Classification	Tier	Proposals for Other Modes
		From	To			Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2008 (2009) Volume	2013 (2012) Volume	2035 Volume E+C	2035 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)			
COLU0004-H	US 64	Haw River	Exit 386	Chatham	1.0	52	4 D	12	190	55	40500	11000	13000	41000	41000	58900	4A	180	F	Sta	
	US 64	Exit 386	US 64 Bus.	Chatham	7.7	52	4 D	12	150-180	65	58900	9100	13000	56800	56800	58900	ADQ	150-180	F	Sta	
COLU0004-H	US 64	US 64 Bus.	Hadley Mill Rd. (SR 2165)	Chatham	1.9	52	4 D	12	105	55	40500	11000	(13000)	38000	38000	58900	4A	180	F	Sta	
COLU0001-H	US 15/US 501/NC 87	Joe Wombie Rd.	Old Sanford Rd. (SR 2219)	Chatham	2.4	24	2	12	270	55	14300	7000	6100	26200	26200	58800	4B	150	E	Sta	
	US 15/US 501/NC 87 (Sanford Rd.)	Old Sanford Rd. (SR 2219)	Log Barn Rd.	Chatham	0.6	24	2	12	100	55	14600	7000	6100	8400	8400	14600	ADQ	100	Maj	Sta	
	US 15/US 501/NC 87 (Sanford Rd.)	Log Barn Rd.	Moncure Pittsboro Rd. (SR 1012)	Pittsboro	0.4	22	2	11	100	35	11200	7200	7200	12200	12200	11200	ADQ	100	Maj	Sta	
	US 15/US 501/NC 87 (Sanford Rd.)	Moncure Pittsboro Rd. (SR 1012)	Trace Dr.	Pittsboro	0.2	40	3	13	100	35	12900	(8300)	(7400)	12500	12500	12900	ADQ	100	Maj	Sta	
	US 15/US 501/NC 87 (Sanford Rd.)	Trace Dr.	S. Horton St.	Pittsboro	0.3	24	2	11	100	35	11200	(8300)	(7400)	12500	12500	11200	ADQ	100	Maj	Sta	
	US 15/US 501/NC 87 (Sanford Rd.)	S. Horton St.	Roberson Creek	Pittsboro	0.2	32	3	10	100	35	12000	(8300)	(7400)	12500	12500	12000	ADQ	100	Maj	Sta	
	US 15/US 501/NC 87 (Sanford Rd.)	Roberson Creek	Womack St.	Pittsboro	0.1	24	2	11	100	35	11200	(8300)	(7400)	12500	12500	11200	ADQ	100	Maj	Sta	
	US 15/US 501/NC 87 (Sanford Rd.)	Womack St.	E. Chatham St.	Pittsboro	<0.1	44	4	10	100	35	21900	(8300)	(7400)	12500	12500	21900	ADQ	100	Maj	Sta	
	US 15/US 501/NC 87 (Sanford Rd.)	E. Chatham St.	Roundabout	Pittsboro	<0.1	44	2	10	100	35	10300	(8300)	(7400)	12500	12500	10300	ADQ	100	Maj	Sta	
	US 15/US 501 (Sanford Rd.)	Roundabout	US 15/US 501 (Sanford Rd.)	Pittsboro	0.05	44	2	11	0	35	10600	12000	14000	23700	23700	10600	ADQ	0	Maj	Sta	
	US 15/US 501 (Sanford Rd.)	US 15/US 501 (Sanford Rd.)	W/E Salisbury St.	Pittsboro	0.07	44	2	11	80	35	10600	12000	14000	23700	23700	10600	ADQ	80	Maj	Sta	
	US 15/US 501 (Sanford Rd.)	W/E Salisbury St.	0.1 mile North Thompson St.	Pittsboro	0.05	44	3	12	0	20	12700	12000	14000	23700	23700	12700	ADQ	0	Maj	Sta	
	US 15/US 501 (Hillsboro St.)	0.1 mile North Thompson St.	Launis St.	Pittsboro	0.3	24	2	12	60	35	11000	12000	14000	23700	23700	11000	ADQ	60	Maj	Sta	

HIGHWAY																					
Local ID	Facility	Section		Jurisdiction	Dist. (mi)	2008 Existing System								2035 Proposed System					CTP Classification	Tier	Proposals for Other Modes
		From	To			Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2008 (2009) Volume	2013 (2012) Volume	2035 Volume E+C	2035 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)			
	US 15/US 501 (Hillsboro St.)	Launis St.	Park Dr.	Pittsboro	0.1	40	3	12	60	35	12700	12000	14000	23700	23700	12700	ADQ	60	Maj	Sta	
	US 15/US 501 (Hillsboro St.)	Park Dr.	0.1 mile North Dark Oaks Dr.	Pittsboro	0.5	24	2	12	60-100	35	11000	11000	16000	27000	27000	11000	ADQ	60-100	Maj	Sta	
	US 15/US 501 (Hillsboro St.)	0.1 mile North Dark Oaks Dr.	Coopers Ridge Rd.	Pittsboro	0.6	28	2	12	100	45	14000	11000	16000	27000	27000	14000	ADQ	100	Maj	Sta	
	US 15/US 501 (Hillsboro St.)	Coopers Ridge Rd.	Powell Ln Pl.	Pittsboro	0.1	55	5	11	120	45	26700	11000	16000	27000	27000	26700	ADQ	120	Bldv	Sta	
COLU0003-H	US 15/US 501 (Chapel-Hill Rd.)	Powell Ln Pl.	0.2 mile South Russet Run (SR 1658)	Pittsboro	0.5	60	4	12	200	55	29100	14000	(18000)	47100	43400	46000	4A	180	E	Sta	
COLU0003-H	US 15/US 501 (Chapel-Hill Rd.)	0.2 mile South Russet Run (SR 1658)	5 Oaks Rd.	Chatham	0.3	60	5	12	150	55	31800	14000	(18000)	47100	43400	46000	4A	180	E	Sta	
COLU0003-H	US 15/US 501 (Chapel-Hill Rd.)	5 Oaks Rd.	Haw River	Chatham	1.8	60	4 D	12	328	55	40500	14000	(18000)	47100	43400	46000	4A	180	E	Sta	
COLU0002-H	US 15/US 501 Bypass	US 15/US 501	US 64	Chatham	4.5	-	-	-	-	-	-	-	-	-	10100	55800	4A	180	E	Sta	
	US 64 Bus.	US 64	Hanks Chapel Rd. (SR 1943)	Chatham	0.9	24	2	12	150	55	15100	4000	(4200)	7100	7100	15100	ADQ	150	Maj	Reg	
	US 64 Bus.	Hanks Chapel Rd. (SR 1943)	Thompson St.	Chatham	0.4	24	2	12	150	45	12700	4000	(4200)	7100	7100	12700	ADQ	150	Maj	Reg	
	US 64 Bus.	Thompson St.	Whites MPH Rd.	Chatham	0.1	24	2	12	80	45	12700	4000	(4200)	7100	7100	12700	ADQ	80	Maj	Reg	
	US 64 Bus. (East St.)	Whites MPH Rd.	Industrial Park Dr.	Pittsboro	0.2	24	2	12	80	45	12200	11000	12000	20300	20300	12200	ADQ	80	Maj	Reg	
	US 64 Bus. (East St.)	Industrial Park Dr.	Fairgrounds Rd.	Pittsboro	0.4	44	3	12	80	45	13300	11000	12000	20300	20300	13300	ADQ	80	Maj	Reg	
	US 64 Bus. (East St.)	Fairgrounds Rd.	Small St.	Pittsboro	0.4	44	3	12	80	35	12700	11000	12000	20300	20300	12700	ADQ	80	Maj	Reg	
	US 64 Bus. (East St.)	Small St.	Masonic St.	Pittsboro	0.1	44	2	12	80	35	11100	11000	12000	20300	20300	11100	ADQ	80	Maj	Reg	
	US 64 Bus. (East St.)	Masonic St.	Roundabout	Pittsboro	<0.1	44	2	12	80	20	11000	11000	12000	20300	20300	11000	ADQ	80	Maj	Reg	
	US 64 Bus. (West St.)	Roundabout	Fayetteville St.	Pittsboro	<0.1	44	2	12	80	20	11000	9100	(11000)	18600	18600	11000	ADQ	80	Maj	Reg	
	US 64 Bus. (West St.)	Fayetteville St.	NC 87/NC 902	Pittsboro	0.4	40	3	11	80	35	10700	8300	9300	15700	15700	10700	ADQ	80	Maj	Reg	
	US 64 Bus.	NC 87/NC 902	Pittsboro City Limit	Pittsboro	0.3	36	3	11	80	35	12300	5300	(5200)	8800	8800	12300	ADQ	80	Maj	Reg	
	US 64 Bus.	Pittsboro City Limit	0.1 mile West Pittsboro City Limit	Chatham	0.1	36	2	11	80	35	10700	5300	(5200)	8800	8800	10700	ADQ	80	Maj	Reg	

HIGHWAY																					
Local ID	Facility	Section		Jurisdiction	Dist. (mi)	2008 Existing System								2035 Proposed System					CTP Classifi- cation	Tier	Proposals for Other Modes
		From	To			Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2008 (2009) Volume	2013 (2012) Volume	2035 Volume E+C	2035 Volume with CTP	Proposed Capacity (vpd)	Cross- Section	ROW (ft)			
	US 64 Bus.	0.1 mile West Pittsboro City Limit	US 64	Chatham	2.0	24	2	12	150	55	14600	5300	(5200)	8800	8800	14600	ADQ	150	Maj	Reg	
	NC 87	Screech Own Rd.	Moncure Pittsboro Rd. (SR 1012)	Concurrent with US 15/501																	
	NC 87	Moncure Pittsboro Rd. (SR 1012)	NC 902	Pittsboro	0.6	28	2	12	100	45	12200	4100	(4500)	7600	7600	12200	ADQ	100	Maj	Reg	
	NC 87	NC 902	Pittsboro City Limit	Chatham	0.4	28	2	12	60	45	12200	6400	(6400)	10800	10800	12200	ADQ	60	Maj	Reg	
	NC 87	Pittsboro City Limit	Old Goldston Rd. (SR 2160)	Pittsboro	0.2	24	2	12	60	45	12200	6900	7800	13200	13200	12200	ADQ	60	Maj	Reg	
	NC 87	Old Goldston Rd.	< 0.1 mile South Brown St.	Pittsboro	<0.1	32	2	16	60	45	12200	6900	7800	13200	13200	12200	ADQ	60	Maj	Reg	
	NC 87	< 0.1 mile South Brown St.	< 0.1 mile US 64 Bus. (West St.)	Pittsboro	0.1	36	3	12	60	45	13300	6900	7800	13200	13200	13300	ADQ	60	Maj	Reg	
	NC 87	< 0.1 mile US 64 Bus. (West St.)	Roundabout	Pittsboro	0.2	24	2	12	60	35	11100	5100	(6100)	10300	10300	11100	ADQ	60	Maj	Reg	
	NC 87	Roundabout	<0.1 mile South Ashford Dr.	Pittsboro	0.1	24	2	12	60	35	11100	5100	(6100)	10300	10300	11100	ADQ	60	Maj	Reg	
	NC 87	South Ashford Dr.	Pittsboro City Limit	Pittsboro	0.1	24	2	12	60	45	12200	5100	(6100)	10300	10300	12200	ADQ	60	Maj	Reg	
	NC 87	Pittsboro City Limit	Cooper Farm Rd.	Chatham	0.6	20	2	10	60	45	11900	3200	3200	5400	5400	11900	ADQ	60	Maj	Reg	
	NC 87	Cooper Farm Rd.	X Campbell Rd (SR 1346)	Chatham	0.8	20	2	10	60	55	13600	3200	3200	5400	5400	13600	ADQ	60	Maj	Reg	
	NC 87	X Campbell Rd (SR 1346)	US 64 east entrance	Chatham	0.1	30	2	10	200	55	13600	3300	(4000)	6800	6800	13600	ADQ	200	Maj	Reg	
	NC 87	US 64 east entrance	US 64 west entrance	Chatham	0.1	36	3	10	200	55	14800	3300	(4000)	6800	6800	14800	ADQ	200	Maj	Reg	
CHAT0017-H	NC 87	US 64 west entrance	Silk Hope Gum Springs Rd. (SR 1346)	Chatham	1.8	20	2	10	60	55	14100	3900	(4600)	12100	12100	15100	2A	60	Maj	Reg	
	NC 87	Silk Hope Gum Springs Rd. (SR 1346)	Granite Springs Rd.	Chatham	2.0	20	2	10	60	55	14100	2500	(3000)	5100	5100	14100	ADQ	60	Maj	Reg	
	NC 902	White-Smith Rd. (SR 1506)	Pittsboro Goldston Rd. (SR 1010)	Chatham	3.2	22	2	11	60	55	14600	1100	(1500)	2500	2500	14600	ADQ	60	Maj	Reg	
	NC 902	Pittsboro Goldston Rd. (SR 1010)	NC 87	Chatham	2.7	22	2	11	60	55	14600	3300	3300	10900	10900	14600	ADQ	60	Maj	Reg	
	NC 902	Pittsboro Goldston Rd. (SR 1010)	US 64 Bus. (West St.)	Concurrent with NC 87																	

HIGHWAY																						
Local ID	Facility	Section		Jurisdiction	Dist. (mi)	2008 Existing System								2035 Proposed System						CTP Classification	Tier	Proposals for Other Modes
		From	To			Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2008 (2009) Volume	2013 (2012) Volume	2035 Volume E+C	2035 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)				
	Adolph Taylor Rd. (SR 2161)	Alston Chapel Rd. (SR 2159)	US 64 Bus.	Chatham	1.3	20	2	9	60	55	13600	380	(450)	760	760	13600	ADQ	60	Min	Sub		
	Alex Cockman Rd. (SR 1263)	NC 902	US 64	Chatham	3.0	18	2	9	60	55	13600	600	(750)	1300	1300	13600	ADQ	60	Min	Sub		
	Alston Chapel Rd. (SR 2159)	Alex Cockman Rd. (SR 1263)	Old Goldston Rd. (SR 2160)	Chatham	5.0	20	2	10	60	55	14100	520	(780)	1300	1300	14100	ADQ	60	Min	Sub		
CHAT0009-H	Bill Thomas Rd. (SR 1952)	Moncure Pittsboro Rd. (SR 1012)	New Blvd. 1	Chatham	0.9	22	2	10	60	45	12000	50	60	100	200	12000	2B	60	Min	Sub		
CHAT0008-H	Bill Thomas Rd. Extension	New Blvd. 1	US 64 Bus.	Chatham	1.7	-	-	-	-	-	-	-	-	-	26800	3100	2B	60	Min	Sub		
	Charlie Brooks Rd. (SR 1969)	US 15/US 501	Moncure Pittsboro Rd. (SR 1012)	Chatham	2.4	20	2	10	60	55	12400	2100	2600	4300	4300	12400	ADQ	60	Min	Sub		
CHAT0007-H	Charlie Brooks Extension	Moncure Pittsboro Rd. (SR 1012)	New Blvd. 1	Chatham	1.2	-	-	-	-	-	-	-	-	-	7100	12000	2B	60	Min	Sub		
CHAT0007-H	Charlie Brooks Extension	New Blvd. 1	US 64	Chatham	2.2	-	-	-	-	-	-	-	-	-	23800	31000	4B	150	B	Sub		
CHAT0007-H	Charlie Brooks Extension	US 64	North-South Connector	Chatham	2.9	-	-	-	-	-	-	-	-	-	1900	12000	2B	60	Min	Sub		
	Chatham Church Rd. (SR 1953)	0.1 mile North Pete Roberson Rd. (SR 2157)	0.6 mile South US 15/US 501	Chatham	1.1	20	2	9	60	45	13100	700	750	1300	1300	13100	ADQ	60	Min	Sub		
	Chatham Church Rd. (SR 1953)	0.6 mile South US 15/US 501	US 15/ US 501	Chatham	0.6	20	2	9	60	55	13600	700	750	1300	1300	13600	ADQ	60	Min	Sub		
CHAT0010-H	Eubanks Rd. (SR 1572)	US 64 Bus.	0.2 mile North Prince Creek Rd.	Chatham	0.7	22	2	10	60	45	11400	300	350	15500	15500	31000	4B	60	Min	Sub		
CHAT0011-H	Eubanks Extension	Prince Creek Rd.	North-South Connector	Chatham	1.5	-	-	-	-	-	-	-	-	-	13400	31000	4B	60	Min	Sub		
	Fairgrounds Rd.	US 64 Bus. (East St.)	Thompson St.	Pittsboro	0.1	18	2	9	-	25	9000	600	650	1100	1100	9000	ADQ	-	Min	Sub		
	Gum Springs Church Rd. (SR 1943)	Old Chesnut Crossing	Providence Church Rd. (SR 1939)	Chatham	2.8	20	2	9	60	55	13600	(420)	480	810	810	13600	ADQ	60	Min	Sub		
	Hanks Chapel Rd. (SR 1943)	Providence Church Rd. (SR 1939)	Hanks Loop Rd. (SR 1945)	Chatham	1.9	20	2	9	60	55	13600	600	(760)	1300	1300	13600	ADQ	60	Min	Sub		
	Hanks Chapel Rd. (SR 1943)	Hanks Loop Rd. (SR 1945)	US 64 Bus.	Chatham	1.7	20	2	9	60	55	13600	680	(900)	1500	1500	13600	ADQ	60	Min	Sub		

