Comprehensive Transportation Plan

Warsaw, Duplin County

December 2012

Comprehensive Transportation Plan

Warsaw, Duplin County

Prepared by: Nora A. McCann, EIT, Project Engineer
James H. Upchurch, Southeast Planning Group Supervisor
Travis K. Marshall, PE, Eastern Unit Manager
Transportation Planning Branch
N.C. Department of Transportation

In Cooperation with: Town of Warsaw
Duplin County
Eastern Carolina Rural Planning Organization

December 2012

Travis K. Marshall, PE
Eastern Unit Manager

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Executive Summary

In July of 2010, the Transportation Planning Branch of the North Carolina Department of Transportation (NCDOT) and The Town of Warsaw initiated a study to cooperatively develop the Warsaw Comprehensive Transportation Plan (CTP), which includes portions of Duplin County. This is a long range multi-modal transportation plan that covers transportation needs through 2040. Modes of transportation evaluated as part of this plan include: highway, public transportation and rail, bicycle, and pedestrian. This plan does not cover routine maintenance or minor operations issues. Refer to Appendix A for contact information on these types of issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening, and public input. Refer to Figure 1 for the CTP maps, which were mutually endorsed/adopted in 2012. Implementation of the plan is the responsibility of the Town of Warsaw, Duplin County, and NCDOT. Refer to Chapter 2 for information on the implementation process.

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

- **NC 24 Bypass:** New location four-lane divided boulevard from Cumberland County to Duplin County.

- **NC 24:** Install a two-lane divided roadway with a raised median with curb and gutter with 11-foot travel lanes, and 5-foot on road bike lanes with sidewalks from the Sampson County line to I 40.

- **Intersection of US 117 and /SR 1387 (Bruce Costin Road):** Realign US 117 to provide more storage area.

BICYCLE

During the development of the CTP, bicycle routes were identified throughout the Warsaw planning area. Additionally, the 2005 Eastern Carolina Rural Planning Organization Bike & Pedestrian Routes identified two county bicycle routes through the Warsaw planning area. These routes are featured on Sheet 4 of Figure 1.

PEDESTRIAN

During the development of the CTP, the Town of Warsaw developed sidewalk recommendations which were incorporated into the CTP. Pedestrian recommendations are depicted on Sheet 5 of Figure 1.

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Adopted by:

Town of Warsaw
Date: June 11, 2012

Duplin County
Date: June 18, 2012

NCDOT
Date: November 8, 2012

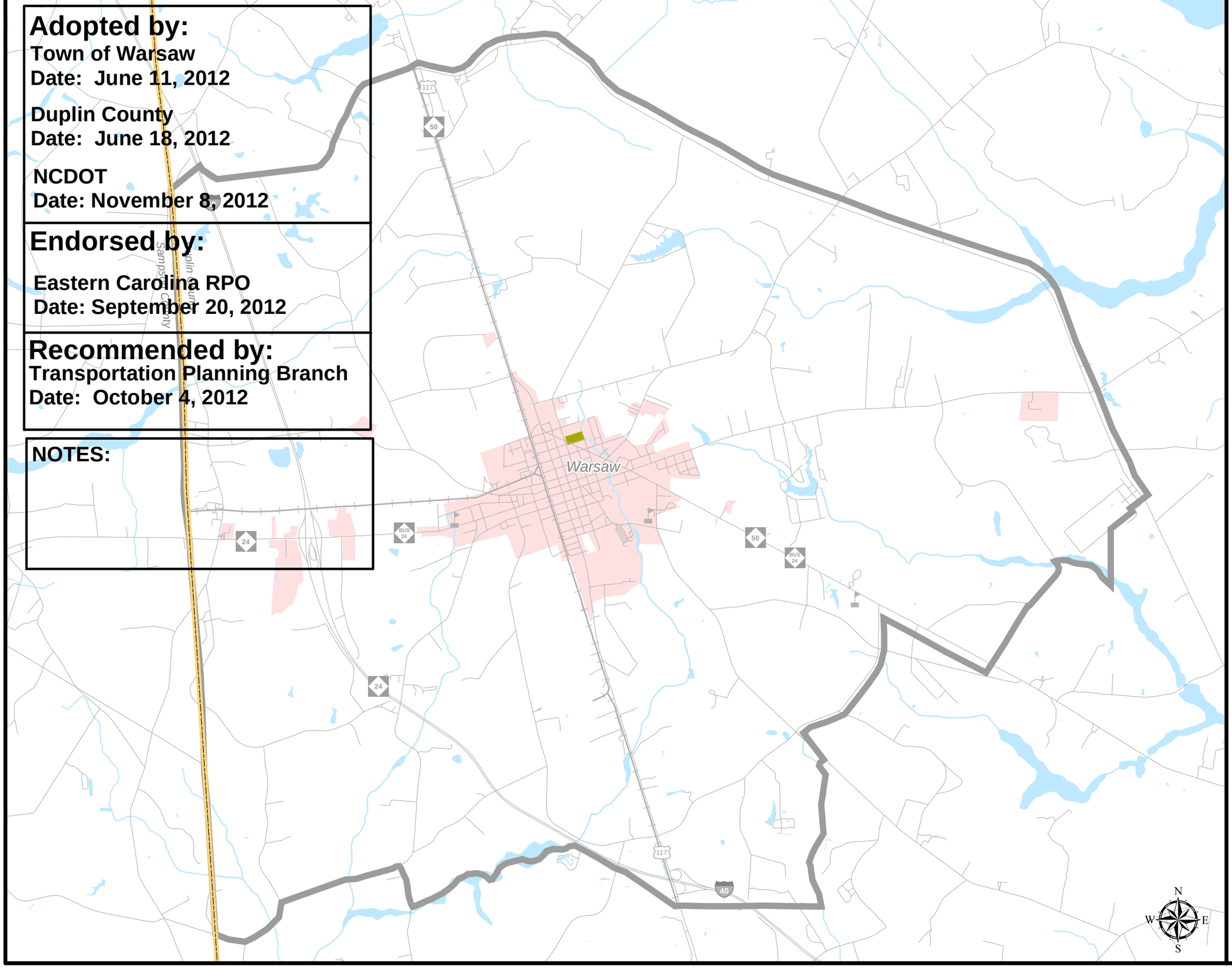
Endorsed by:

Eastern Carolina RPO
Date: September 20, 2012

Recommended by:

Transportation Planning Branch
Date: October 4, 2012

NOTES:



Adoption Sheet

Warsaw Duplin County North Carolina

Comprehensive Transportation Plan

Plan date: March 5, 2011

Legend

- Schools
- County Boundary
- Roads
- Park
- Planning Area Boundary
- Water Bodies
- Railroads
- Rivers and Streams
- Municipal Boundary

0 0.25 0.5 1 1.5 Miles

N W E S

Figure 1 - Sheet 1 of 5

Base map date: August 25, 2010
Refer to CTP document for more details

Highway Map

Warsaw
Duplin County
North Carolina

Comprehensive Transportation Plan

Plan date: March 5, 2011

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

0 0.25 0.5 1 1.5 Miles

Figure 1 - Sheet 2 of 5

Base map date: August 25, 2011

Refer to CTP document for more details

Public Transportation

Warsaw
Duplin County
North Carolina
Comprehensive Transportation Plan

Plan date: March 5, 2011

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

0 0.25 0.5 1 1.5 Miles

Figure 1 - Sheet 3 of 5

Base map date: August 25, 2010

Refer to CTP document for more details

Bicycle Map

Warsaw
Duplin County
North Carolina

Comprehensive Transportation Plan

Plan date: March 5, 2011

On-road
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

0 0.25 0.5 1 1.5 Miles

Figure 1 - Sheet 4 of 5

Base map date: August 25, 2010

Refer to CTP document for more details

Inset A

Sampson County

Duplin County

Bowdens Rd (SR 1301)

Jim Saul Rd (SR 1336)

Johnson Byrd Rd (SR 1342)

Works Farm Rd (SR 1316)

Blackmore Rd (SR 1340)

Bruce Costin Rd (SR 1387)

