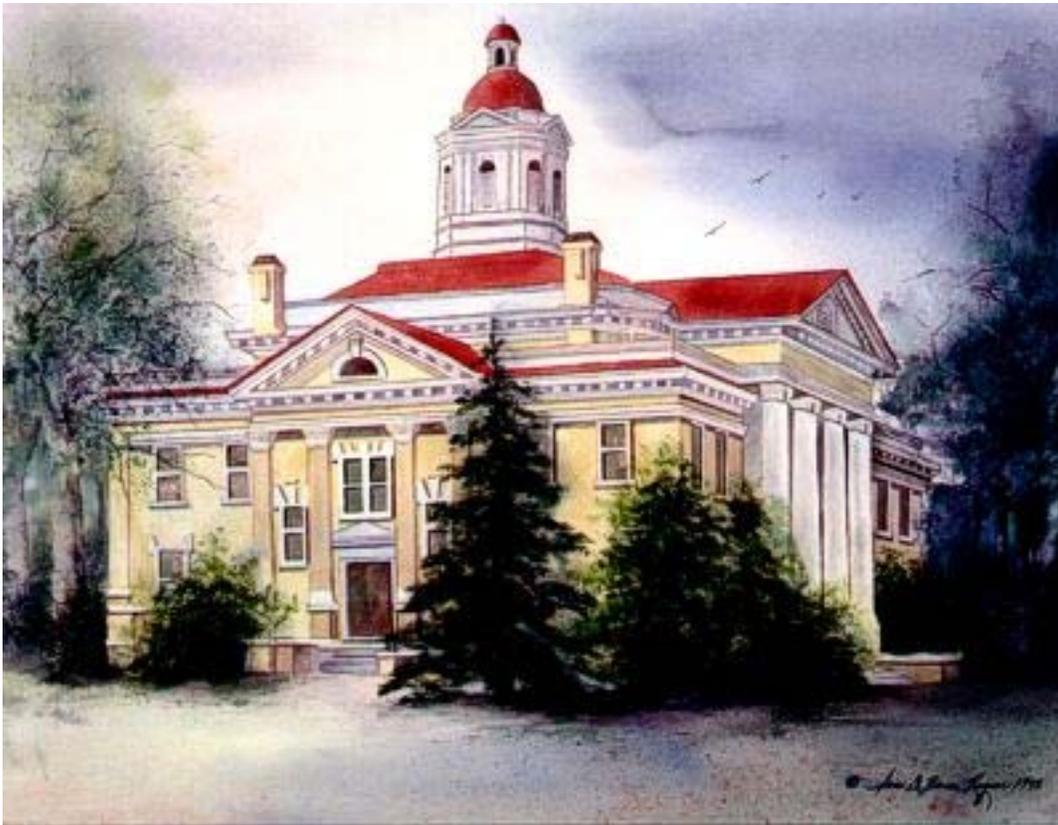




North Carolina Department of Transportation
Transportation Planning Branch

Comprehensive Transportation Plan



Duplin County

October 2008

Comprehensive Transportation Plan Study Report

Duplin County

Prepared by the: Transportation Planning Branch
Division of Highways
N.C. Department of Transportation

In Cooperation with: Duplin County
Eastern Carolina Rural Planning Organization
The Federal Highway Administration
U.S. Department of Transportation

October 2008

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Acknowledgments

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Table of Contents

Executive Summary	i
I. Introduction	
II. Recommendations	5
Highway Map	5
Major Improvements	5
Minor Widening Improvements	13
Bicycle Map	14
Public Transportation and Rail Map	14
Pedestrian Map	15
III. Implementation	17
State-County Adoption of the Transportation Plan	17
Methods Used to Protect the Adopted Transportation Plan	17
Funding Sources	18
Implementation Recommendations	19
IV. Population, Land Use, and Roadway Conditions	21
Population	21
Land Use	22
Roadway System	27
Traffic Crash Analysis	27
Bridge Conditions	30
Roadway Capacity Deficiencies	35
Level of Service	41
V. Environmental Screening	43
Wetlands	43
Threatened and Endangered Species	44
Historic Sites	46
Educational Facilities	46
VI. Public Involvement	51

Appendices

Appendix A: Resources and Contacts	A-1
Appendix B: Comprehensive Transportation Plan Definitions	B-1
Appendix C: Street Tabulations and Recommendations	C-1
Appendix D: Typical Cross-Sections	D-1
Appendix E: Recommended Subdivision Ordinances	F-1
Appendix F: Index of Secondary Road Numbers	E-1
Appendix G: Transportation Improvement Program Project Process	G-1
Appendix H: Existing Transportation Plan Maps	H-1

List of Figures

Figure 1	Comprehensive Transportation Plan	v
Figure 2	Geographic Location	3
Figure 3	Existing Land Use Plan	23
Figure 4	Future Land Use Plan	25
Figure 5	Crash Location	29
Figure 6	Bridge Deficiencies	33
Figure 7	2005 Average Annual Daily Traffic Projections	37
Figure 8	2030 Average Annual Daily Traffic Projections	39
Figure 9	Level of Service Illustrations	42
Figure 10	Environmental Features I	47
Figure 11	Environmental Features II	49

List of Tables

Table 1	Funding Sources and Recommended Methods of Implementation	20
Table 2	Population by Township	21
Table 3	Population Trends and Projections	21
Table 4	Crash Locations	28
Table 5	Deficient Bridges	32
Table 6	2005 Capacity Deficiencies	36
Table 7	2035 Capacity Deficiencies	36
Table 8	Environmental Features	43
Table 9	Threatened and Endangered Species	45

Executive Summary

In March of 2006, the Transportation Planning Branch of the North Carolina Department of Transportation and Duplin County entered into an agreement to cooperatively develop the Duplin County Comprehensive Transportation Plan. This multi-modal transportation plan is a product of this cooperative effort.

This report documents the findings of this study, along with recommendations for improvements that were developed. In addition, this report presents cross-section recommendations, roadway conditions, land use information, and environmental features found in the study area.

The recommendations for improvements are listed below. A more detailed discussion of these recommendations can be found in Chapter 2.

- Interstate 40
The NCDOT Strategic Highway Corridor Report designates I-40 as a freeway through Duplin County. Projections indicate that the facility will operate near or over its capacity in 2035; therefore, it is recommended that the existing facility be widened from four to six lanes through the County and interchange improvements implemented. Improvements will increase the facility's capacity, enhance safety and relieve congestion.
- US 117 (I-40 Connector)
In accordance with the NCDOT Strategic Highway Corridor Report, US 117 (I-40 Connector) is designated as a freeway. It is recommended that the facility be improved to freeway standards by implementing access management strategies including interchanges at NC 50 and SR 1006 (W. Trade Rd). Facility improvements will increase capacity, improve safety and relieve congestion.
- US 117 (Sycamore Road)
It is recommended that US 117 be improved to Boulevard standards from the Town of Magnolia southern town limits southern town limits(STL) south to SR 1937 (Stallings Rd). The two and three-lane facility should be widened to a four-lane divided facility with partial control of access. These improves will increase capacity, improve safety and relieve congestion.
- NC 24 (Kenansville Bypass)
In accordance with the NCDOT Strategic Highway Corridor Report, NC 24 (from I-40 to NC 11 / NC 24 split) is designated as a freeway. It is recommended that the facility be improved to freeway standards by constructing interchanges at NC 11, NC 50 and NC 11 / NC 24 split, and a grade separation at SR 1959 (D.S. Williams Rd). These access control measures will significantly increase capacity, improve safety and relieve congestion.

- NC 24
In accordance with the NCDOT Strategic Highway Corridor Report, NC 24 (from the Kenansville Bypass to the Beulaville Planning Area and from the eastern Beulaville Planning Area to the Onslow County line) is designated as an expressway. It is recommended that the facility be improved to expressway standards by converting the five-lane facility a to four-lane divided facility, and by implementing access management strategies. Facility improvements will significantly increase capacity, improve safety and relieve congestion.
- NC 11/50/24 Bus.
It is recommended that NC 11/50/24Bus. be improved to boulevard standards from NC 24 to NC 903. The two- and three-lane facility should be widened to a four-lane facility and access management strategies implemented to increase capacity, improve safety and relieve congestion.
- NC 41 (Southerland Street) – TIP Project R-2531
It is recommended that NC 41 be improved to boulevard standards from NC 11 east to SR 1945 (Jack Dale Road). The two-lane facility should be widened to four-lanes with partial control of access measures implemented. The recommended improvements will significantly increase capacity, improve safety and relieve congestion.
- NC 41 – TIP Project # R-3409
It is recommended that NC 41 be improved to boulevard standards from NC 50 east to NC 111. The two and three-lane facility should be widened to four-lanes with partial control of access measures implemented. The recommended improvements will significantly increase capacity, improve safety and relieve congestion.
- NC 11 / NC 903 – TIP Project # R-2204
In accordance with the NCDOT Strategic Highway Corridor Report, NC 11 / NC 903 (from NC 24 to the Lenoir County line) is designated as a freeway. It is recommended that the facility be improved to freeway standards by widening the two-lane facility to four-lanes, constructing interchanges and/or grade separations at State Route crossings, and constructing a bypass of Pink Hill.

~ Interchanges are recommended at the following locations: NC 11 (Main St), SR 1700 (Sarecta Rd), SR 1500 (Tram Rd), NC 111, and NC 11 Bypass. An at grade separation is recommended at SR 1516 (Dark Branch Rd).
- SR 1501 (Garner Chapel Road)
It is recommended that SR 1501 be improved to a major thoroughfare from SR 1530 (Willie Best Rd) east to SR 1502 (Bennett's Bridge Rd). The two-lane facility should be widened to four-lanes to increase capacity, improve safety and relieve congestion.

Duplin County's Comprehensive Transportation Plan and technical report are a result of a coordinated effort between the Duplin County Transportation Committee, County staff and the citizens of Duplin County. The County Commissioners adopted the Duplin County Comprehensive Transportation Plan on March 5, 2007; the Eastern Carolina RPO endorsed the Plan on March 15, 2005; and the North Carolina Department of Transportation adopted the plan on May 3, 2007.

Implementation of the plan rests largely with Duplin County and its citizens. The County should work with the Eastern Carolina Rural Planning Organization to prioritize their transportation needs. This organization is responsible for presenting regional transportation needs to the North Carolina Department of Transportation. Transportation needs throughout the State exceed available funding; therefore, local areas should aggressively pursue funding for the projects they desire.

Adopted by:

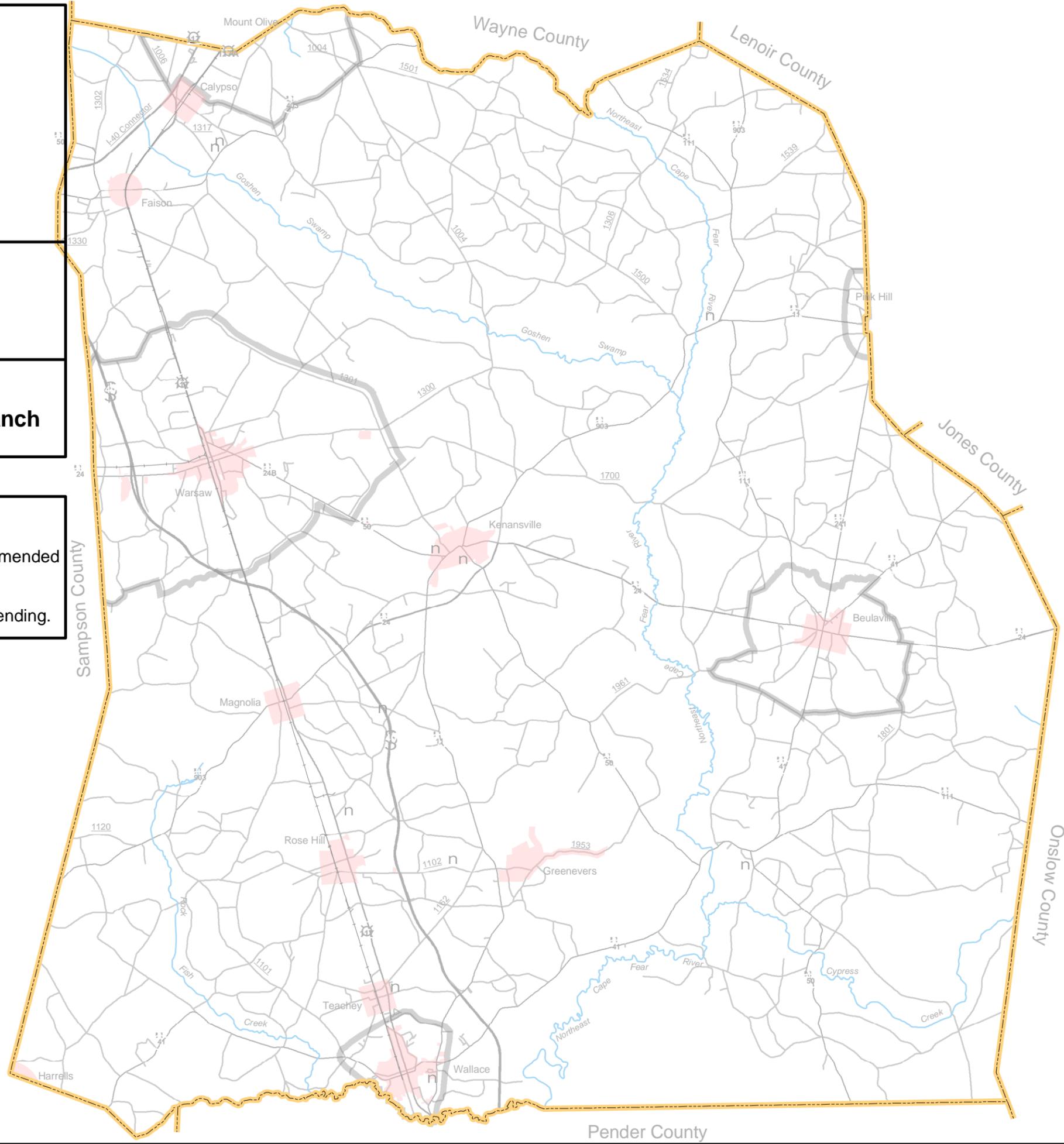
Duplin County
Date: March 5, 2007

NCDOT
Date: May 3, 2007

Endorsed by:
Eastern Carolina RPO
Date: March 15, 2007

Recommended by:
Transportation Planning Branch
Date: March 19, 2007

NOTES:
Sheet 4: There are no existing or recommended bicycle facilities.
Format for Sheet 5 Pedestrian map is pending.



Duplin County
North Carolina

**COMPREHENSIVE
TRANSPORTATION PLAN**
Plan date: January 25, 2007

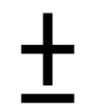
- Sheet 1 Adoption Sheet**
- Sheet 2 Highway Map**
- Sheet 3 Public Transportation and Rail Map**
- Sheet 4 Bicycle Map**
- Sheet 5 Pedestrian Map**

Legend

- Schools
- Railroad
- Rivers and Streams
- City Boundary
- Planning Area Boundary
- County Boundary



Figure 1 (Sheet 1 of 5)
Base map date: November 11, 2005
Refer to CTP document for more details



Highway Map



Duplin County COMPREHENSIVE TRANSPORTATION PLAN

Plan Date : January 25, 2007

Legend

Freeways

- Existing
- Needs Improvement
- Recommended

Expressways

- Existing
- Needs Improvement
- Recommended

Boulevards

- Existing
- Needs Improvement
- Recommended

Other Major Thoroughfares

- Existing
- Needs Improvement
- Recommended

Minor Thoroughfares

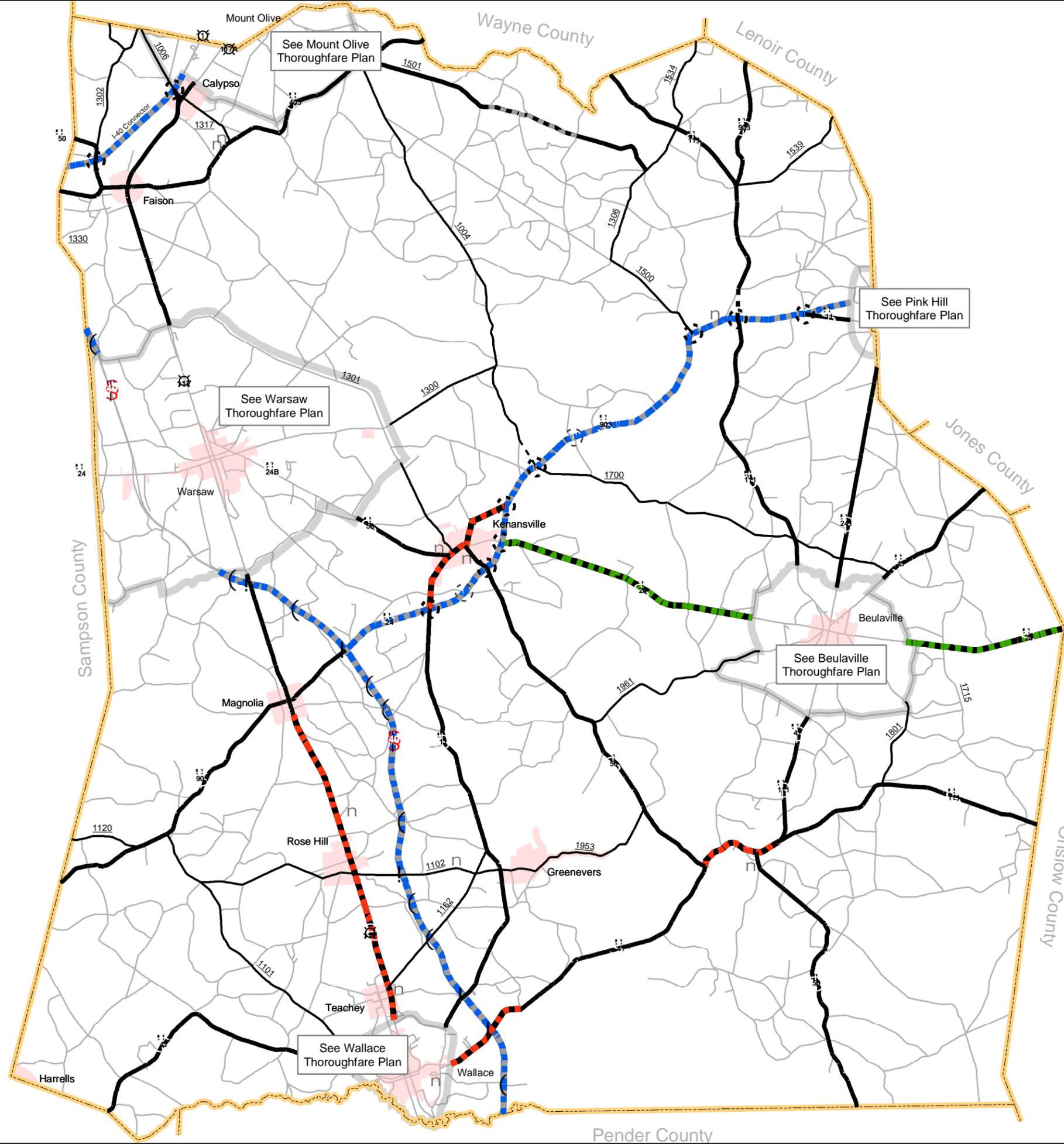
- Existing
- Needs Improvement
- Recommended

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



Figure 1 (Sheet 2 of 5)

Base map date: November 11, 2005
Refer to CTP document for more details



Public Transportation and Rail Map



Duplin County COMPREHENSIVE TRANSPORTATION PLAN

Plan date: January 25, 2007

Legend

Bus Routes

- Existing
- Needs Improvement
- Recommended

Fixed Guideway

- Existing
- Needs Improvement
- Recommended

Operational Strategies

- Existing
- Needs Improvement
- Recommended

Rail Corridor

- Active
- Inactive
- Recommended

High Speed Rail Corridor

- Existing
- Recommended

Rail Stops

- Existing
- Recommended

Intermodal Connector

- Existing
- Recommended

Park and Ride Lot

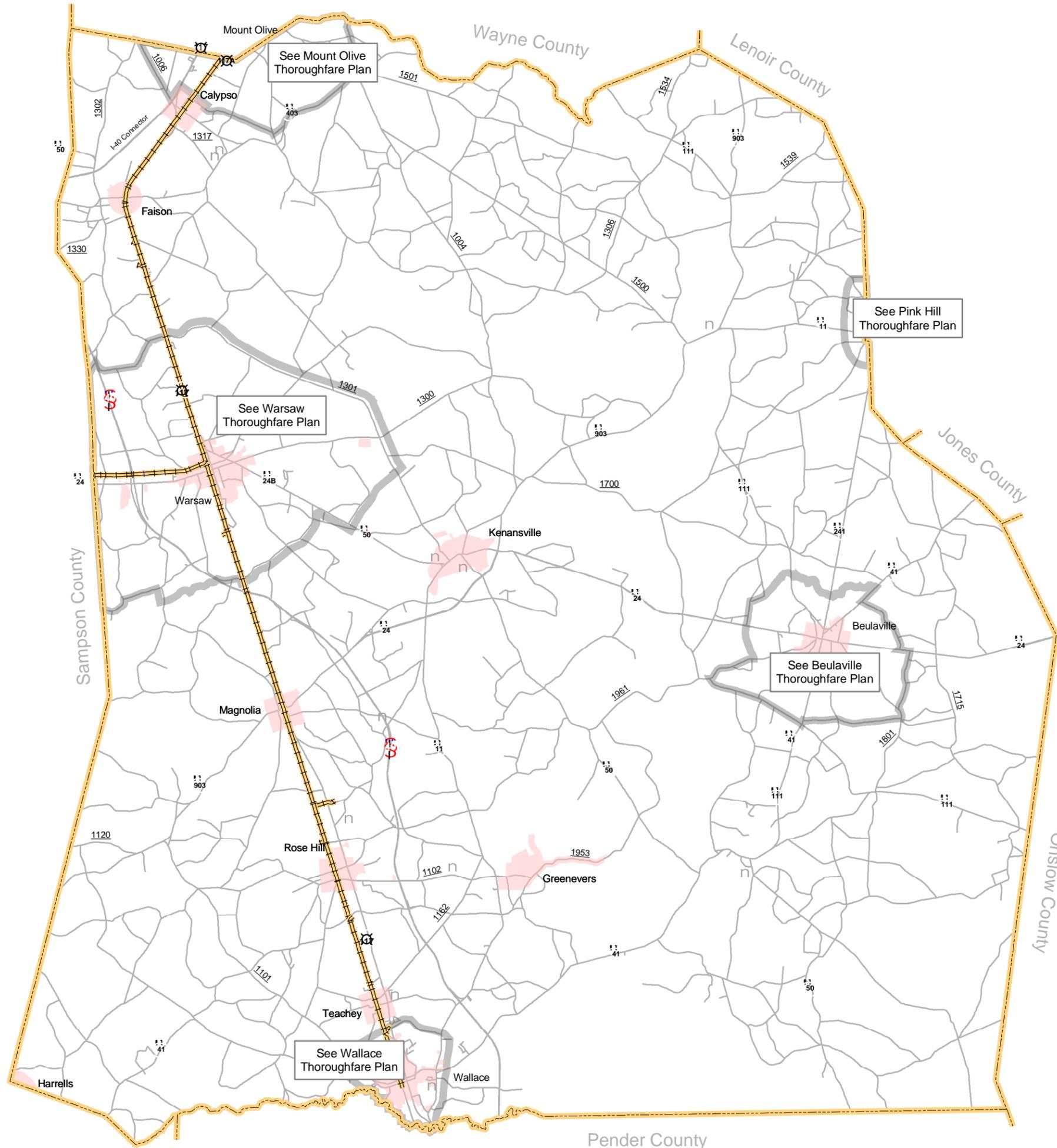
- Existing
- Recommended



Figure 1 (Sheet 3 of 5)

Base map date: November 11, 2005

Refer to CTP document for more details



I. Introduction

An area's transportation system is its lifeline, contributing to its economic prosperity and social well being. The importance of a safe and efficient transportation infrastructure cannot be overstressed. This system provides a means of transporting people and goods from one place to another quickly, conveniently, and safely. A well-planned system will meet the existing travel demands, as well as keep pace with the growth of the region. Duplin County recognized the importance of planning for future transportation needs and requested transportation planning assistance from the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT).