HIGHWAY																						
Local ID	Facility	Section		Jurisdiction	Dist. (mi)	2008 Existing System								2035 Proposed System						CTP Classification	Tier	Proposals for Other Modes
		From	To			Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2008 (2009) Volume	2013 (2012) Volume	2035 Volume E+C	2035 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)				
	Hanks Loop Rd. (SR 1945)	Hanks Chapel Rd. northern (SR 1943)	New Far East	Chatham	0.2	24	2	12	60	55	12000	110	120	200	200	12000	ADQ	60	Min	Sub		
CHAT0006-H	Hanks Loop Rd. (SR 1945)	New Far East	Hanks Chapel Rd. southern (SR 1943)	Chatham	0.3	24	2	12	60	55	12000	110	120	200	200	12000	2B	60	Min	Sub		
CHAT0014-H	Industrial Park-US 15/US 501 Connector	US 15/US 501	Lorax Ln.	Chatham/Pittsboro	1.1	-	-	-	-	-	-	-	-	-	5300	12000	2B	60	Min	Sub		
	Industrial Park Dr.	US 64 Bus. (East St.)	Lorax Ln.	Pittsboro	0.6	24	2	12	-	45	12200	100	1200	2000	2000	12200	ADQ	-	Min	Sub		
CHAT0013-H	Industrial Park Extension	Lorax Ln.	Turkey Creek River	Pittsboro	0.6	-	-	-	-	-	-	-	-	-	11600	12000	2B	60	Min	Sub		
CHAT0013-H	Industrial Park Extension	Turkey Creek River	New Far East	Chatham	1.9	-	-	-	-	-	-	-	-	-	11600	12000	2B	60	Min	Sub		
CHAT0015-H	Lorax Ln.	Industrial Park Dr.	North-South Connector	Pittsboro	0.4	24	2	12	-	46	12000	550	600	1000	21000	31000	4B	150	B	Sub		
CHAT0016-H	Lorax Extension	North-South Connector	Bill Thomas Extension	Chatham	0.9	-	-	-	-	-	-	-	-	-	18900	31000	4B	150	B	Sub		
CHAT0016-H	Lorax Extension	Bill Thomas Extension	Charlie Brooks Extension	Chatham	0.2	-	-	-	-	-	-	-	-	-	11600	12000	2B	60	Min	Sub		
	Moncure Pittsboro Rd. (SR 1012)	<0.1 mile North Mt. View Church Rd.	0.2 mile North Nota Rd.	Chatham	0.9	20	2	9	100	45	13100	2500	(2700)	4600	4600	13100	ADQ	100	Min	Sub		
	Moncure Pittsboro Rd. (SR 1012)	0.2 mile North Nota Rd.	0.2 mile North International Woodyard Rd.	Chatham	4.0	22	2	11	100	55	14600	4000	(3600)	6100	6100	14600	ADQ	100	Min	Sub		
	Moncure Pittsboro Rd. (SR 1012)	0.2 mile North Internation Woodyard Rd.	Pittsboro City Limit	Chatham	0.4	22	2	11	100	35	9900	4000	(3600)	6100	6100	9900	ADQ	100	Min	Sub		
	Moncure Pittsboro Rd. (SR 1012)	Pittsboro City Limit	US 15/US 501	Pittsboro	<0.1	40	3	12	100	35	10200	4000	(3600)	6100	6100	10200	ADQ	100	Min	Sub		
CHAT0012-H	New Boulevard 1	Mount Zion Rd. (SR 1951)	New Far East	Chatham	2.5	-	-	-	-	-	-	-	-	-	14700	31000	4B	150	B	Sub		
CHAT0005-H	New Far East	Moncure Pittsboro Rd. (SR 1012)	Hanks Loop Rd. (SR 1945)	Chatham	4.3	-	-	-	-	-	-	-	-	-	2700	12000	2B	60	Min	Sub		
	Old Goldston Rd. (SR 2160)	Northern of NC 87/ NC 902	Pittsboro City Limit	Pittsboro	0.1	18	2	9	60	35	9200	(730)	640	1100	1100	9200	ADQ	60	Min	Sub		
	Old Goldston Rd. (SR 2160)	Pittsboro City Limit	NC 87/ NC 903 South	Chatham	0.5	18	2	9	60	55	13100	(730)	640	1100	1100	13100	ADQ	60	Min	Sub		

HIGHWAY																						
Local ID	Facility	Section		Jurisdiction	Dist. (mi)	2008 Existing System								2035 Proposed System					CTP Classification	Tier	Proposals for Other Modes	
		From	To			Total Width (ft)	Lanes	Lane Width (ft)	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2008 (2009) Volume	2013 (2012) Volume	2035 Volume E+C	2035 Volume with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)				
	Old Grahman Rd. (SR 1520)	Colonial Ridge Dr.	Russell Chapel Church Rd. (SR 1520)	Chatham	2.7	22	2	11	60	55	14600	810	(1100)	1900	1900	14600	ADQ	60	Min	Sub		
	Old Grahman Rd. (SR 1516)	Russell Chapel Church Rd. (SR 1520)	0.1 mile North X Campbell Rd. (SR 1346)	Chatham	1.9	22	2	11	60	55	14600	810	(1100)	1900	1900	14600	ADQ	60	Min	Sub		
	Old Grahman Rd. (SR 1516)	0.1 mile North X Campbell Rd. (SR 1346)	0.1 mile South X Campbell Rd. (SR 1346)	Chatham	0.3	20	2	10	60	45	13600	810	(1100)	1900	1900	13600	ADQ	60	Min	Sub		
	Old Grahman Rd. (SR 1516)	0.1 mile South X Campbell Rd. (SR 1346)	<0.1 mile North Brownstone Ln.	Chatham	0.5	18	2	9	60	35	9200	2500	(1500)	2500	2500	9200	ADQ	60	Min	Sub		
	Old Grahman Rd. (SR 1516)	<0.1 mile North Brownstone Ln.	NC 87	Pittsboro	0.2	18	2	9	60	35	9200	2500	(1500)	2500	2500	9200	ADQ	60	Min	Sub		
	Pittsboro FireTower Rd. (SR 1702)	Thompson St.	Pittsboro City Limit	Pittsboro	0.1	20	2	9	60	35	9200	1250	1350	2300	2300	9200	ADQ	60	Min	Sub		
	Pittsboro FireTower Rd. (SR 1702)	Pittsboro City Limit	Tom Womble Rd. (SR 1703)	Chatham	0.8	20	2	9	60	55	13100	690	740	1300	1300	13100	ADQ	60	Min	Sub		
	Pittsboro Goldston Rd. (SR 1010)	Rabbit Trail	NC 902	Chatham	2.1	22	2	10	60	55	14100	(1900)	2100	3600	3600	14100	ADQ	60	Min	Sub		
	Rectory St.	US 64 Bus. (West St.)	Thompson St.	Pittsboro	0.1	30	2	12	-	25	10000	1800	1900	3200	3200	10000	ADQ	-	Min	Sub		
	Russell Chapel Church Rd. (SR 1520)	Old Grahman Rd. (SR 1516)	Cooper Horton Rd.	Chatham	1.5	20	2	9	60	55	13100	(1200)	1300	4500	4500	11000	ADQ	60	Min	Sub		
	Russell Chapel Church Rd. (SR 1520)	Cooper Horton Rd .	US 15/US 501	Chatham	0.7	20	2	9	60	45	11000	(1200)	1300	4500	4500	11000	ADQ	60	Min	Sub		
	Silk Hope Gum Springs Rd. (SR 1346)	Harlands (Hollands Creek)	NC 87	Chatham	1.8	22	2	10	60	55	14100	1400	(1600)	2700	2700	14100	ADQ	60	Min	Sub		
	Thompson St.	Rectory St.	Fairgrounds Rd.	Pittsboro	0.9	18	2	9	-	25	9000	850	(880)	1500	1500	9000	ADQ	-	Min	Sub		
	X Campbell Rd. (SR 1346)	NC 87	Old Graham Rd. (SR 1516)	Chatham	1.2	20	2	9	60	55	13600	700	750	1300	1300	13600	ADQ	60	Min	Sub		
CHAT0018-H	X Campbell Rd. Extension	Old Graham Rd. (SR 1516)	North-South Connector	Chatham	1.9	-	-	-	-	-	-	-	-	-	9400	12000	2B	60	Min	Sub		

Appendix D

Typical Cross Sections

Cross section requirements for roadways vary according to the capacity and level of service to be provided. Universal standards in the design of roadways are not practical. Each roadway section must be individually analyzed and its cross section determined based on the volume and type of projected traffic, existing capacity, desired level of service, and available right-of-way. These cross sections are typical for facilities on new location and where right-of-way constraints are not critical. For widening projects and urban projects with limited right-of-way, special cross sections should be developed that meet the needs of the project.

The comprehensive planning and design "typical" highway cross sections, as depicted on the following pages, were updated on May 5, 2014 in response to the Strategic Transportation Investments¹ (STI) law (House Bill 817) and are also consistent with SPOTOnline (used for project prioritization²), NCDOT's GIS-based web application for providing automated, near real-time prioritization scores and project costs. This guidance establishes design elements that emphasize safety, mobility, complete streets³, and accessibility for multiple modes of travel. These "typical" highway cross sections should be used as guidelines for comprehensive transportation planning, project planning and project design activities. The specific and final cross section details and right of way limits for projects will be established through the preparation of the National Environmental Policy Act⁴ (NEPA) documentation and through final design preparation.

On all existing and proposed roadways delineated on the CTP, adequate right-of-way should be protected or acquired for the recommended cross sections. In addition to cross section and right-of-way recommendations for improvements, Appendix C may recommend ultimate needed right-of-way for the following situations:

- ❖ roadways which may require widening after the current planning period,
- ❖ roadways which are borderline adequate and accelerated traffic growth could render them deficient,
- ❖ roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment, and
- ❖ roadways which may need to accommodate an additional transportation mode.

¹ For more information on STI, go to: <http://www.ncdot.gov/strategictransportationinvestments/>.

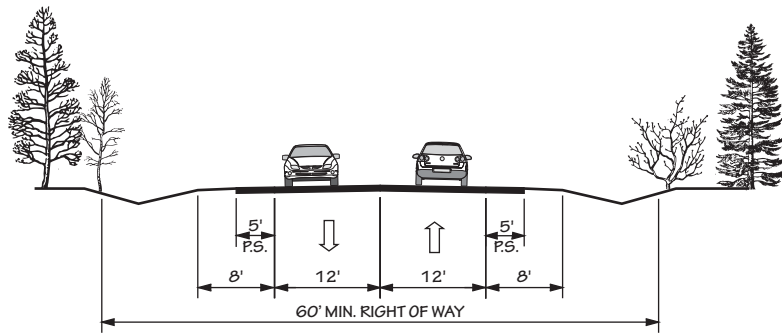
² For more information on prioritization, go to: <https://connect.ncdot.gov/projects/planning/Pages/StrategicPrioritization.aspx>.

³ For more information on Complete Streets, go to: <http://www.completestreetsnc.org/>.

⁴ For more information on NEPA, go to: <http://ceq.hss.doe.gov/>.

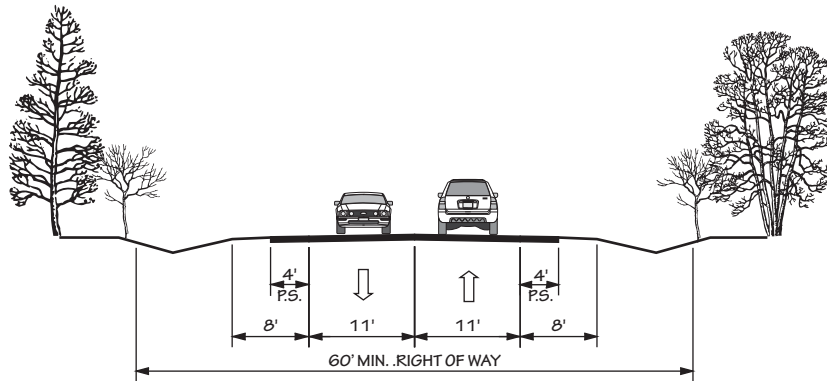
FIGURE 9 "TYPICAL" HIGHWAY CROSS SECTIONS

2A



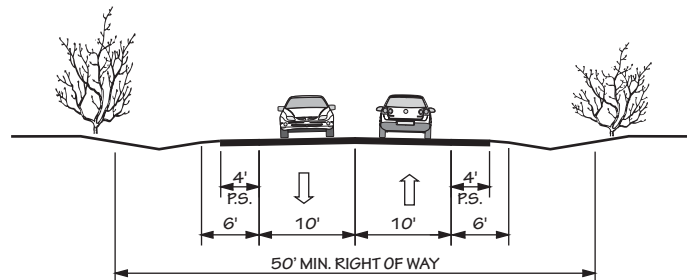
2 LANE UNDIVIDED WITH PAVED SHOULDERS
POSTED SPEED 55 MPH

2B



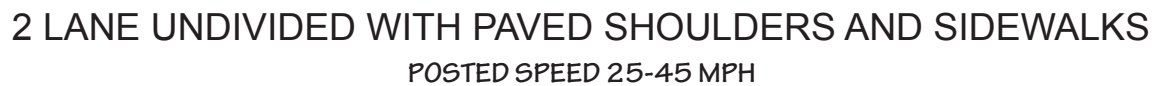
2 LANES UNDIVIDED
POSTED SPEED 45 MPH OR LESS

2C



2 LANE UNDIVIDED WITH PAVED SHOULDERS
POSTED SPEED 25 - 35 MPH

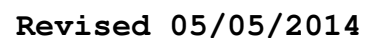
2D



2E

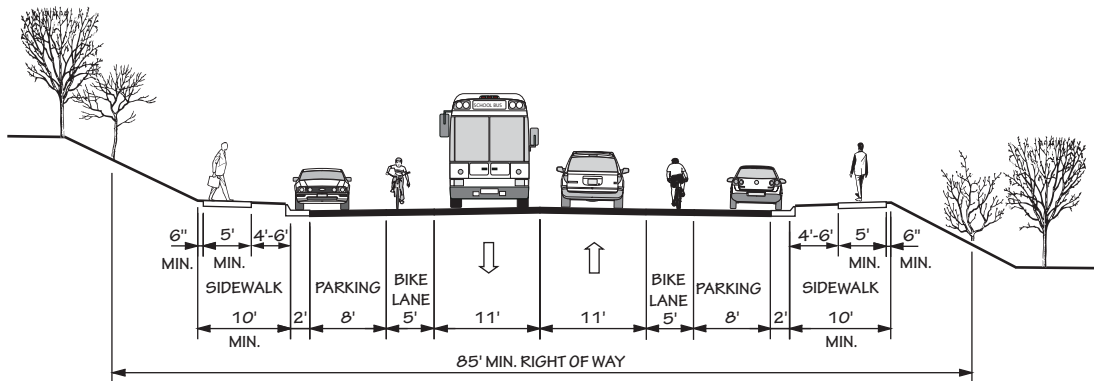


2F



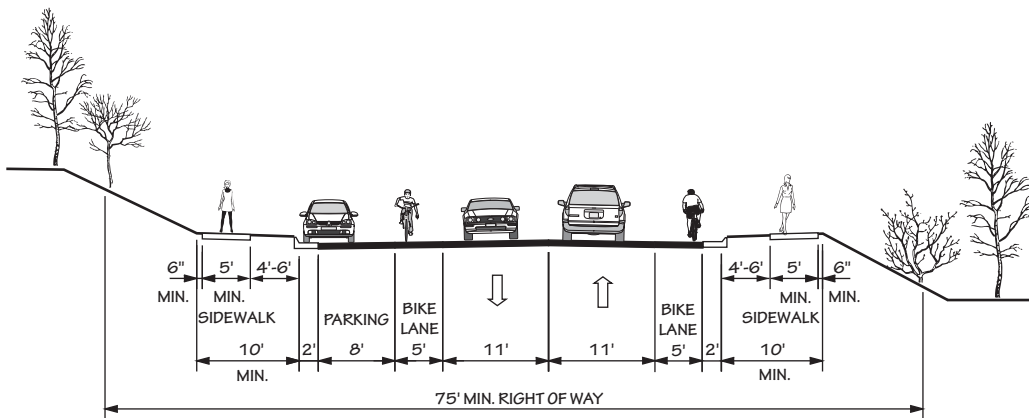
“TYPICAL” HIGHWAY CROSS SECTIONS

2G



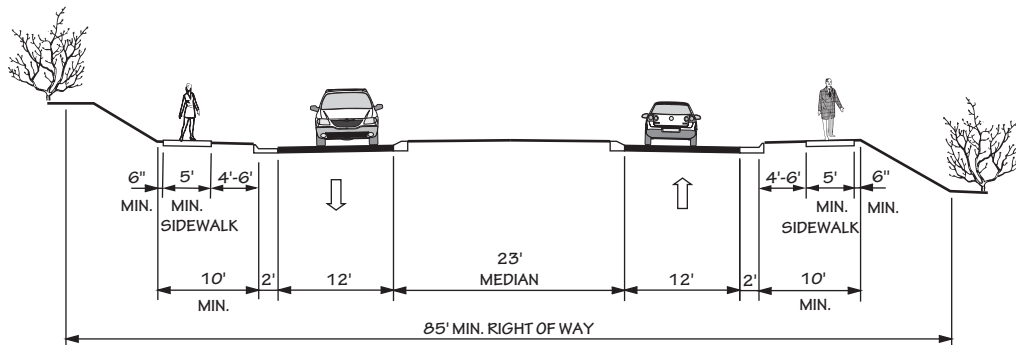
2 LANE UNDIVIDED WITH CURB & GUTTER, PARKING BOTH SIDES,
BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH

2H



2 LANE UNDIVIDED WITH CURB & GUTTER, PARKING ONE SIDE,
BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH

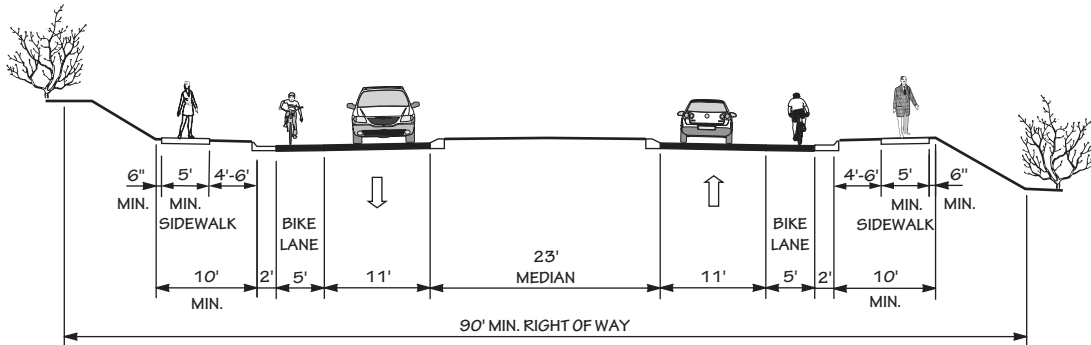
2I



2 LANE DIVIDED (23' RAISED MEDIAN)
WITH CURB & GUTTER AND SIDEWALKS
POSTED SPEED 25-45 MPH

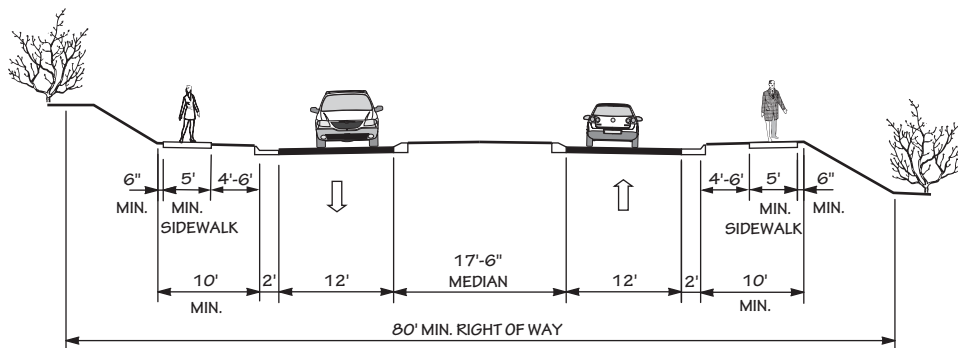
"TYPICAL" HIGHWAY CROSS SECTIONS

2J



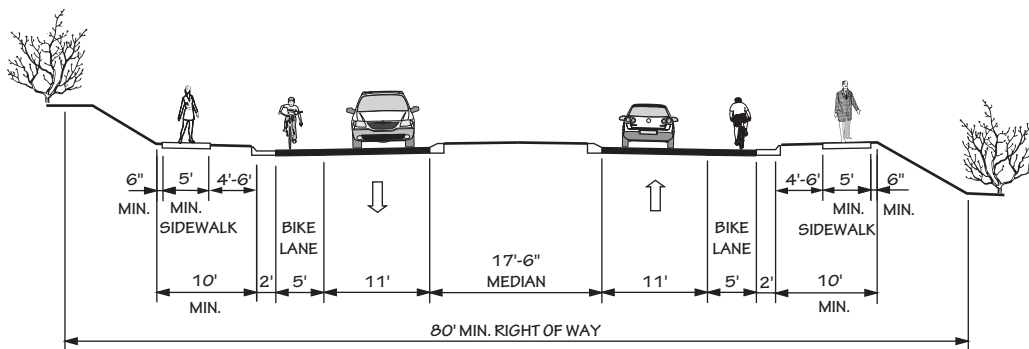
**2 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER,
BIKE LANES, AND SIDEWALKS**
POSTED SPEED 25-45 MPH