Water Tank Rd (SR 1396)

Revelle Rd (SR 1305)

Revelle Rd (SR 1347)

W Wards Bridge Rd (SR 1300)

Penny Branch Rd (SR 1340)

Old Courthouse Rd (SR 1109)

Carrolls Rd (SR 1108)

Pete Quinn Rd (SR 1111)

Sam Miller Rd (SR 1105)

S Cross St (SR 1106)

Lanefield Rd (SR 1900)

Carter Best Rd (SR 1902)

Claude Scott Rd (SR 1903)

Abner Phillips Rd (SR 1375)

Perry Rivenbark Rd (SR 1106)

Henry Best Rd (SR 1110)

Carlton Chapel Church Rd (SR 1105)

Johnson Church Rd (SR 1107)

Charlie Frederick Rd (SR 1113)

Perry Rivenbark Rd (SR 1107)

Carrolls Rd (SR 1192)

Buck Hall Creek Rd (SR 1112)

N W E S

Bicycle Map
Inset A

Warsaw
Duplin County
North Carolina
Comprehensive Transportation Plan

Plan date: March 5, 2010

On-road
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

0 0.15 0.3 0.6 Miles

Figure 1 - Sheet 4A of 5

Base map date: August 25, 2010

Refer to CTP document for more details

Pedestrian Map

Warsaw
Duplin County
North Carolina
Comprehensive Transportation Plan

Plan Date: March 5, 2011

Sidewalks
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

0 0.25 0.5 1 1.5 Miles

Figure 1 - Sheet 5 of 5

Base map date: August 25, 2010

Refer to CTP document for more details

Pedestrian Map
Inset A

Warsaw
Duplin County
North Carolina
Comprehensive
Transportation Plan

Plan date: March 5, 2010

Sidewalks
- Existing
- Needs Improvement
- Recommended

Off-road
- Existing
- Needs Improvement
- Recommended

Multi-Use Paths
- Existing
- Needs Improvement
- Recommended

- Existing Grade Separation
- Proposed Grade Separation

0 0.125 0.25 0.5 Miles

Figure 1 - Sheet 5A of 5

Base map date: August 25, 2010

Refer to CTP document for more details

I. Analysis of the Existing and Future Transportation System

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

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

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

Analysis Methodology and Data Requirements

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

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

Roadway System Analysis

An important stage in the development of a CTP is the analysis of the existing transportation system and its ability to serve the area's travel 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, and intersection controls; or system problems, such as the need to construct missing travel links, bypass routes, loop facilities, additional radial routes or infrastructure improvements to meet statewide initiatives.

One of those statewide initiatives is the Strategic Highway Corridor (SHC) Vision Plan adopted by the Board of Transportation on September 2, 2004 and last revised on July

10, 2008. The SHC Vision Plan represents a timely initiative to protect and maximize the mobility and connectivity on a core set of highway corridors throughout North Carolina, while promoting environmental stewardship through maximizing the use of existing facilities to the extent possible, and fostering economic prosperity through the quick and efficient movement of people and goods.

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

In the development of this plan, travel demand was projected from 2010 to 2040 using a trend line analysis based on Annual Average Daily Traffic (AADT) from 1991 to 2010. In addition, local land use plans and growth expectations were used to further refine future growth rates and patterns. The established future growth rates were endorsed by the Warsaw CTP Steering Committee, February 10, 2011.

Existing and future travel demand is compared to existing roadway capacities. Capacity deficiencies occur when the traffic volume of a roadway exceeds the roadway's capacity. Roadways are considered near capacity when the traffic volume is at least eighty percent of the capacity. Refer to Figures 2, 2A, 3, 3A for existing and future capacity deficiencies.

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 along the road, including residential, commercial, agricultural, and industrial developments;
- Number of traffic signals along the route;
- Peaking characteristics of the traffic on the road;
- Characteristics of side-roads feeding into the road; and

- Directional split of traffic or the percentages of vehicles traveling in each direction along a road at any given time.

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

LOS D indicates "practical capacity" of a roadway, or the capacity at which the public begins to express dissatisfaction. The practical capacity for each roadway was developed based on the 2000 Highway Capacity Manual using the NCDOT Transportation Planning Branch Level of Service D Standards for Systems Level Planning that was updated 10/14/2011. Recommended improvements and overall design of the transportation plan were based upon achieving a minimum LOS D on existing facilities and a LOS C for new facilities. Refer to Appendix E for detailed information on LOS.

Traffic Crash Analysis

Traffic crashes are often used as an indicator for locating congestion and roadway problems. Crash patterns obtained from an analysis of crash data can lead to the identification of improvements that will reduce the number of crashes. A crash analysis was performed for the Warsaw CTP for crashes occurring in the planning area between January 1, 2009 and December 31, 2011. During this period, a total of one intersection was identified as having a high number of crashes as illustrated in Figure 4. Refer to Appendix F for a detailed crash analysis.

Bridge Deficiency Assessment

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 NCDOT Structure Management Unit inspects all bridges in North Carolina at least once every two years. Bridges having the highest priority are replaced as Federal and State funds become available. Two deficient bridges were identified within the planning area and are illustrated in Figure 5. Refer to Appendix G for more detailed information.

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Figure 2

2010
Volume and Capacity
Deficiencies

Warsaw
Duplin County
North Carolina

Comprehensive Transportation Plan

Legend

- Near Capacity
- Over Capacity
- 2600 / 13600 — 2010 Volumes (AADT) / 2010 Capacity
- Schools
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary
- Planning Area Boundary

0 0.3 0.6 1.2 1.8 Miles

Base map date: August 25, 2010

Inset A

Warsaw

Sampson County

Duplin County

3300 / 16400
800 / 14100
900 / 14100
200 / 13600
200 / 13600
15100 / 63200
1100 / 13600
4200 / 16400
200 / 12400
300 / 12000
600 / 12400
2200 / 14100
1600 / 13600
1300 / 14700
500 / 12000
1000 / 12400
7600 / 16400
8300 / 16400
10400 / 14900
8600 / 32000
5900 / 16400
800 / 13100
1200 / 11000
400 / 12400
500 / 13100
22000 / 63200
3800 / 16400
1100 / 12400
800 / 14100
300 / 13100
200 / 13100
700 / 13100
4500 / 16400
300 / 13100
400 / 13100
17000 / 63200
4100 / 16400

Back of Figure

Figure 2
Inset A (Warsaw)

2010
Volume and Capacity
Deficiencies

Warsaw
Duplin County
North Carolina
Comprehensive Transportation Plan

Legend

- Near Capacity
- Over Capacity
- 2600 / 13600 — 2010 Volumes (AADT) / 2010 Capacity
- Schools
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary
- Planning Area Boundary

0 0.125 0.25 0.5 Miles

Base map date: August 25, 2010

N W E S

Warsaw

600 / 9500
200 / 12400
3700 / 11100
600 / 12400
4400 / 11100
300 / 12000
1000 / 12400
1300 / 9800
250 / 9800
500 / 12000
3700 / 11100
2300 / 9800
3400 / 10200
3900 / 11100
3400 / 10500
7500 / 22200
7300 / 12700
6600 / 10700
11000 / 22200
1700 / 10500
7600 / 16400
900 / 9800
800 / 9500
4700 / 11100
900 / 9500
7400 / 22200
600 / 9800
4200 / 11100
1000 / 10500

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Figure 3

2040
Volume and Capacity
Deficiencies

Warsaw
Duplin County
North Carolina

Comprehensive Transportation Plan

Legend

- Near Capacity
- Over Capacity
- 2600 / 13600 — 2040 Volumes (AADT) / 2040 Capacity
- Schools
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary
- Planning Area Boundary