Duplin County is located in southeastern North Carolina and is bordered by Sampson, Wayne, Lenoir, Jones, Onslow, and Pender Counties. The geographic location of Duplin County is illustrated in Figure 2.

This report documents the development of the 2007 Duplin County Comprehensive Transportation Plan (CTP) shown in Figure 1. In addition, this report presents recommendations for each relevant mode of transportation in the County. A comprehensive transportation plan is developed to ensure that the transportation system will be progressively enhanced to meet the needs of the planning area. It will serve as an official guide, providing a well-coordinated, efficient, and economical transportation system that utilizes all modes of transportation. This document will be used by local officials to ensure that planned transportation facilities reflect the needs of the public, while minimizing the disruption to local residents, businesses, and the environment.

The purpose of this study is to examine present and future transportation needs of the area and develop a transportation plan to meet these needs. The plan recommends those improvements that are necessary to provide an efficient transportation system within the 2005-2035 planning period. The recommended cross-sections outlined in Appendix D for these improvements are based on existing and projected conditions.

The proposed Comprehensive Transportation Plan is based on the projected growth for the planning area as coordinated with the County Planners. 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 development 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 Comprehensive Transportation Plan should be consistent with the other elements.

Initiative for implementing the CTP rests predominately with the policy boards and citizens of the County. Duplin County and the North Carolina Department of Transportation share the responsibility for the construction of the recommended projects. As transportation needs throughout the State exceed available funding, it is imperative that the local planning area aggressively pursue funding for desired projects.

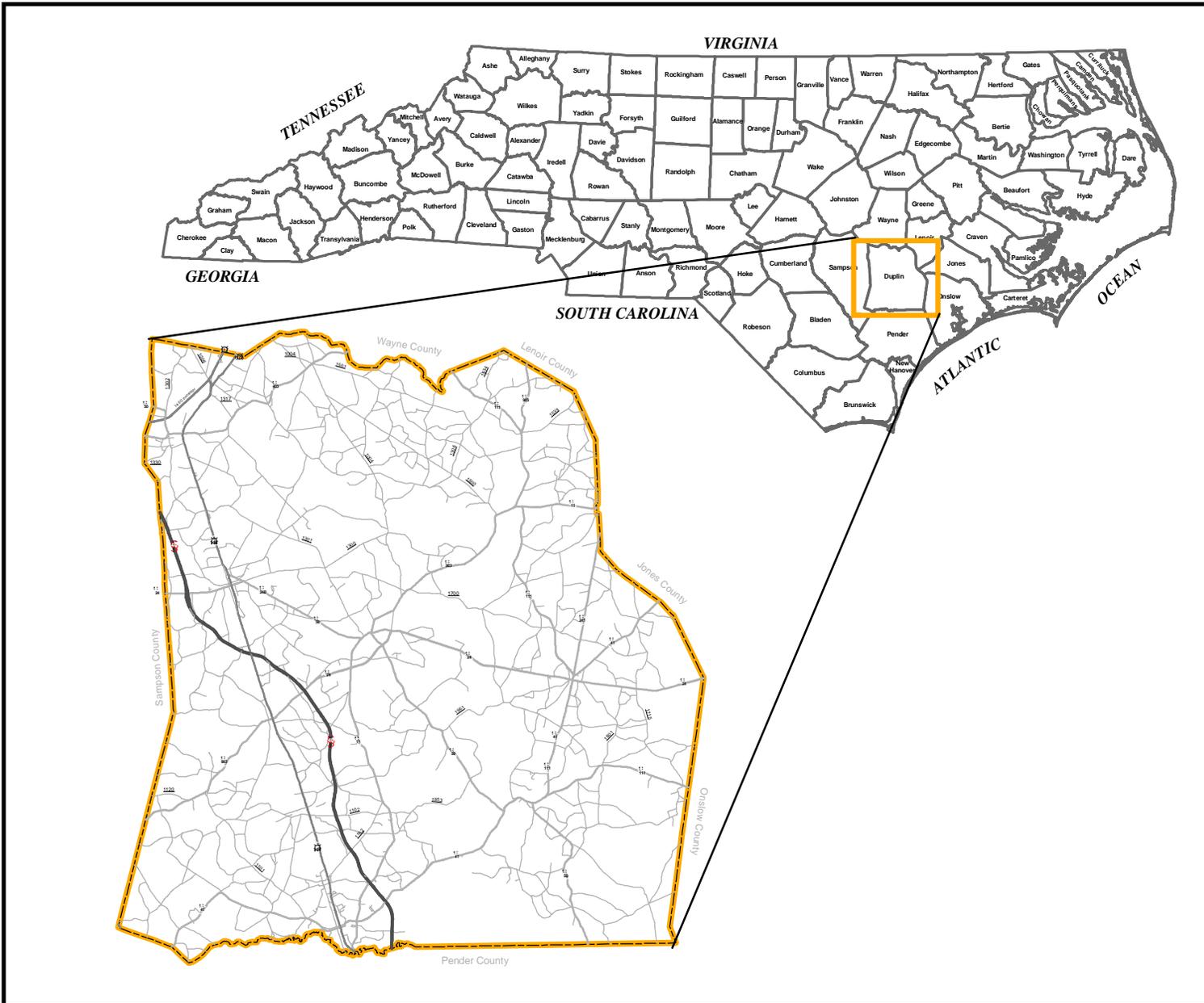
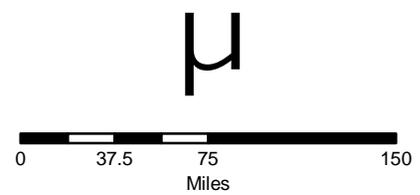


Figure 2
Geographic Location

Duplin County
North Carolina

Prepared By The
North Carolina Department of Transportation
Transportation Planning Branch

In Cooperation With
Duplin County
The Eastern Carolina RPO
The U.S. Department of Transportation
Federal Highway Administration



II. Recommendations

This chapter contains recommendations that are based on the ability of the area's roadway system to serve existing and anticipated travel demands. The objective is to reduce congestion and improve safety by eliminating both existing and projected deficiencies in the transportation system. The adopted plan represents a transportation system that will address anticipated traffic and land development needs.

HIGHWAY MAP

The highway element of the Duplin County Comprehensive Transportation Plan (CTP) is presented in Figure 1 (Sheet 2). This plan includes roadways within the County that fall into five general categories: freeways, expressways, boulevards, other major thoroughfares, and minor thoroughfares. Refer to Appendix C for an inventory of the existing and recommended highway attributes and Appendix D for a listing of typical cross-sections used by NCDOT.

The process of formulating and evaluating recommendations for the facilities in the CTP involves many factors including the goals and objectives of the area, existing roadway conditions, identified roadway deficiencies, environmental impacts, and existing and anticipated land development. Consideration of these factors led to the development of the recommended improvements. A detailed description for each is listed below.

Major Improvements

I-40

- **Project Recommendation:** The NCDOT Strategic Highway Corridor Report designates I-40 as a freeway through Duplin County. It is recommended that the facility be widened from four to six lanes and interchange improvements performed. The total project length is approximately 27 miles.
- **Transportation Demand:** Interstate 40 is functionally classified as an interstate and serves both intrastate and interstate travel. This facility traverses eight states linking the west (California) and east (North Carolina) coasts of the United States. Within North Carolina, this route connects eight of the seventeen Metropolitan Planning Organizations (MPO), four of the six major airports and an intermodal connector in Greensboro, NC. This corridor serves as a primary connection for moving people, goods and services throughout the State and the Country.
- **Roadway Capacity and Deficiencies:** The 2005 Average Annual Daily Traffic (AADT) along I-40, ranged from 19,000 vehicles per day (vpd) in the southern part of Duplin County to 22,000 vpd in the northern part of the County. The route's capacity ranges between 40,400 and 42,400 due to the 20% truck rate north of US 24. AADTs

through Duplin County are projected to double in 2035 jumping to 40,600 and 51,100 vpd. This significant increase will result in portions of I-40 being near and over capacity. The current LOS for I-40 through Duplin County is a LOS B. Without improvements, in 2035 the northern portion of I-40 will operate at a LOS F and the southern portion LOS D. (See Chapter 4 for a detailed explanation of LOS.)

- Social Demands and Economic Development: Widening I-40 will improve intrastate and interstate travel and access to North Carolina. The route's designation as a SHC and its linkage to other states, the ports and beaches of North Carolina and other interstates all contribute to its great economic and social value. Further, as a Strategic Highway Corridor, I-40 plays a major role in statewide mobility and connectivity, promotes a vision of modern transportation, and supports economic opportunities.
- System Linkage: The primary purpose of the North Carolina Strategic Highway Corridors is to provide a network of high-speed, safe, reliable highways throughout the State. I-40 is a major east-west corridor through the State that provides connectivity between many of the State's activity centers. Additionally, every interstate that traverses NC intersect with I-40 creating a comprehensive network. {I-26 in Asheville, I-77 in Statesville, I-85 in Greensboro, I-74 in Winston Salem, and I-95}
- Relationship to Other Plans: The recommendations made for I-40 is consistent with the North Carolina Strategic Highway Corridor Plan that designates this segment of I-40 as a freeway. A CTP for the Town of Warsaw is currently being developed. Any recommendations should be coordinated with this plan.

I-40 Connector

- Project Recommendation: In accordance with the SHC Report, it is recommended that the I-40 Connector be improved to freeway standards. Recommendations include implementing access management strategies to achieve full control of access and the construction of interchanges at SR 1006 (W. Trade Rd.) and NC 50. The total length of the project is 4.5 miles.
- Transportation Demand: The I-40 Connector is functionally classified as an other principal arterial and serves as a connector between US 117 and I-40 in northern Duplin County.
- Social Demands and Economic Development: The I-40 Connector is vital because it provides uninterrupted freeway service from US 117 to I-40. As with all SHCs, the I-40 Connector will contribute toward interstate mobility and connectivity, promote a vision of modern transportation, and support economic opportunities, and environmental excellence.

- System Linkage: The primary purpose of the I-40 Connector is to link the freeway section of US 117 (located within the Mt. Olive Planning Area) to I-40. Thus, providing a fully controlled facility that represents a vital part of the network.
- Relationship to Other Plans: The recommendations made for the I-40 Connector are consistent with the North Carolina Strategic Highway Corridor Plan that designates this facility as a freeway. This project is not identified in any other adopted transportation plan.

US 117

- Project Recommendation: It is recommended that US 117 be improved to boulevard standards from the Town of Magnolia STL to SR 1937 (Stallings Rd. - Wallace Planning Area Boundary). Boulevard standards will be achieved by widening the two and three-lane facility to a four-lane divided facility with partial control of access. The total project length is 9.4 miles.
- Transportation Demand: US 117 is functionally classified as a major arterial and serves intra-state travel. This facility begins at I-95 in Wilson County and terminates at I-40 in Wilmington. The southern portion of the facility, beginning in Duplin County, runs parallel to I-40 serving as an alternate north-south route.
- Roadway Capacity and Deficiencies: The current AADT along the length of the US 117 project ranges from 5,900 to 8,800 vpd. The capacity of the roadway varies from 12,600 to 25,700 vpd. The projected 2035 AADT of 8,000 to 12,600 vpd will result in sections of the roadway being over and near capacity. US 117 is currently operating between a level of service LOS C and D. Without improvements, portions of this facility will be operating as high as LOS E by the year 2035.
- Safety Issues: Of the 145 crashes that occurred along US 117 in Duplin County between January 1, 2003 and December 31, 2005, 58 occurred within this 9.4 mile project area. Nine intersections along this stretch are categorized as “high accident intersections”, 6 of which have a severity index higher than the State Average. High crash locations are listed in Table 5 and shown visually on Figure 3.
- Social Demands and Economic Development: This facility primarily serves north-south travel between I-95 and I-40. Within Duplin County, US 117 links 7 of the 10 municipalities. A considerable rise in commercial and residential development is expected in the southern portion of the County and it is probable that a large percentage of this development will occur along US 117.
- System Linkage: Improving US 117 to a multi-lane divided facility is imperative due to its significance in serving inter-county travel and as an alternate north-south route in the event of congestion or a crash on I-40. US 117 is also identified as a North Carolina Hurricane Evacuation Route.

- Relationship to Other Plans: US 117 extend into the Wallace Planning where the current thoroughfare plan was adopted 1982. However, no recommendations were made for this route.

NC 24

- Project Recommendation: The entire length of NC 24 is designated a Strategic Highway Corridor (SHC) through Duplin County. In accordance with the SHC Report, recommendations for the facility are as follows:

(Kenansville Bypass) - It is recommended that NC 24 (from I-40 to NC 11/24 split) be improved to freeway standards. Improvements include constructing interchanges at NC 11, NC 50 and NC 11/24 split, and a grade separation at SR 1959 (D.S. Williams Rd). The project length is approximately 5.6 miles.

(Rural NC 24) - It is recommended that NC 24 from the Kenansville Bypass to the western Beulaville Planning Area (7.8 mi.) and from the eastern Beulaville Planning Area to the Duplin County line (4.7 mi.) be improved to expressway standards. Improvements should be achieved by converting the five-lane facility a to four-lane divided facility, and by implementing access management strategies. The project combines for a total of approximately 12.5 miles.

- Transportation Demand: NC 24 is functionally classified as a principal arterial and primarily serves intra-state travel. It is an essential east-west route that accommodates travel between Charlotte, Fayetteville, Jacksonville and Morehead City. The corridor is also a primary route for military traffic between Fort Bragg, Camp Lejeune, and the State Port at Morehead City.
- Roadway Capacity and Deficiencies: The current average daily traffic on NC 24 varies between 7, 600 to 10,000 vpd. The capacity of the existing roadway is 40,400 for the Kenansville Bypass and 39,800 vpd for the eastern portion. The projected average daily traffic will range between 12,300 (LOS A) and 24,200 vpd (LOS B). Therefore, the facility will adequately serve future traffic.
- Social Demands and Economic Development: By limiting access to NC 24 safety and capacity will be greatly improved. Further, as a SHC, the recommended improvements will achieve the vision of statewide mobility and connectivity, promoting a vision of modern transportation, and being supportive of economic opportunities and environmental excellence. Economic development is fostered by the usage of NC 24 as a truck route for many port operations.
- System Linkage: The primary purpose of North Carolina SHCs is to provide a network of high-speed, safe, reliable highways throughout the State. The eastern segment of this route provides connectivity between three major state activity centers and four other strategic corridors. {Fayetteville (I-95), I-40, Jacksonville (US 17), and the Port of Morehead City (US 70)}. Further, the Kenansville Bypass

segment of NC 24, which is designated as a future freeway, will serve as a connector between NC 11 and I-40.

NC 24 is also identified as a hurricane evacuation route for the coastal areas, a Strategic Highway Network (STRAHNET) route, and is a vital part of the North Carolina Intrastate System and the National Highway System.

- Relationship to Other Plans: The recommendations made for NC 24 are consistent with the North Carolina Strategic Highway Corridor Plan which designates segments of NC 24 as a freeway or an expressway. A CTP for the Town of Beulaville is currently being developed. Any recommendations for NC 24 should be coordinated with this plan.

NC 11/903 (TIP # R-2204)

- Project Recommendation: In accordance with the NCDOT Strategic Highway Corridor Report it is recommended that NC 11/903 be improved to freeway standards from NC 24 to the Lenoir County line. Recommendations include widening the two-lane facility to four-lanes, constructing interchanges or grade separations at State Route crossings, and constructing a bypass of Pink Hill. Realignment of the SR 1004 and NC 903/111 intersections are also recommended to improve operations.

Note that facility upgrades may occur in stages thereby achieving freeway standards in phases. In addition to the Pink Hill bypass, other portions of the facility may be constructed on new location in order to bypass developed areas. Realignment of the SR 1004 and NC 903/111 intersections are also recommended to improve operations. The proposed improvements will significantly increase capacity, improve safety and relieve future congestion.

- Transportation Demand: NC 11 is functionally classified as a major collector, which primarily serves intra-county travel and traffic generators in addition to providing access to the arterial system. NC 11 runs north-south through the eastern part of the State, connecting Hertford, Pitt, Duplin and Columbus counties. In Duplin County, NC 11 serves travel from the northeast part of the County through Kenansville, and continues southwest through Wallace.
- Roadway Capacity and Deficiencies: The current average daily traffic on NC 11/903 varies between 2,900 to 5,900 vpd. The capacity of the existing roadway is 10,600 vpd. The projected average daily traffic will range between 5,700 and 10,500 vpd resulting in portions of the route being near capacity. Currently NC 11/903 is operating a LOS of B to C, without improvements the LOS will worsen to C to D.
- System Linkage: As a SHC, it is envisioned that the northern portion of NC 11 will play an important role in the interstate system. This segment of NC 11 will contribute to a freeway network that will ultimately connect Wilmington, NC to Norfolk, VA.

- Relationship to Other Plans: The recommendations made for NC 24 are consistent with the SHC Plan which designates segments of NC 24 as a freeway and an expressway. The recommendations are also consistent with the Pink Hill Thoroughfare Plan, adopted in 1999, which recommends that NC 11/903 be widened to a four-lane divided facility bypassing Pink Hill.

This project is identified as an unfunded project (R-2204) in the State Transportation Improvement Program (STIP).

NC 11/50/24 Business

- Project Recommendation: It is recommended that NC 11/50/24 Bus. be improved to boulevard standards from NC 24 to NC 903. This two and three-lane facility should be widened to a four-lane undivided facility and access management strategies implemented. The estimated project length is 4.2 miles.
- Transportation Demand: NC 11 is functionally classified as a major collector, which primarily serve intra-county travel and traffic generators in addition to providing access to the arterial system. NC 11 runs north-south through the eastern part of the State, connecting Hertford, Pitt, Duplin and Columbus counties. This facility runs diagonally through Duplin County, merging with NC 50 and NC 24 Business through the Town of Kenansville.
- Roadway Capacity and Deficiencies: The current AADT on this section of NC 11 range from 7,100 to 11,000 vpd. The capacity of the roadway is 12,500 vpd. The projected 2035 AADT of 10,300 to 16,200 vpd will result in segments of NC 11 being at and over capacity. Ten percent of the route's traffic is due to truck traffic. NC 11 is currently operating at LOS D and, without any improvements, will be operating at LOS E by the year 2035. The proposed cross-section, a four-lane undivided facility, will provide a capacity of approximately 40,500 vpd and will improve the level of service to B.
- Social Demands and Economic Development: Kenansville is home to the majority of the County's public offices including the County Courthouse, the Sheriff's Department, the Planning Department, and the James Sprunt Community College. As the Town's primary thoroughfare, NC 11 accommodates travel to these facilities as well as numerous commercial establishments and the NCDOT County Maintenance Yard.
- System Linkage: In addition to its statewide significance, where it plays a crucial role in providing continuous north-south travel across the State, NC 11 plays a major role in intra-county travel. Therefore, it is important that the proposed improvements are implemented to ensure that the facility will be able to adequately accommodate future travel demands.
- Relationship to Other Plans: This project is not directly related to any other transportation plan.

NC 41

- **Project Recommendation:** It is recommended that NC 41 be improved to boulevard standards at two different locations in southern Duplin County. The detailed recommendations for each project are as follows:

It is recommended that NC 41 be improved to boulevard standards from NC 11 east to SR 1945 (Jack Dale Road), just east of Wallace. The two-lane facility should be widened to four-lanes with partial control of access measures implemented. The total project length is approximately 3 miles. This project is included in the 2009-2015 Transportation Improvement Program (TIP) as project R-2531. This project is currently in the planning/design phase.

It is recommended that NC 41 be improved to boulevard standards from NC 50 east to NC 111 (the Chinquapin area), for a total length of 2 miles. The two- and three-lane facility should be widened to four-lanes. This project is within the limits of TIP project R-3409, which runs from east of I-40 to NC 24. However, TIP Project R-3409 merely proposes to widen the roadway to a 24-foot cross section, construct paved shoulders, provide turn lanes at various locations, and realign where appropriate. This unfunded project is included in the 2009-2015 TIP.

- **Transportation Demand:** NC 41 is functionally classified as a major collector, which primarily serves intra-county travel and traffic generators in addition to providing access to the arterial system. NC 41 runs through the eastern portion of the State, from US 70 in Craven County south to South Carolina. In Duplin County, NC 41 facilitates northeast-southwest traffic, providing a link between the Towns of Beulaville and Wallace.
- **Roadway Capacity and Deficiencies:** The current capacity of NC 41 throughout the County, excluding areas within municipalities, is 10,600. Current AADTs range from 6,300 to 10,000 within the two project areas, which create near capacity travel conditions. Due to proposed land developments, AADTs in 2035 are projected to be between 9,600 and 16,700. The anticipated growth will result in the areas near Wallace being over capacity and the Chinquapin area being near capacity. The proposed improvements will improve travel from a LOS of D to a LOS of B in both project areas.
- **Safety Issues:** The NC 41 and NC 50 intersection within the Chinquapin area is one of the worse accident locations within Duplin County. Without the planned improvements, the ensuing congestion will result in the potential for increased crash rates. However, the recommended improvements to NC 41 will provide increase capacity, and allow greater maneuverability both of which will result in safer driving conditions.
- **Social Demands and Economic Development:** NC 41 carries traffic east-west through southeastern Duplin County. Development is rural in nature along this route

with the exception of Beulaville and Wallace urban areas. The anticipated growth in the Wallace area is significant due to the continuing growth of the River Landing residential golfing community and spawning commercial developments. As a result, area traffic will continue to grow as well. In addition to accommodating future traffic, the recommended improvements to NC 41 may also help to spur additional economic development.