2K



**2 LANE DIVIDED (17'-6" RAISED MEDIAN)
WITH CURB & GUTTER AND SIDEWALKS**
POSTED SPEED 25-45 MPH

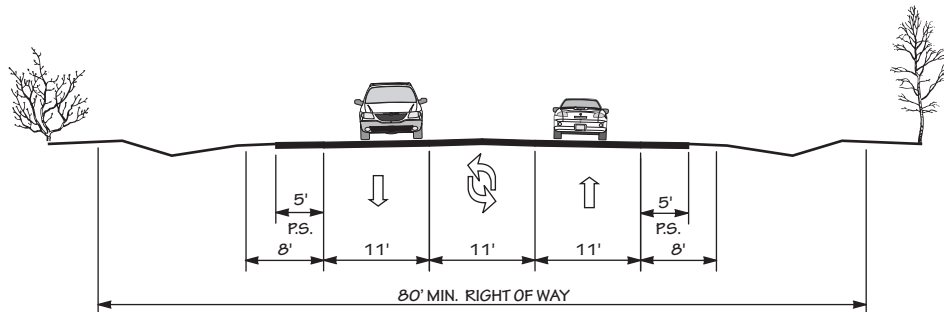
2L



**2 LANE DIVIDED (17'-6" RAISED MEDIAN)
WITH CURB & GUTTER, BIKE LANES, AND SIDEWALKS**
POSTED SPEED 25-45 MPH

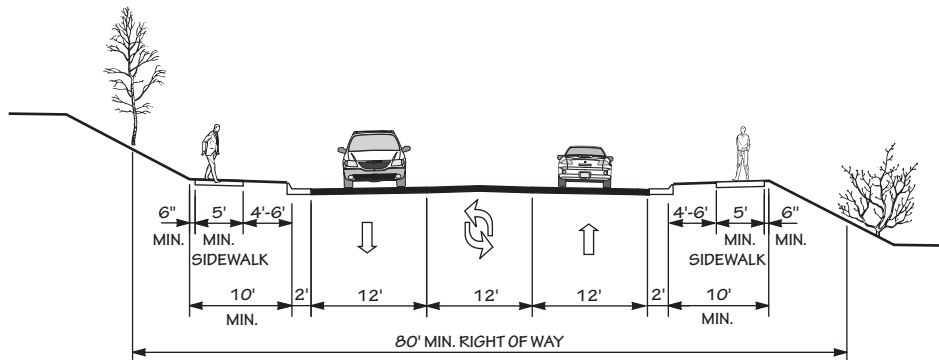
“TYPICAL” HIGHWAY CROSS SECTIONS

3A



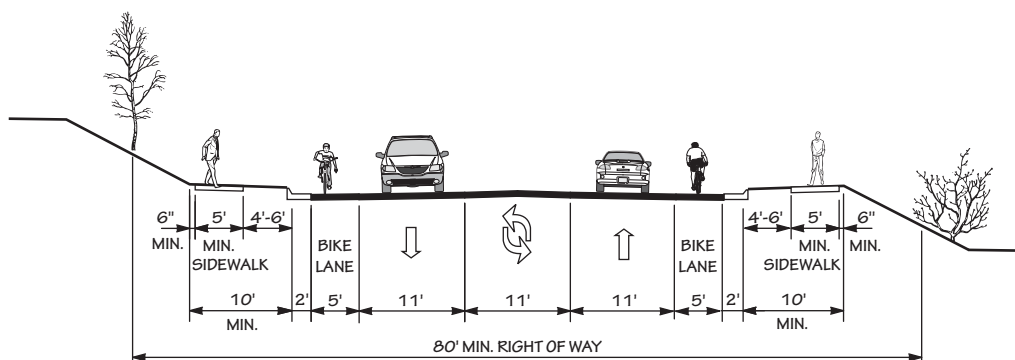
2 LANE WITH TWO WAY LEFT TURN LANE, AND PAVED SHOULDERS
POSTED SPEED 25-55 MPH

3B



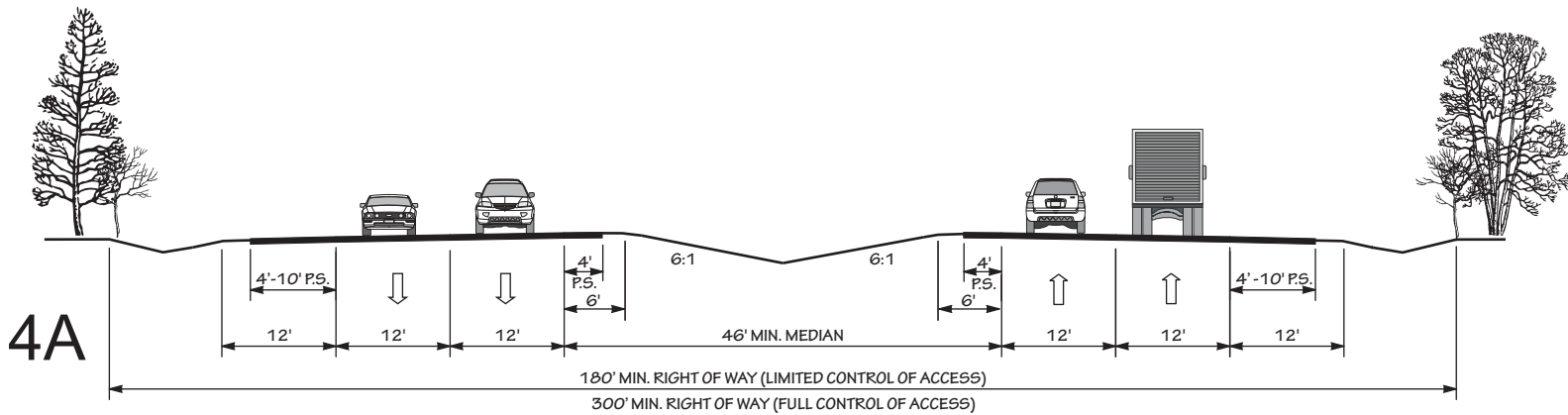
2 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER,
AND SIDEWALKS
POSTED SPEED 25-45 MPH

3C

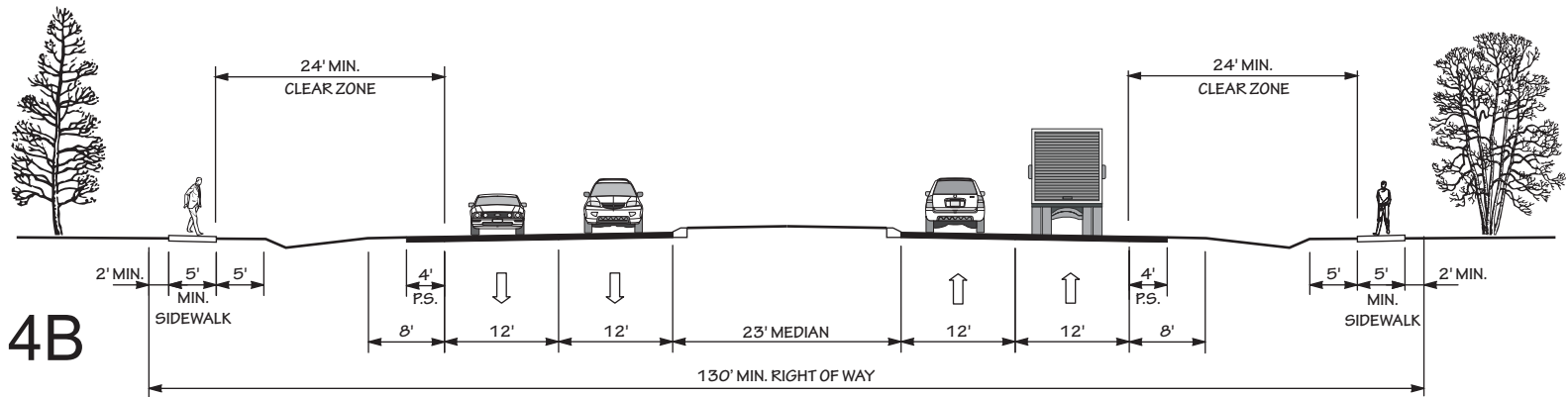


2 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER,
BIKE LANES, AND SIDEWALKS
POSTED SPEED 25-45 MPH

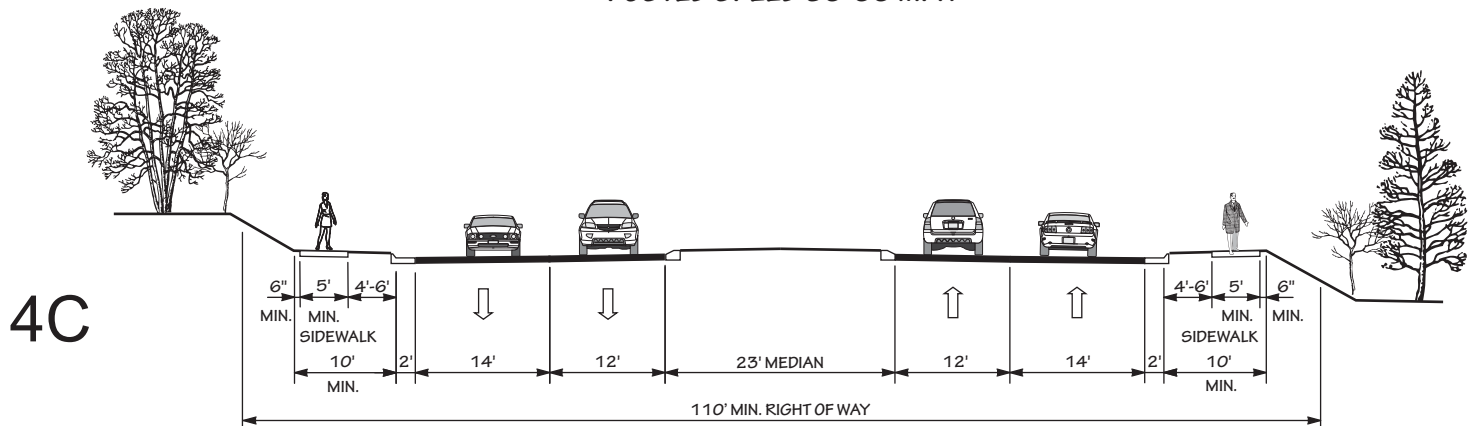
"TYPICAL" HIGHWAY CROSS SECTIONS



4 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS
POSTED SPEED 45-70 MPH

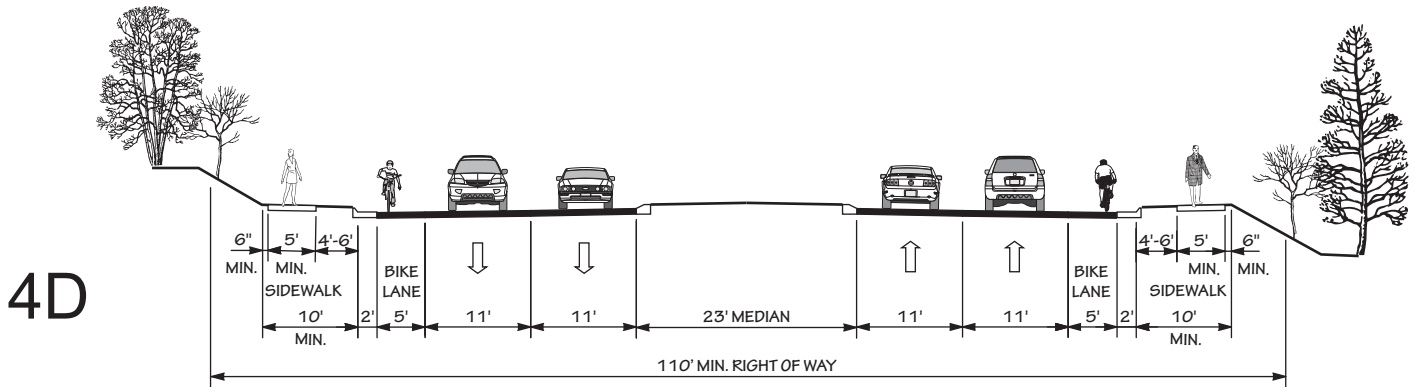


4 LANE DIVIDED (23' RAISED MEDIAN) WITH PAVED SHOULDERS AND SIDEWALKS
POSTED SPEED 35-55 MPH

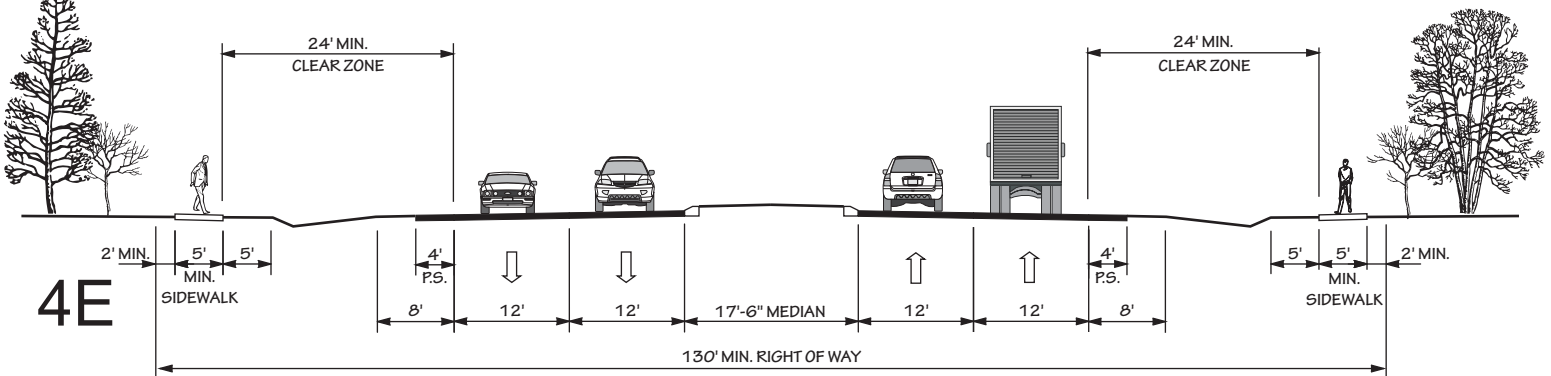


4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER, WIDE OUTSIDE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH

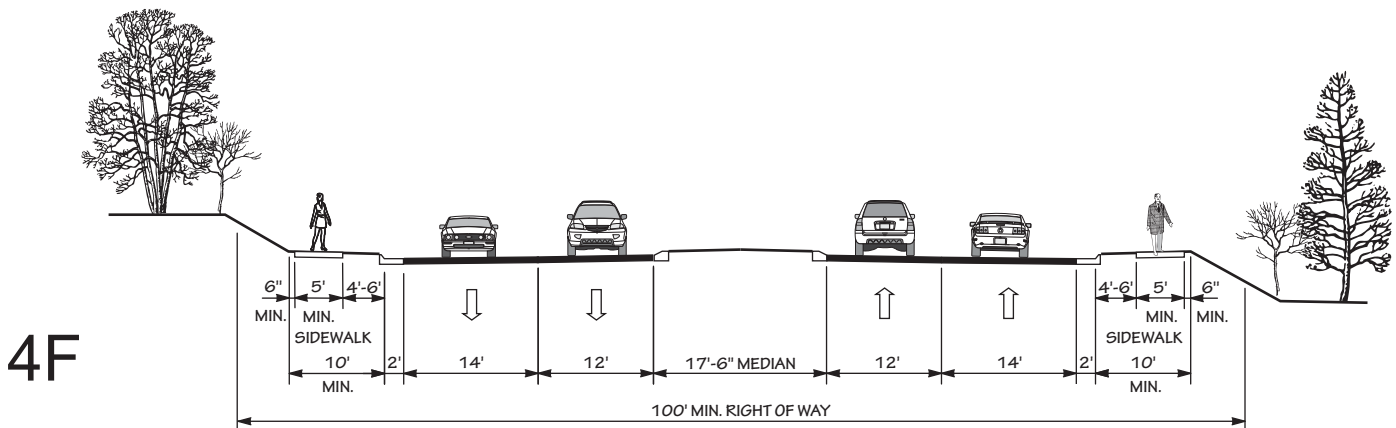
"TYPICAL" HIGHWAY CROSS SECTIONS



**4 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER,
BIKE LANES AND SIDEWALKS**
POSTED SPEED 35-45 MPH

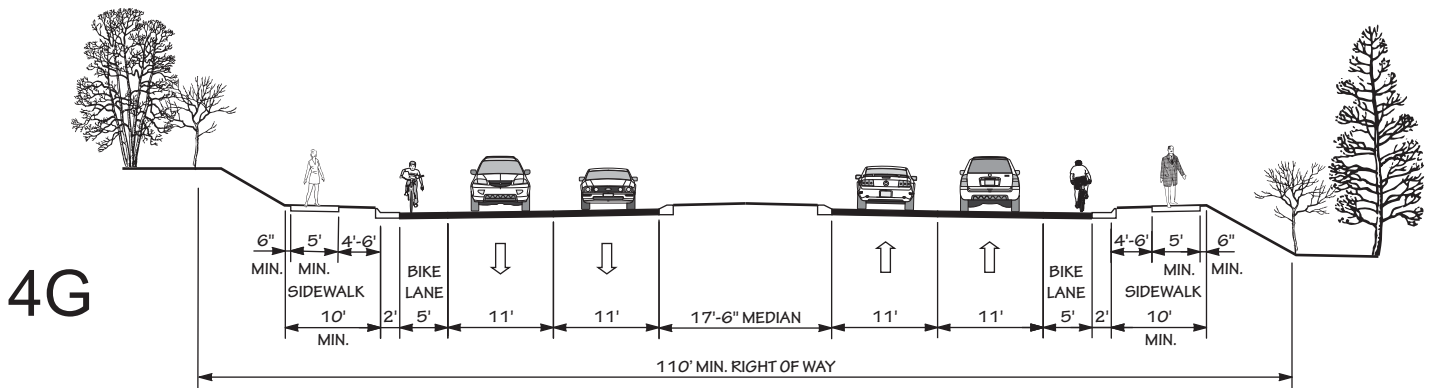


**4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH
PAVED SHOULDERS AND SIDEWALKS**
POSTED SPEED 35-55 MPH

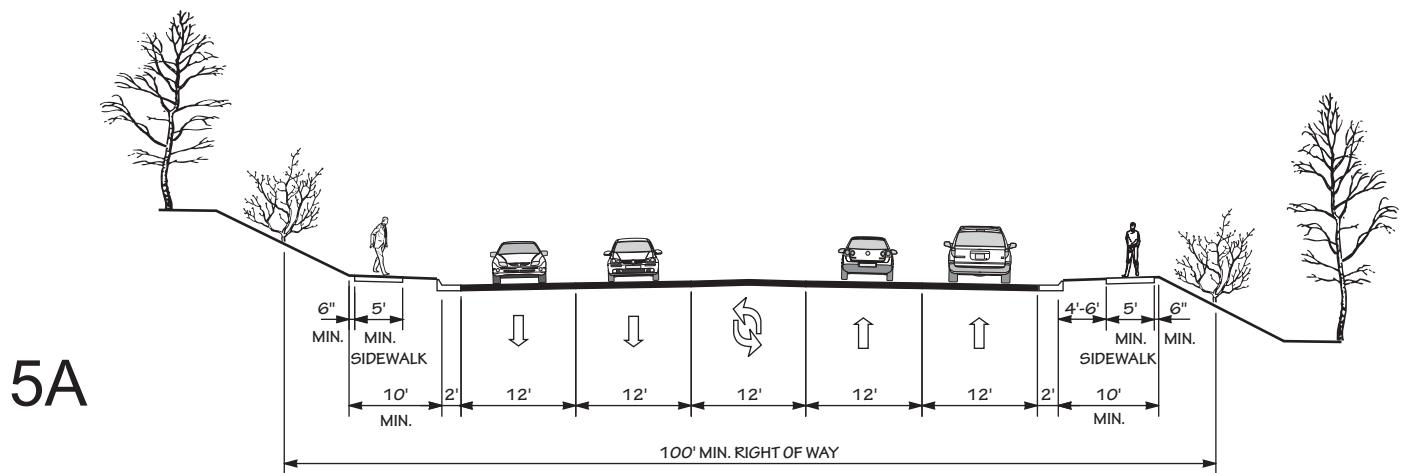


**4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES AND SIDEWALKS**
POSTED SPEED 35-45 MPH

“TYPICAL” HIGHWAY CROSS SECTIONS

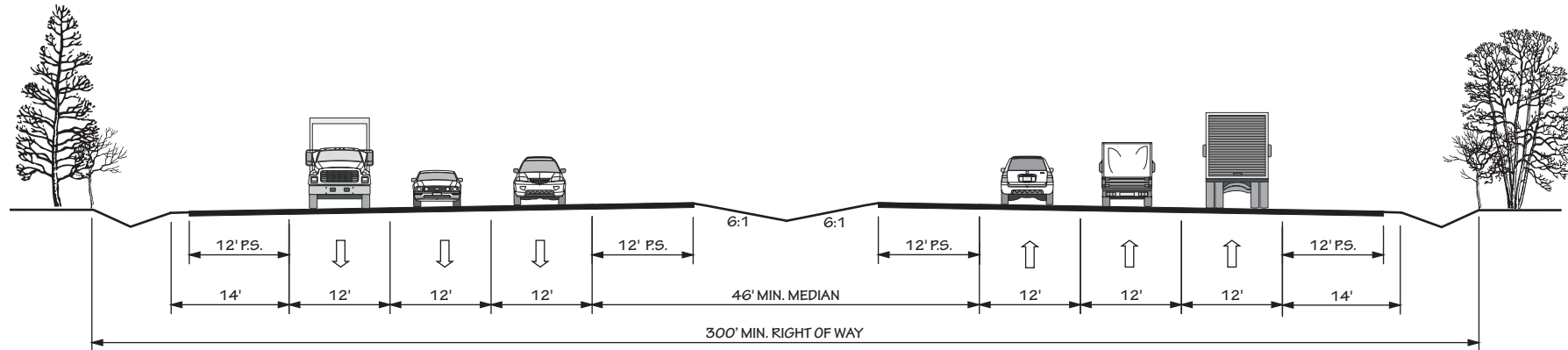


4 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER,
BIKE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH

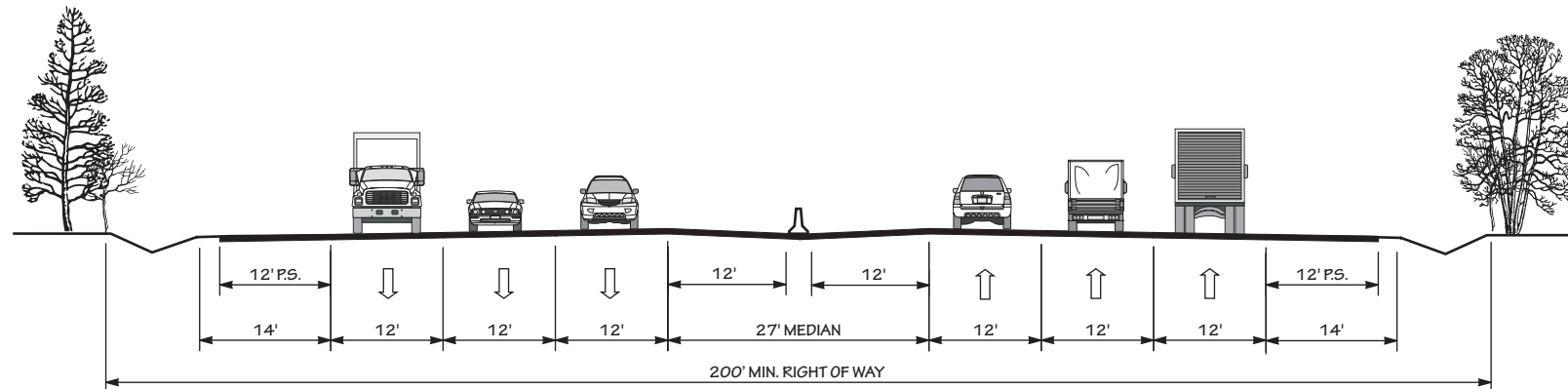


4 LANE WITH TWO WAY LEFT TURN LANE, CURB & GUTTER,
AND SIDEWALKS
POSTED SPEED 35-45 MPH

“TYPICAL” HIGHWAY CROSS SECTIONS

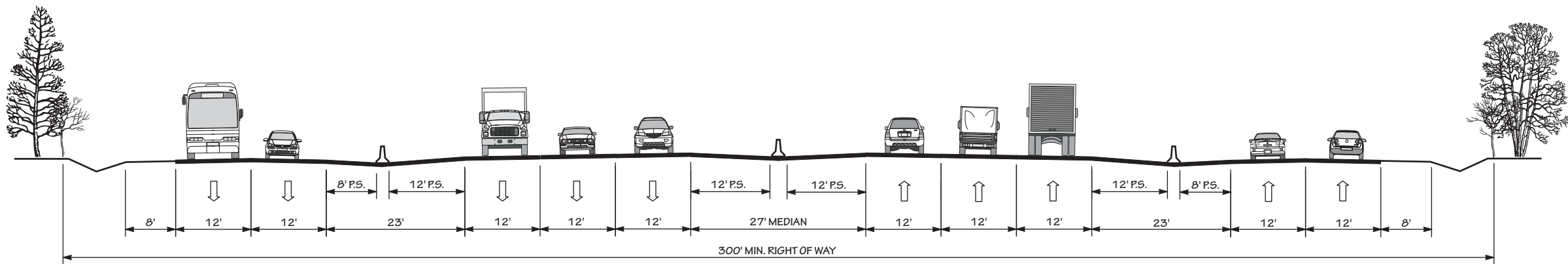


6A 6 LANE DIVIDED (46' DEPRESSED MEDIAN) WITH PAVED SHOULDERS
POSTED SPEED 45-70 MPH

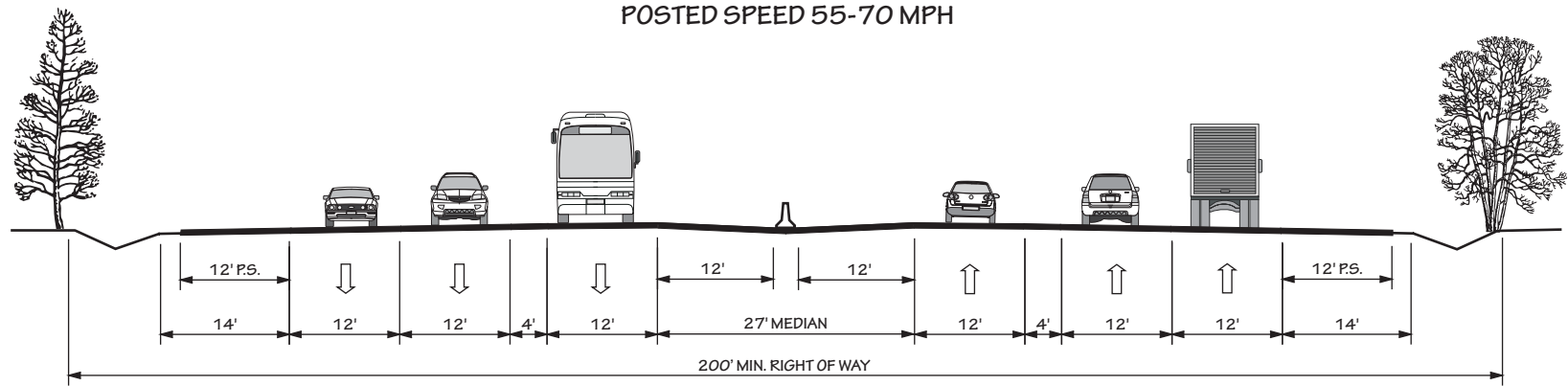


6B 6 LANE DIVIDED (27' MEDIAN WITH JERSEY BARRIER)
WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

“TYPICAL” HIGHWAY CROSS SECTIONS

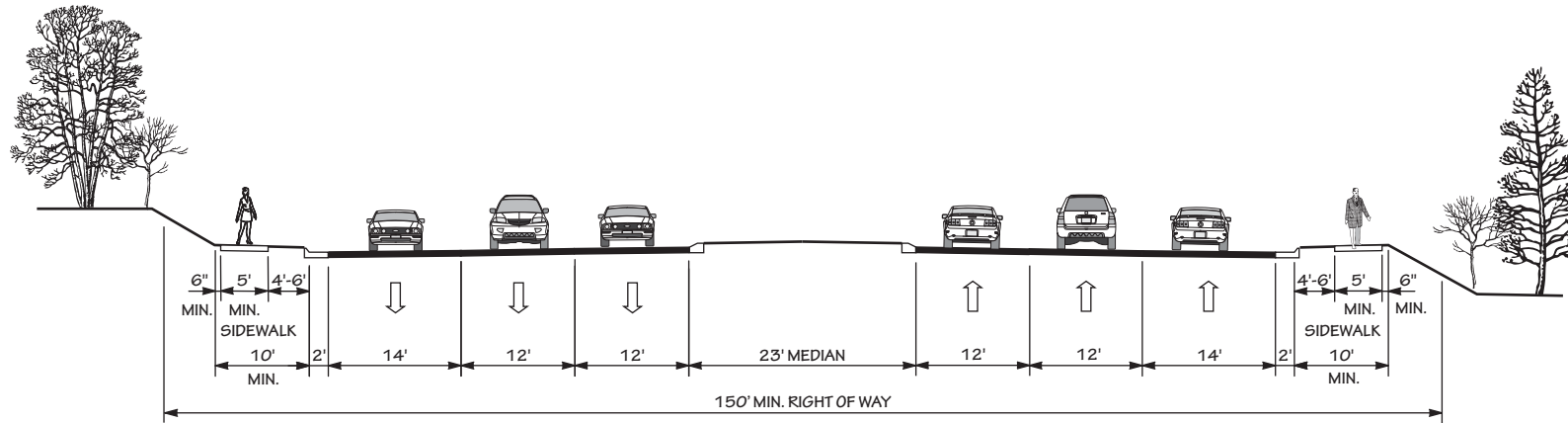


6C 6 LANE FREEWAY (27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS AND 2 LANE ONE-WAY SERVICE ROADS EACH SIDE
POSTED SPEED 55-70 MPH



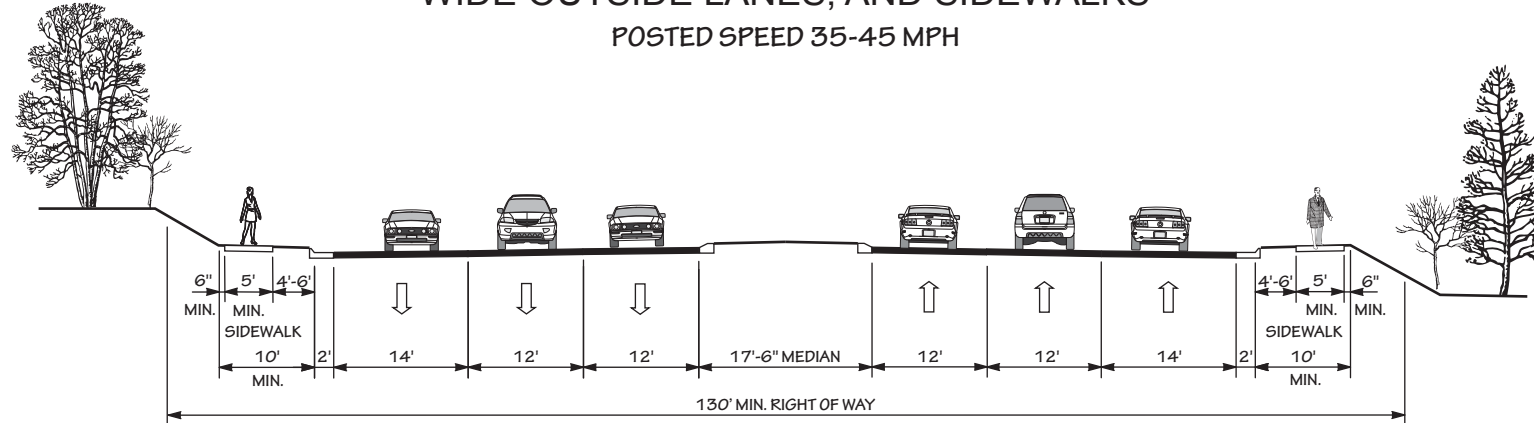
6D 6 LANE FREEWAY (4 GENERAL PURPOSE LANES, 2 MANAGED LANES, AND 27' MEDIAN WITH JERSEY BARRIER) WITH PAVED SHOULDERS
POSTED SPEED 55-70 MPH

“TYPICAL” HIGHWAY CROSS SECTIONS



6E

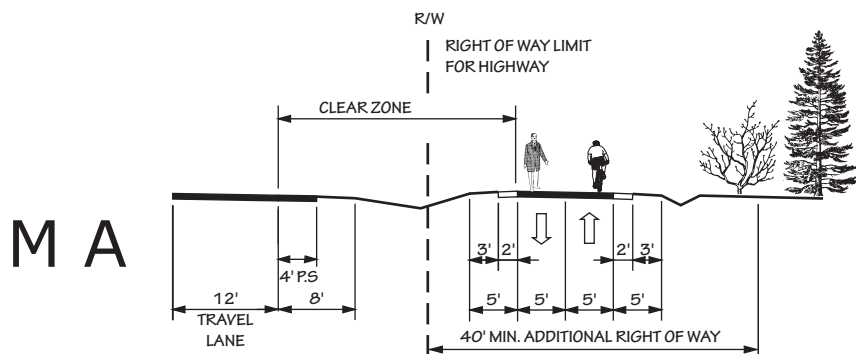
6 LANE DIVIDED (23' RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH



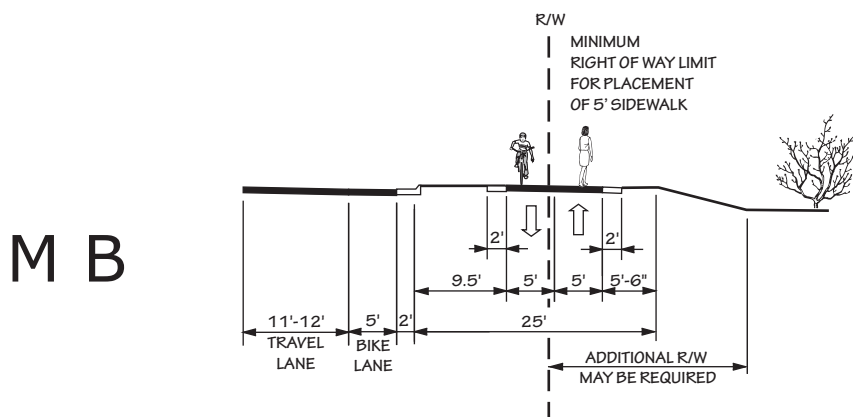
6F

6 LANE DIVIDED (17'-6" RAISED MEDIAN) WITH CURB & GUTTER,
WIDE OUTSIDE LANES, AND SIDEWALKS
POSTED SPEED 35-45 MPH

“TYPICAL” HIGHWAY CROSS SECTIONS



MULTI - USE PATH
ADJACENT TO RIGHT OF WAY OR SEPARATE PATHWAY



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

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Appendix E

Level of Service Definitions

The relationship of travel demand compared to the roadway capacity determines the level of service (LOS) of a roadway. Six levels of service identify the range of possible conditions. Designations range from LOS A, which represents the best operating conditions, to LOS F, which represents the worst operating conditions.

Design requirements for roadways vary according to the desired capacity and level of service. LOS D indicates “practical capacity” of a roadway, or the capacity at which the public begins to express dissatisfaction. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C on new facilities. The six levels of service are described below and illustrated in Figure 10.

- ❖ **LOS A:** Describes free-flow operations. Free Flow Speed (FFS) prevails and vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed.
- ❖ **LOS B:** Represents reasonably free-flow operations, and FFS is maintained. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. The effects of minor incidents and point breakdowns are still easily absorbed.
- ❖ **LOS C:** Provides for flow with speeds near the FFS. Freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more care and vigilance on the part of the driver. Minor incidents may still be absorbed, but the local deterioration in service quality will be significant. Queues may be expected to form behind any significant blockages.
- ❖ **LOS D:** The level at which speeds begin to decline with increasing flows, with density increasing more quickly. Freedom to maneuver within the traffic stream is seriously limited and drivers experience reduced physical and psychological comfort levels. Even minor incidents can be expected to create queuing, because the traffic stream has little space to absorb disruptions.
- ❖ **LOS E:** Describes operation at capacity. Operations at this level are highly volatile because there are virtually no usable gaps within the traffic stream, leaving little room to maneuver within the traffic stream. Any disruption to the traffic stream, such as vehicles entering from a ramp or a vehicle changing lanes, can establish a disruption wave that propagates throughout the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate even the most minor disruption, and any incident can be expected to produce a serious breakdown and substantial queuing. The physical and psychological comfort afforded to drivers is poor.
- ❖ **LOS F:** Describes breakdown, or unstable flow. Such conditions exist within queues forming behind bottlenecks.

Figure 10 - Level of Service Illustrations



LOS A



LOS B



LOS C



LOS D



LOS E



LOS F

Source: 2010 Highway Capacity Manual, Exhibit 11-4

Appendix F

Bridge Deficiency Assessment

The Transportation Improvement Program (TIP) development process for bridge projects involves consideration of several evaluation methods in order to prioritize needed improvements. A sufficiency index is used to determine whether a bridge is sufficient to remain in service, or to what extent it is deficient. The index is a percentage in which 100 percent represents an entirely sufficient bridge and zero represents an entirely insufficient or deficient bridge. Factors evaluated in calculating the index are listed below.

- ❖ structural adequacy and safety
- ❖ serviceability and functional obsolescence
- ❖ essentiality for public use
- ❖ type of structure
- ❖ traffic safety features

The NCDOT Structures Management Unit inspects all bridges in North Carolina at least once every two years. A sufficiency rating for each bridge is calculated and establishes the eligibility and priority for replacement. Bridges having the highest priority are replaced as federal and state funds become available.