0 0.25 0.5 1 1.5 Miles

N W E S

Base map date: August 25, 2010

1100 / 14100
8600 / 16400
1000 / 14100
700 / 13600
500 / 13600
37200 / 63200
1500 / 13600
8600 / 15800
700 / 12400
1400 / 12400
1100 / 12000
4400 / 14100
7000 / 13600
7500 / 14700
1300 / 12400
1400 / 12000
Warsaw
13400 / 16400
16000 / 16400
20000 / 14900
15100 / 39700
10400 / 16400
1400 / 13100
1600 / 11000
46300 / 63200
1500 / 12400
700 / 13100
Inset A
1100 / 13100
7700 / 15800
4300 / 12400
900 / 14100
1000 / 13100
7000 / 13100
9200 / 16400
500 / 13100
44100 / 63200
8400 / 16400

Sampson County
Duplin County

Back of Figure

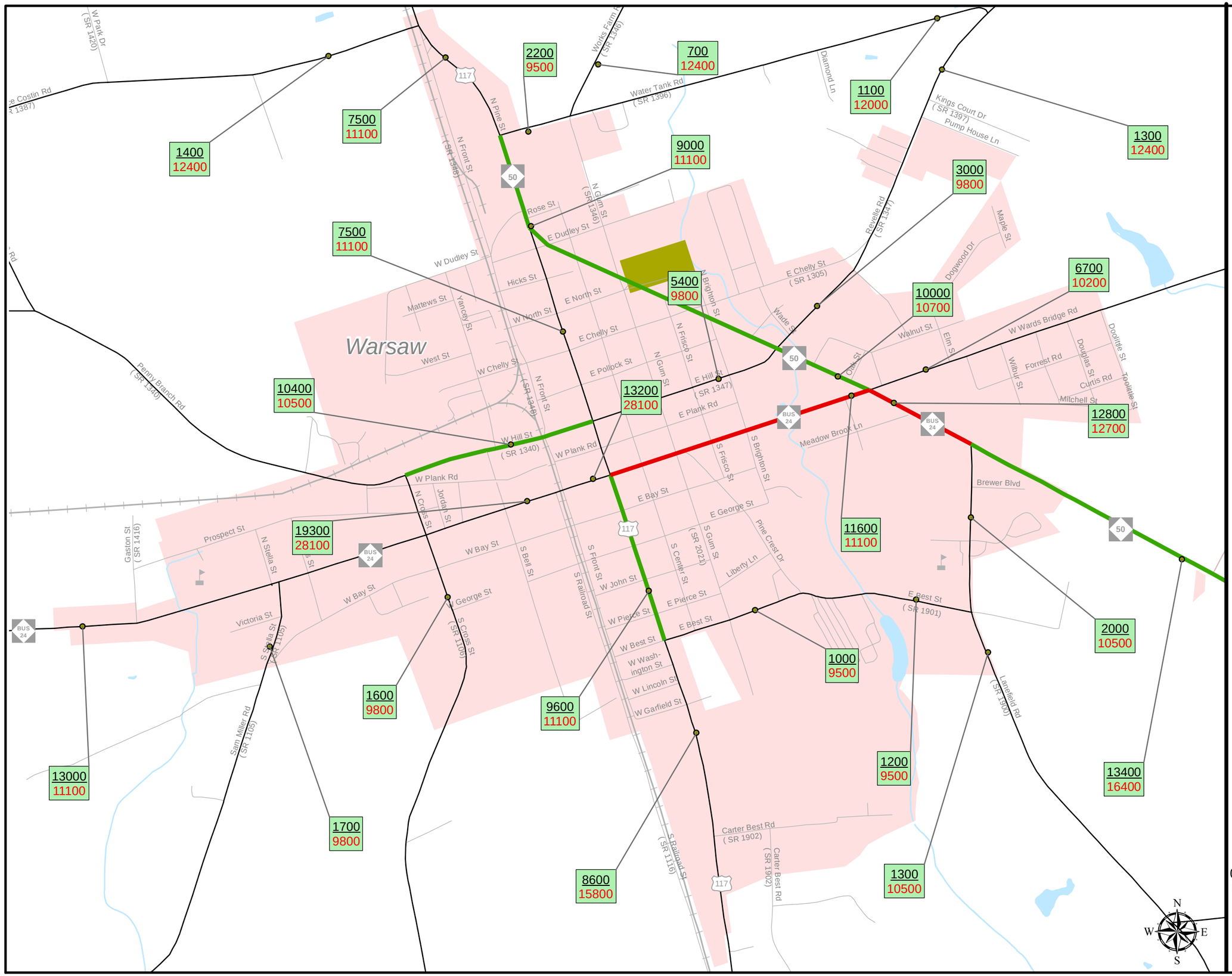

Figure 3
Insert A (Warsaw)
2040
Volume and Capacity
Deficiencies

Warsaw
Duplin County
North Carolina

Comprehensive Transportation Plan

Legend

- Near Capacity
- Over Capacity
- 2600 / 13600 — 2040 Volumes (AADT) / 2040 Capacity
- Schools
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary
- Planning Area Boundary

0 0.125 0.25 0.5 Miles

Base map date: August 25, 2010

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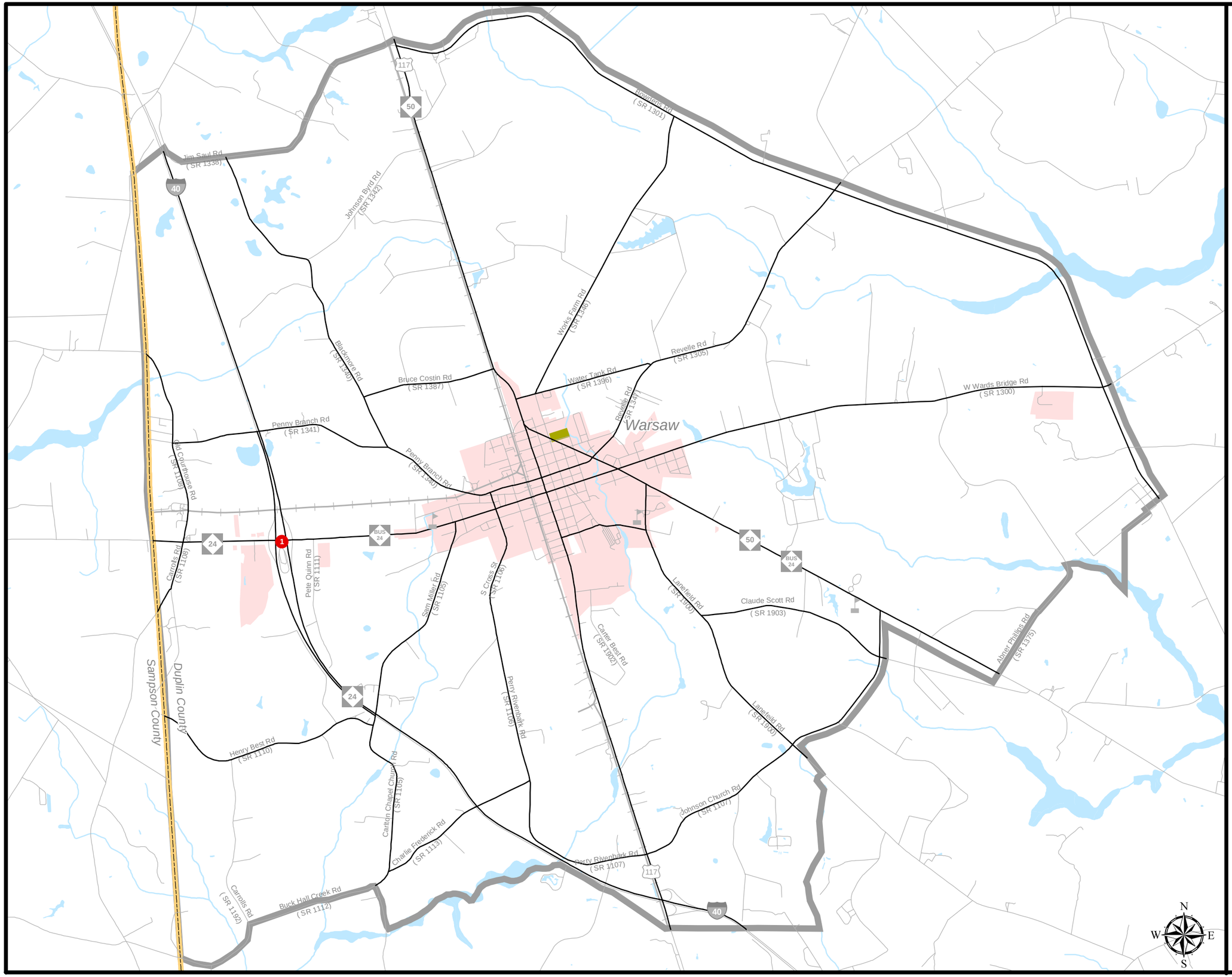