- System Linkage: Because of the significance of NC 41 in serving intra-county travel, it is important that the facility is kept in good operating condition. Further, NC 41 plays a crucial role in providing continuous east-southwest travel from Jones and Onslow Counties to I-40.
- Relationship to Other Plans: This project is not directly related to any other transportation plan.

SR 1501 (Garner Chapel Road)

- Project Recommendation: It is recommended that SR 1501 be improved to a major thoroughfare from SR 1530 (Willie Best Rd) east to SR 1502 (Bennett's Bridge Rd), for a total length of 2.8 miles. This two-lane facility should be widened to a four-lane undivided facility with turn lanes into the Butterball Turkey Plant.
- Transportation Demand: SR 1501 is functionally classified as a minor collector, which primarily serves small local communities and traffic generators providing access to the major collector system. In Duplin County, SR 1501 serves as an east-west route in the northern part of the county and provides a connection between NC 403 and NC 903.
- Roadway Capacity and Deficiencies: The current average daily traffic on SR 1501 is between 1,000 and 3,450 vpd and has a 10,600 capacity. The projected AADT of 8,900 will result in this section of roadway being near capacity in 2035. Currently, SR 1501 is operating at a LOS B and without any improvements will be at LOS D by year 2035. The proposed four-lane facility will provide a capacity of approximately 38,400 and will improve the LOS to A.
- Safety Issues: Within the five year study period (January 1, 2001 and December 31, 2005) there was no significant number of crashes along this route. However, with the high truck traffic, the potential for conflict should be considered.
- Social Demands and Economic Development: The Carolina (Butterball) Turkey Plant, which is the largest turkey processor in the US, is located on SR 1501. This facility is one of two routes that provides primary access and regress for 2,400 employees and numerous transfer trucks. In addition to accommodating the expected traffic increase, the recommended improvements may also spur further economic development, i.e., commercial and industrial, in this area.

- System Linkage: Due to the importance of SR 1501 to the Carolina Turkey Plant and in the surrounding local communities, this facility should be kept in good operating condition. Further, SR 1501 facilitates north-south travel within the county.
- Relationship to Other Plans: This facility is not directly related to any other transportation plan.

Minor Widening Improvements

The following routes do not have capacity issues, but are recommended to be upgraded to two 12-foot lanes with 2-foot paved shoulders to improve safety.

- **US 117A (N. 4th St.)**: It is recommended that US 117A be widened from two 10-foot lanes to two 12-foot lanes from Calypso NTL to US 117.
- **NC 50**: It is recommended that NC 50 be widened from two 10-foot lanes to two 12-foot lanes from Sampson County Line to NC 403.
- **NC 111**: It is recommended that NC 111 be widened from two 10-foot lanes to two 12-foot lanes from NC 41 to Onslow County Line.
- **NC 241**: It is recommended that NC 241 be widened from two 10-foot lanes to two 12-foot lanes from Jones County to SR 1700 (Sarecta Rd/Beulaville PIng Area Bdry)
- **SR 1006 (West Trade Rd.)**: It is recommended that SR 1006 be widened from two 9-foot lanes to two 12-foot lanes from Wayne County Line to US 117.
- **SR 1101 (Cornwallis Rd.)**: It is recommended that SR 1101 be widened from two 9-foot lanes to two 12-foot lanes from NC 903 to NC 41.
- **SR 1102 (Brice's Store Rd.)**: It is recommended that SR 1102 be widened from two 9-foot lanes to two 12-foot lanes from SR 1101(Cornwallis Rd) to Railroad Rd.
- **SR 1102 (N. Charity Rd.)**: It is recommended that SR 1102 be widened from two 10-foot lanes to two 12-foot lanes from I-40 to SR 1953 (Pasture Branch Rd).
- **SR 1120 (Halls Pond Rd.)**: It is recommended that SR 1120 be widened from two 9-foot lanes to two 12-foot lanes from Sampson County Line to NC 903.
- **SR 1162 (Bay Lane)**: It is recommended that SR 1162 be widened from two 10-foot lanes to two 12-foot lanes from I-40 to US 117 in Teachy.
- **NC 1306 (Red Hill Rd.)**: It is recommended that SR 1306 be widened from two 9-foot lanes to two 12-foot lanes from NC 111 to SR 1500 (Tram Rd.).

- **SR 1317 (White Oak Bridge Rd.):** It is recommended that SR 1317 be widened from two 9-foot lanes to two 12-foot lanes from Calypso eastern town limits (ETL 0 to NC 403.
- **SR 1319 (Duplin School Rd.):** It is recommended that SR 1319 be widened from two 9-foot lanes to two 12-foot lanes from SR 1317 (White Oak Bridge Rd.) to NC 403.
- **SR 1500 (Tram Rd.):** It is recommended that SR 1500 be widened from two 9-foot lanes to two 12-foot lanes from SR 1306 (Red Hill Rd.) to NC 11 / 903.
- **SR 1534 (Drummersville Rd.):** It is recommended that SR 1534 be widened from two 9-foot lanes to two 12-foot lanes from NC 111 to the Wayne County Line.
- **SR 1539 (Piney Grove Rd.):** It is recommended that SR 1539 be widened from two 9-foot lanes to two 12-foot lanes from NC 903 to the Lenoir County Line.
- **SR 1700 (Sarecta Rd.):** It is recommended that SR 1700 be widened from two 9-foot lanes to two 12-foot lanes from NC 903 to NC 41.
- **SR 1801 (Lyman Rd.):** It is recommended that SR 1801 be widened from two 9-foot lanes to two 12-foot lanes from NC 111 to SR 1804 (Quinn Store Rd.)
- **SR 1953 (Pasture Branch Rd.):** It is recommended that SR 1953 be widened from two 9-foot lanes to two 12-foot lanes from SR 1102 (Murphy Store Rd) to NC 50.
- **SR 1961 (Hallsville Rd.):** It is recommended that SR 1961 be widened from two 9-foot lanes to two 12-foot lanes from NC 50 to SR 1800 (Jackson Store Rd.).
- **SR 2029 (Old NC 903 Hwy):** It is recommended that SR 2029 be widened from two 10-foot lanes to two 12-foot lanes from NC 24 to NC 11.

Bicycle Map

There are no designated State bike routes, locally planned bike routes or greenways within the study area. Therefore, a map of this element was not included in the plan.

Public Transportation and Rail Map

The Public Transportation and Rail Element of the transportation plan is an innovative way to consider other modes of transportation and give the public other options of traveling from one place to another. At this time, there are no fixed route public

transportation services available in the County. There are no improvements planned for the existing rail system for Duplin County.

The public transportation and rail map for the planning area is presented on Sheet 3 of Figure 1. See Appendix B for a more detailed description of each category.

Pedestrian Map

The format for the Pedestrian Map is still under development; therefore no map is included.

III. Implementation

Implementation is one of the most important aspects of the comprehensive transportation plan. If implementation is not an integral part of this process, the effort and expense associated with developing the plan will be lost. There are several tools available for use by the County to assist in the implementation of the CTP. They are described in detail in this chapter.

State-County Adoption of the CTP

Duplin County and the North Carolina Department of Transportation have mutually approved the CTP shown in Figure 1. The mutually adopted plan can now serve as a guide for the Department of Transportation in the development of the transportation system for the County. The approval of this plan by the County also enables standard road regulations and land use controls to be used effectively in the implementation of this plan. As part of the plan, the County and Department of Transportation shall reach agreement on the responsibilities for existing and proposed streets and highways. Facilities which are designated a State responsibility will be constructed and maintained by the Division of Highways.

Methods Used to Protect the Adopted CTP

Subdivision Regulations

Subdivision regulations require every subdivider to submit to the County Planning Commission a plan of any proposed subdivision. It also requires that subdivisions be constructed to meet certain standards. Through this process, it is possible to require the subdivision streets to conform to the CTP and to reserve or protect necessary right-of-way for proposed roads and highways that are a part of the CTP.

The construction of subdivision streets to adequate standards reduces maintenance costs and simplifies the transfer of streets to the State Highway System. Appendix E outlines the recommended subdivision design standards as they pertain to road construction.

Zoning Ordinances

A zoning ordinance can be beneficial to transportation planning by designating appropriate locations of various land use and allowable densities of residential development. This provides a degree of stability on which to make future traffic projections and to plan streets and highways.

Other benefits of good zoning ordinance are: (1) the establishment of standards of development which will aid traffic operations on major thoroughfares and (2) the

minimization of strip commercial development which creates traffic friction and increases the traffic accident potential.

Future Street Line Ordinances

A municipality with legislative approval may amend its charter to be empowered to adopt future street line ordinances. This ordinance, enacted for selected streets, is particularly beneficial for planned future improvements, such as roadway widening. Through a metes-and-bounds description of a street's future right-of-way requirements, the municipality may prohibit new construction or reconstruction of structures within the future right-of-way. This approach requires specific design hearings to be held as an opportunity for affected property owners to obtain information about what to expect and to make necessary adjustments without undue hardship.

Roadway Corridor Official Maps

A Roadway Corridor Official Map (Official Map) is a document adopted by the North Carolina Board of Transportation which allows the reservation of roadway corridors as provided by General Statutes 136-44.50 through 136-44.54. Official Maps place temporary restrictions on private property rights by prohibiting the issuance of a building permit or the approval of a subdivision on property within an adopted alignment, for up to a three-year period beginning when a request for development is denied. The Official Map in effect serves as notice to developers that the State or Municipality intends to acquire specific property. This process is a beneficial tool in directing development so those sites can be reserved for public improvements in anticipation of actual need.

Development Reviews

The District Engineer's Office and the Traffic Engineering Branch of the North Carolina Department of Transportation review driveway access to any state-maintained road. In addition, any development expected to generate large volumes of traffic (e.g., shopping centers, fast food restaurants, or large industries) should be comprehensively studied by the Traffic Engineering Branch, the Project Development and Environmental Analysis Branch, and/or the Roadway Design Unit of NCDOT. If reviewed at an early stage, it is often possible to significantly improve the development's accessibility while preserving the integrity of the CTP.

Funding Sources

Capital Improvements Program

A capital improvement program makes it easier to build a planned transportation system. It consists of two lists of projects. The first is a list of highway projects that are designated as a municipal responsibility and are to be implemented with municipal funds. The second is a list of local projects designated as State responsibility to be included in the State's Transportation Improvement Program.

Transportation Improvement Program

North Carolina's Transportation Improvement Program (TIP) is a document that lists all major transportation projects, and their funding sources, planned by the NCDOT for a seven-year period. Every two years, when the TIP is updated, completed projects are removed, programmed projects are advanced, and new projects are added.

During biennial TIP public hearings, municipalities, local citizens groups, Rural Planning Organizations (RPO), and other interested parties request projects to be included in the TIP. The group requesting a particular project(s) should submit to the NCDOT Board of Transportation Member representing their area the following: a letter with a prioritized summary of requested projects, TIP candidate project request forms, and project location maps with a description of each project. Refer to Appendix G for an example of a TIP project request package. Local areas should work within their respective Rural Planning Organization (RPO) to develop local and regional project priorities.

The Board of Transportation reviews all of the project requests from each area of the state. Based on the technical feasibility, need, and available funding, the board decides which projects will be included in the TIP. In addition to highway construction and widening, TIP funds are available for bridge replacement, highway safety projects, public transit projects, railroad projects and bicycle facilities.

Industrial Access Funds

If certain economic conditions are met, Industrial Access Funds are available for construction of access roads for industries that plan to develop property that does not have access to any state-maintained road. The NCDOT Secondary Roads Office should be contacted for information on Industrial Access Funds.

Small Urban Funds

Small Urban Funds are annual discretionary funds that are made available to municipalities with qualifying projects on the state system. The maximum amount is one million dollars per year per highway division. Requests for Small Urban Fund assistance should be directed to the Division Engineer or to the Program Development Branch of NCDOT.

Implementation Recommendations

The following table gives recommendations for the most suitable funding sources and methods of implementation for the major project proposals of the Duplin County CTP.

Table 1 - Funding Sources and Recommended Methods of Implementation

Projects	Funding Sources				Methods of Implementation				
	Local Funds	TIP Funds	Indust. Access	Small Urban	CTP	Subdiv. Ord.	Zoning Ord.	Future Street Lines	Develop Review
I-40		X			X		X	X	
I-40 Connector		X			X		X	X	
US 117 Widening		X			X		X	X	X
NC 24 Access Mgmt		X			X		X	X	X
NC 11/50 Widening		X			X		X	X	X
NC 24 Improvements		X			X		X	X	X
NC 41 (R-2531)		X			X		X	X	X
NC 41 (R-3409)		X			X		X	X	X
NC 11/903 (R-2204)		X			X		X	X	X
SR 1501 (Widening)		X	X		X		X	X	X

IV. Population, Land Use, and Existing Transportation System

In order to fulfill the objectives of an adequate long-range transportation plan, reliable forecasts of future travel patterns must be achieved. Such forecasts depend on careful analysis of the following items: historic and potential population changes, significant economic trends, character and intensity of land development and the ability of the transportation system to meet existing and future travel demand. Secondary items that influence forecasts include the effects of legal controls such as zoning ordinances and subdivision regulations, availability of public utilities and transportation facilities, and other physical features of the area.

Population

Since the volume of traffic on a roadway is related to the size and distribution of the population that it serves, population data is used to aid the development of the CTP. Future population estimates typically rely on the observance of past population trends and counts. Table 2 presents Duplin County's population by township and its growth rate between 1990 and 2000. Table 3 depicts the population trends and projections for Duplin County as established by the North Carolina State Demography Office.

Table 2 - Duplin County Population By Township

Township	1990	2000	1990 / 2000 % Growth	Township	1990	2000	1990 / 2000 % Growth
Albertson	1,359	2,712	99.6	Magnolia	1,972	3,090	56.7
Cypress Crk	2,695	3,033	12.5	Rockfish	1,185	1,356	14.4
Faison	3,170	3,843	21.2	Rose Hill	2,763	3,048	10.3
Glisson	1,008	1,552	54.0	Smith	1,893	2,505	32.3
Island Creek	7,588	8,484	11.8	Warsaw	5,297	5,677	7.2
Kenansville	3,616	4,773	32.0	Wolfscrape	2,022	2,748	5.9
Limestone	5,427	6,242	15.0				

Source: U.S. Census Bureau, Census 2000

Table 3 - Duplin County Population Trends and Projections

Year	Population	Annual % Growth	Year	Population	Annual % Growth
1970	38,015	-	2005	51,788	+ 5.5
1980	40,952	+ 7.7	2010	55,665	+13.5
1990	39,995	- 2.3	2020	63,742	+14.5
2000	49,063	+ 22.7	2030	72,638	+14.0

Source: North Carolina State Demography Office

Land Use

Land use refers to the physical patterns of activities and functions within an area. Traffic demand in a given area often can be attributed to adjacent land use. For example, a shopping center generates larger 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. Even commercial and residential traffic generation patterns 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:

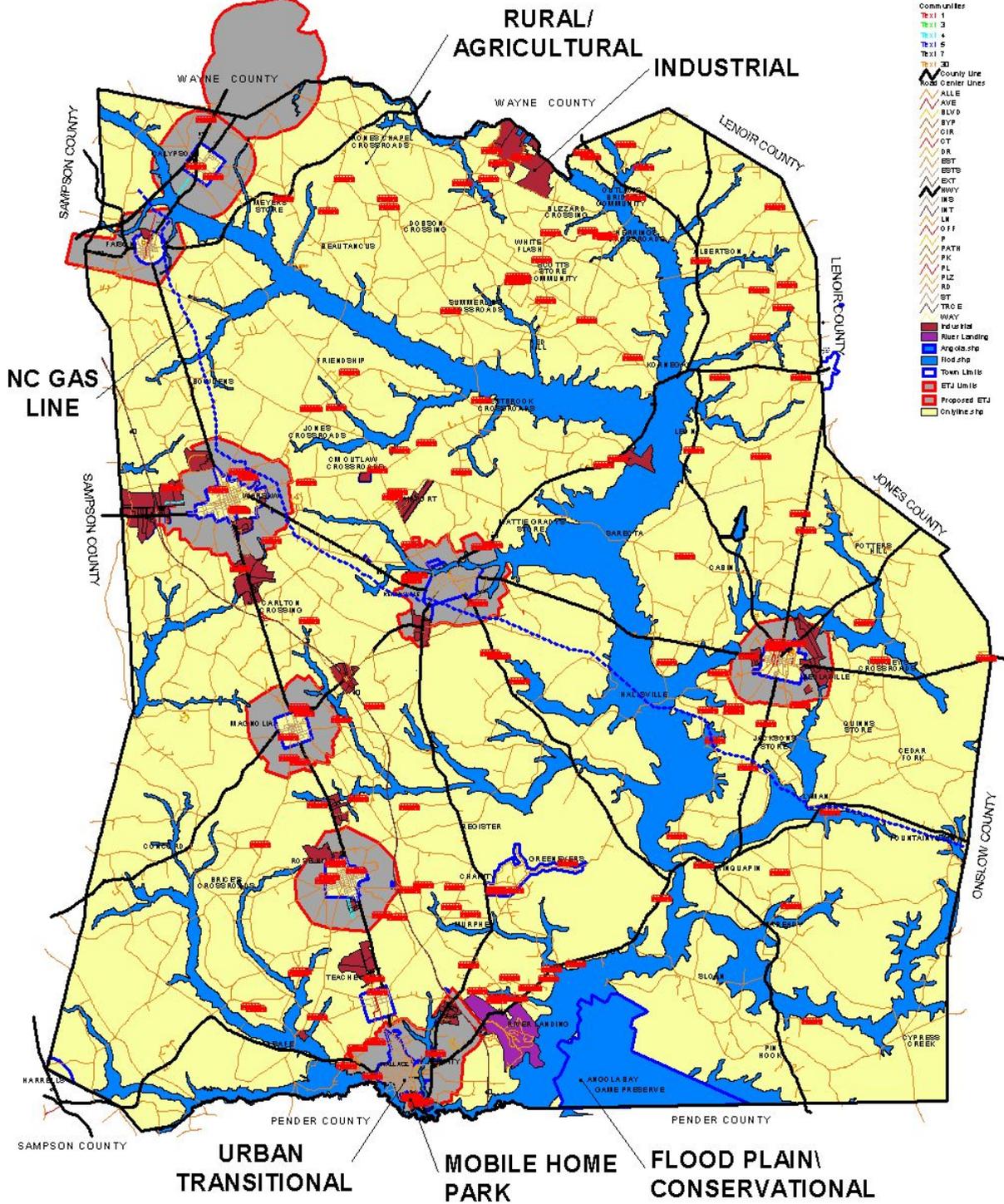
- **Residential**: All land is devoted to the housing of people, with the exception of hotels and motels.
- **Commercial**: All land is devoted to retail trade including consumer and business services and their offices; this may be further stratified into retail and special retail classifications. Special retail would include high-traffic establishments, such as fast food restaurants and service stations; all other commercial establishments would be considered retail.
- **Industrial**: All land is devoted to the manufacturing, storage, warehousing, and transportation of products.
- **Public**: All land is devoted to social, religious, educational, cultural, and political activities; this would include the office and service employment establishments.
- **Agricultural**: All land is 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.

Anticipated future land development is a logical extension of the present spatial land use distribution. Determination of where expected growth is to occur within the planning area facilitates the location of proposed thoroughfares or the improvements of existing thoroughfares.

Illustrations of the existing and anticipated land use patterns were extracted from the Duplin County 2002 Strategic Plan for Economic Recovery and Land Use, and are illustrated in Figures 3 and 4, respectively.

Duplin County primarily anticipates growth in areas designated as “Community” areas. Community areas, as depicted in Figure 4, encompass residential, commercial and public land uses. These areas tend to be established populated areas and are located throughout the County, typically along major routes. Substantial residential and commercial growth is expected in the southern part of the County, particularly around the Wallace and Chinquapin areas.

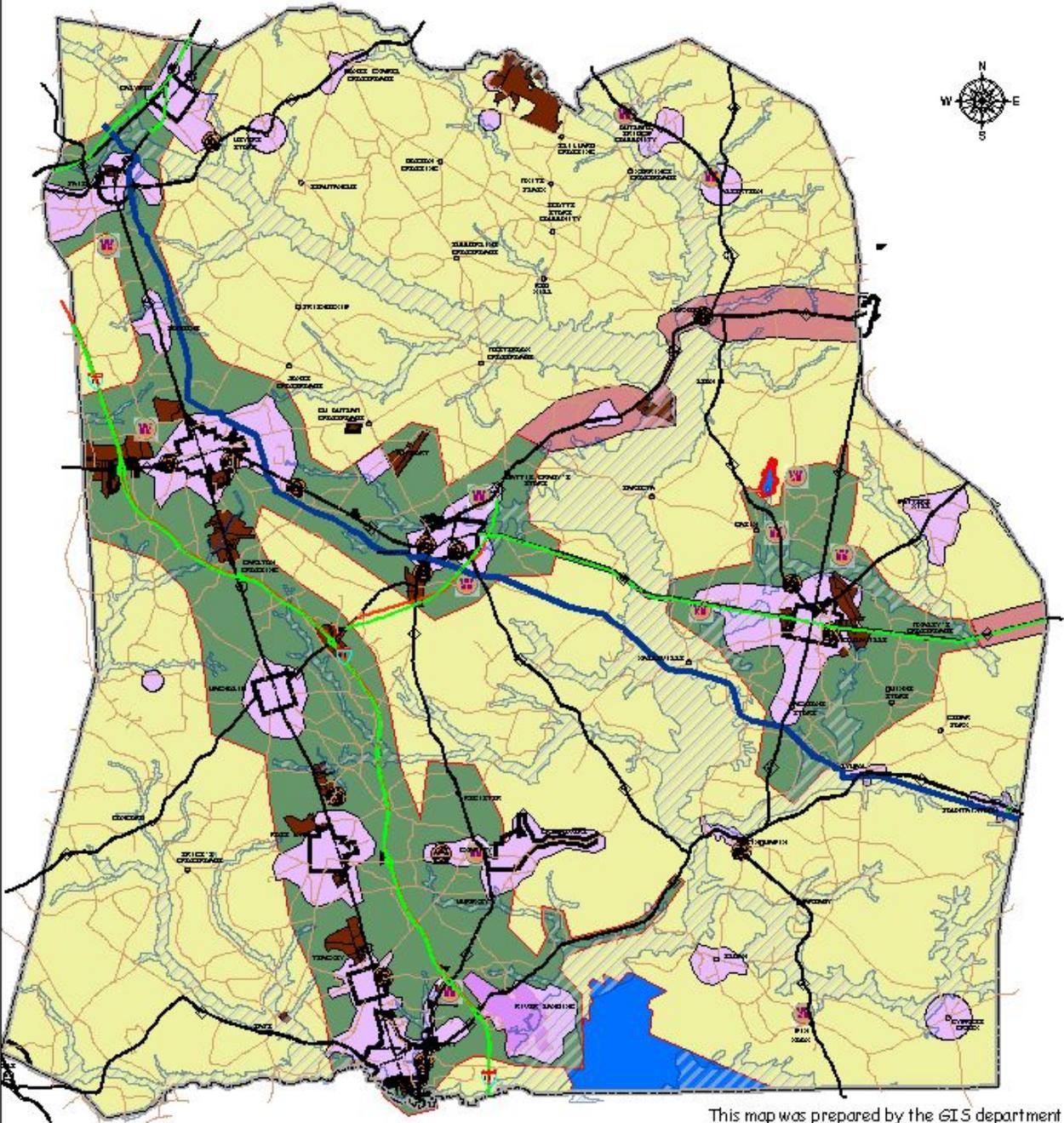
DUPLIN COUNTY EXISTING GENERAL LAND CLASSIFICATION SYSTEM 2002



- NC Gas Line.shp
- Mobile Home Parks
- Communities**
- Text 1
- Text 2
- Text 3
- Text 4
- Text 5
- Text 6
- Text 7
- Text 8
- Text 9
- County Line
- Road Center Lines
- ALLE
- AVE
- BLVD
- BYP
- CIR
- CT
- DR
- EBT
- ECT
- HWY
- IWS
- LT
- LM
- OFF
- P
- PATH
- PK
- PL
- PLZ
- RD
- ST
- TRO E
- HWY
- Industrial
- River Landing
- Argola.shp
- Flood.shp
- Town Limits
- ETJ Limits
- Proposed ETJ
- On/line.shp

This map was created by the GIS mapping department of the Duplin County Tax Office

DUPLIN COUNTY FUTURE GENERAL LAND CLASSIFICATION SYSTEM



This map was prepared by the GIS department of the Duplin County Tax Office

Future Land Use Legend

NC Gas Line	School 50/1e 1500	100 Flood Plain	Open Lake
BLVD	Water Ways	Industrial	Angola Canal Lands
BYP	1000 50/1e 1500	Rebuilding	Rural/Agricultural
HWY	County Boundary	Community	
RT	Town Limits	Transition	
RD	Future Transition		
Schools			



Roadway System

An important stage in the development of a CTP is the analysis of the existing roadway system and its ability to serve the area’s travel desires. 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 such as pavement widths, intersection geometry, or intersection controls. Deficiencies may also result from system problems, such as the need to construct missing travel links, bypass routes, loop facilities, or additional radial routes.