A bridge is considered deficient if it is either structurally deficient (SD) or functionally obsolete (FO). Structurally deficient means there are elements of the bridge that need to be monitored and/or repaired. The fact that a bridge is "structurally deficient" does not imply that it is likely to collapse or that it is unsafe. It means the bridge must be monitored, inspected and repaired/replaced at an appropriate time to maintain its structural integrity. A functionally obsolete bridge is one that was built to standards that are not used today. These bridges are not automatically rated as structurally deficient, nor are they inherently unsafe. Functionally obsolete bridges are those that do not have adequate lane widths, shoulder widths, or vertical clearances to serve current traffic demand or to meet the current geometric standards, or those that may be occasionally flooded.

A bridge must be classified as deficient in order to qualify for federal replacement funds. Additionally, the sufficiency rating must be less than 50% to qualify for replacement or less than 80% to qualify for rehabilitation under federal funding. Deficient bridges located on roads evaluated as a part of the CTP are listed in Table 3. For more details on deficient bridges within the planning area, contact the Structures Management Unit using the information in Appendix A.

Table 4 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	Local I0044
17	US 15-501	Robertson's Creek	SD & FO	
61	NC 87/ NC 902	Robertson's Creek	SD & FO	
129	SR 2159 (Alston Chapel Road)	Branch of Rocky River	SD & FO	
400	SR 2157 (Pete Roberson Road)	Tributary of Rocky River	FO	
410	SR 1522 (Eddie Berry Road)	Creek	FO	
422	SR 1564 (Old Siler City Road)	Creek	FO	
486	SR 1572 (Eubanks Road)	US 64	FO	
498	US 64 Business (WBL)	US 64	FO	

Appendix G

Crash Analysis Documentation

Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. The Traffic Safety Unit of NCDOT's Transportation Mobility and Safety Division identifies high frequency crashes at intersections and along roadway sections during a five year period. The high frequency crash locations examined during the development of the Pittsboro CTP occurred between January 1, 2007 and December 31, 2011. During this period, a total of sixteen intersections and twenty-five roadway sections were identified as having a high frequency of crashes as illustrated in Figure 4. Contact information for the Transportation Mobility and Safety Division can be found in Appendix A.

The NCDOT is actively involved with investigating and improving many of these locations. To request a more detailed analysis for any of these locations, or other intersections of concern, contact the Division Traffic Engineer (see Appendix A).

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Appendix H Public Involvement

This appendix documents the public involvement process and includes a listing of steering committee members, the goals and objectives survey results, and public meetings held throughout the development of the CTP.

List of CTP Steering Committee Members

At the start of a CTP study, a committee is formed that is comprised of individuals who represent the various needs, issues and populations of the community. These representatives are responsible for capturing the transportation needs of the community relative to all modes of transportation and for guiding the development of the CTP. A listing of steering committee members for the Pittsboro CTP is given below.

- ❖ Stuart Bass, Pittsboro
- ❖ Brian Bock, Chatham County Commissioner
- ❖ Michael Fiocco, Pittsboro Town Council
- ❖ Melissa Guilbeau, Chatham County
- ❖ John Hodges-Copple, Triangle Area RPO
- ❖ Paul Horne, Pittsboro
- ❖ Kenneth Hoyle, Pittsboro Planning Board
- ❖ Tim Johnson, NCDOT – Division 8
- ❖ Gia Miele, Pittsboro Merchants Association
- ❖ Dianne Reid, Chatham County EDC
- ❖ Bill Terry, Pittsboro
- ❖ Tom Vanderbeck, Chatham County
- ❖ Cathleen Whitted, ETJ Resident

CTP Vision, Goals, Objectives and MOEs

The CTP vision, goals and objectives are developed as part of the public involvement process and help identify how the people within an area would like to develop the transportation system (all modes). The CTP committee develops the draft vision, goals, objectives, and MOEs which are further refined with input from citizens via the CTP Goals & Objectives (G&O) survey. These products become the official guide for the CTP being developed.

The vision statement, goals and objectives reflect what is important for the area and defines any local preferences concerning the transportation system and community assets. The vision statement is the framework for the area's strategic planning. Goals and objectives document how the area plans to fulfill its vision. The goals break down the vision statement into themes, while the objectives document how the area plans to make progress towards achieving each goal. MOEs are established to enable the area to track the progress of each objective.

Town of Pittsboro Vision Statement

Enhance the connectivity of the town of Pittsboro through the development of a transportation network which promotes and supports economic development compatible with the existing and future environmental and land use patterns. Provide safe, reliable, affordable, and convenient transportation choices to the residents of the town as well as public awareness of those choices. Develop a regional transportation network that improves residents' quality of life and surrounding environment.

Goals and Objectives Survey

A G&O survey is a public involvement technique used to help identify an area's perception of transportation-related issues, identify concerns that should be addressed during the development of a CTP, and to help develop a vision for the community. The G&O survey is most appropriately implemented at the beginning of the transportation planning study. In addition to determining up front what is important to the citizens of the planning area, initiating the G&O survey early in the planning process allows the survey to serve as an introduction to the transportation planning process. The survey usually includes a brief introduction explaining what a transportation plan is and how the area can benefit from having one. The survey also includes a wide variety of questions that is tailored to each area as appropriate. A summary of the Pittsboro Area G & O survey is given below.

An online public comment form was available during the planning process. The responses are shown on the following pages.

Table 6: Pittsboro CTP Comment Website Responses

Response Date	Your name (optional)	Your contact information (optional, but please provide one if requesting a response)		Would you like to be added to the email contact list for the plan (to receive meeting announcements, plan information, etc.)?	Please select any meetings you have attended for the comprehensive transportation plan (select all that apply). July 22, 2010 Kickoff Meeting September 23, 2010 Concerned Citizens Luncheon November 4, 2010 Steering Committee Meeting January 6, 2011 Public Meeting Other (please specify)	Please provide your questions or comments.
		Email	Phone			
12/3/2010	Dee Reid		-	Yes	None	Please add me to the list so I can be informed. Thanks.
1/12/2011	Laura Heise		-	Yes	January 6, 2011 Public Meeting	In weighing the different options, these would be my priorities (in no particular order): * New roads/improvements should strengthen viability of downtown Pittsboro * Close attention should be paid to solving problems in projected new growth areas (Note: the western bypass options don't help much with alleviating projected high congestion areas) * Plans from inception should include bikeway and pedestrian components as well as accommodations for future bus/tram service as population builds a few questions-- *If money remains tight for a significant period, what "short term" solutions would make for significant improvements? * If gas prices skyrocket, what changes might be expected in Chatham land use patterns? How would that affect road building decisions? Thank you.
1/17/2011	Patt Harris		-	No	January 6, 2011 Public Meeting	I sincerely believe that we MUST have this new road as close to downtown Pittsboro as possible. An ideal place would be on the west side of the Christian Home in Pittsboro, no further out than that. In order to maintain the viability of our downtown, we must keep the convenience of travelers as close to the downtown as possible. Thank you
2/6/2011	Phillip Culpepper		-	Yes	July 22, 2010 Kickoff Meeting November 4, 2010 Steering Committee Meeting January 6, 2011 Public Meeting	Your process has not worked closely enough with the major land holder in the study area and has not taken into consideration the land use plans for that property.
5/30/2011	Diane Brauner		-	Yes	This is the first I have heard of the website and specific proposals!	It is understood that a plan is needed in order to keep up with the Pittsboro area growth rate. I am concerned that all but one plan options have significant roads (highways, expressways, etc.) so close to Jordan Lake and the Haw River. With the road expansions, will come even more neighborhoods, businesses, and growth - all on top of the Haw River, smaller streams such as Roberson Creek and Stinky Creek that feed directly into Jordan Lake and Jordan Lake itself. Jordan Lake is not only a recreational lake, but it is the main drinking water source in our area! Plan A seems like the ONLY option that should be considered. Thank you.

Public Meetings

Brief summaries of public meetings held within the planning area are given below.

Kickoff Meeting

July 22, 2010

Number of Attendees: 21

Concerned Citizens Meeting

September 23, 2010

Number of Attendees: 22

1st Steering Committee Meeting

November 4, 2010

Number of Attendees: 11

2nd Steering Committee Meeting

December 2, 2010

Number of Attendees: 12

Commission Meeting

December 7, 2010

Met with county commissioners

Public Meeting #1

January 6, 2011

Number of Attendees: 68

3rd Steering Committee Meeting

February 22, 2011

Number of Attendees: 16

4th Steering Committee Meeting

March 22, 2011

Number of Attendees: 14

5th Steering Committee Meeting

April 14, 2011

Number of Attendees: 16

6th Steering Committee Meeting

May 10, 2011

Number of Attendees: 17

Public Meeting #2

May 31, 2011.

Number of Attendees: 15

Council Meeting

June 13, 2011

Met with town council

Appendix I

Alternatives & Scenarios Studied

This appendix includes documentation for alternatives and scenarios that were considered, including ones not shown on the adopted CTP.

Evaluated Land Use Scenarios

The following residential developments were included as fully constructed in the 2035 Socioeconomic Data:

- Bellemont Point
- Chatham Forest East
- Chatham Park
- Gaines Tract
- Indian Trace
- Mellot Tract
- Moore's Ridge
- North Pittsboro Station
- NW Corner Residential
- Pittsboro Place
- Powell Place Residential
- River Oaks (Toll Bros.)
- River Oaks Commons
- Windjam
- Chatham Forest
- J. A. Webster Tract
- Potterstone Village

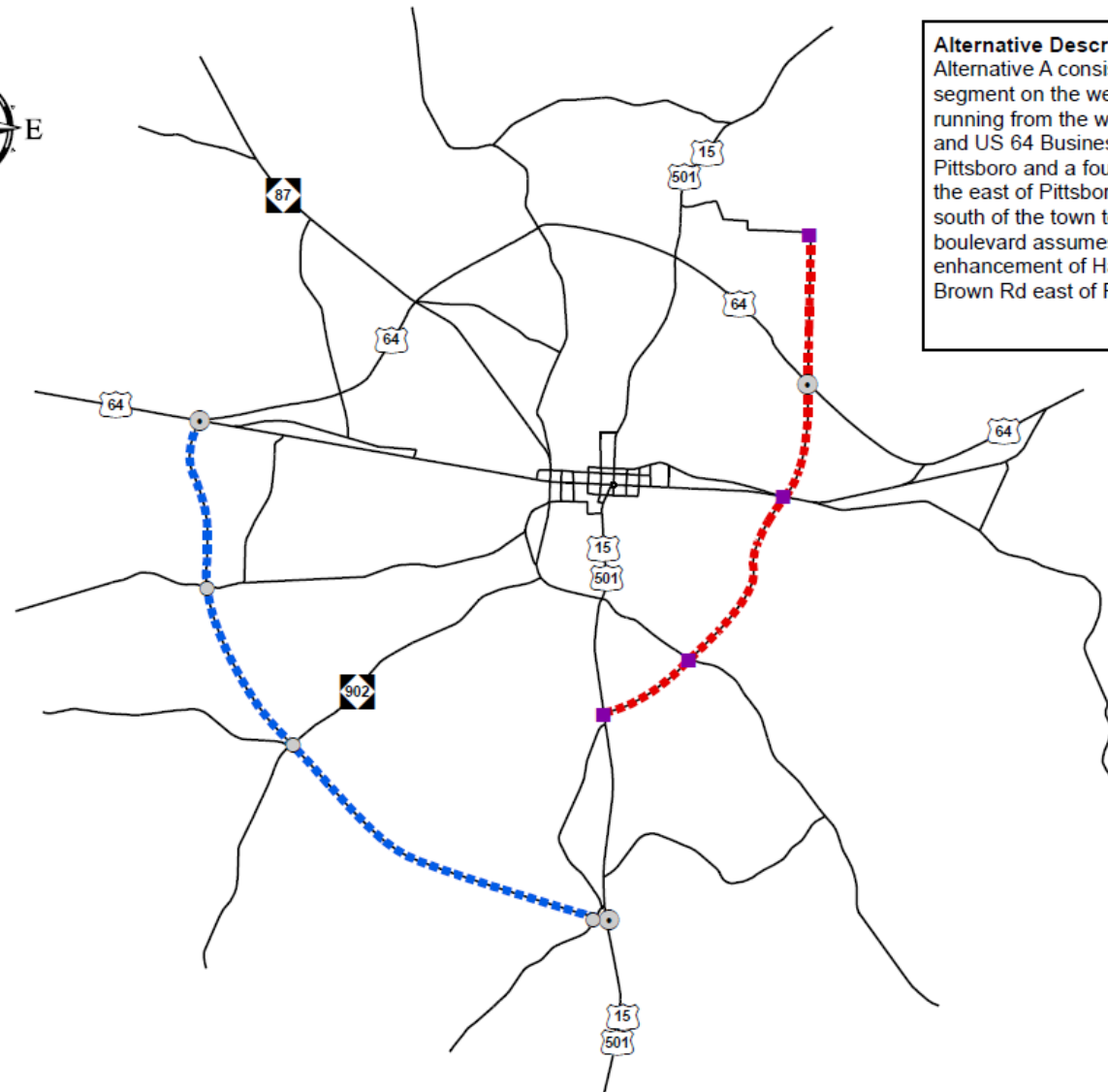
The following commercial developments were included as fully constructed in the 2035 Socioeconomic Data:

- Pittsboro Place
- Powell Place
- NW Corner Retail
- Moore's Ridge
- Chatham Park
- Bellemont Point
- North Pittsboro Station
- River Oaks Commons

No other changes in the land use were made outside of the projected growth from the base year to the future year.

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Alternatives Map: Alternative A



Alternative Description:

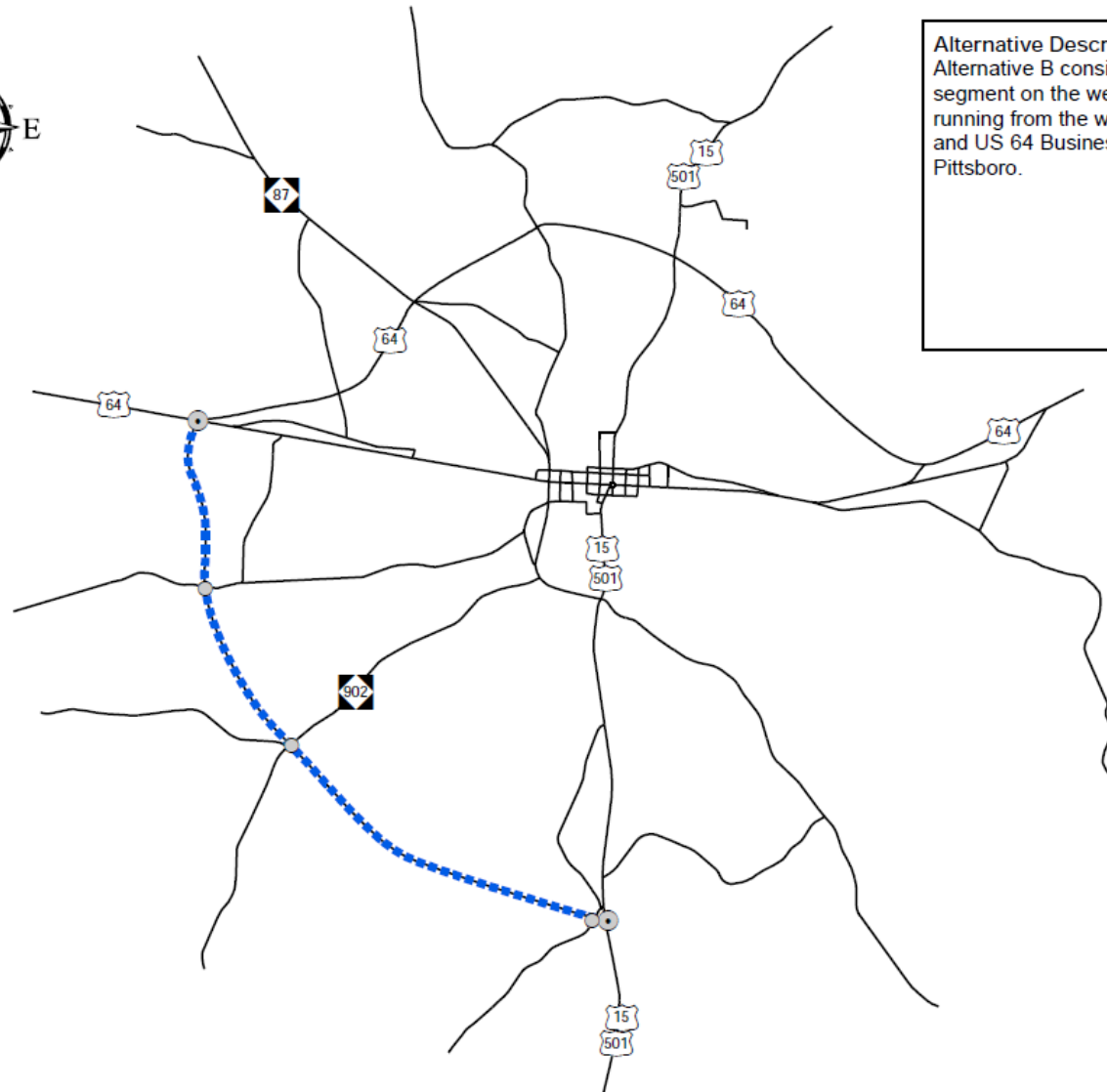
Alternative A consists of a four lane freeway segment on the western side of Pittsboro running from the western interchange for US 64 and US 64 Business to US 15/501 south of Pittsboro and a four lane boulevard segment to the east of Pittsboro running from US 15/501 south of the town to north of US 64. The boulevard assumes an extension and enhancement of Haven Rd / Country Rhoutt Brown Rd east of Russet Run.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative B