Figure 4

Crash Locations

January 1, 2009 to December 31, 2011

Warsaw
Duplin County
North Carolina

Comprehensive Transportation Plan

Legend

- Crash Locations (# Map Index)
- Schools
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary
- Planning Area Boundary

0 0.25 0.5 1 1.5 Miles

Base map date: August 25, 2010

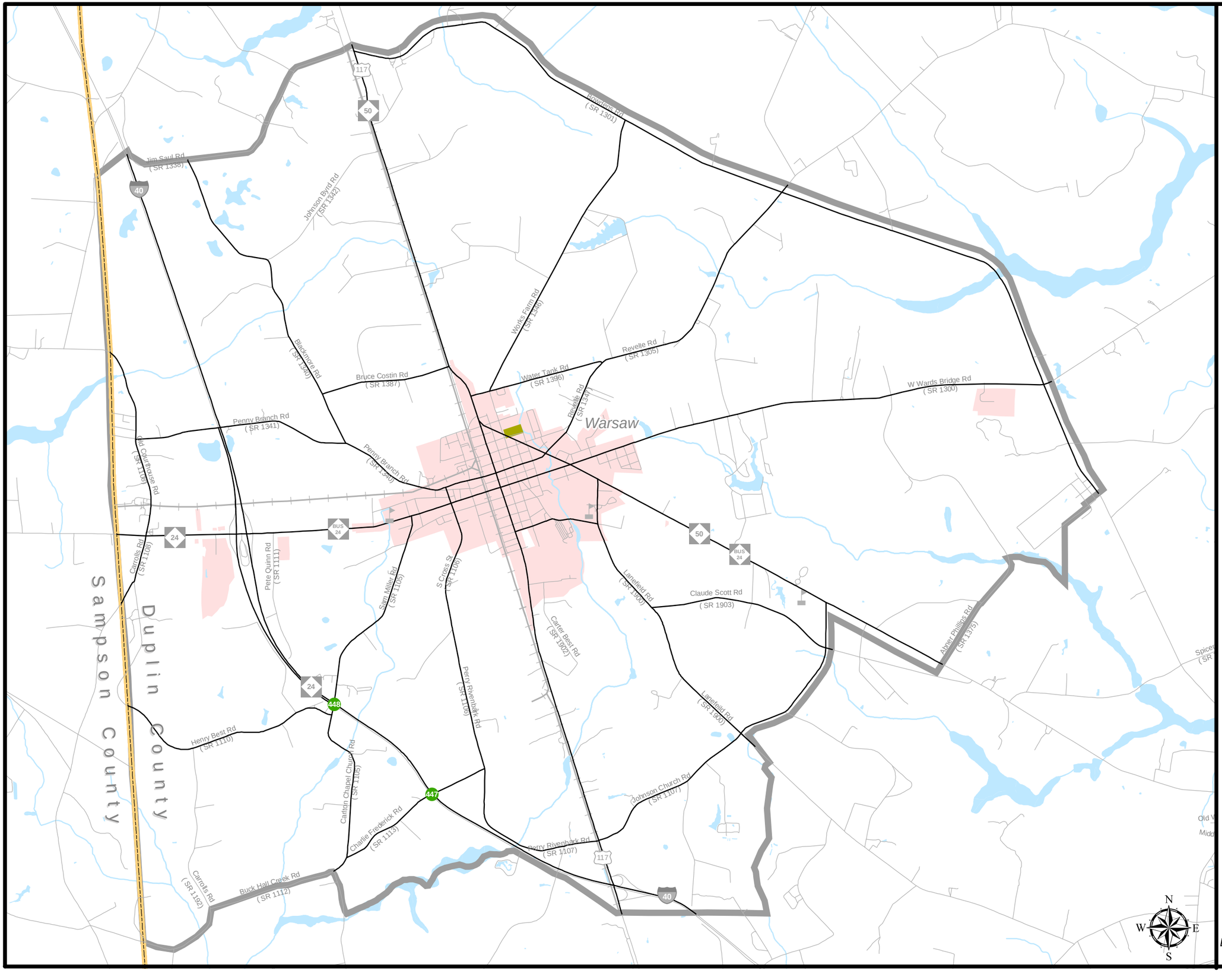


Figure 5

Deficient Bridges

Warsaw
Duplin County
North Carolina

Comprehensive Transportation Plan

Legend

- # Deficient Bridge (# Bridge Number)
- Schools
- Roads
- Railroads
- Rivers and Streams
- Water Bodies
- Municipal Boundary
- County Boundary
- Planning Area Boundary

0 0.25 0.5 1 1.5 Miles

N W E S

Base map date: August 25, 2010

Public Transportation and Rail

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

Public Transportation

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

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

An inventory of existing and planned fixed public transportation routes for the planning area is presented on Sheet 3 of Figure 1. Duplin County Public Transportation provides on demand service to the public with curb to curb service to any destination within the county and a fare is charged. A two day advanced booking is required and as a rule same day service is not allowed; however in the case of an emergency, same day service has been provided. The fleet consists of a total of 14 vans and 13 are equipped to lift wheel chairs. The Wellness Center in Warsaw is one of five Senior Citizen Nutrition Sites in Duplin County and clients are brought to this site Monday through Friday for a nutritional lunch and no fare is charged. There were no recommendations for public transportation. Refer to Appendix A for contact information.

Rail

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

The North Carolina Department of Transportation sponsors two passenger trains, the Carolinian and Piedmont. The Carolinian runs between Charlotte and New York City, while the Piedmont train carries passengers from Raleigh to Charlotte and back everyday. Combined, the Carolinian and Piedmont carry more than 200,000 passengers each year.

There are two major freight railroad companies that operate in North Carolina, CSX Transportation and Norfolk Southern Corporation. Also, there are more than 20 smaller freight railroads, known as shortlines.

An inventory of existing and planned rail facilities for the planning area is presented on Sheet 3 of Figure 1. CSX Transportation operates the railroad within the Warsaw planning area. There is no passenger rail service to Warsaw. There were no recommendations for rail. Refer to Appendix A for contact information.

Bicycles & Pedestrians

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

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

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

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

Inventories of existing and planned bicycle and pedestrian facilities for the planning area are presented on Sheets 4 and 5 of Figure 1. The Eastern Carolina RPO Bike & Pedestrian Routes Adopted October 20, 2005 were utilized in the development of these

elements of the CTP. There are neither any regional nor statewide facilities that go through the area. All recommendations for bicycle and pedestrian facilities were coordinated with the local governments and the NCDOT Division of Bicycle and Pedestrian Transportation. Refer to Appendix A for contact information.

Land Use

G.S. §136-66.2 requires that local areas have a current (less than five years old) land development plan prior to adoption of the CTP. For this CTP, the Town of Warsaw used a Zoning Map to assist in land use planning. The Warsaw Zoning Map was last updated on June 9, 2008 this was used to meet this requirement and is illustrated in Figure 6.

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

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

Anticipated future land development is, in general, a logical extension of the present spatial land use distribution. Locations and types of expected growth within the planning area help to determine the location and type of proposed transportation improvements.

The Town of Warsaw anticipates growth in employment along the major routes within the study area such as NC 24, NC 24 Business, and US 117. Growth in population is expected to occur throughout the planning area.

On July 20, 2011 members of the Steering Committee met to determine the population and employment for 2040 and decide which zones would have the most growth.