An analysis of the roadway system looks at both current and future travel patterns and identifies existing and anticipated deficiencies. This is usually accomplished through a traffic crash analysis, roadway capacity deficiency 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 of the future system.

Traffic Crash Analysis

Traffic crashes are often used as an indicator for locating congestion and roadway problems. While often the result of driver error or vehicle malfunction, crashes may also be a result of the physical characteristics of the roadway. Deficiencies such as poor design and obstructions, traffic conditions, limited sight distance and inadequate signing may all lead to a crash. 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 performed for the Duplin County CTP factored crash frequency, crash type, and crash severity. Crash frequency is the total number of reported collisions and contributes to the ranking of the most problematic intersections. These high crash intersections are illustrated in Figure 5. Crash type provides a general description of the crash and allows the identification of any trends that may be correctable through roadway or intersection improvements. Crash severity is the crash rate based upon injuries and property damage incurred.

The severity of every accident is measured with a series of weighting factors developed by the NCDOT Division of Highways (DOH). These factors define a fatal or incapacitating crash as 47.7 times more severe than one involving only property damage, and an accident resulting in minor injury is 11.8 times more severe than one with only property damage. In general, a higher severity index indicates more severe accidents. Listed below are levels of severity for various severity index ranges.

<u>Severity</u>	<u>Severity Index</u>
low	< 6.0
average	6.0 to 7.0
moderate	7.0 to 14.0
high	14.0 to 20.0
very high	> 20.0

Table 4 depicts a summary of the crashes occurring in the planning area between January 1, 2003 and December 31, 2005. The data represents locations with 10 or more crashes and/or a severity average greater than that of the state's 4.46 index. The "Total" column indicates the total number of accidents reported within 150-ft of the intersection during the study period. The severity listed is the average crash severity for that location.

Table 4 - Crash Locations

Map Index	Intersection	Average Severity	Total Collisions
1	I-40 and NC 41	4.49	9
2	I-40 and US 117	4.47	9
3	I-40 and NC 903	2.23	12
4	US 117 and SR 1150 (High School Rd.)	17.33	6
5	US 117 and SR 1102 (Charity Rd.)	12.33	8
6	US 117 and SR 1148 (Rosemary Rd.)	5.23	7
7	US 117 and SR 1162 (Bay Rd.)	4.70	6
8	NC 24 and SR 1959 (D S Williams Rd.)	22.08	5
9	NC 24 and SR 1701 (N Williams Rd.)	17.64	5
10	NC 24 and NC 50	10.11	28
11	NC 24 and NC 903	4.42	26
12	NC 41 and NC 50	2.23	12
13	NC 41 and SR 1800 (Jackson Store Rd.)	19.12	5
14	NC 11 and NC 24	15.00	7
15	NC 11 and NC 903	2.23	12
16	NC 11 and SR 1102 (Charity Rd.)	10.8	10
17	NC 50 and SR 1816 (Maready Rd.)	5.62	8
18	NC 111 and SR 1306 (Outlaw Bridge Rd.)	5.23	7
19	SR 1101 (Cornwallis Rd.) and SR 1146	4.70	6

The NCDOT is actively involved with investigating and improving many of these locations. To request a more detailed analysis for any of the locations listed in Table 5, or other intersections of concern, contact the Division Traffic Engineer. Contact information for the Division Traffic Engineer is included in Appendix A.

Bridge Conditions

Bridges are a vital and unique 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 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 Bridge Maintenance 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 or functionally obsolete. A bridge that is at least ten years old is considered structurally deficient if it is in relatively poor structural condition or has an insufficient load-carry capacity due to either the original design or to deterioration. A bridge is considered functionally obsolete if it is narrow, has inadequate under-clearances, has insufficient load-carrying capacity, is poorly aligned with the roadway, and/or can no longer adequately serve existing traffic.

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 within the planning area are listed in Table 5; the locations of the functionally obsolete and structurally deficient bridges are shown in Figure 6.

Table 5 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	CTP Project
07	NC 24 Business	Marsh Grove Swamp	Functionally Obsolete	
16	US 117 (NBL)	CSX Railroad	Structurally Deficient & Functionally Obsolete	
17	US 117 (SBL)	CSX Railroad	Functionally Obsolete	
20	NC 903	Beaver Dam Creek	Structurally Deficient & Functionally Obsolete	NC 903 Widening
23	SR 1102	Br. Rockfish Creek	Structurally Deficient	
24	SR 1102	Taylor's Creek	Structurally Deficient	
25	SR 1102	Island Creek	Structurally Deficient & Functionally Obsolete	
33	NC 41	Little Rockfish	Functionally Obsolete	
35	NC 111	Panther Creek	Functionally Obsolete	
36	NC 11	Maxwell Creek	Structurally Deficient	
42	NC 11	Elder Creek	Structurally Deficient	
46	NC 403	White Oak Branch	Functionally Obsolete	
52	SR 1135	Rockfish Creek	Structurally Deficient	
53	NC 41	Island Creek	Functionally Obsolete	R-3409
59	NC 11	Grove Creek	Functionally Obsolete	NC 11 Widening
67	SR 1912	Maxwell Creek	Structurally Deficient	
68	NC 11	Grove Creek	Functionally Obsolete	NC 11 Widening
69	SR 1915	Br. of Maxwell Creek	Structurally Deficient	
72	NC 11	Goshen Swamp	Functionally Obsolete	R-2204
77	NC 11	Goshen Swamp	Functionally Obsolete	R-2204
79	NC 11	N.E. Cape Fear River	Functionally Obsolete	R-2204
82	NC 111	Burnt Coat Creek	Structurally Deficient & Functionally Obsolete	R-2204
97	NC 1305	Goshen Swamp	Structurally Deficient	
105	SR 1004	Maple Run	Structurally Deficient & Functionally Obsolete	
107	SR 1307	Nahunga Swamp	Structurally Deficient & Functionally Obsolete	
111	SR 1306	Halls Marsh	Structurally Deficient	
119	SR 1300	Maple Run	Functionally Obsolete	
120	SR 1306	Herring Marsh	Structurally Deficient & Functionally Obsolete	
133	SR 1531	Br. of NE Cape Fear	Structurally Deficient	
137	SR 1534	Brch NE Cape Fear	Structurally Deficient	
141	SR 1707	Panther Creek	Structurally Deficient	
154	SR 1700	Cabin Creek	Structurally Deficient & Functionally Obsolete	

Table 5 – Deficient Bridges cont.

Bridge Number	Facility	Feature	Condition	CTP Project
166	SR 1702	Branch Cabin Creek	Structurally Deficient	
188	SR 1826	Nine Mile Creek	Structurally Deficient	
196	SR 1141	Stockinghead Creek	Structurally Deficient	
201	SR 1946	Island Creek	Structurally Deficient	
211	SR 1801	Branch Muddy Creek	Structurally Deficient	
219	SR 1354	Bear Swamp	Structurally Deficient	
229	SR 1376	Grove Swamp	Structurally Deficient	
230	SR 1301	Grove Swamp	Structurally Deficient	
276	SR 1710	Gum Swamp	Structurally Deficient	
278	SR 1715	Branch of Cabin	Structurally Deficient	
309	SR 1301	Nahunga Creek	Structurally Deficient	
325	SR 1004	Branch N.C. Cape Fear	Structurally Deficient	
408	SR 1105	Stewarts Creek	Structurally Deficient	
433	NC 903	I-40	Functionally Obsolete	I-40 Widening
447	SR 1113	I-40	Functionally Obsolete	I-40 Widening

Figure 6
Deficient Bridges

Legend

- K Deficient Bridges
- Routes
- Hydrology
- Duplin County Boundary

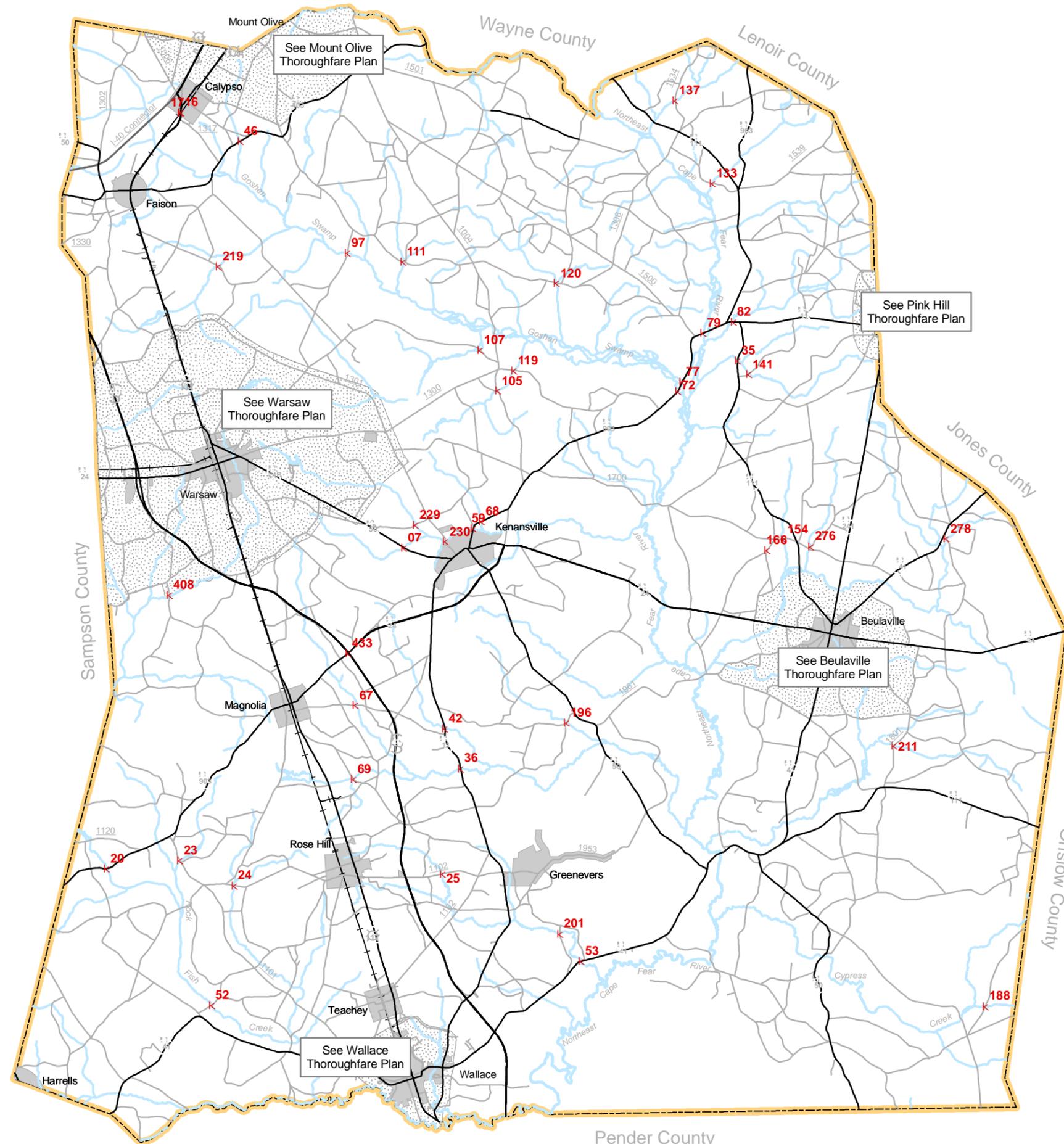
Duplin County
North Carolina

Prepared By The
North Carolina Department of Transportation
Transportation Planning Branch

In Cooperation With The
U.S. Department of Transportation
Federal Highway Administration



Base map date: November 11, 2005



Roadway Capacity Deficiencies

Capacity deficiencies occur when the traffic volume of a roadway is eighty percent or more of roadway's capacity. Travel volumes are based on the total number of vehicles that use a roadway on a typical day. These volumes are based on annual average daily traffic (AADT) counts taken annually by the NCDOT Traffic Survey Group.

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;
- 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 of 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.

2005 Traffic Capacity Analysis

A comparison of the 2005 travel demand volumes for the major roadways in the planning area and their respective capacities identified several existing deficiencies for the Duplin County planning area. These existing roadway deficiencies are summarized in Table 6 and shown in Figure 7.

2035 Traffic Capacity Analysis

The capacity deficiency analysis for the 2035 design year is based upon a "no build" scenario. This analysis revealed several roadways within the planning area will exceed capacity by the design year. Table 7 and Figure 8 present the capacity deficiencies for the design year. Complete recommendations for these facilities are included in Chapter 2 of this report.

Table 6 - 2005 Capacity Deficiencies

Roadway / Description	Deficiency
NC 11 / NC 50 / NC 24 Bus. From NC 11/ 50 junction to NC 11/50/24B junction	Near Capacity
NC 41 From I-40 to SR 1945 (Jack Dale Rd.)	Near Capacity

Table 7 - 2035 Capacity Deficiencies

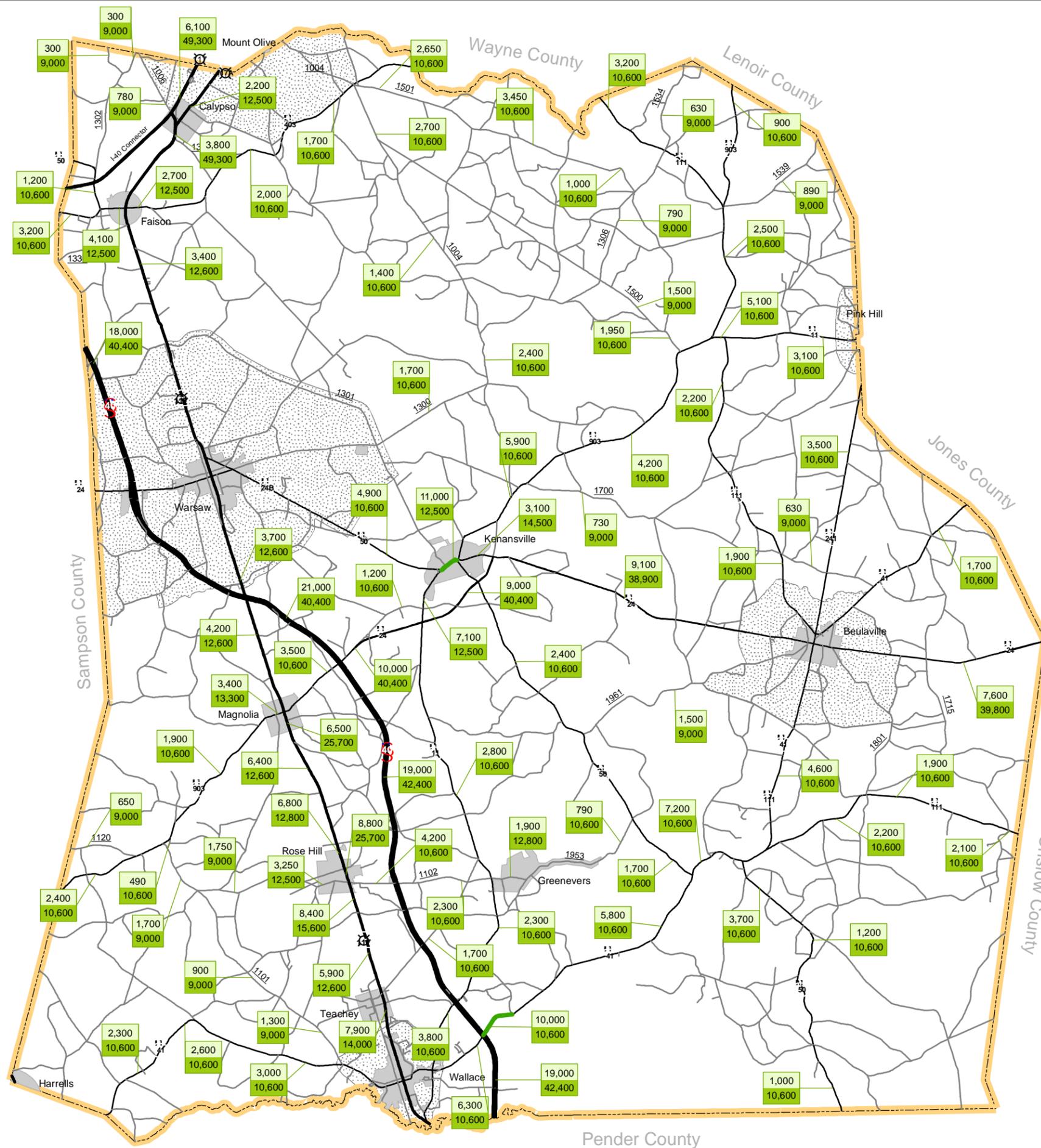
Roadway / Description	Deficiency
I-40 From Sampson County Line to Warsaw Planning Area Boundary From Warsaw Planning Area Boundary to NC 24 From NC 24 to Pender County Line	Over Capacity Over Capacity Near Capacity
US 117 From Magnolia STL to Rose Hill NTL From Rose Hill STL to South of SR 1148 (Rosemary Rd.) From Teachy NTL to Teachy STL	Over Capacity Near Capacity Near Capacity
SR 1501 (Garner Chapel Rd.) From SR 1530 (Willie Best Rd) to SR 1502 (Bennett's Bridge Rd)	Near Capacity
NC 41 Wallace Planning Area Boundary to SR 1945 (Jack Dale Rd.) From NC 50 to NC 111	Over Capacity Near Capacity
NC 11 From NC 11/24 junction to NC 11/50/24B junction From NC 11/50/24 B junction to SR 1004 (Summerlin Crossroad) From NC 903 / 111 junction to NC 11 / 111 junction	Over Capacity Near Capacity Near Capacity

Figure 7

2005 Volumes and Roadway Deficiencies

Legend

- Near Capacity
- Over Capacity
- Duplin County Boundary
- Planning Areas Excluded From Study
- 0000 2005 AADT
- 0000 Capacity



Duplin County North Carolina

Prepared By The
North Carolina Department of Transportation
Transportation Planning Branch

In Cooperation With The
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Federal Highway Administration



Base map date: November 11, 2005

Level of Service (LOS)

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 9.

- **LOS A**: LOS A describes free-flow operations. Free-flow speeds prevail. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. The effects of incidents or point breakdowns are easily absorbed at this level.
- **LOS B**: represents reasonably free flow, and free-flow speeds are 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 at or near the free flow speed of the freeway. 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 will be substantial. Queues may be expected to form behind any significant blockage.
- **LOS D**: is the level at which speeds begin to decline slightly with increasing flows and density begins to increase somewhat more quickly. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences 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 volatile, because there are virtually no usable gaps in the traffic stream. Vehicles are closely spaced, leaving little room to maneuver within the traffic stream. Any disruption of 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 with extensive queuing. Maneuverability within the traffic stream is extremely limited, and the level of physical and psychological comfort afforded the driver is poor.
- **LOS F**: describes breakdowns in vehicular flow; and with such stop-and-go conditions, it is difficult to predict a flow rate. These conditions generally exist within

queues forming behind breakdown points. Breakdowns occur when the ratio of existing demand to actual capacity or of forecast demand to estimated capacity exceeds 1.00. The various reasons for these breakdowns (as identified in the HCM) include traffic incidents, which can cause a temporary reduction in the capacity of a short segment; and points of recurring congestion, such as merge or weaving segments and lane drops.

Figure 9 - Level Of Service Illustrations

Level of Service A



Driver Comfort: High

Maximum Density:

12 passenger cars per mile per lane

Level of Service B



Driver Comfort: High

Maximum Density:

20 passenger cars per mile per lane

Level of Service C



Driver Comfort: Some Tension

Maximum Density:

30 passenger cars per mile per lane

Level of Service D



Driver Comfort: Poor

Maximum Density:

42 passenger cars per mile per lane

Level of Service E



Driver Comfort: Extremely Poor

Maximum Density:

67 passenger cars per mile per lane

Level of Service F



Driver Comfort: The lowest

Maximum Density:

More than 67 passenger cars per mile per lane

Source: 2000 Highway Capacity Manual

V. Environmental Screening

In recent years, the environmental considerations associated with transportation construction have come to the forefront of the planning process. Section 102 of the National Environmental Policy Act (NEPA) requires the completion of an Environmental Impact Statement (EIS) for projects that have a significant impact on the environment. The EIS includes impacts on wetlands, wildlife, water quality, historic properties, and public lands. While this report does not cover the environmental concerns in as much detail as an EIS would, consideration for many of these factors was incorporated into the development of the transportation plan. These factors were also incorporated into the recommended improvements. A list of environmental features examined can be found in Table 8; those occurring within Duplin County are shown in Figures 10 and 11.