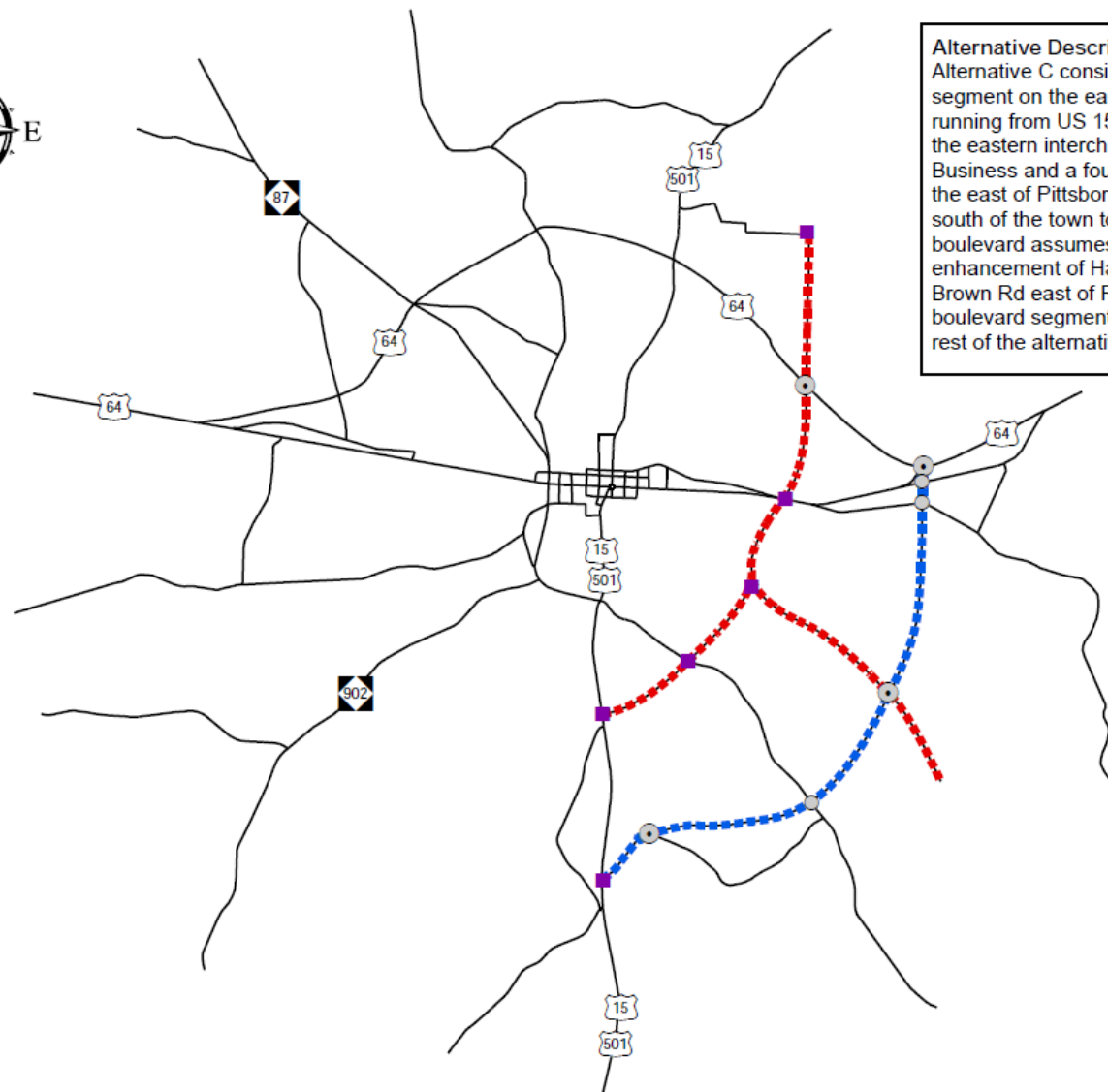
Alternative Description:
Alternative B consists of a four lane freeway segment on the western side of Pittsboro running from the western interchange for US 64 and US 64 Business to US 15/501 south of Pittsboro.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative C



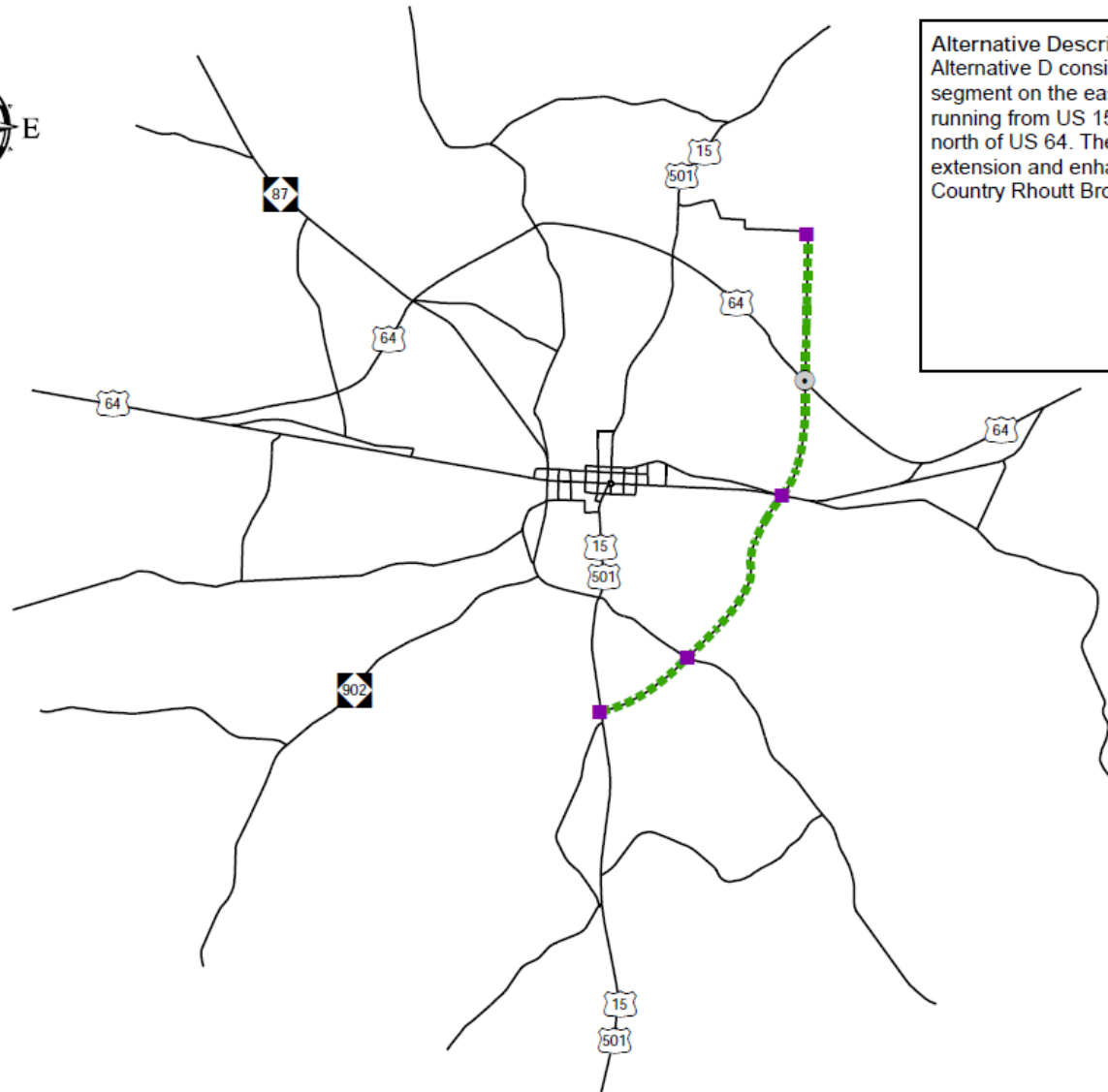
Alternative Description:
Alternative C consists of a four lane freeway segment on the eastern side of Pittsboro running from US 15/501 south of Pittsboro to the eastern interchange for US 64 and US 64 Business and a four lane boulevard segment to the east of Pittsboro running from US 15/501 south of the town to north of US 64. The boulevard assumes an extension and enhancement of Haven Rd / Country Rhoutt Brown Rd east of Russet Run. A four lane boulevard segment connects the freeway to the rest of the alternative.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative D



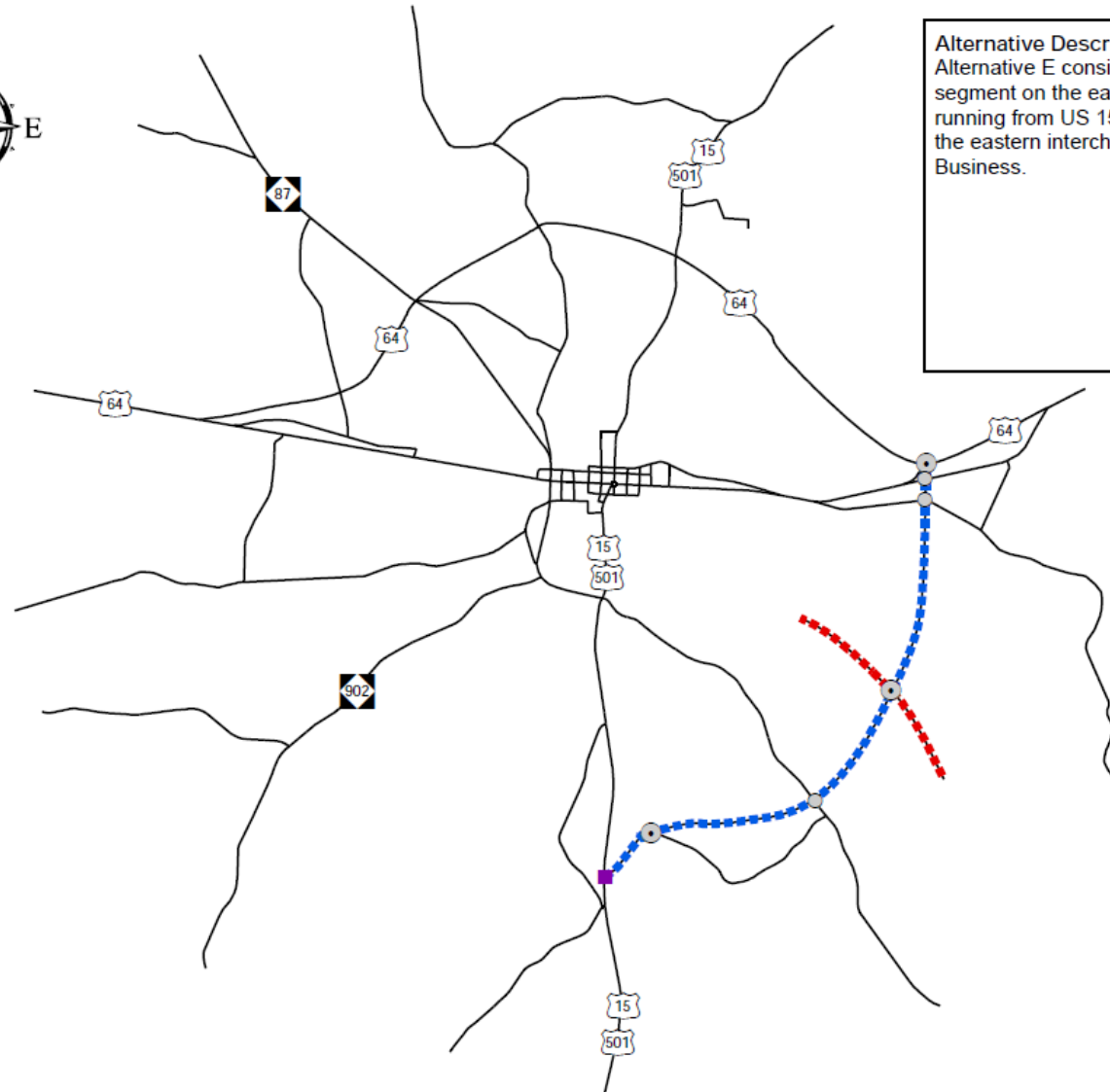
Alternative Description:
Alternative D consists of a four lane expressway segment on the eastern side of Pittsboro running from US 15/501 south of the town to north of US 64. The expressway assumes an extension and enhancement of Haven Rd / Country Rhoutt Brown Rd east of Russet Run.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative E



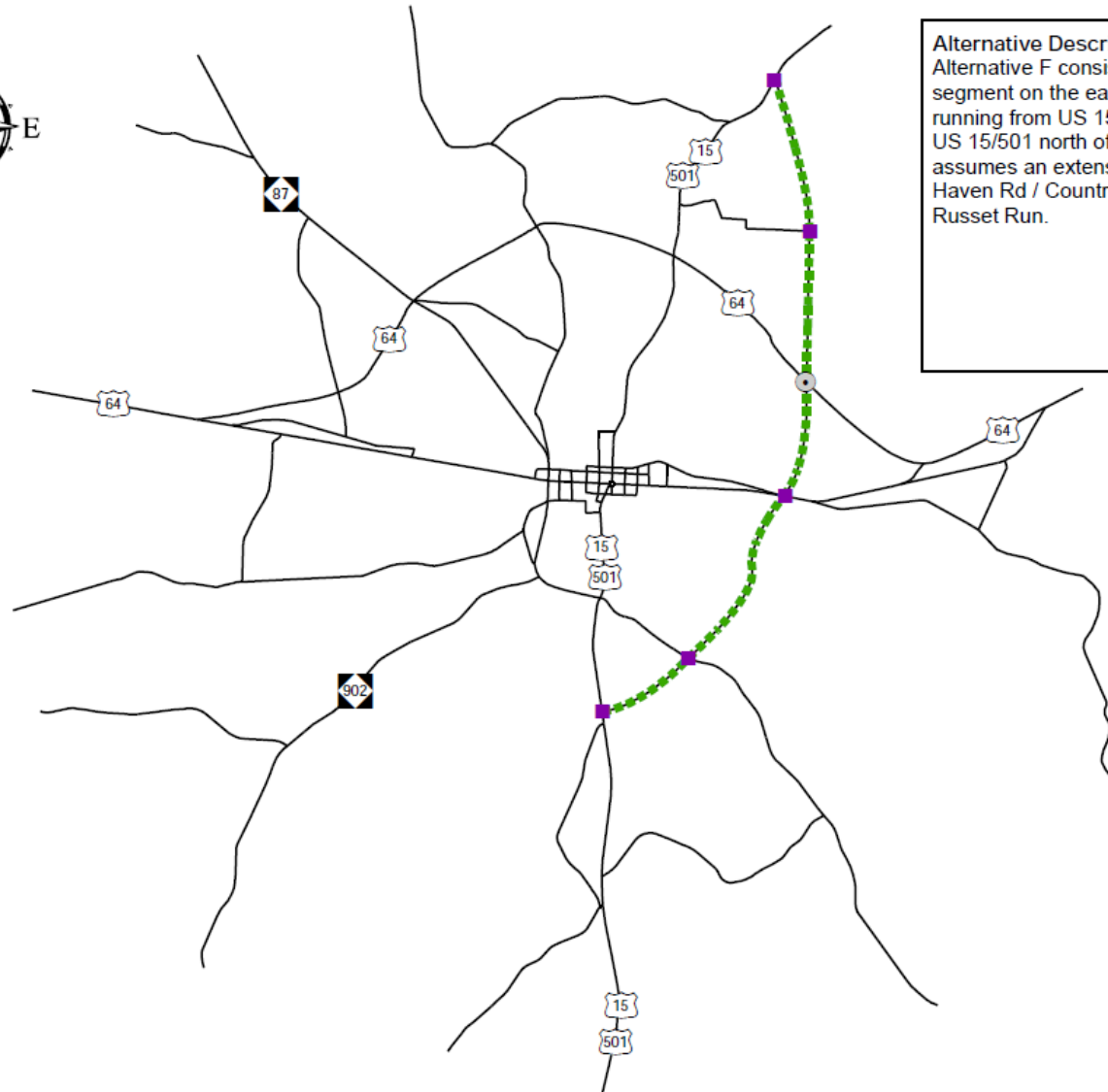
Alternative Description:
Alternative E consists of a four lane freeway segment on the eastern side of Pittsboro running from US 15/501 south of Pittsboro to the eastern interchange of US 64 with US 64 Business.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

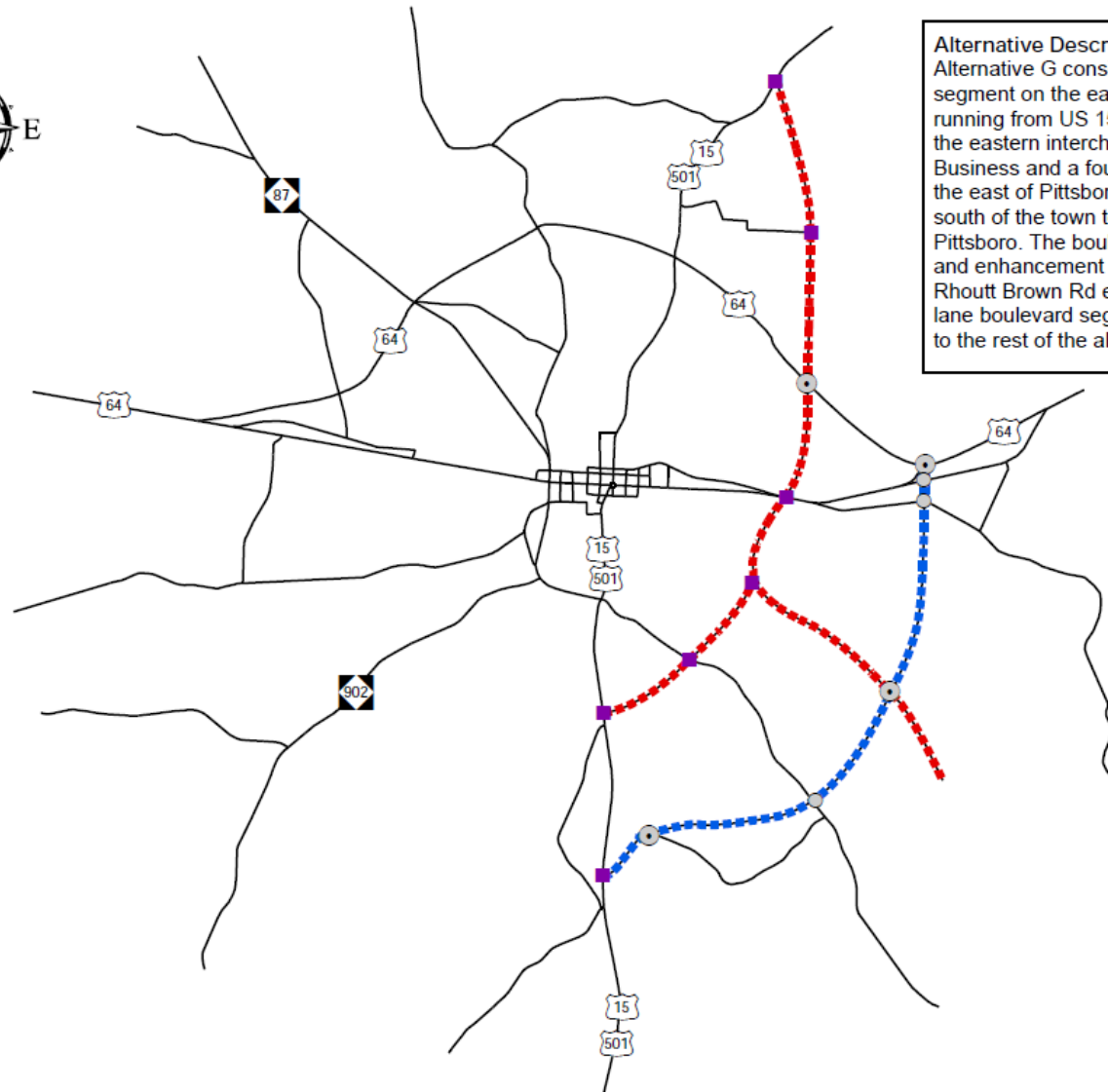
Alternatives Map: Alternative F



Alternative Description:
Alternative F consists of a four lane expressway segment on the eastern side of Pittsboro running from US 15/501 south of Pittsboro to US 15/501 north of Pittsboro. The expressway assumes an extension and enhancement of Haven Rd / Country Rhoutt Brown Rd east of Russet Run.