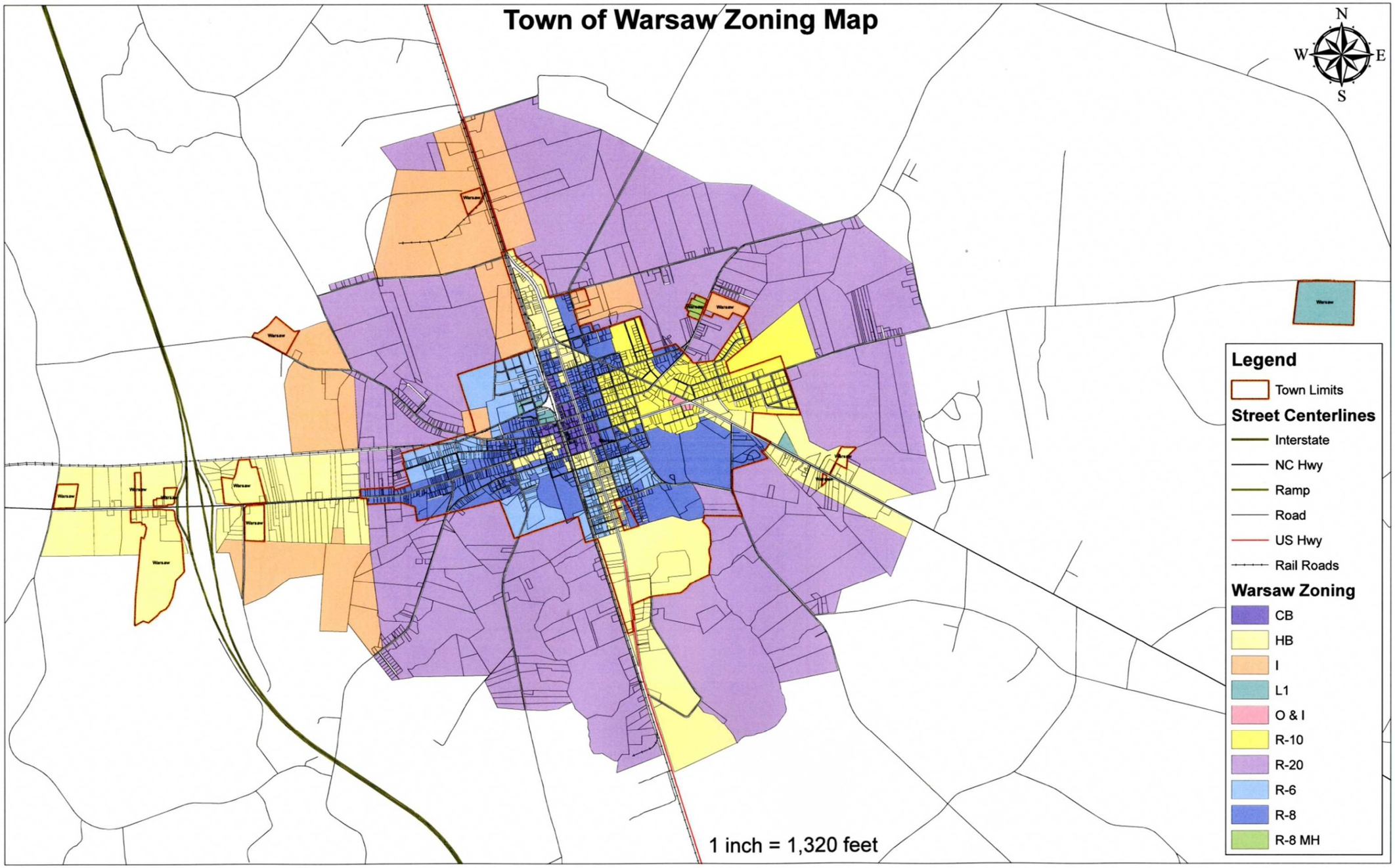
Based on the analysis done in December 2010, there were 2,504 households within the planning area. This analysis was done with information provided Duplin County. Parcel data was used along with the 911 data base in order to determine which structures were actual living quarters. According to the 2010 US Census, there were 2.9 persons per household in Duplin County. This information gave us the 2010 population for the planning area of 7,261 people.

The US Census showed that over the past 10 years the population in Duplin County increased 19.2%. This comes to about 1.8% population growth per year. It was decided that the population of the planning area would grow by 0.5% over the next 30 years. This yields a population of 8,433 people for the year 2040. This increase of 1,172 people was converted to households and distributed evenly among the 38 zones.

The employment in the planning area was verified by the Town of Warsaw on a zone by zone inspection. The follow up verification consisted of several weeks of telephone calls to verify the exact number of employees and commercial vehicles at each employment location. The total employment in the Warsaw Planning Area is 1,691 people.

Members of the Steering Committee talked about the increases in employment over the next 30 years. A 0.5% increase in employment over the next 30 years would result in an additional 273 jobs in the planning area. Using a 1.0% growth rate over the next 30 years would represent an additional 588 jobs. A growth rate of 0.65% per year over the next 30 years was chosen. This would result in a 365 more jobs in the planning area.

Figure 6
Zoning Map



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Consideration of Natural and Human Environment

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

A full listing of environmental features that were examined as a part of this study is shown in the following tables utilizing the best available data. Environmental features occurring within the Warsaw Planning Area are shown in Figures 8 and 8A.

Table 1 – Environmental Features

- Airport Boundaries
- Anadromous Fish Spawning Areas
- Beach Access Sites
- Bike Routes (NCDOT)
- Coastal Marinas
- Colleges and Universities
- Conservation Tax Credit Properties
- Emergency Operation Centers
- Federal Land Ownership
- Fisheries Nursery Areas
- Geology (including Dikes and Faults)
- Hazardous Substance Disposal Sites
- Hazardous Waste Facilities
- High Quality Water and Outstanding Resource Water Management Zones
- Hospital Locations
- Hydrography (1:24,000 scale)
- Land Trust Priority Areas
- National Heritage Element Occurrences
- National Wetlands Inventory
- North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)
- Paddle Trails – Coastal Plain
- Railroads (1:24,000 scale)
- Recreation Projects – Land and Water Conservation Fund
- Sanitary Sewer Systems – Discharges, Land Application Areas, Pipes, Pumps and Treatment Plants
- Schools – Public and Non-Public
- Shellfish Strata
- Significant Natural Heritage Areas
- State Parks
- Submersed Rooted Vasculars
- Target Local Watersheds - EEP
- Trout Streams (DWQ)
- Trout Waters (WRC)
- Water Distribution Systems – Pipes, Pumps, Tanks, Treatment Plants, and Wells
- Water Supply Watersheds
- Wild and Scenic Rivers

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

Table 2 – Restricted Environmental Features

- Archaeological Sites
- Historic National Register Districts
- Historic National Register Structures
- Macrosite Boundaries
- Managed Areas
- Megasite Boundaries

Figure 7

Environmental Features

Warsaw North Carolina Comprehensive Transportation Plan

Legend

- Schools
- Water Distribution System Treatment Plants
- Water Distribution System Wells
- Water Distribution System Tanks
- Hazardous Substance Disposal Sites
- Recreation Projects
- NC Coastal Region Evaluation of Wetland Significance
- National Wetlands Inventory
- Target Local Watersheds
- County Boundary
- Roads
- Planning Area Boundary
- Water Bodies
- Railroad

0 0.25 0.5 1 1.5 Miles

Base map date: August 25, 2010

Back of Figure

Figure 8

Environmental Features

Warsaw
North Carolina
Comprehensive
Transportation Plan

Legend

- Schools
- Sanitary Sewer System Discharges
- Sanitary System Sewer Pumps
- Sanitary Sewer System Treatment Plants
- Water Distribution System Pipes
- Sanitary Sewer System Pipes
- Conservation Tax Credit Properties
- Recreation Projects
- County Boundary
- Roads
- Planning Area Boundary
- Water Bodies
- Railroad

0 0.25 0.5 1 1.5 Miles

Base map date: August 25, 2010

Back of Figure

Public Involvement

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

A meeting was held with the Warsaw Town Council in July 2010 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on area transportation needs.