Table 8 – Environmental Features

Air Quality Pollution Discharge Points	Groundwater Incidents, unverified
Ambient Water Quality Monitoring Sites	Groundwater Recharge/Discharge
Anadromous Fish Spawning Areas	Heavy Metal & Organic-Rich Mud Pollutant Sample Sites
Animal Operation Permits	High Quality Water and Outstanding Resource Water Management Zones
Artificial Marine Reefs	Hydrology – Major
Benthic Monitoring Results	Land Trust Conservation Properties
Bottom Sediment Sampling Sites	Lands Managed for Conservation & Open Space
Citizen Water Quality Monitoring Sites	National Pollutant Discharge Elimination System Sites (NPDES) – Major and Minor
Closed Shellfish Harvesting Areas	National Wetlands Inventory
Coastal Reserves	North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)
Conditionally Approved Shellfish Harvesting Areas	Peat Deposits of the Pamlico Peninsula
Conservation Easements, US Fish & Wildlife Service	Shellfish Strata
Conservation Tax Credit Properties	Significant Aquatic Endangered Species Habitats
Discharger Coalitions' Monitoring Sites	Stream Gaging Stations - Unverified
Ecosystem Enhancement Program (EEP) Local Watershed Plans, 2004	Stream Gaging Stations - USGS
Ecosystem Enhancement Program (EEP) Targeted Local Watersheds, 2004	Submersed Rooted Vasculars
Fish Community Sampling Sites	Water Supply Watersheds
Fisheries Nursery Areas	

Wetlands

Wetlands are those lands where saturation with water is the dominant factor in determining the nature of soil development and the types of plant and animal communities living in the soil and on its surface. Wetlands are crucial ecosystems in our environment. They help regulate and maintain the hydrology of our rivers, lakes, and streams by storing and slowly releasing floodwaters. Wetlands help maintain the quality of water by storing nutrients, reducing sediment loads, and reducing erosion. They are also critical to fish and wildlife populations by providing an important habitat for approximately one-third of the plant and animal species that are federally listed as threatened or endangered.

The National Wetland Inventory showed several wetlands throughout the study area. Wetland impacts have been avoided or minimized to the greatest extent possible while preserving the integrity of the transportation plan.

Threatened and Endangered Species

The Threatened and Endangered Species Act of 1973 allows the U.S. Fish and Wildlife Service to impose measures on the Department of Transportation to mitigate the environmental impacts of a transportation project on endangered animal and plant species, as well as critical wildlife habitats. Locating any rare species that exist within the planning area during this early planning stage will help to avoid or minimize impacts.

A preliminary review of the Federally Listed Threatened and Endangered Species in the area was completed to determine what effects, if any, the recommended improvements may have on wildlife. Mapping from the N.C. Department of Environment and Natural Resources revealed occurrences of threatened or endangered plant and/or animal species in the area which are summarized in Table 9. No threatened or endangered species are anticipated to be adversely impacted by any of the transportation plan recommendations. However, a detailed field investigation is recommended prior to construction of any highway project in this area.

Table 9 – Threatened or Endangered Species

Species	Common Name	Major Group
<i>Elliptio waccamawensis</i>	Waccamaw Spike	Mollusk
<i>Lampsilis cariosa</i>	Yellow Lampmussel	Mollusk
<i>Lampsilis fullerhati</i>	Waccamaw Fatmucket	Mollusk
<i>Toxolasma pullus</i>	Savannah Lilliput	Mollusk
<i>Triodopsis soelneri</i>	Cape Fear Threetooth	Mollusk
<i>Picoides borealis</i>	Red-cockaded Woodpecker	Bird
<i>Aimophila aestivalis</i>	Bachman's Sparrow	Bird
<i>Acipenser brevirostrum</i>	Shortnose Sturgeon	Fish
<i>Noturus</i> sp. 1	Broadtail Madtom	Fish
<i>Fundulus waccamensis</i>	Waccamaw Killifish	Fish
<i>Menidia extensa</i>	Waccamaw Silverside	Fish
<i>Elassoma boehlkei</i>	Carolina Pygmy Sunfish	Fish
<i>Etheostoma perlongum</i>	Waccamaw Darter	Fish
<i>Myotis austroriparius</i>	Southeastern Myotis	Mammal
<i>Corynorhinus rafinesquii macrotis</i>	Rafinesque's Big-eared Bat	Mammal
<i>Alligator mississippiensis</i>	American Alligator	Reptile
<i>Ophisaurus mimicus</i>	Mimic Glass Lizard	Reptile
<i>Solidago verna</i>	Spring-flowering Goldenrod	Vascular Plant
<i>Dionaea muscipula</i>	Venus Flytrap	Vascular Plant
<i>Macbridea caroliniana</i>	Carolina Bogmint	Vascular Plant
<i>Ludwigia ravenii</i>	Raven's Seedbox	Vascular Plant
<i>Plantago sparsiflora</i>	Pineland Plantain	Vascular Plant
<i>Lysimachia asperulifolia</i>	Rough-leaf Loosestrife	Vascular Plant
<i>Thalictrum cooleyi</i>	Cooley's Meadowrue	Vascular Plant
<i>Parnassia caroliniana</i>	Carolina Grass-of-parnassus	Vascular Plant
<i>Parnassia grandifolia</i>	Large-leaved Grass-of-parnassus	Vascular Plant
<i>Sagittaria weatherbiana</i>	Grassleaf Arrowhead	Vascular Plant
<i>Fimbristylis perpusilla</i>	Harper's Fimbry	Vascular Plant
<i>Rhynchospora decurrens</i>	Swamp Forest Beakrush	Vascular Plant
<i>Sporobolus teretifolius sensu stricto</i>	Wireleaf Dropseed	Vascular Plant
<i>Anguilla Rostrata</i>	American Eel	Fish
<i>Haliaeetus Leucocephalus</i>	Bald Eagle	Bird
<i>Ammodramus Henslowii Susurrans</i>	Eastern Henslow's Sparrow	Bird
<i>Mycteria Americana</i>	Wood Stork	Bird
<i>Stylurus Townesi</i>	Bronze Clubtail Dragonfly	Insect
<i>Amorpha Georgiana</i>	Carolina lead-plant	Vascular Plant

Historic Sites

Section 106 of the National Historic Preservation Act requires the Department of Transportation to identify historic properties listed in, as well as eligible for, the National Register of Historic Places (NRHP). The NCDOT must consider the impacts of transportation projects on these properties and consult with the Federal Advisory Council on Historic Preservation.

N.C. General Statute 121-12(a) requires the NCDOT to identify historic properties listed on the National Register, but not necessarily those that are eligible to be listed. The NCDOT must consider the impacts and consult with the State Historic Preservation Office (SHPO), but is not bound by their recommendations.

The location of historic sites within the planning area was investigated to determine any possible impacts resulting from the recommended improvements. This investigation identified 5 registered historic properties (The Buckner Hill House, The Needham-Whitfield Herring House, The Hebron Presbyterian Church, The Grady House and The B.F. Grady School). The B.F. Grady School is located along NC 11, which is recommended for improvements. All reasonable efforts should be made to minimize the impact to this structure when widening or constructing the facility.

Educational Facilities

The location of educational facilities in the study area was considered during the development of the transportation plan and are depicted in Figure 10. The implementation of the transportation plan should result in positive effects on educational facilities in the study area by improving the safety and capacity of the roadways around educational facilities, and avoiding existing schools.

Figure 10

Environmental Features I



Legend

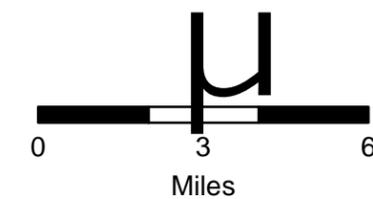
- n Public Schools
- " Benthic Monitoring Results
- ^ Animal Operation Permits
- ! Air Quality Pollution Discharge Points
- G Fish Community Sampling Sites
- k Discharger Coalitions' Monitoring Sites
- +— Anadromous Fish Spawning Areas
- Hydrology
- ▨ Land Managed for Conservation
- ▨ Ecosystem Enhancement Program (EEP) Watersheds

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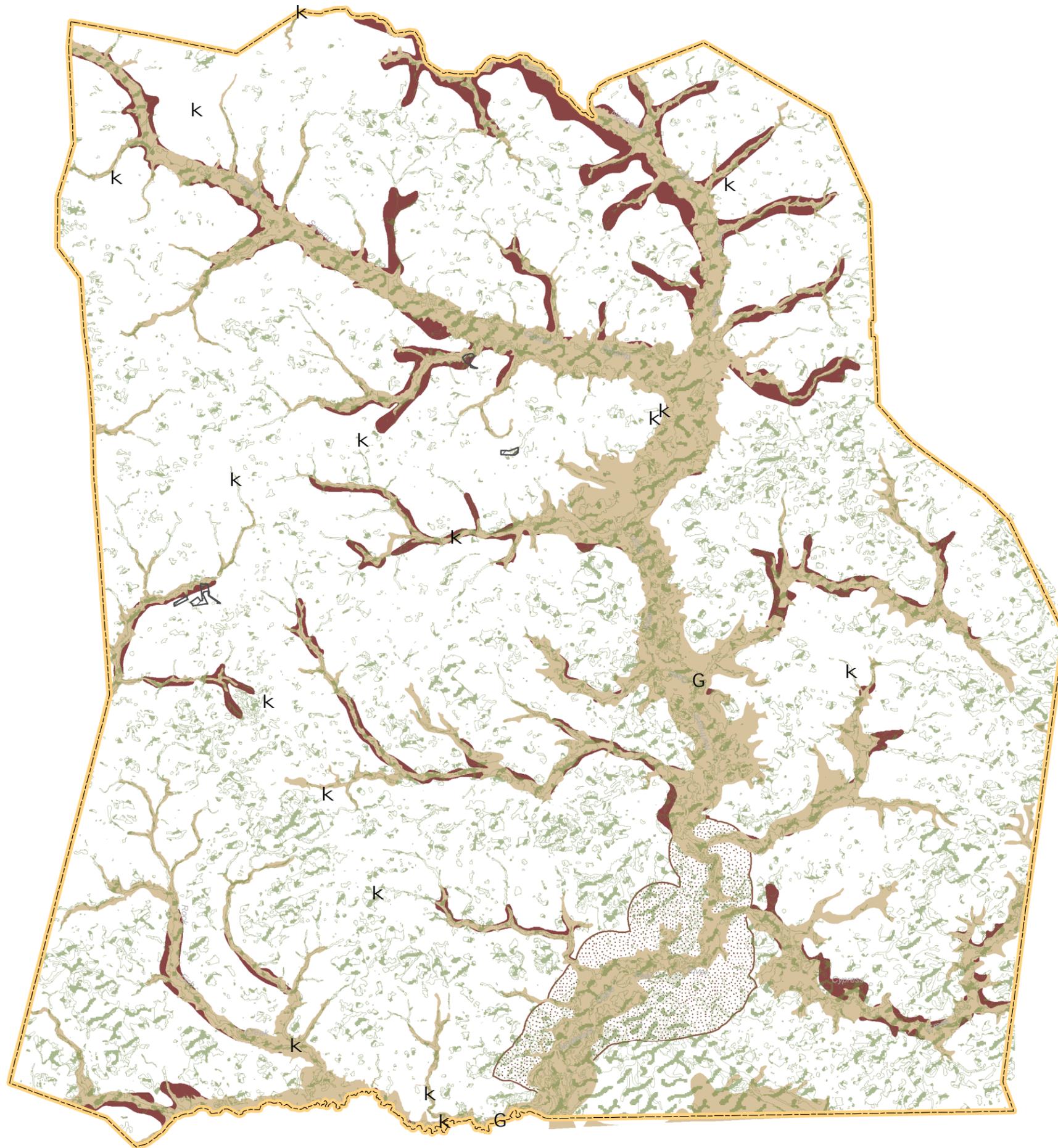
Base map date: November 11, 2005

Figure 11

Environmental Features II

Legend

- G Ambient Water Quality Monitoring Sites
- k Nat'l Pollutant Discharge Elimination System Sites
-  Conservation Easement (US Fish and Wildlife)
-  Wetlands
-  Flood Plains
-  High Quality Outstanding Resource Waters
-  Groundwater Recharge Areas

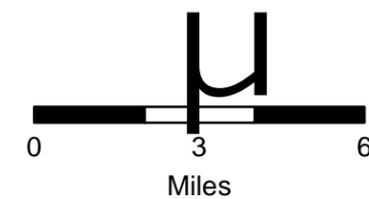


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VI. Public Involvement

Overview

Since the passage of the federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the emphasis on public involvement in transportation has taken on a new role. Although public participation has been an element of long range transportation planning in the past, these regulations call for a much more proactive approach. The NCDOT's Transportation Planning Branch has a long history of making public involvement a key element in the development of any long-range transportation plan, regardless the size of the planning area. This chapter is designed to provide an overview of the public involvement elements implemented into the development of the transportation plan for Duplin County.

Plan Development

The Eastern Carolina RPO requested the development of a comprehensive transportation plan for Duplin County through a prioritized list of regional needs. A meeting was held with the Duplin County Board of Commissioners in March of 2006 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on their transportation needs.

Throughout the course of the study, the Transportation Planning Branch met with the county transportation committee, which included a representative from each municipality and county staff, to provide plan information, to discuss population and employment projections, and to discuss the proposed recommendations.

Three public drop-in sessions were held in Duplin County to present the proposed Comprehensive Transportation Plan to the public and solicit comments. The first meeting was held on February 15, 2007 at the Rosehill Town Square; the second meeting was held on February 22, 2007 at the B.F. Grady School Media Center; and the third meeting was held on February 27, 2007 at the Duplin County Cooperative Extension Building. Each session was publicized in the local newspaper and was held from 4:30 to 7pm. Two comment forms were submitted during the session held on February 15th.

A public hearing was held on March 5, 2007 during the Duplin County Commissioners meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The CTP was adopted unanimously during this meeting.

The Eastern Carolina RPO voted unanimously to endorse the CTP on March 15, 2007. The North Carolina Board of Transportation voted to mutually adopt the Duplin County CTP on May 3, 2007.

APPENDIX SPECIFIC

Appendix A Resources and Contacts

North Carolina Department of Transportation

Customer Service Office
1-877-DOT4YOU
(1-877-368-4968)

Secretary of Transportation
1501 Mail Service Center
Raleigh, NC 27699-1501
(919) 733-2520

*Board of Transportation Member**

Current contact information for the Board of Transportation may be accessed from the NCDOT homepage below or by calling the Customer Service Office.

<https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=30>

*Highway Division Engineers**

Division specific contact information can be found at

<https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx>

Contact Whom, When?

Division Engineer

Contact the Division Engineer with general questions concerning NCDOT activities within each Division; information on Small Urban Funds.

Division Construction Engineer

Contact the Division Construction Engineer for information concerning major roadway improvements under construction.

Division Traffic Engineer

Contact the Division Traffic Engineer for information concerning high- collision locations.

District Engineer

Contact the District Engineer for information regarding Driveway Permits, Right of Way, Encroachments, and Development Reviews.

* See page A4 for Division 3 contact information.

County Maintenance Engineer

Contact the County Maintenance Engineer regarding any maintenance activities, such as drainage.

Transportation Planning Branch (TPB)

Contact the Transportation Planning Branch with long-range planning questions.

1554 Mail Service Center
Raleigh, NC 27699-1554
(919) 733-4705

<https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=3234>

Secondary Roads Office

Contact the Secondary Roads Office for information regarding the Industrial Access Funds Program.

P.O. Box 25201
Raleigh, NC 27699
(919) 733-3250

<https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=135>

Program Development Branch

Contact the Program Development Branch for information concerning Roadway Official Corridor Maps and the Transportation Improvement Program (TIP).

1534 Mail Service Center
Raleigh, NC 27699-1534
(919) 733-2039

<https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=632>

Project Development & Environmental Branch (PDEA)

Contact PDEA for information on environmental studies for projects that are included in the TIP.

1548 Mail Service Center
Raleigh, NC 27699-1548
(919) 733-3141

<https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=3212>

Highway Design Branch

Contact the Highway Design Branch for information regarding alignment for projects that are included in the TIP.

1584 Mail Service Center
Raleigh, NC 27699-1584
(919) 250-4001

<https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=659>

Public Transportation Division

Contact the Public Transportation Division for information public transit systems.

1550 Mail Service Center

Raleigh, NC 27699-1550

(919) 733-4713

<https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=3366>

Other NCDOT Departments

Contact information for other departments within the NCDOT not listed here are available by calling the Customer Service Office or by visiting the NCDOT homepage at

<https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx>

Other State Government Offices

Division of Community Assistance

Contact the Division of Community Assistance for information regarding the Community Planning Program. You may find their contact information at:

<http://www.nccommerce.com/en/CommunityServices/>

Division 3, District 1 Contacts (Duplin County)

Board Member

Mr. Lanny T. Wilson
1442 Quadrant Circle
Wilmington, NC 28405
(828) 265-5380
lanny73763@aol.com

District II Engineer

Ms. Karen Fussell
220 North Boulevard
Clinton, 28328
(910) 592-6174
rvause@ncdot.gov

Division Engineer

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Division Project Manager

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Division Maintenance Engineer

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(919) 733-4705
mbruff@ncdot.gov

Eastern Group Manager

Mr. Travis Marshall, PE
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(919) 733-4705
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droddenberry@ncdot.gov

NCDOT Eastern Carolina RPO Coord.

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Raleigh, NC 27699-1554
(919) 733-4705
cemoya@ncdot.gov

Appendix B

Comprehensive Transportation Plan Definitions

Highway Map

- **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
 - 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 45 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*
- **Existing** – Roadway facilities that are not recommended to be improved.

- **Needs Improvement** – Roadway facilities that need to be improved for capacity, safety, or system continuity. The improvement to the facility may be widening, other operational strategies, increasing the level of access control along the facility, or a combination of improvements and strategies. “Needs improvement” does not refer to the maintenance needs of existing facilities.
- **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 high speed rail service is provided (there are currently no existing high speed corridor in North Carolina).
 - Recommended – Proposed corridor for high speed rail service.
- **Rail Stop** – A railroad station or stop along the railroad tracks.
- **Intermodal Connector** – A location where more than one mode of public transportation meet such as where light rail and a bus route come together in one location or a bus station.
- **Park and Ride Lot** – A strategically located parking lot that is free of charge to anyone who parks a vehicle and commutes by transit or in a carpool.

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 the 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 bicycle transportation (may also accommodate pedestrians, eg. greenways) and is physically separated from a highway facility usually on a separate right-of-way.
- **Off Road-Needs Improvement** – A facility that accommodate bicycle transportation (may also accommodate pedestrians, e.g. greenways) and is physically separated from a highway facility usually on a separate right-of-way that will not adequately serve future bicycle needs. Improvements may include but are not limited to, widening, paving (not re-paving), improved horizontal or vertical alignment.
- **Off Road-Recommended** – A facility needed to accommodate bicycle transportation (may also accommodate pedestrians, eg. greenways) and is physically separated from a highway facility usually on a separate right-of-way. This may also include greenway segments that do not necessarily serve a transportation function but intersect recommended facilities on the highway map or public transportation and rail map.

Pedestrian Map

Format for the pedestrian map is under development.

Appendix C

Street Tabulation and Recommendations

This appendix includes a detailed tabulation of all streets identified as elements of the Duplin County Comprehensive Transportation Plan. The table includes a description of the roads by sections, as well as the length, cross section, and right-of-way for each section. Also included is the existing and projected average daily traffic volumes, roadway capacity, and the recommended ultimate lane configuration. Due to space constraints, these recommended cross sections are given in the form of an alphabetic code. A detailed description of each of these codes and an illustrative figure for each can be found in Appendix D.

The following index of terms may be helpful in interpreting the table:

ETL – Eastern Town Limits	WPB – Western Planning Boundary
NTL – Northern Town Limits	SR – Secondary Road
STL – Southern Town Limits	N/A – Not Available
WTL – Western Town Limits	RDWY – Roadway
EPB – Eastern Planning Boundary	ROW – Right-of-way
NPB – Northern Planning Boundary	vpd – Vehicles Per Day
SPB – Southern Planning Boundary	

Street Tabulation and Recommendations

FACILITY & SECTION	EXISTING CONDITIONS					AADT		RECOMMENDATIONS		
	DIST. (mi)	RDWY (ft)	ROW (ft)	NO. OF LANES	CAPACITY (vpd)	2005 (vpd)	2035 (vpd)	CROSS SECT.	ROW (ft)	CAPACITY (vpd)
I-40										
Sampson County – SR 1102	20.2	48	160	4	40,400	22,000	51,100	L	300	60,800
SR 1102 to Pender County	8.0	48	160	4	42,400	19,000	40,200	L	300	60,800
I-40 Connector										
US 117 to Sampson County Line	4.3	48	120	4	37,800	N/A	N/A	L	300	60,800
US 117										
Wallace NPB – SR 1148	3.5	22	130	2	14,000	7,900	11,600	F	110	39,300
SR 1148 – Rosehill STL	0.6	35	130	3	15,600	5,900	8,000	F	110	39,300
Rosehill STL – SR 1102	0.3	35	60	3	15,000	8,400	12,600	F	110	39,300
SR 1102 – SR 1141	0.4	24	60	4	25,700	8,800	12,200	F	110	39,300
SR 1141 to Magnolia STL	4.5	24	60	2	12,600	6,800	9,500	F	110	39,300
Magnolia STL to Magnolia NTL	1.0	44	60	4	25,700	8,800	12,200	ADQ		
Magnolia NTL to SR 1107 (Warsaw SPB)	3.5	22	80	2	12,600	4,000	5,400	ADQ		
SR 1301 (Warsaw NPB) to Faison STL	3.8	24	150	2	12,600	3,400	4,600	ADQ		
Faison STL to NC 403	0.5	31	N/A	3	15,000	3,700	5,000	ADQ		
NC 403 to Faison NTL	0.5	24	N/A	2	12,500	3,900	5,300	ADQ		
Faison NTL to Goshen Swamp Bridge	2.5	24	60	2	12,600	3,900	5,300	ADQ		
Goshen Swamp Bridge to US 117A	1.5	48	100	4	49,300	3,800	5,100	ADQ		
US 117A to Calypso NTL	0.6	48	100	4	39,800	6,100	8,200	ADQ		
US 117A										
US 117 to Calypso NTL	0.8	20	150	2	12,500	2,600	3,500	K	70	12,500
NC 11										
Wallace NPB to I-40	1.1	22	60	2	10,600	3,800	5,100	ADQ		
I-40 to NC 24 / 903	12.3	22	60	2	10,600	3,200	4,300	ADQ		
NC 24 / 903 to Kenansville STL	1.1	33	60	3	13,000	2,600	4,600	E	110	40,500
Kenansville STL to NC 50 / 24 Bus.	0.6	22	80	2	12,500	7,100	14,400	E	110	40,500
NC 50 / 24 Bus. to Traffic Circle	0.6	22	80	2	12,500	11,000	16,200	E	110	40,500
Traffic Circle to Grove Creek Bridge	0.6	40	80	2	12,500	6,300	10,300	E	110	40,500
Grove Creek Bridge to NC 903 Junction	1.2	22	100	2	13,000	6,300	10,300	E	110	40,500
NC 903 Junction to NC 903/NC 111	9.2	22	100	2	10,600	5,900	10,500	A	300	43,500
NC 903 to Lenoir County	4.3	22	100	2	10,600	3,100	5,700	A	300	43,500
NC 24										
Onslow County to Beulaville EPB	4.5	48	150	4	39,800	7,800	10,500	E	110	41,000
Beulaville WPB to NC 24 Bus.	7.8	48	125	4	39,800	9,100	12,300	E	110	41,000
NC 24 Bus. to I-40	5.9	48	125	4	40,400	10,000	24,300	A	300	43,500