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative G



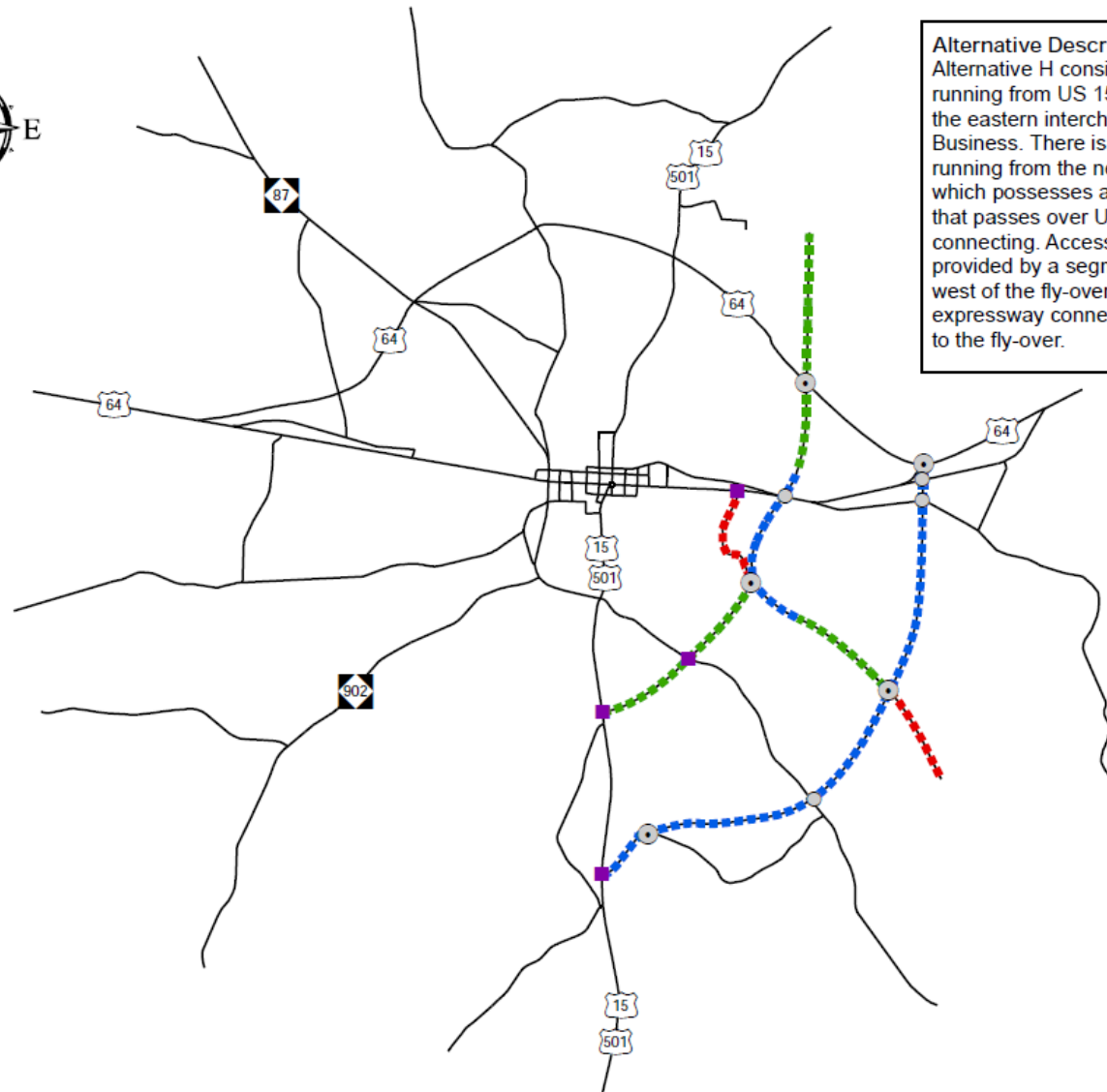
Alternative Description:
Alternative G consists of a four lane freeway segment on the eastern side of Pittsboro running from US 15/501 south of Pittsboro to the eastern interchange for US 64 and US 64 Business and a four lane boulevard segment to the east of Pittsboro running from US 15/501 south of the town to US 15/501 north of Pittsboro. The boulevard assumes an extension and enhancement of Haven Rd / Country Rhoutt Brown Rd east of Russet Run. A four lane boulevard segment connects the freeway to the rest of the alternative.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative H



Alternative Description:

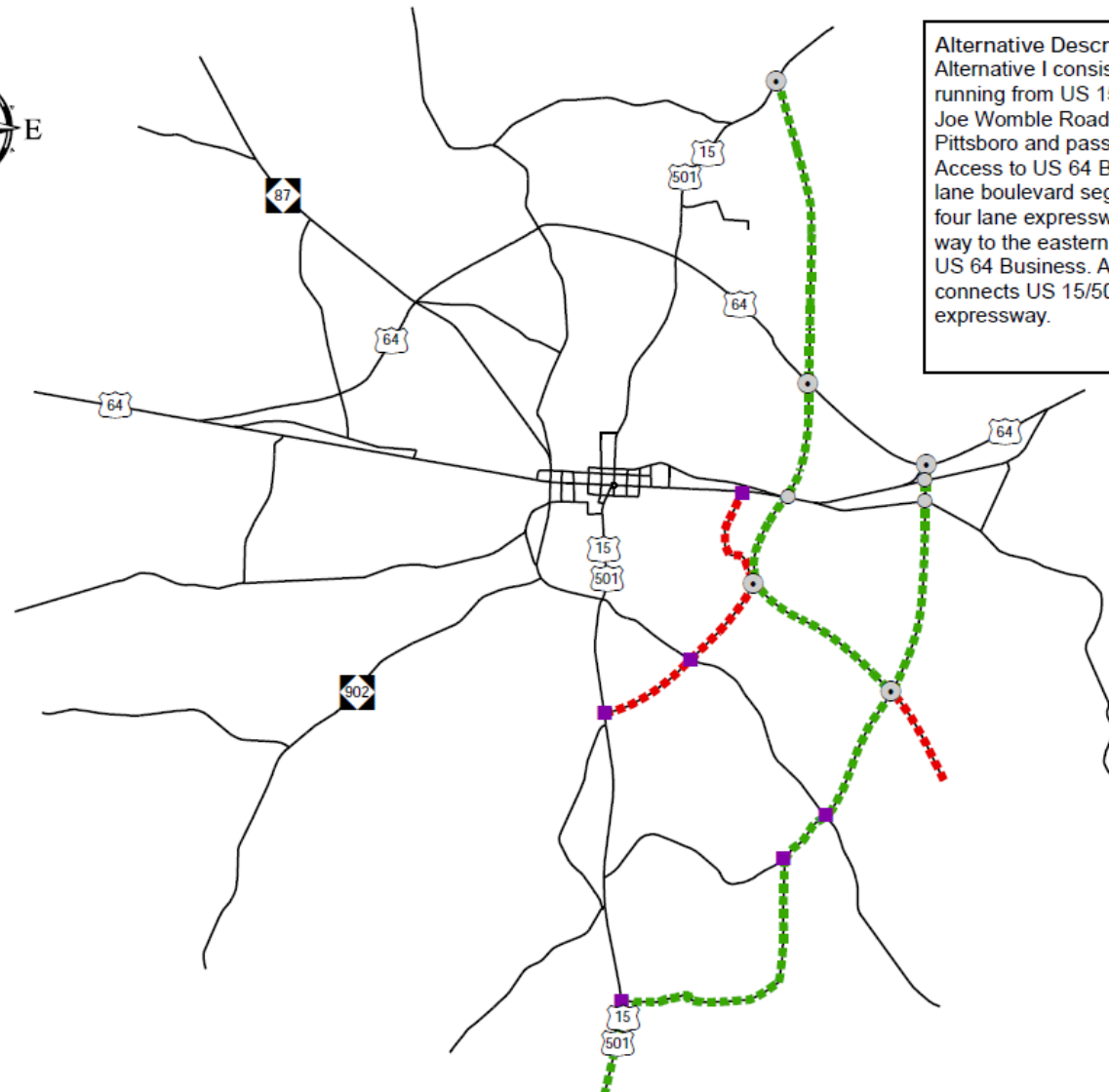
Alternative H consists of a four lane freeway running from US 15/501 south of Pittsboro to the eastern interchange of US 64 with US 64 Business. There is a four lane expressway running from the new freeway to north of US 64 which possesses a section of four lane freeway that passes over US 64 Business without connecting. Access to US 64 Business is provided by a segment of four lane boulevard west of the fly-over. A four lane segment of expressway connects US 15/501 south of town to the fly-over.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative I



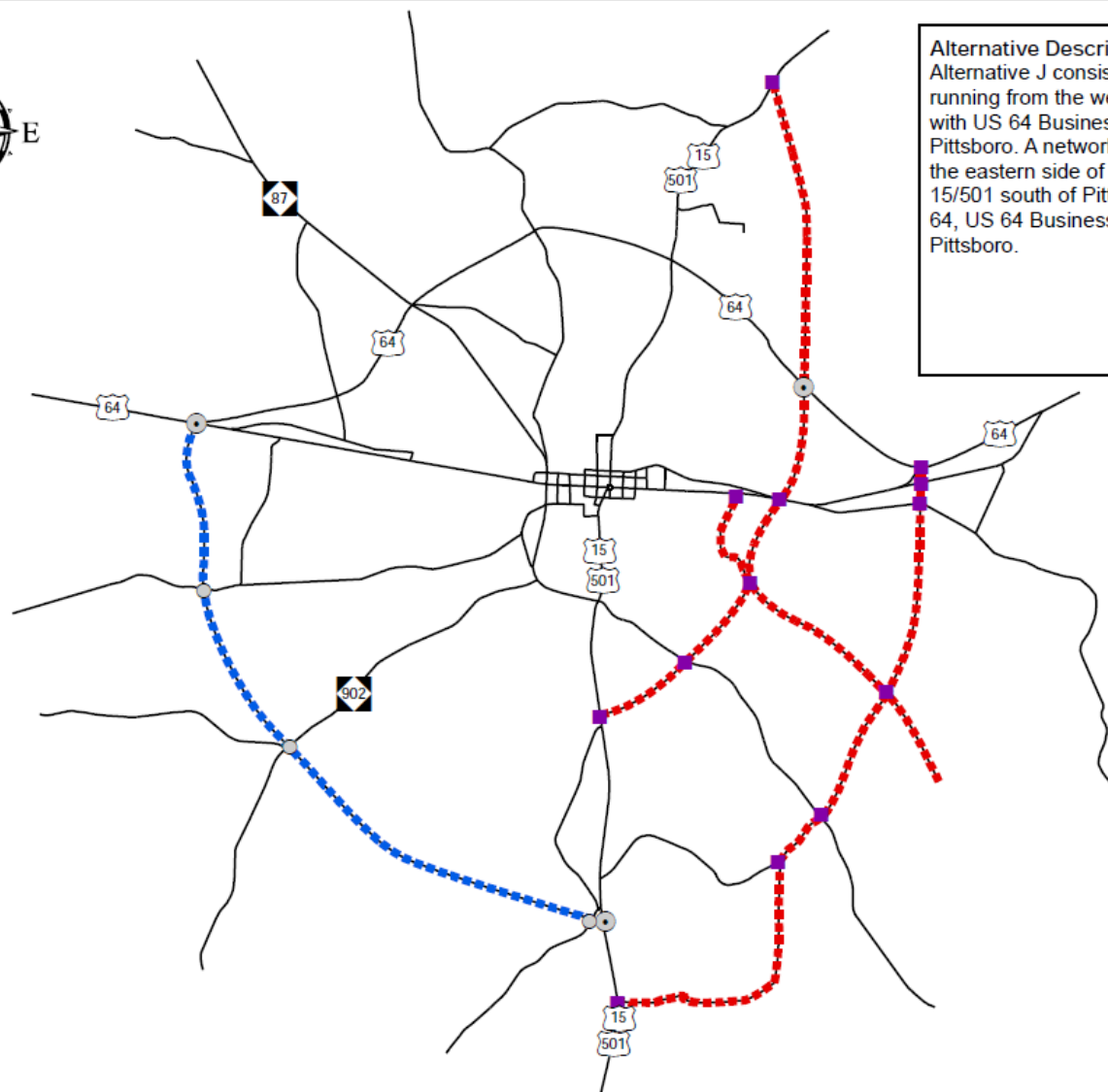
Alternative Description:
Alternative I consists of a four lane expressway running from US 15/501 south of Pittsboro at Joe Womble Road to US 15/501 north of Pittsboro and passing over US 64 Business. Access to US 64 Business is provided by a four lane boulevard segment west of the fly-over. A four lane expressway connects the new express way to the eastern interchange of US 64 with US 64 Business. A four lane boulevard connects US 15/501 south of town with the new expressway.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative J



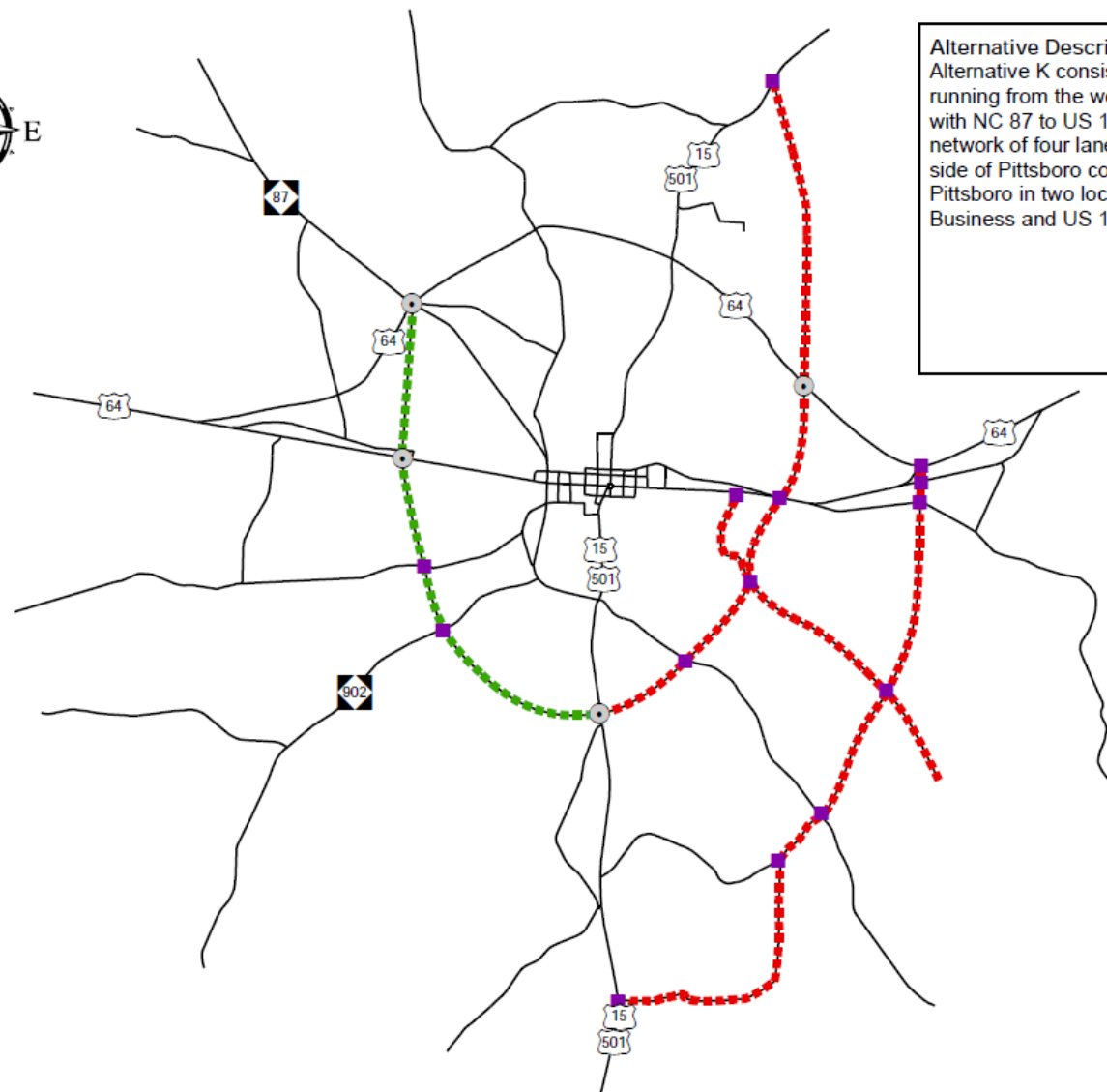
Alternative Description:
Alternative J consists of a four lane freeway running from the western interchange of US 64 with US 64 Business to US 15/501 south of Pittsboro. A network of four lane boulevards on the eastern side of Pittsboro connects US 15/501 south of Pittsboro in two locations to US 64, US 64 Business and US 15/501 north of Pittsboro.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 3, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative K



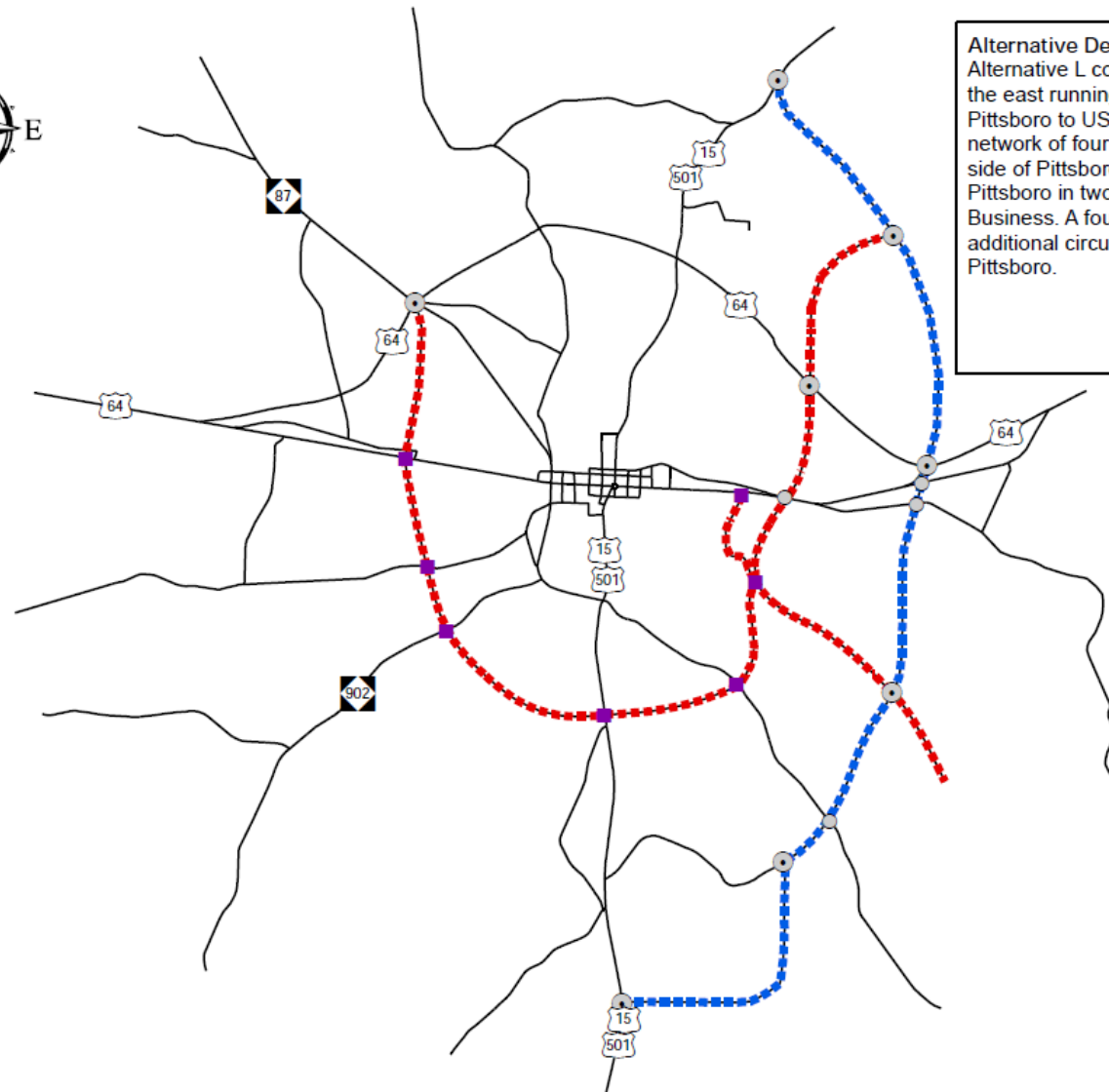
Alternative Description:
Alternative K consists of a four lane expressway running from the western interchange of US 64 with NC 87 to US 15/501 south of Pittsboro. A network of four lane boulevards on the eastern side of Pittsboro connects US 15/501 south of Pittsboro in two locations to US 64, US 64 Business and US 15/501 north of Pittsboro.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: December 13, 2010; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative L