Throughout the course of the study, the Transportation Planning Branch cooperatively worked with the Warsaw Steering Committee, which included representatives from the Warsaw Planning Board, town staff, and the Eastern Carolina Rural Planning Organization, to provide information on current local plans, to develop transportation vision and goals, to discuss population and employment projections, and to develop proposed CTP recommendations. Refer to Appendix H for detailed information on the vision statement, the goals and objectives survey and a listing of committee members.

The public involvement process included holding two public drop-in sessions in Warsaw to present the proposed Warsaw CTP to the public and solicit comments. The first meeting was held on April 20, 2012 at the Warsaw Wellness Center at 211 West Hill Street in Warsaw from 11am to 2 pm; the second meeting was held on April 24, 2012 at the Warsaw Wellness Center from 5pm to 8pm. Each session was publicized in the local newspaper. At the April 20, 2012 drop-in session ten citizens signed the attendance sheet and no written comment forms were submitted during this session but many people asked questions and a few people said that they were in favor of installing more sidewalks.

At the April 24, 2012 drop-in session three citizens sign the attendance sheet. The same written comment was made by Earl Rouse and Al Searles (members of the Steering Committee). They wrote “the roundabout was not a recommendation discussed” by the Steering Committee. One resident wrote that the plan was “much needed for jobs”. As a result of this drop-in session, a Steering Committee Meeting was held on May 10, 2012 to discuss a recommendation for improvements at the intersection of NC 24 Business (College Road)/NC 50 (Memorial Drive)/ SR 1300 (Wards Bridge Road), and a possible roundabout at this location.

A public hearing was held on June 11, 2012 during the Warsaw Town Council meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The Warsaw CTP was adopted during this meeting.

A public hearing was held on June 18, 2012 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 Warsaw CTP was adopted during this meeting.

The Eastern Carolina Rural Planning Organization endorsed the CTP on September 20, 2012. The North Carolina Board of Transportation voted to mutually adopt the Warsaw CTP on November 8, 2012.

II. Recommendations

This report documents the development of the 2010 Warsaw CTP as shown in Figure 1. This chapter presents recommendations for each mode of transportation in the town.

Unaddressed Deficiency

The following deficiency was identified during the development of the CTP, but remains unaddressed.

Intersection NC 24 Business/NC 50 (Memorial Drive)/ SR 1300 (Wards Bridge Road)

This intersection of NC 24 Business and NC 50 is currently a two-way stop at a skew of 42 degrees, which limits sight distance. Accident data was studied for a three year period between January 1, 2009 and December 31, 2011 and there were no fatalities at this intersection. However there was a fatality at this intersection on March 23, 2007 which is outside of our study period.

In that improvements are needed at this intersection, the committee brainstormed 3 possible solutions.

Option # 1 presented (7/22/2010) A stop light - Realign skew.

Option # 2 presented (7/22/2010) Convert to 3 leg intersection .

Option # 3 presented (5/10/2012) Possible roundabout.

No recommendations were made on any options and further study is deemed to be necessary.

Implementation

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

Initiative for implementing the CTP rests predominately with the policy boards and citizens of the town of Warsaw. As transportation needs throughout the State exceed available funding, it is imperative that the local planning area aggressively pursue funding for priority projects. Projects should be prioritized locally and submitted to the

Eastern Carolina RPO for regional prioritization and submittal to NCDOT. Refer to Appendix A for contact information on funding. Local governments may use the CTP to guide development and protect corridors for the recommended projects. It is critical that NCDOT and local government coordinate on relevant land development reviews and all transportation projects to ensure proper implementation of the CTP. Local governments and the North Carolina Department of Transportation share the responsibility for access management and the planning, design and construction of the recommended projects.

Prior to implementing projects from the CTP, additional analysis will be necessary to meet the National Environmental Policy Act (NEPA) or the North Carolina (or State) Environmental Policy Act (SEPA). This CTP may be used to provide information in the NEPA/SEPA process.

The following pages contain problem statements for each recommendation, organized by CTP modal element.

Problem Statements

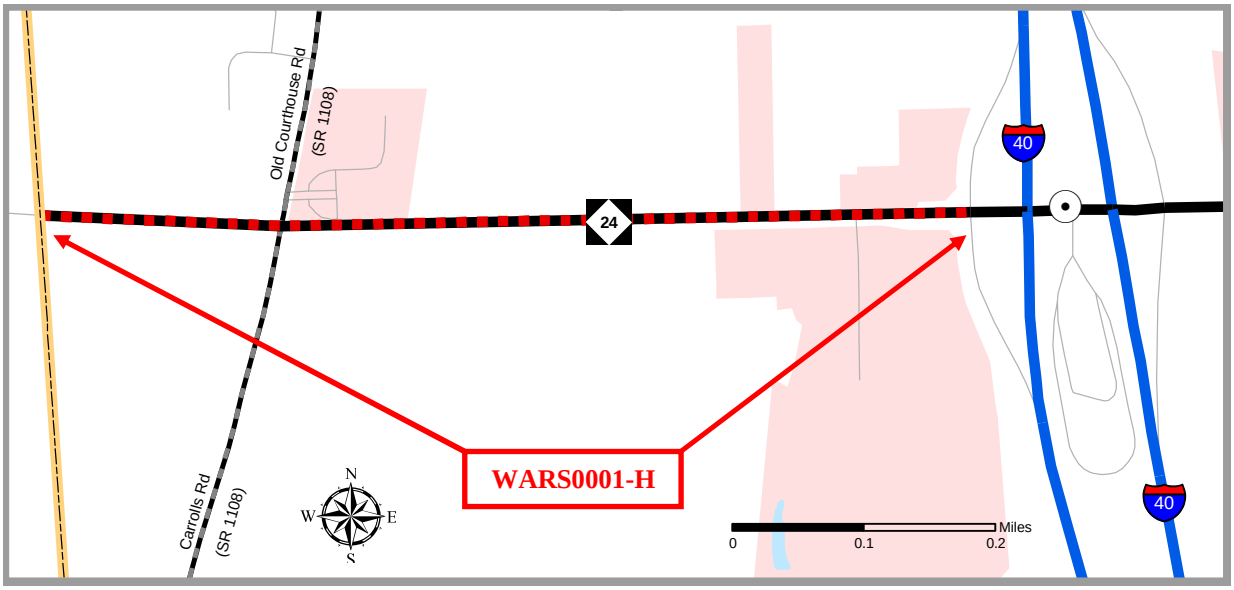
HIGHWAY

NC 24 Bypass, TIP No. R-2303

NC 24 is currently a rural two-lane facility with a pavement width of 22-24 feet with six to ten-foot grass shoulder (including some 2-foot paved shoulder) from 2.8 miles east of I-95 at Fayetteville to I-40 in Warsaw which is approximately 40 miles in length.

The proposed improvement, as stated in the Record of Decision September 2010, NC 24 is a strategic highway corridor for this region of North Carolina. NC 24 is part of the Strategic Highway Corridor (SHC) Vision Plan adopted by NCDOT on September 2, 2004 and updated on July 10, 2008. An improved NC 24 facility would serve several functions: it would provide an efficient link between two major interstate highways (I-95 and I-40), critical military facilities, and state ports. Consequently, it would play an important role in local, state and national transportation mobility. An improved NC 24 facility could permit separation of through and local traffic in the vicinity of the study area to the benefit of both groups of users. The resulting anticipated reduction in traffic accidents would reduce medical and property damage costs. An improved NC 24 would enhance other modes of transportation in the region. An improved NC 24 highway would sustain and possibly promote social and economic development in the project area. This project is currently in the right of way phase. For additional information about this project including the Purpose and Need, contact NCDOT's Project Development and Environmental Analysis Branch.

NC 24 Proposed improvements from Sampson County to I-40	Local ID: WARS0001-H Last Updated: 7/3/2012



Identified Problem

Existing NC 24 is projected to be near capacity by 2040 from 0.5 miles west of I-40 to I-40. The intersection of NC 24 and I-40 is a high frequency crash location. Additionally, mobility along this facility is hampered by the lack of access control. The primary purpose of this project is to relieve congestion on the existing facility such that a minimum of LOS D can be achieved.