FACILITY & SECTION	EXISTING CONDITIONS					AADT		RECOMMENDATIONS		
	DIST. (mi)	RDWY (ft)	ROW (ft)	NO. OF LANES	CAPACITY (vpd)	2005 (vpd)	2035 (vpd)	CROSS SECT.	ROW (ft)	CAPACITY (vpd)
NC 24 Bus. (Routhledge St.)										
Kenansville Bypass to Kenansville ETL	0.4	24	250	2	14,500	3,100	4,300	ADQ		
Kenansville ETL to NC 50 / 11	0.7	28	60	2	12,500	3,100	4,300	ADQ		
NC 41										
Sampson County Line to Wallace WPB	8.7	22	60	2	10,600	3,000	5,300	ADQ		
Wallace EPB to SR 1945	2.8	22	60	2	10,600	10,000	16,700	E	110	40,500
SR 1945 to NC 50	7.2	24	60	2	10,600	5,300	8,400	ADQ		
NC 50 to SR 1200	1.3	24	100	2	10,600	7,100	9,200	G	90	26,200
SR 1200 to NC 50	0.6	36	100	3	15,600	7,200	9,600	G	90	26,200
NC 50 to NC 111	0.8	24	100	2	13,000	7,200	9,600	G	90	26,200
NC 111 to Beulaville SPB	3.8	22	100	2	10,600	4,500	8,100	ADQ		
Beulaville NPB to Jones County Line	6.6	22	60	2	10,600	580	800	ADQ		
NC 50										
Sampson County Line to NC 403	2.0	20	100	2	10,600	1,200	1,600	K	70	10,600
NC 403 to Faison WTL	0.2	24	60	2	13,000	4,400	5,900	ADQ		
Faison WTL to US 117	0.5	32	N/A	2	12,500	4,100	5,500	ADQ		
Warsaw SPB to NC 11	3.0	22	60	2	10,600	4,800	7,300	ADQ		
NC 11/24B Junction to Kenansville STL	0.6	33	80	3	15,000	4,000	5,600	ADQ		
Kenansville STL to NC 41	11.9	22	60	2	10,600	2,400	3,900	ADQ		
NC 41 to Pender County	8.7	22	60	2	10,600	3,700	5,000	ADQ		
NC 111										
Wayne County Line to NC 903	5.9	22	100	2	10,600	3,200	6,500	ADQ		
NC 11 to Beulaville NPB	8.2	24	100	2	10,600	2,200	3,100	ADQ		
NC 41 to Onslow County Line	8.4	20	60	2	10,600	2,200	3,600	K	70	10,600
NC 241										
Lenoir County to Beulaville NPB	7.4	20	60	2	10,600	3,500	6,000	K	70	10,600
NC 403										
Sampson County to NC 50	1.5	22	60	2	10,600	2,600	3,500	ADQ		
US 117 to Faison ETL	0.5	22	60	2	12,500	2,700	3,900	ADQ		
Faison ETL to Wayne SPB	5.4	22	60	2	10,600	2,000	4,500	ADQ		
NC 903										
Sampson County Line to Magnolia WTL	8.7	22	60	2	10,600	2,300	4,700	ADQ		
Magnolia WLT to Magnolia ETL	1.0	22	60	2	12,500	3,400	7,200	ADQ		
Magnolia ETL to I-40	1.5	22	60	2	10,600	3,500	7,600	ADQ		
NC 24 Bus. to NC 11	1.1	48	260	4	40,400	N/A	N/A	A	300	43,500
NC 111 to Lenoir County Line	8.0	22	100	2	10,600	2,500	3,700	ADQ		
SR 1004 (Summerlin Crossroad Rd.)										
NC 403 to NC 11 / 903	13.7	22	N/A	2	10,600	2,700	5,700	ADQ		
SR 1006 (W. Trade Rd.)										
Wayne County Line to US 117	2.0	18	N/A	2	9,000	780	1,900	K	70	10,600

FACILITY & SECTION	EXISTING CONDITIONS					AADT		RECOMMENDATIONS		
	DIST. (mi)	RDWY (ft)	ROW (ft)	NO. OF LANES	CAPACITY (vpd)	2005 (vpd)	2035 (vpd)	CROSS SECT.	ROW (ft)	CAPACITY (vpd)
SR 1101 (Cornwallis Rd.)										
NC 903 to NC 41	8.3	18	N/A	2	9,000	1,700	4,000	K	70	10,600
SR 1102 (Brice's Store Rd. / Charity Rd.)										
SR 1101 to SR 1142	3.6	18	N/A	2	9,000	1,800	3,900	K	70	10,600
SR 1142 to Rosehill ETL	1.3	18	60	2	12,500	4,800	10,600	K	70	10,600
Rosehill ETL to I-40	1.2	20	N/A	2	10,600	4,300	5,800	K	70	10,600
I-40 to NC 11	2.7	20	N/A	2	10,600	2,600	3,500	K	70	10,600
NC 11 to SR 1953	1.0	20	N/A	2	12,800	2,200	4,400	K	70	10,600
SR 1120 (Halls Pond Rd.)										
Sampson County Line to NC 903	2.1	18	N/A	2	9,000	650	1,000	K	70	10,600
SR 1162 (Bay Lane)										
US 117 to Teachy ETL	0.5	20	N/A	2	12,500	1,900	3,500	K	70	12,500
Teachy ETL to NC 11	4.9	20	60	2	12,600	1,700	2,700	K	70	12,600
SR 1300 (W. Wards Bride Rd.)										
Warsaw EPL to SR 1004	3.8	22	60	2	10,600	1,700	4,100	ADQ		
SR 1301 (N. Bowdens Rd.)										
Warsaw PAB to Kenansville NTL	2.6	22	N/A	2	10,600	2,000	3,700	ADQ		
Kenansville NTL to NC 11/50/24B	0.5	22	N/A	2	12,500	1,900	3,000	ADQ		
SR 1306 (Red Hill Rd.)										
SR 1500 to NC 111	4.5	18	N/A	2	9,000	790	1,800	K	70	10,600
SR 1317 (White Oak Bridge Rd.)										
US 117 to Calypso ETL	0.8	36	60	2	12,500	1,500	2,000	ADQ		
Calypso ETL to NC 403	1.6	18	N/A	2	9,000			K	70	10,600
SR 1319 (Duplin School Rd.)										
SR 1317 to NC 403	0.6	18	N/A	2	12,500	1,200	2,100	K	70	12,500
SR 1500 (Tram Rd.)										
SR 1004 to SR 1501	10.5	19	60	2	9,000	1,500	2,300	K	70	10,600
SR 1501 (Garner Chapel Rd.)										
NC 403 to SR 1306	9.4	22	N/A	2	10,600	3,500	8,900	G	90	38,400
NC 111 to NC 903	0.7	23	N/A	2	10,600	1,900	3,300	ADQ		
SR 1534 (Drummersville Rd.)										
NC 903 to Wayne County Line	2.8	18	60	2	9,000	620	1,000	K	70	10,600
SR 1539 (Piney Grove Rd.)										
NC 903 to Lenoir County Line	3.5	18	N/A	2	9,000	890	1,700	K	70	10,600

FACILITY & SECTION	EXISTING CONDITIONS					AADT		RECOMMENDATIONS		
	DIST. (mi)	RDWY (ft)	ROW (ft)	NO. OF LANES	CAPACITY (vpd)	2005 (vpd)	2035 (vpd)	CROSS SECT.	ROW (ft)	CAPACITY (vpd)
<i>SR 1700 (Sarecta Rd.)</i>										
NC 903 to NC 41	11.2	18	N/A	2	9,000	730	1,300	K	70	10,600
<i>SR 1801 (Lyman Rd.)</i>										
NC 111 to SR 1804	2.3	18	60	2	9,000	1,400	1,800	K	70	10,600
<i>SR 1953 (Pasture Branch Rd.)</i>										
SR 1102 to NC 50	3.5	18	N/A	2	9,000	800	1,200	K	70	10,600
<i>SR 1961 (Hallsville Rd.)</i>										
SR 1800 to NC 50	4.4	18	N/A	2	9,000	1,500	2,800	K	70	10,600
<i>SR 2029 (Gin House Lane)</i>										
NC 24 to NC 11	2.1	20	N/A	2	10,600	1,200	3,500	K	70	10,600

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.

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, and
- roadways where an urban curb and gutter cross section may be locally desirable because of urban development or redevelopment.

Recommended design standards relating to grades, sight distances, degree of curve, superelevation, and other considerations for roadways are given in Appendix E. The typical cross sections are described below.

A: Four Lanes Divided with Median - Freeway

Cross section "A" is typical for four-lane divided highways in rural areas that may have only partial or no control of access. The minimum median width for this cross section is 46 feet, but a wider median is desirable.

B: Seven Lanes - Curb & Gutter

Cross section "B" is typically not recommended for new projects. When the conditions warrant six lanes, cross section "D" should be recommended. Cross section "B" should be used only in special situations such as when widening from a five-lane section where right-of-way is limited. Even in these situations, consideration should be given to converting the center turn lane to a median so that cross section "D" is the final cross section.

C: Five Lanes - Curb & Gutter

Typical for major thoroughfares, cross section "C" is desirable where frequent left turns are anticipated as a result of abutting development or frequent street intersections.

D: Six Lanes Divided with Raised Median - Curb & Gutter**E: Four Lanes Divided with Raised Median - Curb and Gutter**

Cross sections "D" and "E" are typically used on major thoroughfares where left turns and intersection streets are not as frequent. Left turns would be restricted to a few selected intersections. The 16-ft median is the minimum recommended for an urban boulevard-type cross section. In most instances, monolithic construction should be utilized due to greater cost effectiveness, ease and speed of placement, and reduced future maintenance requirements. In certain cases, grass or landscaped medians result in greatly increased maintenance costs and an increase danger to maintenance personnel. Non-monolithic medians should only be recommended when the above concerns are addressed.

F: Four Lanes Divided - Boulevard, Grass Median

Cross section "F" is typically recommended for urban boulevards or parkways to enhance the urban environment and to improve the compatibility of major thoroughfares with residential areas. A minimum median width of 24 ft is recommended, with 30 ft being desirable.

G: Four Lanes - Curb and Gutter

Cross section "G" is recommended for major thoroughfares where projected travel indicates a need for four travel lanes but traffic is not excessively high, left turning movements are light, and right-of-way is restricted. An additional left turn lane would likely be required at major intersections. This cross section should be used only if the above criteria are met. If right-of-way is not restricted, future strip development could take place and the inner lanes could become de facto left turn lanes.

H: Three Lanes - Curb and Gutter

In urban environments, thoroughfares that are proposed to function as one-way traffic carriers would typically require cross section "H".

I: Two Lanes – Curb and Gutter, Parking both sides**J: Two Lanes – Curb and Gutter, Parking one side**

Cross section "I" and "J" are usually recommended for urban minor thoroughfares since these facilities usually serve both land service and traffic service functions. Cross-section "I" would be used on those minor thoroughfares where parking on both sides is needed as a result of more intense development.

K: Two Lanes - Paved Shoulder

Cross section "K" is used in rural areas or for staged construction of a wider multilane cross section. On some thoroughfares, projected traffic volumes may indicate that two travel lanes will adequately serve travel for a considerable period of time. For areas that are growing and future widening will be necessary, the full right-of-way of 100 ft should be required. In some instances, local ordinances may not allow the full 100-ft. In those cases, 70 ft should be preserved with the understanding that the full 70-ft will be preserved by use of building setbacks and future street line ordinances.

L: Six Lanes Divided with Grass Median - Freeway

Cross section "L" is typical for controlled access freeways. The 46-ft grass median is the minimum desirable width, but variation from this may be permissible depending upon design considerations. Right-of-way requirements are typically 228 ft or greater, depending upon cut and fill requirements.

M: Eight Lanes Divided with Raised Median - Curb and Gutter

Also used for controlled access freeways, cross section "M" may be recommended for freeways going through major urban areas or for routes projected to carry very high volumes of traffic.

N: Five Lanes with Curb & Gutter, Widened Curb Lanes

O: Two Lanes/Shoulder Section

P: Four Lanes Divided with Raised Median – Curb & Gutter, Widened Curb Lanes

If there is sufficient bicycle travel along the thoroughfare to justify a bicycle lane or bikeway, additional right-of-way may be required to contain the bicycle facilities. The North Carolina Bicycle Facilities Planning and Design Guidelines should be consulted for design standards for bicycle facilities. Cross sections "N", "O" and "P" are typically used to accommodate bicycle travel.

General

The urban curb and gutter cross sections all illustrate the sidewalk adjacent to the curb with a buffer or utility strip between the sidewalk and the minimum right-of-way line. This permits adequate setback for utility poles. If it is desired to move the sidewalk farther away from the street to provide additional separation for pedestrians or for aesthetic reasons, additional right-of-way must be provided to insure adequate setback for utility poles.

The right-of-way shown for each typical cross section is the minimum amount required encompassing the street, sidewalks, utilities, and drainage facilities. Cut and fill requirements may require either additional right-of-way or construction easements. Obtaining construction easements is becoming the more common practice for urban roadway construction.

Bicycle Cross Sections

Cross sections B-1, B-2, B-3, B-4, and B-5 are typical bicycle cross sections. Contact the NCDOT Division of Bicycle and Pedestrian Transportation for more information regarding these cross-sections.

B-1: Four Lanes Divided with Wide Outside Lanes

B-2: Five Lanes with Wide Outside Lanes

A widened outside lane is an effective way to accommodate bicyclists riding in the same lane with motor vehicles. With a wide outside lane, motorists do not have to change lanes to pass a bicyclist. The additional width in the outside lane also improves sight

distance and provides more room for vehicles to turn onto the roadway. Therefore, on roadways with bicycle traffic, widening the outside lane can improve the capacity of that roadway. Also, by widening the outside lane by a few extra feet both motorists and bicyclists have more space in which to maneuver. This facility type is generally considered for use in urban, suburban, and occasionally rural conditions on roadways where there is a curb and gutter. Wide outside lanes can be applied to several different roadway cross sections.

B-3: Bicycle Lanes on Collector Streets

Bicycle lanes may be considered when it is desirable to delineate road space for preferential use by cyclists. Streets striped with bicycle lanes should be part of a connected bikeway system rather than being an isolated feature. Bicycle lanes function most effectively in mid-block situations by separating bicyclists from overtaking motor vehicles. Integrating bicyclists into complicated intersection traffic patterns can sometimes be problematic. Strip development areas, or roadways with a high number of commercial driveways, tend to be less suitable for bicycle lanes due to frequent and unpredictable motorist turning movements across the path of straight-through cyclists. Striped bike lanes can be effective as a safety treatment, especially for less experienced bicyclists. Two-lane residential/collector streets with lower traffic volume, low-posted speed limit, adequate roadway width for both bike lanes and motor vehicle travel lanes, and an absence of complicated intersections. A median-divided multi-lane roadway with lower traffic volumes and a low volume of right and left turning traffic would be a more appropriate location for bicycle lanes than a high traffic volume undivided multi-lane roadway with a continuous center turn lane. Most bicyclists will choose a route that combines direct access with lower traffic volumes. An origin and destination of less than 4 miles is desirable to generate usage on a facility.

B-4: Wide Paved Shoulders

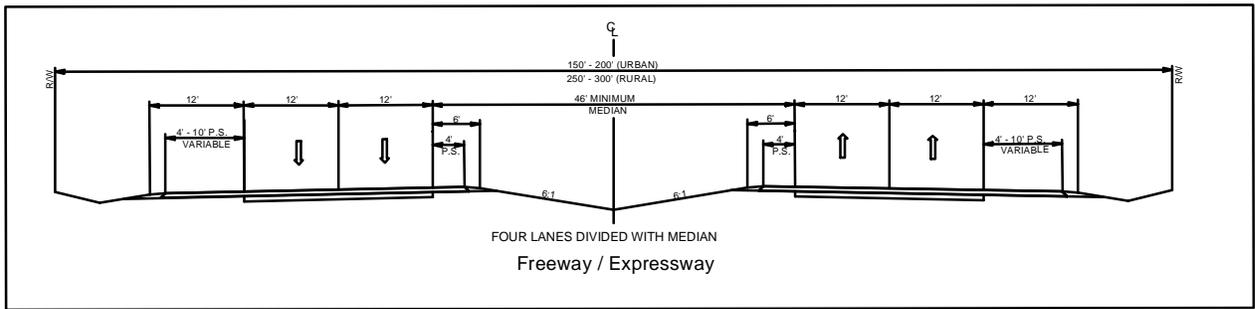
On urban streets with curb and gutter, wide outside lanes and bicycle lanes are usually the preferred facilities. Shoulders for bicycle use are not typically provided on roadways with curb and gutter. On rural roadways where bicycle travel is common, such as roads in coastal resort areas, wide paved shoulders are highly desirable. On secondary roadways without curb and gutter where there are few commercial driveways and intersections with other roadways, many bicyclists prefer riding on wide, smoothly paved shoulders.

B-5: Multi-use Pathway

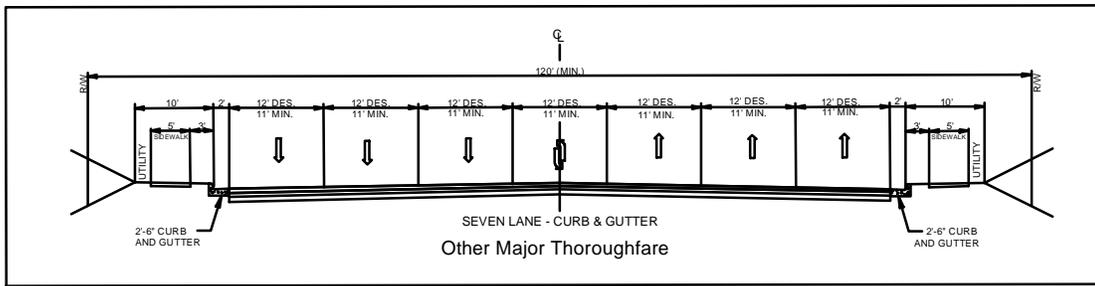
When properly located, multi-use pathway can be a safer type of facility for novice and child bicyclists because they do not have to share the path with motor vehicles. The design standards used for this cross section provides adequate width for two-directional use by both cyclists and pedestrians, provisions of good sight distance, avoidance of steep grades and tight curves, and minimal cross-flow by motor vehicles. A multi-use pathway can serve a variety of purposes, including recreation and transportation. This pathway should not be located immediately adjacent to a roadway because of safety considerations at intersections with driveways and roads. Sidewalks should never be used as a multi-use pathway.

TYPICAL HIGHWAY CROSS SECTIONS

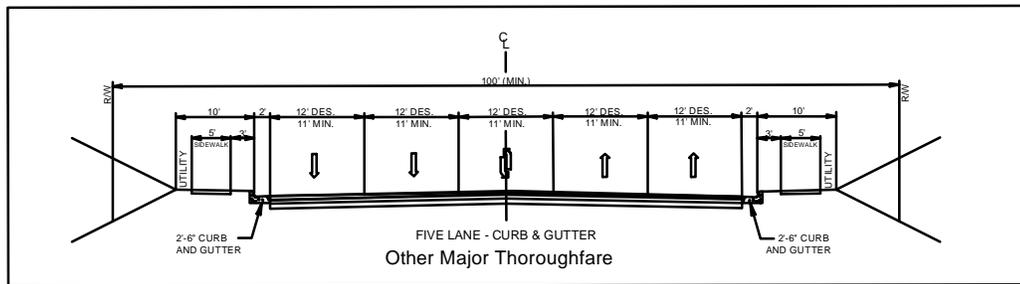
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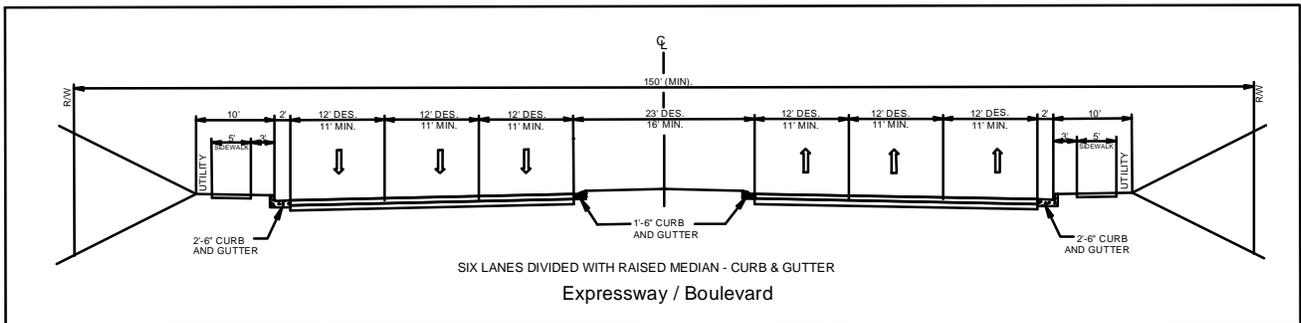
B



C



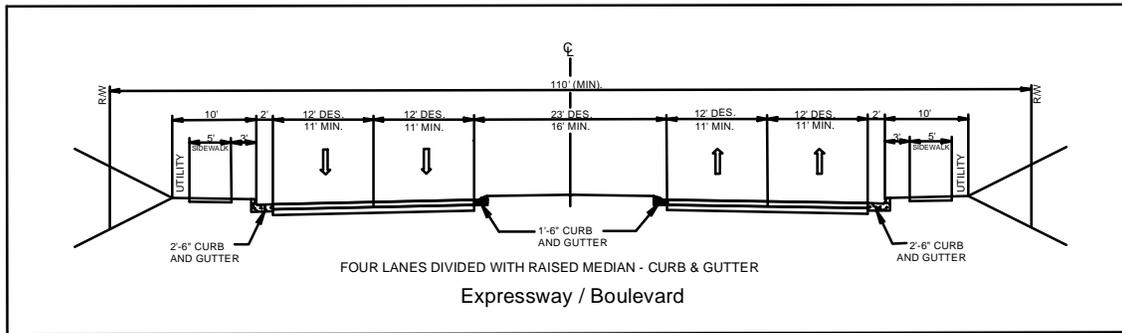
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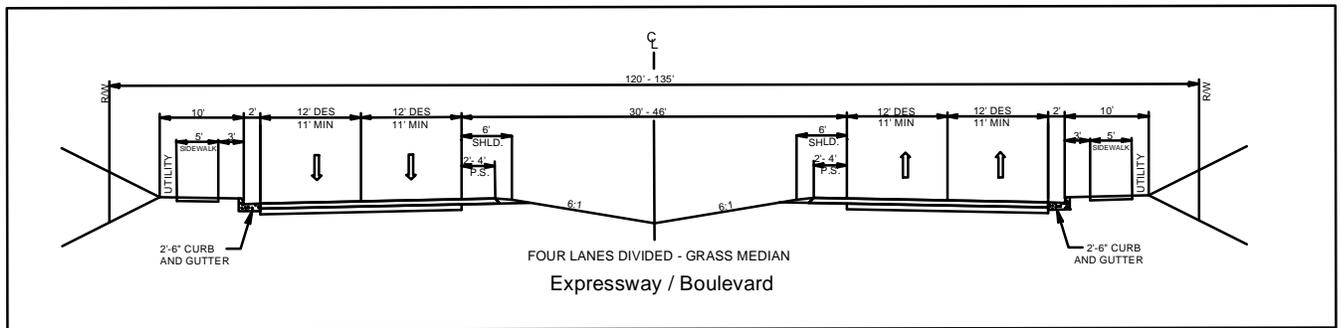
revised 04-01-05