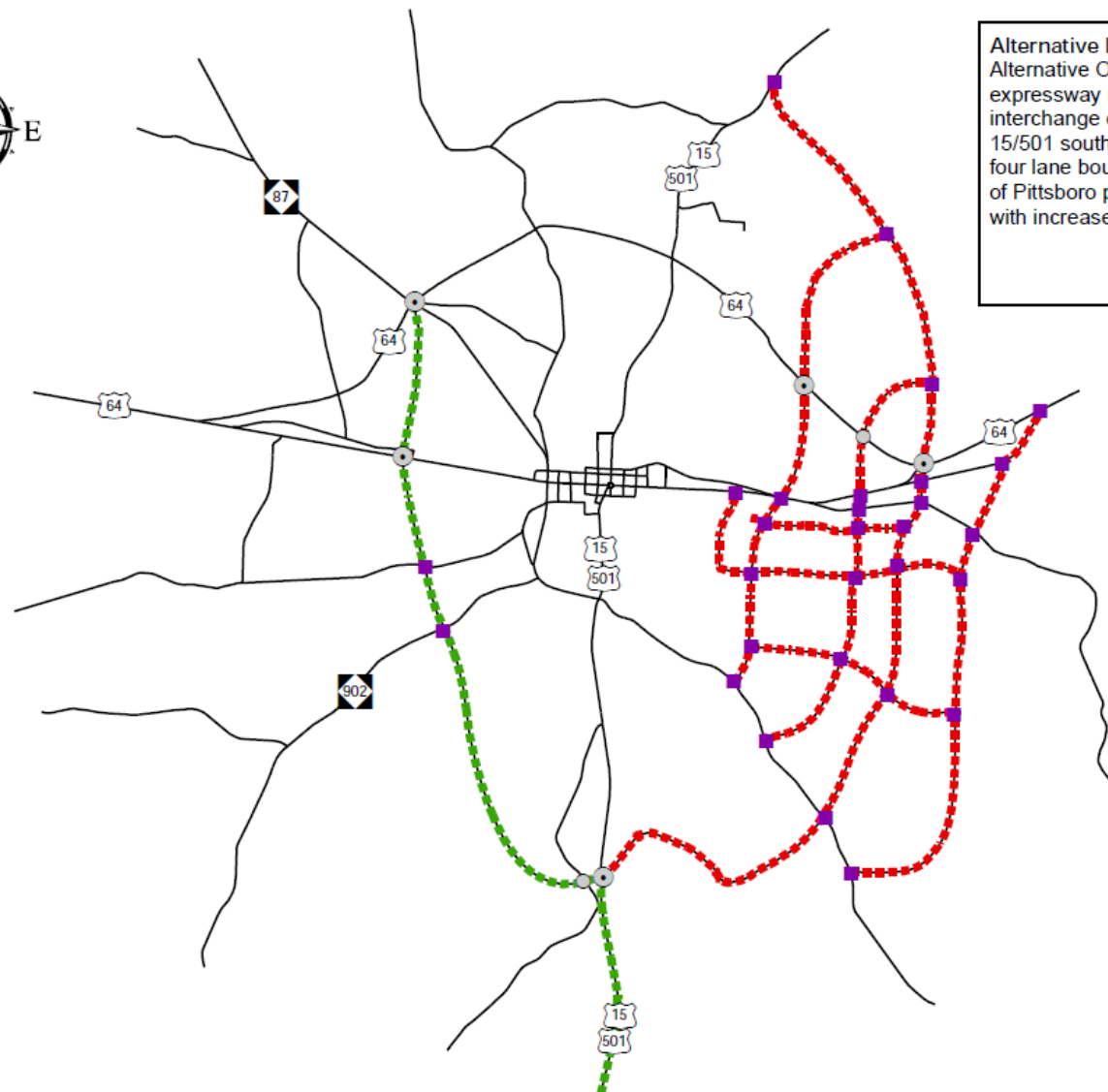
Alternative Description:
Alternative L consists of a four lane freeway to the east running from US 15/501 south of Pittsboro to US 15/501 north of Pittsboro. A network of four lane boulevards on the eastern side of Pittsboro connects US 15/501 south of Pittsboro in two locations to US 64 and US 64 Business. A four lane boulevard provides additional circulation on the west side of Pittsboro.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: January 28, 2011; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative O



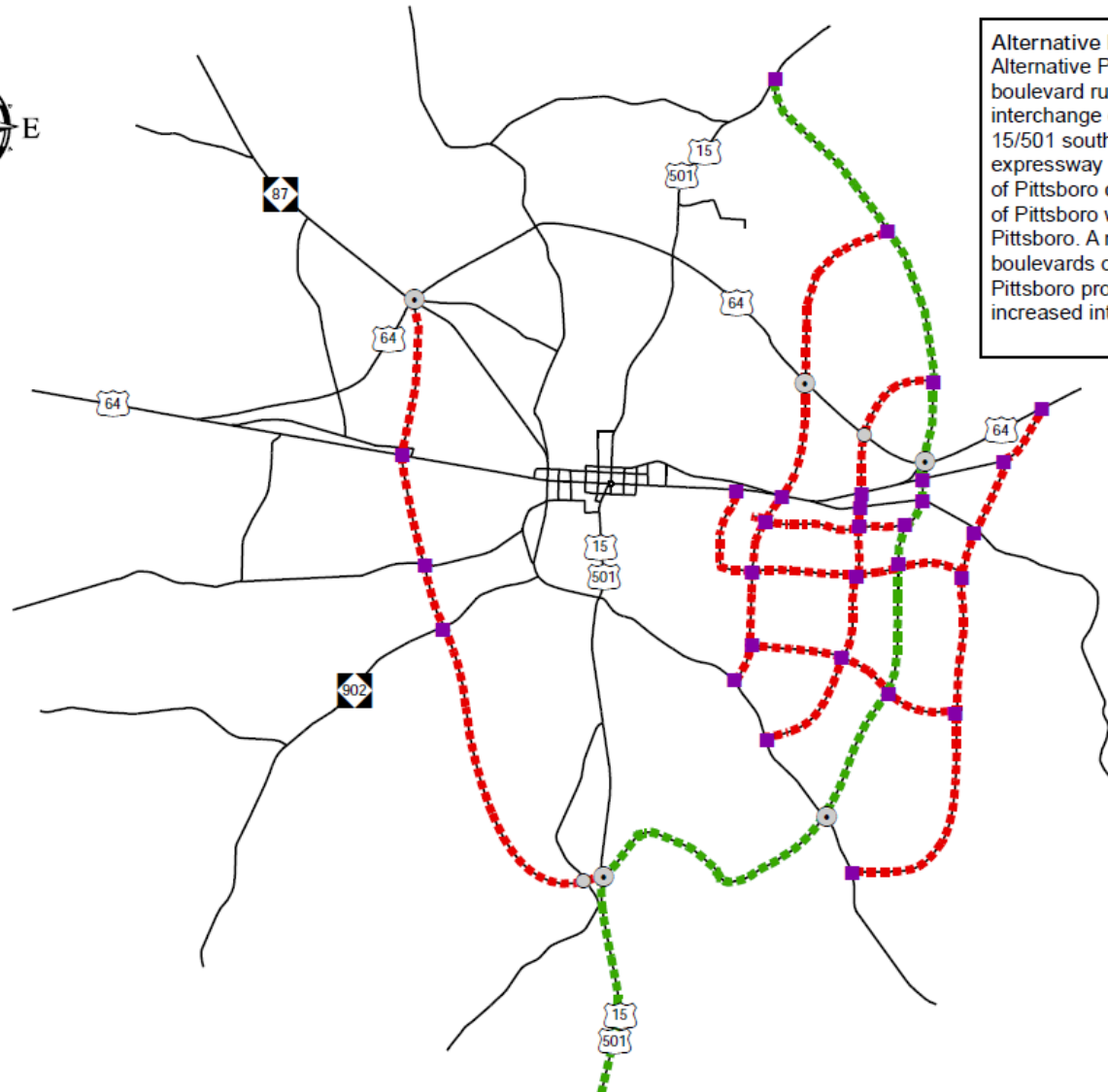
Alternative Description:
Alternative O consists of a four lane expressway running from the western interchange of US 64 with NC 87 to US 15/501 south of Pittsboro. A network of four lane boulevards on the eastern side of Pittsboro provides a grid-like system with increased interconnectivity.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: March 24, 2011; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative P



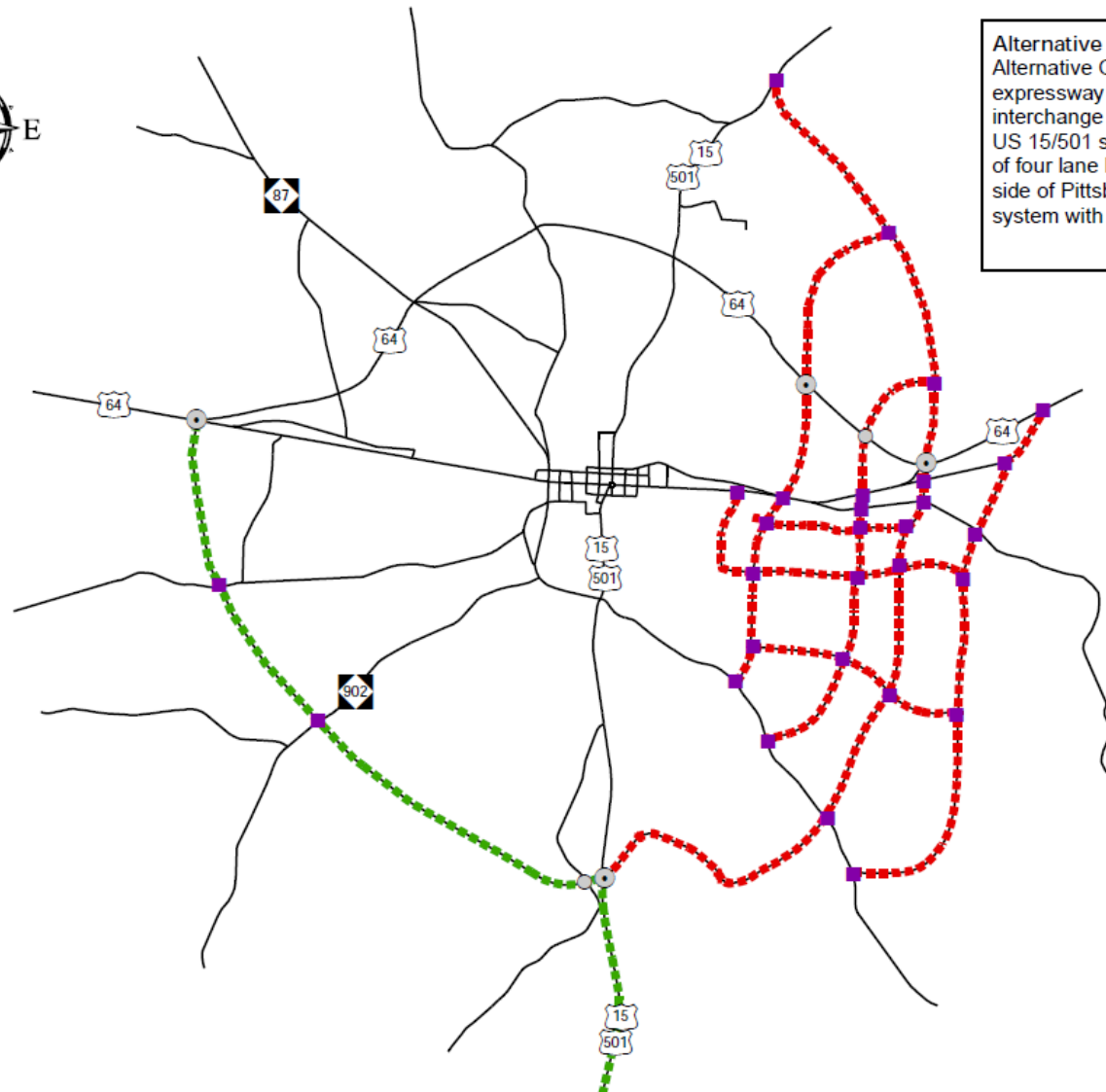
Alternative Description:
Alternative P consists of a four lane boulevard running from the western interchange of US 64 with NC 87 to US 15/501 south of Pittsboro. A four lane expressway runs along the eastern side of Pittsboro connecting US 15/501 north of Pittsboro with US 15/501 south of Pittsboro. A network of four lane boulevards on the eastern side of Pittsboro provides a grid-like system with increased interconnectivity.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: March 24, 2011; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative Q



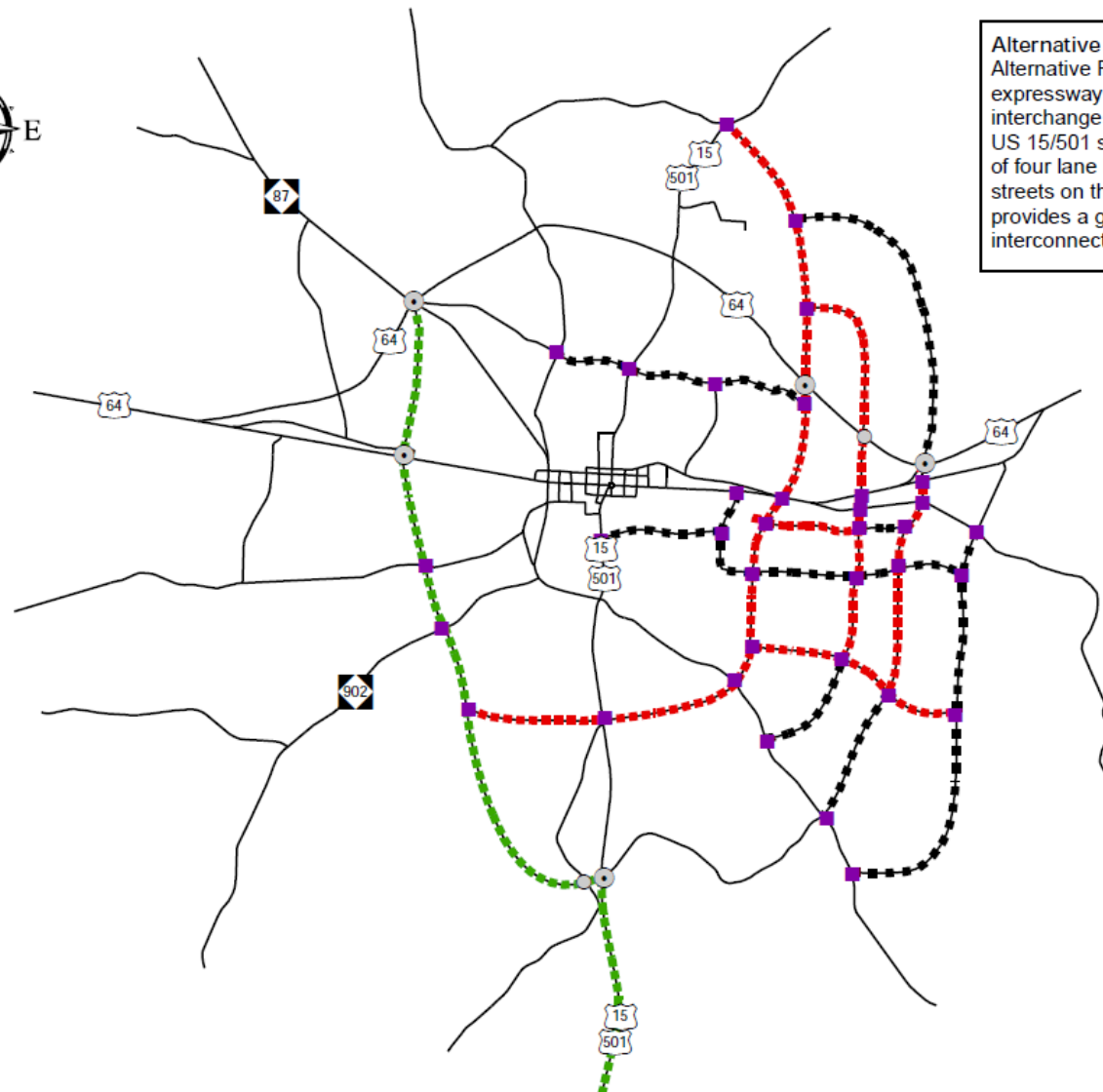
Alternative Description:
Alternative Q consists of a four lane expressway running from the western interchange of US 64 with US 64 BUS to US 15/501 south of Pittsboro. A network of four lane boulevards on the eastern side of Pittsboro provides a grid-like system with increased interconnectivity.

Recommendations

- Intersection
- Interchange
- Fly-over
- Boulevard
- Expressway
- Freeway

Date: March 24, 2011; Source: Pittsboro Travel Demand Model

Alternatives Map: Alternative R



Alternative Description:
Alternative R consists of a four lane expressway running from the western interchange of US 64 with US 64 BUS to US 15/501 south of Pittsboro. A network of four lane boulevards and two lane local streets on the eastern side of Pittsboro provides a grid-like system with increased interconnectivity.

Recommendations

- Intersection
- Interchange
- Fly-over
- ■ ■ ■ Local
- ■ ■ ■ Boulevard
- ■ ■ ■ Expressway
- ■ ■ ■ Freeway

Date: March 24, 2011; Source: Pittsboro Travel Demand Model

Appendix J

Existing Transportation Plans

The following CTPs or Thoroughfare Plans for areas within the county that were incorporated as a part of this plan is/are listed below and may be viewed on the web. Refer to those reports for detailed descriptions of recommendations that were not documented as a part of this report.

- ❖ 1983 Chatham County Thoroughfare Plan
- ❖ 1991 Draft Chatham County Thoroughfare Plan
- ❖ 1996 Draft Chatham County Thoroughfare Plan
- ❖ 2035 Durham-Chapel Hill-Carrboro Metropolitan Planning Organization Long-Range Transportation Plan