Justification of Need

NC 24 is currently a 2-lane section from the Sampson County line to 0.5 miles west of I-40 and a 3-lane section with 12-foot lanes and a center turn lane from 0.5 miles west of I-40 to I-40. NC 24 is classified as a Strategic Highway Corridor. With the proposed relocation of NC 24 to the south of existing NC 24, it is likely that this designation will be transferred to the new facility. Regardless of a change in designation, NC 24 will continue to be an important road because it serves as the only access to the Rest Area on I-40. For vehicles traveling east on I-40, it is the last Rest Area. In addition to the Rest Area, there are many businesses serving the needs of the motoring public on this section of NC 24.

By 2040 the facility is projected to be over capacity from the Sampson County line to I-40. Volumes are expected to increase from 10,400 vehicles per day (vpd) in 2010 to 23,100 vpd in 2040 compared to LOS D capacity of 14,900 vpd.

The interchange of I-40 and NC 24 is a high frequency crash location with a moderate severity index of 8.53 for the period of January 1, 2009 through December 31, 2011.

There were a total of 27 crashes during this time period. These crashes are due to congestion on NC 24. In order to improve mobility, the congestion at this interchange necessitates a town of Warsaw police officer to direct traffic on certain days during the peak beach going season and holiday weekends for motorists traveling to the North Carolina and South Carolina coasts.

Community Vision and Problem History

Amenities and services that are not available in Warsaw are found in Clinton in Sampson County. NC 24 is the direct connection between Warsaw and Clinton in Sampson County.

This is the first time this deficiency has been identified on a transportation plan.

CTP Project Proposal

The proposed project (WARS0001-H) is to install a 2 lane roadway with a raised median with curb and gutter with 11-foot travel lanes, and 5-foot on road bike lanes with sidewalks from the Sampson County line to I-40 with appropriate median breaks and traffic signals.

The proposed improvement to NC 24 will help reduce congestion and improve mobility in this area of Warsaw.

Relationship to Land Use Plans

The town of Warsaw Zoning Map shows this area as highway business and it consists of fast-food restaurants, gas stations, hotels and other service based establishments. Most of commercial and strip development in Warsaw is located on NC 24 near the I-40 interchange. At the intersection of NC 24 and Old Courthouse Road (SR 1108) is the headquarters of a livestock production company that is the world's largest producer of pork products. This area along NC 24 is expected to grow and will continue to be an employment center for Warsaw. A 0.65% increase in employment is expected over the next 30 years and 85 new jobs are predicted to be created within this time frame along the NC 24 corridor from Sampson County to I-40.

Linkages to Other Plans

None

Intersection of US 117 and SR 1387 (Bruce Costin Road), Local ID No. WARS0002-H

This intersection of US 117 and SR 1387 is a non-signalized intersection with two sets of railroad tracks with crossing gates and a stop bar on SR 1387 approximately 90 feet from US 117. The setback of the stop bar from US 117 limits sight distance. Approximately 31% of the vehicles on SR 1387 are trucks according to classifications counts taken in 2010 (8% dual axels and 23% tractor trailers). A preliminary recommendation is to re-route US 117 to provide more storage space.

Minor Widening Improvements

The following routes are recommended to be upgraded to two 12-foot lanes with paved shoulders to improve narrow lane widths and / or to accommodate bicyles.

- **WARS0003-H:** NC 24 BUS – From Pine Street (US 117) to NC 50, widen from two 10-foot lanes to two 11-foot lanes with four-foot paved shoulders
- **WARS0004-H:** NC 24 BUS – From NC 50 (Memorial Drive) to Lanefield Road (SR 1900), widen from three 12-foot lanes to two 14-foot lanes with an 11-foot center turn lane
- **WARS0005-H:** NC 50 (Memorial Drive) – From Pine Street (US 117) to NC 24 BUS/Wards Bridge Road (SR 1300), widen from two 8.5-foot lanes to two 11-foot lanes with 5-foot paved shoulders
- **WARS0006-H:** East Best Street – From Pine Street (US 117) to Lanefield Road (SR 1900), widen from two 9-foot lanes to two 11-foot lanes with 4-foot paved shoulders
- **WARS0007-H:** Blackmore Road (SR1340) – From Penny Branch Road (SR 1341) to Jim Saul Road (SR 1338), widen from two 9-foot lanes to two 12-foot lanes with 5-foot paved shoulders
- **WARS0008-H:** Bowdens Road (SR 1301) – From US 117 to Eastern Planning Boundary, widen from two 11-foot lanes to two 12-foot lanes with 5-foot paved shoulders
- **WARS0009-H:** Bruce Costlin Road (SR 1387) – From Blackmore Road (SR 1340) to US 117, widen from two 9.5-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0010-H:** Carrolls Road (SR 1105) – From Blanchard Road (SR 1109) to NC 24, widen from two 9.5-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0011-H:** Carlton Chapel Church Road (SR 1105) – From Buck Hall Creek Road (SR 1112) to Henry Best Road (SR 1110), widen from two 9-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0012:-H:** Charlie Frederick Road (SR 1113) – From Carlton Chapel Church Road (SR 1105) to Perry Rivenbark Road (SR 1107), widen from two 9-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0013-H:** Claude Scott Road (SR 1903) – From Johnson Church Road (SR 1107) to Lanefield Road (SR 1900), widen from two 9-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0014-H:** Henry Best Road (SR 1110) – From Carrolls Road (SR 1192) to Sam Miller Road (SR 1105), widen from two 8.5-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0015-H:** Johnson Church Road (SR 1107) – From US 117 to NC 24 BUS/NC 50, widen from two 10-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0016-H:** Old Courthouse Road (SR 1108) – From NC 24 to Sampson County, widen from two 10-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0017-H:** Penny Branch Road (SR 1314) – From Old Courthouse Road (SR 1108) to West Hill Street (Town Limit), widen from two 9.5-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0018-H:** Perry Rivenbark Road (SR 1107) – From US 117 to South Cross Street (Town Limit), widen from two 9-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0019-H:** Revelle Road (SR 1305) – From East Hill Street (Town Limit) to Bowdens Road (SR 1301), widen from two 9.5-foot lanes to two 12-foot lanes with 5-foot paved shoulders

- **WARS0020-H:** Sam Miller Road (SR 1105) – Henry Best Road (SR 1110) to Stella Street (Town Limit), widen from two 9-foot lanes to two 12-foot lanes with 5-foot paved shoulders
- **WARS0021-H:** Wards Bridge Road (SR 1300) – From NC 24 BUS to Bowdens Road (SR 1301), widen from two 10.5-foot lanes to two 12-foot lanes with 5-foot paved shoulders
- **WARS0022-H:** Works Farm Road (SR 1346) – From Water Tank Road (SR 1396) to Bowdens Road (SR 1301), widen from two 9.5-foot lanes to two 12-foot lanes with 5-foot paved shoulders

PUBLIC TRANSPORTATION & RAIL

CSX Transportation is a Class I railroad operating throughout the eastern United States and specifically within the Warsaw area. It serves approximately two industries; livestock production, and cold food storage. Approximately 90 rail carloads per day enter the Warsaw area with feed to be distributed by truck to the livestock industries. Approximately one to two rail carloads per month are shipped from the cold food storage facility.

In May 2001, NCDOT released results of a feasibility study that indicated there is interest in passenger rail service to and from Wilmington. In July 2005, the department released the results of more detailed studies that identified costs and some needed improvements for re-establishing service to Southeastern North Carolina. The study recommended implementing passenger rail service from Raleigh to Wilmington via Fayetteville and Goldsboro in phases as funding becomes available. Other recommendations included investigating the possibility of commuter service between Selma and Raleigh and working with the State Ports to definite benefits and investments needed to re-establish freight service between Goldsboro and Wilmington. In order to re-establish freight service between Goldsboro and Wilmington, tracks would need to be replaced between Wallace in Duplin County and Castle Hayne in New Hanover County. The final route for re-establishing passenger rail service to Southeastern North Carolina is not yet determined.