TYPICAL HIGHWAY CROSS SECTIONS

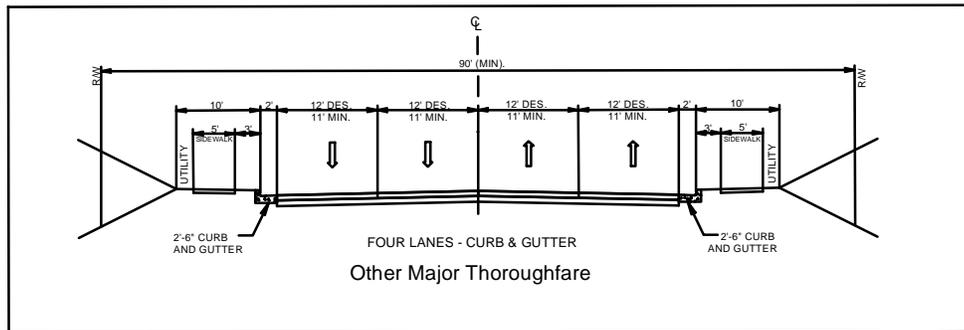
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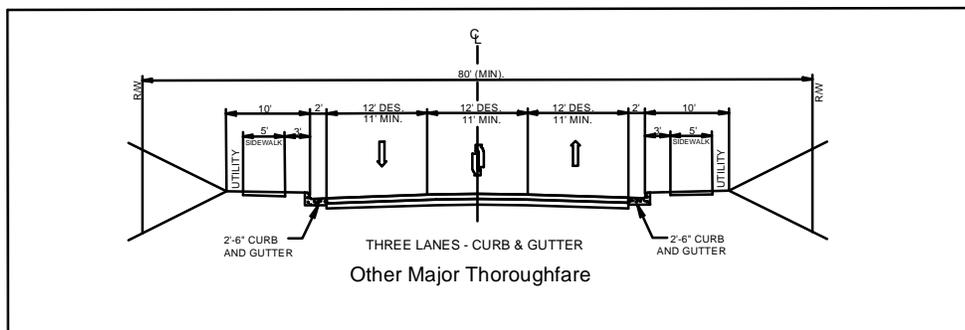
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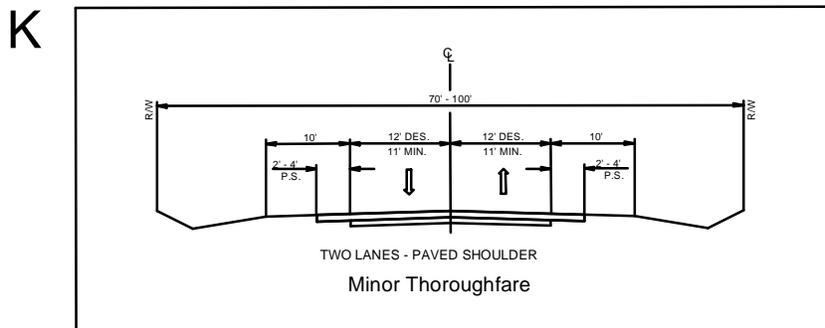
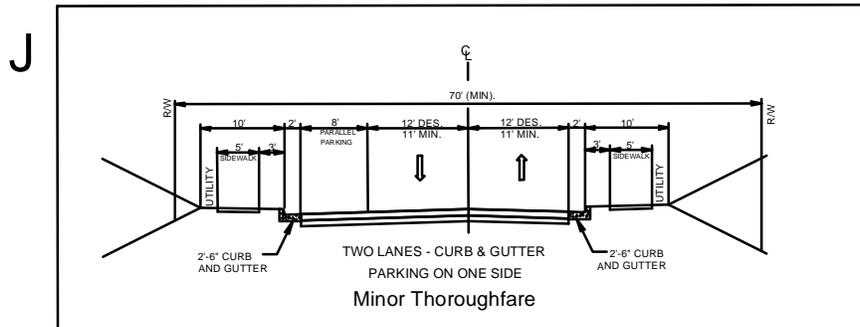
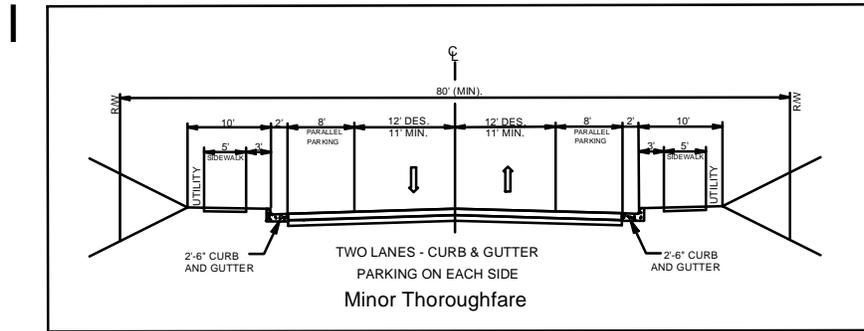
G



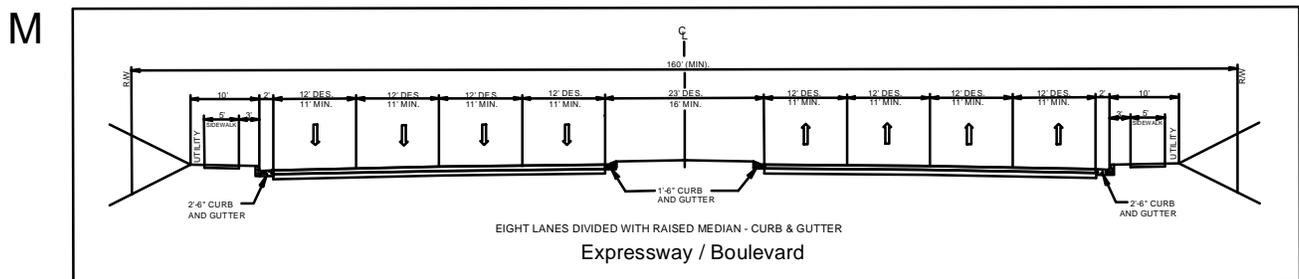
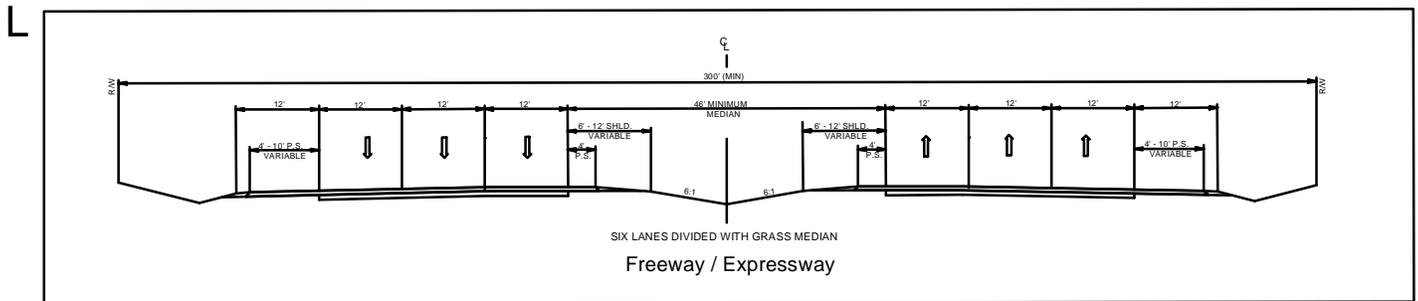
H



TYPICAL HIGHWAY CROSS SECTIONS



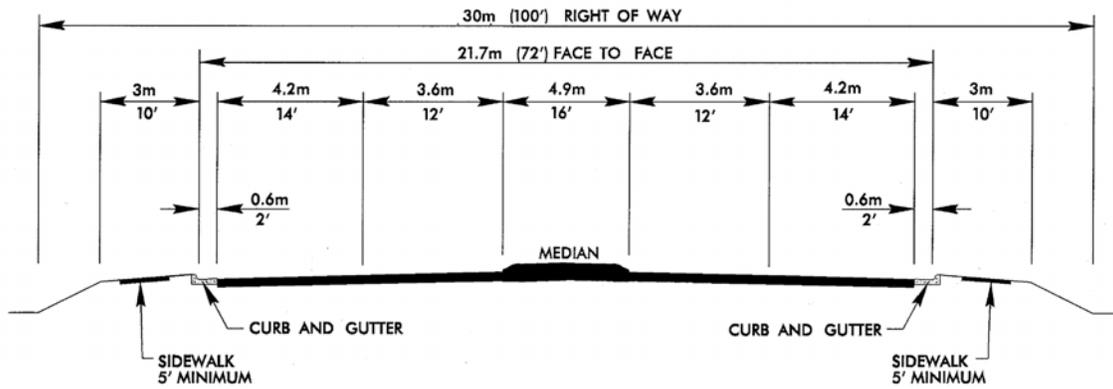
TYPICAL HIGHWAY CROSS SECTIONS



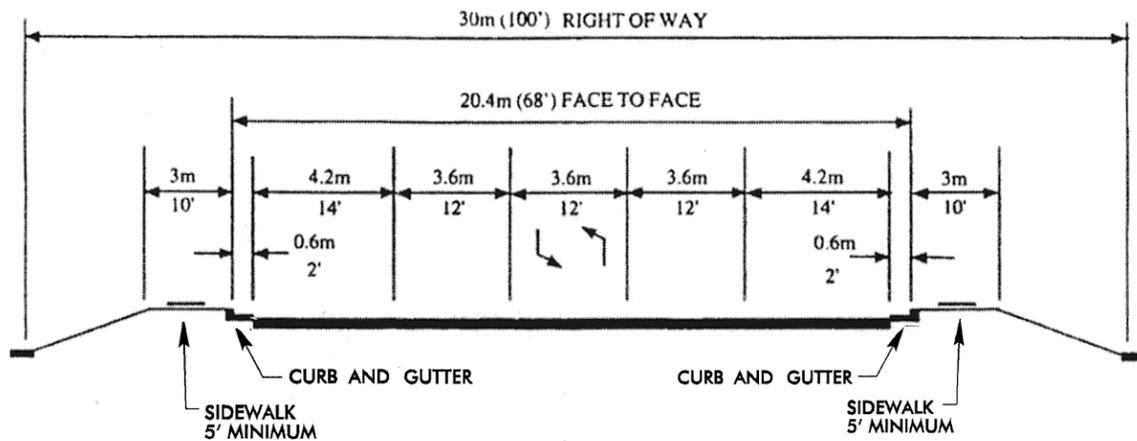
Typical Bicycle Cross Sections

WIDE CURB LANES

B-1 4-LANE MEDIAN DIVIDED TYPICAL SECTION With Wide Outside Lanes

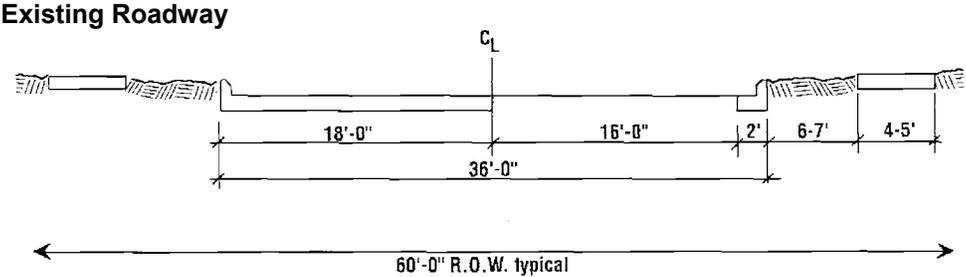


B-2 5-LANE TYPICAL SECTION With Wide Outside Lanes

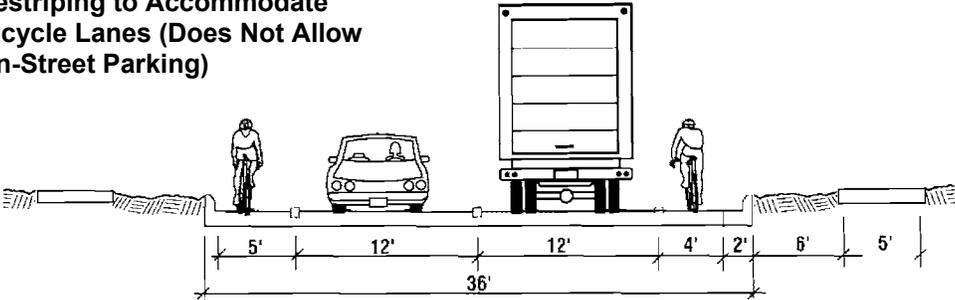


Typical Bicycle Cross Sections

B-3 BICYCLE LANES ON COLLECTOR STREETS



**Restriping to Accommodate
Bicycle Lanes (Does Not Allow
On-Street Parking)**

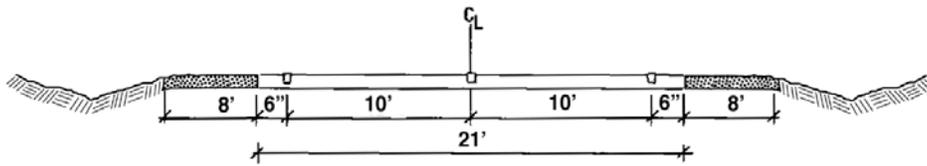


Typical Bicycle Cross Sections

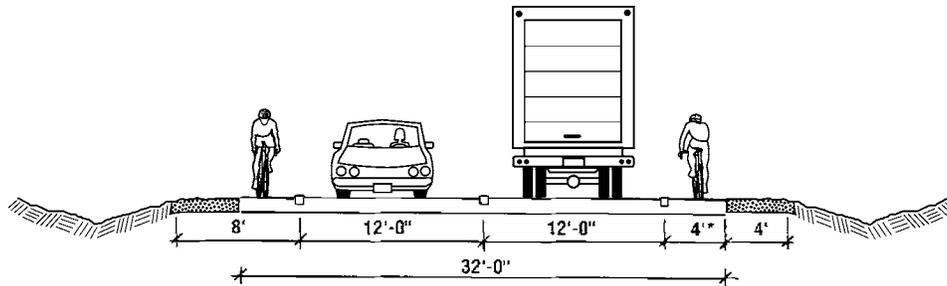
B-4

WIDE PAVED SHOULDERS

Existing Roadway



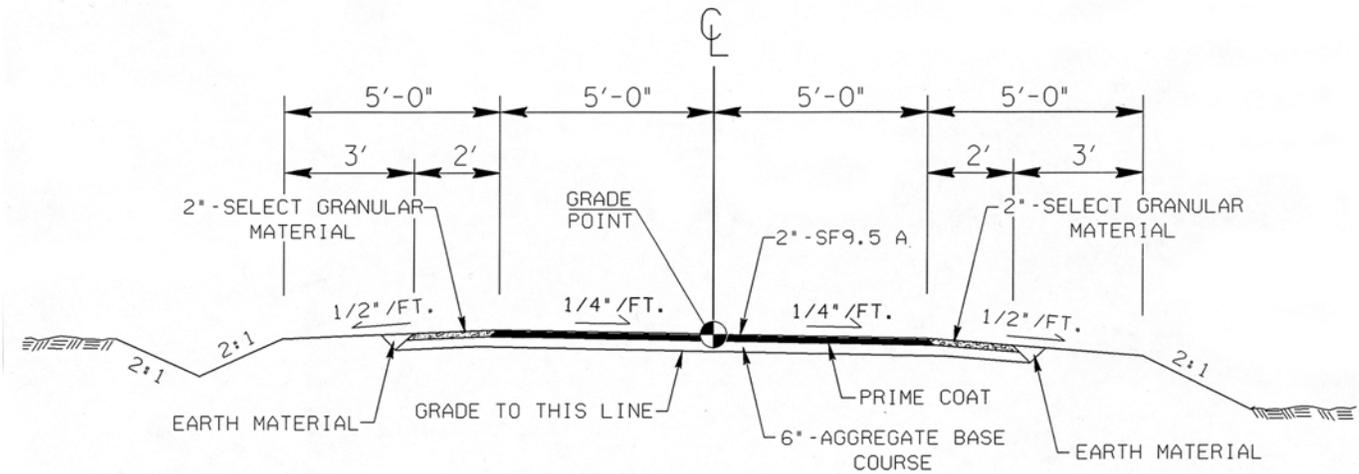
Roadway Retrofitted with
4-Ft Paved Shoulders



* If speeds are higher than 40 mph,
shoulder widths greater than 4' are
recommended.

Typical Bicycle Cross Sections

B-5 RECOMMENDED TYPICAL SECTION OF 10-FT ASPHALT PATHWAY With 2-Ft Select Material Shoulder



Appendix E

Recommended Subdivision Ordinances

Definitions

Rural Roads

- *Principal Arterial* - A rural link in a highway system serving travel, and having characteristics indicative of substantial statewide or interstate travel and existing solely to serve traffic. This network would consist of Interstate routes and other routes designated as principal arterials.
- *Minor Arterial* - A rural roadway joining cities and larger towns and providing intra-state and inter-county service at relatively high overall travel speeds with minimum interference to through movement.
- *Major Collector* - A road that serves major intra-county travel corridors and traffic generators and provides access to the arterial system.
- *Minor Collector* - A road that provides service to small local communities and traffic generators and provides access to the major collector system.
- *Local Road* - A road that serves primarily to provide access to adjacent land over relatively short distances.

Urban Streets

- *Major Thoroughfares* - Major thoroughfares consist of inter-state, other freeway, expressway, or parkway roads, and major streets that provide for the expeditious movement of high volumes of traffic within and through urban areas.
- *Minor Thoroughfares* - Minor thoroughfares perform the function of collecting traffic from local access streets and carrying it to the major thoroughfare system. Minor thoroughfares may be used to supplement the major thoroughfare system by facilitating minor through traffic movements and may also serve abutting property.
- *Local Street* - A local street is any street not on a higher order urban system and serves primarily to provide direct access to abutting land.

Specific Type Rural or Urban Streets

- *Freeway, expressway, or parkway* - Divided multilane roadways designed to carry large volumes of traffic at high speeds. A *freeway* provides for continuous flow of vehicles with no direct access to abutting property and with access to selected crossroads only by way of interchanges. An *expressway* is a facility with full or partial control of access and generally with grade separations at major intersections. A *parkway* is for non-commercial traffic, with full or partial control of access.

- *Residential Collector Street* - A local street which serves as a connector street between local residential streets and the thoroughfare system. Residential collector streets typically collect traffic from 100 to 400 dwelling units.
- *Local Residential Street* - Cul-de-sacs, loop streets less than 2,500 feet in length, or streets less than 1.0 mile in length that do not connect thoroughfares, or serve major traffic generators, and do not collect traffic from more than 100 dwelling units.
- *Cul-de-sac* - A short street having only one end open to traffic and the other end being permanently terminated and a vehicular turn-around provided.
- *Frontage Road* - A road that is parallel to a partial or full access controlled facility and provides access to adjacent land.
- *Alley* - A strip of land, owned publicly or privately, set aside primarily for vehicular service access to the backside of properties otherwise abutting on a street.

Property

- *Building Setback Line* - A line parallel to the street in front of which no structure shall be erected.
- *Easement* - A grant by the property owner for use by the public, a corporation, or person(s), of a strip of land for a specific purpose.
- *Lot* - A portion of a subdivision, or any other parcel of land, which is intended as a unit for transfer of ownership or for development or both. The word "lot" includes the words "plat" and "parcel".

Subdivision

- *Subdivider* - Any person, firm, corporation or official agent thereof, who subdivides or develops any land deemed to be a subdivision.
- *Subdivision* - All divisions of a tract or parcel of land into two or more lots, building sites, or other divisions for the purpose, immediate or future, of sale or building development and all divisions of land involving the dedication of a new street or change in existing streets. The following shall not be included within this definition nor subject to these regulations:
 - the combination or re-combination of portions of previously platted lots where the total number of lots is not increased and the resultant lots are equal to or exceed the standards contained herein
 - the division of land into parcels greater than 10 acres where no street right-of-way dedication is involved
 - the public acquisition, by purchase, of strips of land for the widening or the opening of streets
 - the division of a tract in single ownership whose entire area is no greater than 2 acres into not more than three lots, where no street right-of-way dedication is involved and where the resultant lots are equal to or exceed the standards contained herein.

- *Dedication* - A gift, by the owner, of his property to another party without any consideration being given for the transfer. The dedication is made by written instrument and is completed with an acceptance.
- *Reservation* - Reservation of land does not involve any transfer of property rights. It constitutes an obligation to keep property free from development for a stated period of time.

Design Standards

The design of all roads within the Planning Area shall be in accordance with the accepted policies of the North Carolina Department of Transportation, Division of Highways, as taken or modified from the American Association of State Highway and Transportation Officials (AASHTO) manual.

The provision of street rights-of-way shall conform and meet the recommendations of the transportation plan, as adopted by the municipality. The proposed street layout shall be coordinated with the existing street system of the surrounding area. Normally the proposed streets should be the extension of existing streets if possible.

Right-of-way Widths

Right-of-way widths shall not be less than the following and shall apply except in those cases where right-of-way requirements have been specifically set out in the transportation plan.

The subdivider will only be required to dedicate a maximum of 100 feet of right-of-way. In cases where over 100 feet of right-of-way is desired, the subdivider will be required only to reserve the amount in excess of 100 feet. On all cases in which right-of-way is sought for a fully controlled access facility, the subdivider will only be required to make a reservation. It is strongly recommended that subdivisions provide access to properties from internal streets, and that direct property access to major thoroughfares, principle and minor arterials, and major collectors be avoided. Direct property access to minor thoroughfares is also undesirable.

A partial width right-of-way, not less than 60 feet in width, may be dedicated when adjoining undeveloped property that is owned or controlled by the subdivider; provided that the width of a partial dedication be such as to permit the installation of such facilities as may be necessary to serve abutting lots. When the said adjoining property is sub-divided, the remainder of the full required right-of-way shall be dedicated. Minimum right-of-way requirements are shown in Table E-1.

Table E-1

Minimum Right-of-way Requirements		
Area Classification	Functional Classification	Minimum ROW
Rural	Principal Arterial (Freeway)	350 feet
	Principal Arterial (Other)	200 feet
	Minor Arterial	100 feet
	Major Collector	100 feet
	Minor Collector	80 feet
	Local Road (see note #1)	60 feet
Urban	Major Thoroughfare	90 feet
	Minor Thoroughfare	70 feet
	Local Street	60 feet
	Cul-de-sac (See note #2)	varies

1) The desirable minimum right-of-ways is 60 feet. If curb and gutter is provided, 50 feet of ROW is adequate on local residential streets.

2) The ROW dimension will depend on the radius used for vehicle turn-a-around. Distance from edge of pavement of turn-a-around to ROW should not be less than distance from edge of pavement to ROW on street approaching turn-a-round.

Street Widths

Widths for street and road classifications other than local shall be as recommended by the transportation plan. Width of local roads and streets shall be as follows:

- *Local Residential*
 - Curb and Gutter section - 26 feet, face to face curb
 - Shoulder section - 20 feet to edge of pavement, 4 feet for shoulders
- *Residential Collector*
 - Curb and Gutter section - 34 feet, face to face of curb
 - Shoulder section - 20 feet to edge of pavement, 6 feet for shoulders

Geometric Characteristics

The standards outlined below shall apply to all subdivision streets proposed for addition to the State Highway System or Municipal Street System. In cases where a subdivision is sought adjacent to a proposed thoroughfare corridor, the requirements of dedication and reservation discussed under right-of-way shall apply.

- *Design Speed* - The design speed for a roadway should be a minimum of 5 mph greater than the posted speed limit. The design speeds for subdivision type streets are shown in Table E-2.
- *Minimum Sight Distance* - In the interest of public safety, no less than the minimum sight distance applicable shall be provided. Vertical curves that connect each change in grade shall be provided and calculated using the parameters set forth in Table E-3.
- *Superelevation* - Table E-4 shows the minimum radius and the related maximum superelevation for design speeds. The maximum rate of roadway superelevation (e) for rural roads with no curb and gutter is 0.08. The maximum rate of superelevation for urban streets with curb and gutter is 0.06, with 0.04 being desirable.
- *Maximum and Minimum Grades* - The maximum grades in percent are shown in Table E-5. Minimum grade should not be less than 0.5%. Grades for 100 feet each way from intersections (measured from edge of pavement) should not exceed 5%.

Table E-2

Facility Type	Design Speed (mph)		
	Desirable	Level	Minimum Rolling
<i>Rural</i>			
Minor Collector Roads (AADT Over 2000)	60	50	40
Local Roads ¹ (AADT Over 400)	50	*50	*40
<i>Urban</i>			
Major Thoroughfares ²	60	50	40
Minor Thoroughfares	40	30	30
Local Streets	30	**30	**20

*Based on AADT of 400-750. Where roads serve limited area and small number of units, reduce minimum design speed. **Based on projected ADT of 50-250. (Refer to NCDOT Roadway Design Manual page 1-1B)

¹ Local Roads including Residential Collectors and Local Residential.

² Major Thoroughfares other than Freeways or Expressways.

Table E-3

Sight Distance						
Design Speed (mph)	Stopping Sight Distance (feet)		Minimum K^1 Values (feet)		Passing Sight Distance (feet)	
	Desirable	Minimum	Crest Curve	Sag Curve	For 2-lanes	
30	200	200	30	40	1100	
40	325	275	60	60	1500	
50	475	400	110	90	1800	
60	650	525	190	120	2100	

Note: General practice calls for vertical curves to be multiples of 50 feet. Calculated lengths shall be rounded up in each case. (Reference NCDOT Roadway Design Manual page 1-12 T-1)

¹K is a coefficient by which the algebraic difference in grade may be multiplied to determine the length of the vertical curve, which will provide the desired sight distance. Sight distance provided for stopped vehicles at intersections should be in accordance with "A Policy on Geometric Design of Highways and Streets, 1990".

Table E-4

Superelevation						
Design Speed (mph)	Minimum Radius of Maximum e^1			Maximum Degree of Curve		
	$e=0.04$	$e=0.06$	$e=0.08$	$e=0.04$	$e=0.06$	$e=0.08$
30	302	273	260	19 00'	21 00'	22 45'
60	573	521	477	10 00'	11 15'	12 15'
80	955	955	819	6 00'	6 45'	7 30'
100	1,637	1,432	1,146	3 45'	4 15'	4 45'

¹ e = rate of roadway superelevation, foot per foot

Note: (Reference NCDOT Roadway Design Manual page 1-12 T-6 thru T-8)

Table E-5

Maximum Vertical Grade				
Facility Type and Design Speed (mph)	Minimum Grade in Percent			
	Flat	Rolling	Mountainous	
RURAL				
Minor Collector Roads*				
20	7	10	12	
30	7	9	10	
40	7	8	10	
50	6	7	9	
60	5	6	8	
70	4	5	6	
Local Roads* ¹				
20	-	11	16	
30	7	10	14	
40	7	9	12	
50	6	8	10	
60	5	6	-	
URBAN				
Major Thoroughfares ²				
30	8	9	11	
40	7	8	10	
50	6	7	9	
60	5	6	8	
Minor Thoroughfares*				
20	9	12	14	
30	9	11	12	
40	9	10	12	
50	7	8	10	
60	6	7	9	
70	5	6	7	
Local Streets*				
20	-	11	16	
30	7	10	14	
40	7	9	12	
50	6	8	10	
60	5	6	-	

Note: *For streets and roads with projected annual average daily traffic less than 250 or short grades less than 500 ft long, grades may be 2% steeper than the values in the above table. (Reference NCDOT Roadway Metric Design Manual page 1-12 T-3)

¹ Local Roads including Residential Collectors and Local Residential.

² Major Thoroughfares other than Freeways or Expressways.

Intersections

1. Streets shall be laid out so as to intersect as nearly as possible at right angles, and no street should intersect any other street at an angle less than sixty-five (65) degrees.
2. Property lines at intersections should be set so that the distance from the edge of pavement, of the street turnout, to the property line will be at least as great as the distance from the edge of pavement to the property line along the intersecting streets. This property line can be established as a radius or as a sight triangle. Greater offsets from the edge of pavement to the property lines will be required, if necessary, to provide sight distance for the stopped vehicle on the side street.
3. Offset intersections are to be avoided. Intersections that cannot be aligned should be separated by a minimum length of 200 feet between survey centerlines.

Cul-de-sacs

Cul-de-sacs shall not be more than 500 feet in length. The distance from the edge of pavement on the vehicular turn around to the right-of-way line should not be less than the distance from the edge of pavement to right-of-way line on the street approaching the turn around. Cul-de-sacs should not be used to avoid connection with an existing street or to avoid the extension of an important street.

Alleys

1. Alleys shall be required to serve lots used for commercial and industrial purposes except that this requirement may be waived where other definite and assured provisions are made for service access. Alleys shall not be provided in residential subdivisions unless necessitated by unusual circumstances.
2. The width of an alley shall be at least 20 feet.
3. Dead-end alleys shall be avoided where possible, but if unavoidable, shall be provided with adequate turn around as may be required by the planning board.

Permits for Connection to State Roads

An approved permit is required for connection to any existing state system road. This permit is required prior to any construction on the street or road. The application is available at the office of the District Engineer of the Division of Highways.

Offsets To Utility Poles

Poles for overhead utilities should be located clear of roadway shoulders, preferably a minimum of at least 30 feet from the edge of pavement. On streets with curb and gutter, utility poles shall be set back a minimum distance of 6 feet from the face of curb.

Wheel Chair Ramps

All street curbs being constructed or reconstructed for maintenance purposes, traffic operations, repairs, correction of utilities, or altered for any reason, shall provide wheelchair ramps for the physically handicapped at intersections where both curb and gutter and sidewalks are provided and at other major points of pedestrian flow.

Horizontal Width on Bridge Deck

The clear roadway widths for new and reconstructed bridges serving two-lane, two-way traffic should be as follows:

- shoulder section approach:
 - * under 800 ADT design year - minimum 28 feet width face to face of parapets, rails, or pavement width plus 10 feet, whichever is greater,
 - * 800 - 2000 ADT design year - minimum 34 feet width face to face of parapets, rails, or pavement width plus 12 feet, whichever is greater,
 - * over 2000 ADT design year - minimum width of 40 feet, desirable width of 44 feet width face to face of parapets or rails;
- curb and gutter approach:
 - * under 800 ADT design year - minimum 24 feet face to face of curbs,
 - * over 800 ADT design year - width of approach pavement measured face to face of curbs,
 - * where curb and gutter sections are used on roadway approaches, curbs on bridges shall match the curbs on approaches in height, in width of face to face curbs, and in crown drop; the distance from face of curb to face of parapet or rail shall be a minimum of 1.5 feet, or greater if sidewalks are required.

The clear roadway widths for new and reconstructed bridges having 4 or more lanes serving undivided two-way traffic should be as follows:

- shoulder section approach - width of approach pavement plus width of usable shoulders on the approach left and right. (shoulder width 8 feet minimum, 10 feet desirable)
- curb and gutter approach - width of approach pavement measured face to face of curbs.

Appendix F

Index for Secondary Road Numbers

- SR 1004 – Summerlin Crossroad Rd.
- SR 1006 – W. Trade Rd.
- SR 1101 – Cornwallis Rd.
- SR 1102 – Charity Rd.
- SR 1120 – Halls Pond Rd.
- SR 1162 – Bay Lane
- SR 1300 – W. Wards Bridge Rd.
- SR 1301 – North Bowdens Rd.
- SR 1302 – Emmet Jackson Rd.
- SR 1306 – Red Hill Rd.
- SR 1317 – White Oak Bridge Rd.
- SR 1319 – Duplin School Rd.
- SR 1417 – I40 Connector
- SR 1500 – Tram Rd.
- SR 1501 – Garner Chapel Rd.
- SR 1534 – Drummersville Rd.
- SR 1539 – Piney Grove Rd.
- SR 1700 – Sarecta Rd.
- SR 1715 – Fountaintown Rd.
- SR 1801 – Lyman Rd.
- SR 1937 – Stallings Rd.
- SR 1953 – Pasture Branch Rd.
- SR 1961 – Hallsville Rd.
- SR 2029 – Gin House Lane

Appendix G

Transportation Improvement Program Project Process

The process for requesting projects to be included in the Transportation Improvement Program (TIP) is described briefly in this appendix.

The local representatives should first decide which projects from the CTP they would like funded in the TIP. A TIP request for a few carefully selected projects is likely to be more effective than requesting all the projects proposed in the thoroughfare plan. These projects should be prioritized by the local representatives and summarized briefly, as shown on Appendix Page G-3.

After determining which projects are the highest priority for the area, a TIP project request should be sent to the Board of Transportation Member from the municipality's or county's respective district. The TIP project request should include a letter with a prioritized summary of requested projects, as well as a TIP candidate project request form and a project location map for each project. An example of each of these items is included in this appendix.

Example

* *Note: This is not an official request submitted to the Board of Transportation. This is intended to be an example of a Transportation Improvement Program (TIP) Request.*

Month ##, Year

North Carolina Board Member
N. C. Board of Transportation
N. C. Department of Transportation
P. O. Box 25201
Raleigh, NC 27611-5201

Dear Board Member:

SUBJECT: 2002-2008 TIP Project Requests for *Generic Town*

Enclosed find the projects requested by *Generic Town* for consideration in the next TIP update. The list is presented by priority, as approved by the *Generic Town* Council at their *Month* meeting.

Generic Town also endorsed the existing schedule of projects contained in the current TIP for the city, with one request. The City requests that TIP Project R-XXXX remain as a high priority and kept on the existing schedule.

We thank you for the opportunity to participate in development of the State TIP. Please contact us immediately if additional information is needed concerning any of the enclosed project requests.

Sincerely,

John Q. Public

cc: Division Engineer
Enclosure

**Generic Town
Town Council
2008 Proposed Highway Projects (Final)**

- 1) SR 1111 (Town Street) & SR 1112 (Industry Drive) TIP Project R-XXXX
 - From SR 1113 (Country Road) to NC 11
 - Widen roadway to a multilane facility, with some new location

- 2) US 11
 - From SR 1112 (Industry Drive) to SR 1113 (Country Road)
 - Widen roadway to a multilane facility

- 3) NC 11
 - From SR 1114 (Any Road) to the existing four lane section just south of I-85
 - Widen roadway to a multilane facility

- 4) US 11 Business (Business Road)
 - From SR 1115 (Some Road) to NC 12
 - Widen facility to a five lane cross section

- 5) New Connector
 - From US 11 to US 112 Business (City Street)
 - New Facility

**Highway Program
TIP Candidate Project Request**

(Please Provide Information if Available)

Date ###/###/### Priority No. #

County Generic City/Town Generic

Requesting Agency Generic Town Council NCTIP No. R-####
(if available)

Route (US, NC, SR/Local Name) SR 1111(Town Street) and SR 1112 (Industry Drive)

Project Location (From/To/Length) From SR 1113 (Country Road) to NC 11, #.# miles

Type of Project (Widening, New Facility, Bridge Replacement, Signing, Safety, Rail Crossing, Bicycle, Enhancement, etc.)
Widen roadway to a multi-lane facility, with some new location.

Existing Cross Section 24 Feet, Type

Existing Row 60 to 80 Feet Existing ADT 8,000 (2006)

Estimated Cost, ROW \$ 900,000 Construction \$ 4,000,000

Brief Justification for Project As a major thoroughfare, this facility carries increasing traffic volumes between the industrial sites along this route to NC 11 and the I-85 corridor. In the adopted thoroughfare plan for Generic Town, it is recommended that this facility should be widened to a multi-lane cross section due to the increasing volume and the potential for more development in this area. The Town requests that this project continue to be funded.

Project Supported By (Agency/Group)

Other Information/ Justification

- Part of Comprehensive Transportation Plan
- Serves School
- Serves Hospital
- Serves Park

- Obsolete Facility
- High Accident (#)
- Other

(Please Attach Map Showing Project Location)

Appendix H

Existing Transportation Plans

There are currently four completed transportation plans within Duplin County, they are as follows:

The Town of Wallace – Adopted 1983

The Town of Mt. Olive – Adopted 1984 (A plan update is currently understudy)

The Town of Warsaw – Adopted 1991 (A plan update is currently understudy)

The Town of Pink Hill – Adopted 1998

Plans for the aforementioned municipalities are attached. A CTP for the Town of Beulaville, a first for the Town, is also currently understudy.

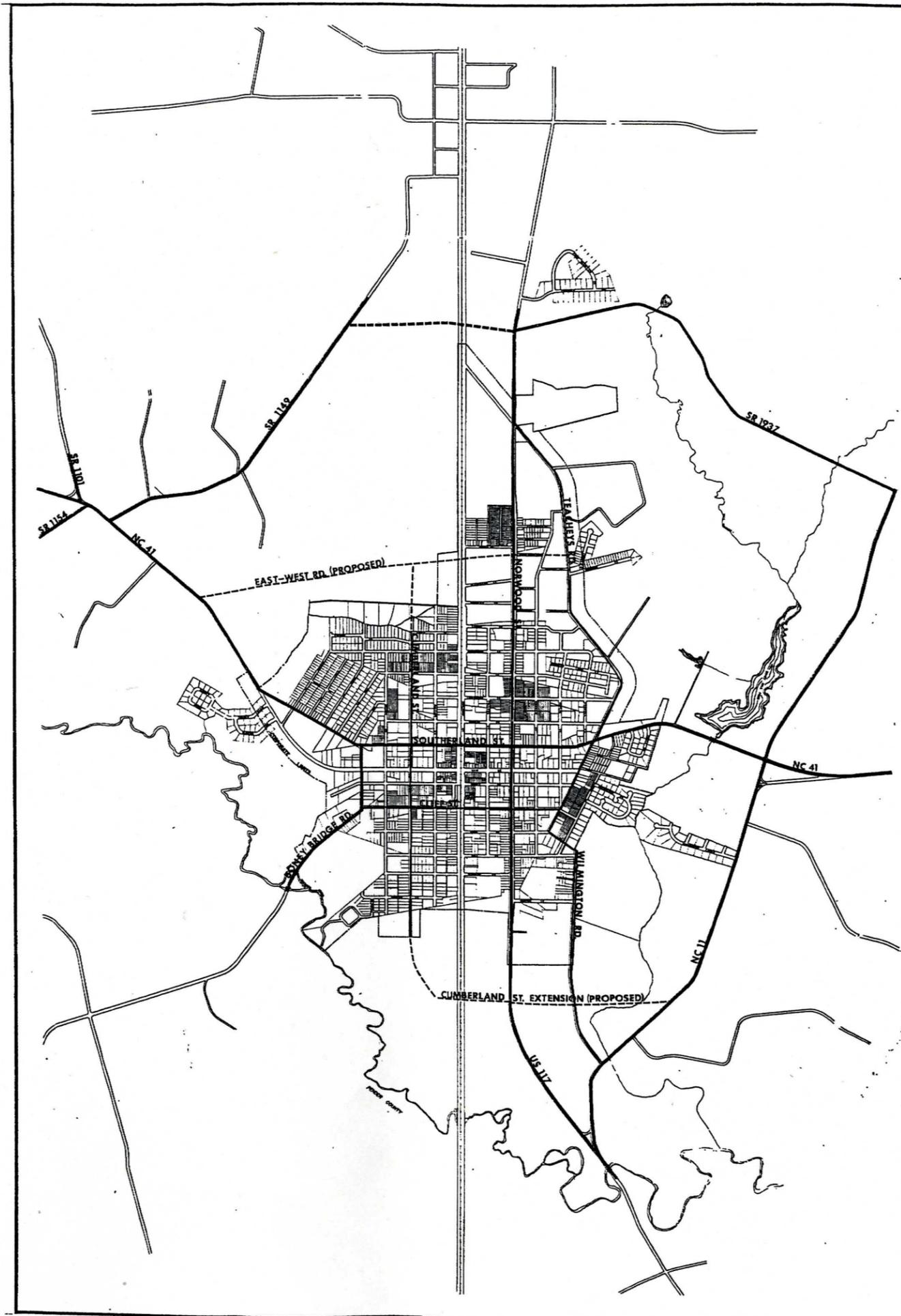


FIGURE 3

WALLACE THOROUGHFARE PLAN

ADOPTED BY:

TOWN OF WALLACE

DECEMBER 9, 1982

RECOMMENDED APPROVAL BY
PLANNING & RESEARCH BRANCH

DECEMBER 14, 1982

T.L. White

NORTH CAROLINA BOARD OF
TRANSPORTATION

JANUARY 14, 1983

LEGEND:

THOROUGHFARES	
EXISTING	PROPOSED
MAJOR	-----
MINOR	-----



OCTOBER 6, 1982



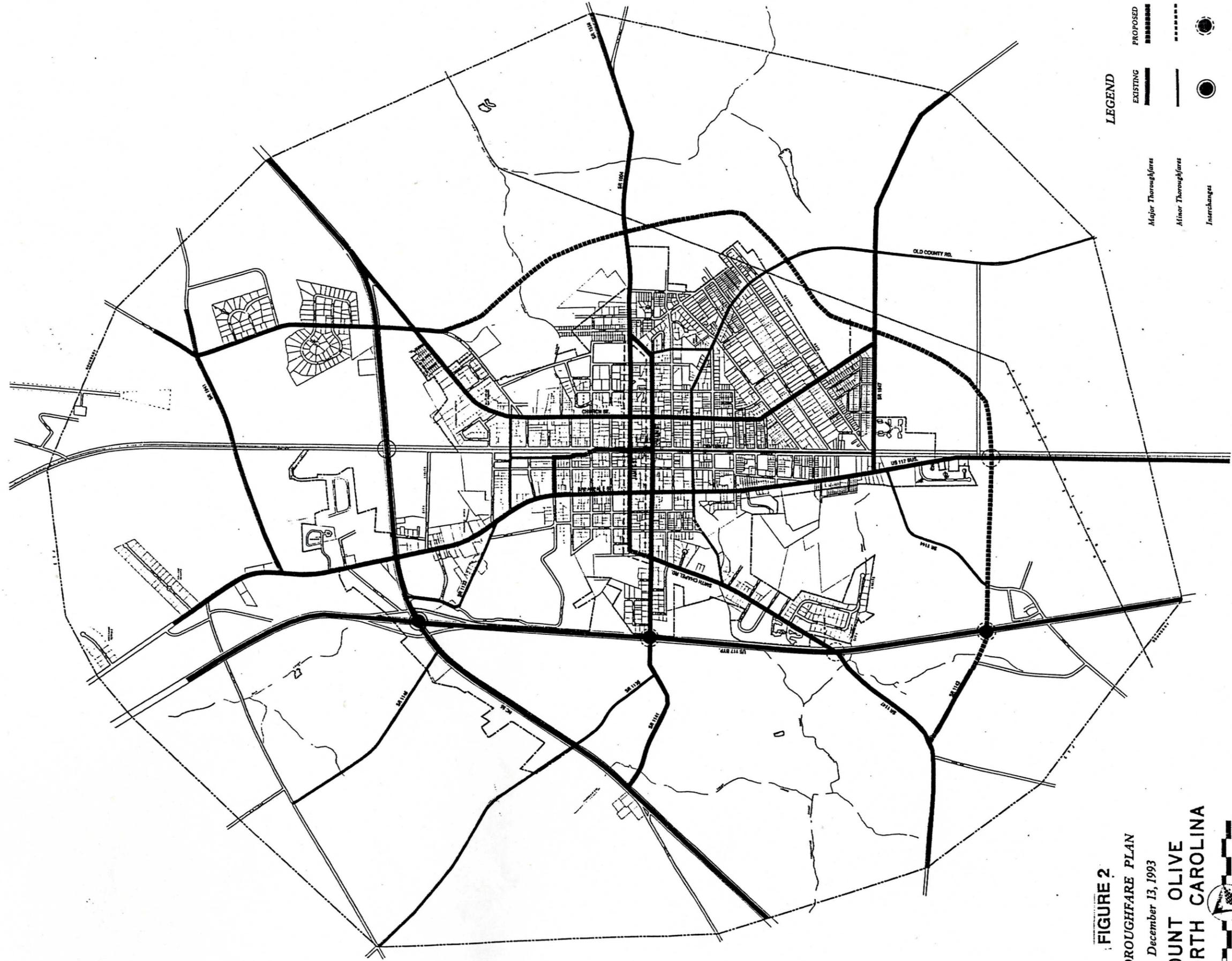


FIGURE 2
THOROUGHFARE PLAN
 December 13, 1993
MOUNT OLIVE
NORTH CAROLINA



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ADOPTED BY:
 MT OLIVE
 N.C. DEPT. OF
 TRANSPORTATION
 RECOMMENDED BY STATEWIDE
 PLANNING BRANCH
 PUBLIC HEARING DATE
 APRIL 1, 1994
 APRIL 1, 1994
 APRIL 11, 1994
 FEBRUARY 1, 1994

LEGEND

Major Thoroughfares	EXISTING	PROPOSED
Minor Thoroughfares	—	—
Interchanges	●	●
Grade Separations	○	○
One Way Traffic	—	—