BICYCLE

The Eastern Carolina Rural Planning Organization completed a Bike and Pedestrian Route Plan Adopted October 20, 2005. Elements of this plan were used to create a Bicycle Map for the Warsaw CTP.

NC 24 from Sampson County to I-40, Local ID: WARS0001-H

CTP Project Proposal
On-road bicycle lanes are recommended to be built as part of the recommendation for (WARS001-H) which includes a raised median, 11 foot travel lanes, 5 foot outside bicycle lanes, and sidewalks. This area around the I-40 interchange has several gas stations and restaurants and is a popular destination for residents within the Warsaw planning area as well as people traveling through the planning area. The businesses within the area around the I-40 interchange provide employment, and the addition of bicycle lanes would provide connectivity from the town of Warsaw to this area of employment. Bicycle lanes would also provide a connection with NC 24 Business and bicycle routes shown in the Eastern Carolina Rural Planning Organization Bike and Pedestrian Routes Adopted October 20, 2005.

NC 24 Bus from NC 50 (Memorial Drive) to Lanefield Road (SR 1900), Local ID: WARS0004-H

CTP Project Proposal
On-road bicycle lanes are recommended to be built as part of the recommendation for (WARS0005-H) which includes 14 foot travel lanes (to accommodate bicycles), 11 foot middle turn lane, and sidewalks. Bicycle lanes on NC 24 Business would connect to recommended on-road bicycle lanes on NC 50 and subsequently a recommended multi-use path. This recommendation is consistent with the bicycle routes shown in the Eastern Carolina Rural Planning Organization Bike and Pedestrian Routes Adopted October 20, 2005.

NC 50(Memorial Drive) from Pine Street (US 117) to NC 24 BUS (Wards Bridge Road SR 1300), Local ID: WARS0005-H

CTP Project Proposal
On-road bicycle lanes are recommended to be built as part of the recommendation for (WARS0006-H) which includes 11 foot travel lanes, 5 foot outside bicycle lanes, and sidewalks. Bicycle lanes on NC 50 would connect to recommended on-road bicycle lanes on NC 24 Business and subsequently a recommended multi-use path. This recommendation is consistent with the bicycle routes as shown in the Eastern Carolina Rural Planning Organization Bike and Pedestrian Routes Adopted October 20, 2005.

Minor Bicycle Improvements

CTP Project Proposal

The Eastern Carolina Rural Planning Organization Bike and Pedestrian Routes, adopted October 20, 2005, identifies existing and recommended bicycle and pedestrian routes throughout Duplin County. On-road bicycle facilities that have been identified as needing improvements, as well as recommended multi-use path are shown on the Bicycle Map.

In accordance with the American Association of State Highway and Transportation Officals (AASHTO), roadways identified as bicycle routes should incorporate the following standards as roadway improvements are made and funding is available:

- Curb & gutter sections require at minimum 4-ft bike lanes of 14-ft wide outside lanes.
- Shoulder sections require a minimum 4-ft paved shoulder.
- All bridges along roadways where bike facilities are recommended shall be equipped with 54" railings.

- **WARS0001-B:** NC 24 BUS – From I-40 to Gaston Street (SR 1416)
- **WARS0002-B:** North Brighton Street – From NC 50 to East North Street
- **WARS0003-B:** East Chelly Street – From Front Street to North Brighton Street
- **WARS0004-B:** North Cross Street – From Prospect Street to West Hill Street (SR 1340)
- **WARS0005-B:** West Dudley Street – From Yancey Street to Front Street (SR 1348)
- **WARS0006-B:** East Dudley Street – From Front Street to North Gum Street (SR 1346)
- **WARS0007-B:** Front Street (SR 1348) – From West Garfield Street to Bruce Costin Road (SR 1387)
- **WARS0008-B:** West Garfield Street – From Front Street (SR 1348) to US 117
- **WARS0009-B:** Gaston Street (SR 1416) – From NC 24 BUS to Prospect Street

- **WARS0010-B:** North Gum Street (SR 1346) – From NC 50 to East Dudley Street
- **WARS0011-B:** West Hill Street (SR 1340) – From North Cross Street to North Front Street (SR 1348)
- **WARS0012-B:** East North Street – From NC 50 to North Brighton Street
- **WARS0013-B:** Prospect Street – From Gaston Street (SR 1416) to North Cross Street
- **WARS0014-B:** Yancey Street – From West Hill Street (SR 1340) to West Dudley Street

Additionally, the following multi-use paths were recommended during the development of the CTP:

- **WARS0001-M:** US 117 – From Southern Planning Boundary to West Garfield Street
- **WARS0002-M:** US 117 – From Bruce Costin Road (SR 1387) to Northern Planning Boundary
- **WARS0003-M:** NC 24BUS/NC 50 From Lanefield Road (SR 1900) to Eastern Planning Boundary

PEDESTRIAN

The Eastern Carolina Rural Planning Organization completed the sidewalk inventory for the town of Warsaw in 2010. These features are shown on the Pedestrian Map as existing sidewalks or sidewalks that need improvement.

Sidewalks – Recommended (Sidewalks needed on one side of the facility)

- **WARS0001-P:** South Front Street (SR 1348) – From East Bay Street to NC 24 BUS
- **WARS0002-P:** North Front Street (SR 1348) – From East Chelly Street to Bruce Costin Road (SR 1387)

Sidewalks – Needs Improvement (Sidewalks need to be added on one side of the facility)

- **WARS0003-P:** US 117 – From West Garfield Street to NC 24 BUS
- **WARS0004-P:** NC 24 BUS - From 0.2 miles east of Gaston Street (SR 1416) to Railroad Street (SR 1116)
- **WARS0003-H:** NC 24 BUS – From South Gum Street (SR 2021) to NC 24 BUS to South Brighton Street
- **WARS0005-P:** North Center Street – From NC 24 BUS to West Plank Street
- **WARS0006-P:** North Gum Street (SR 1346) – From East Plank Street to East Hill Street (SR 1347)
- **WARS0007-P:** East Hill Street (SR 1347) – From US 117 to North Frisco Street
- **WARS0008-P:** West Plank Street – From North Front Street (SR 1348) to US 117

Sidewalks – Recommended (Sidewalks needed on both sides of the facility)

- **WARS0001-H:** NC 24 – From Sampson County to I-40
- **WARS0001-B:** NC 24 BUS - I-40 to 0.2 miles east of Gaston Street (SR 1416)

- **WARS0003-H:** NC 24 BUS – From South Brighton Street to NC 50
- **WARS0004-H:** NC 24 BUS – From NC 50 to Lanefield Road (SR 1900)
- **WARS0005-H:** NC 50 – From East Dudley Street to Wards Bridge Road (SR1300)
- **WARS0009-P:** West Bay Street – From South Cross Street to South Railroad Street (SR 1116)
- **WARS0010-P:** East Bay Street – From South Front Street (SR 1348) to US 117
- **WARS0011-P:** North Bell Street – From NC 24 BUS to West Hill Street (SR 1340)
- **WARS0012-P:** East Best Street – From US 117 to Lanefield Road (SR 1900)
- **WARS0013-P:** South Cross Street – From West Bay Street to NC 24 BUS
- **WARS0014-P:** West Dudley Street – From Yancey Street to Front Street (SR 1348)
- **WARS0015-P:** East Dudley Street – From North Front Street (SR 1348) to North Gum Street (SR1346)
- **WARS0016-P:** South Gum Street (SR 2021) – From East Best Street (SR 1901) to NC 24 BUS
- **WARS0017-P:** North Gum Street (SR 1346) – From NC 24 BUS to East Plank Road
- **WARS0018-P:** North Gum Street (SR1346) – From East Hill Street (SR 1347) to East Dudley Street
- **WARS0019-P:** West Hill Street (SR 1340) – From North Bell Street to North Front Street (SR 1348)
- **WARS0020-P:** East Hill Street (SR 1347) – From North Frisco Street (SR 1346) to NC 50
- **WARS0021-P:** Lanefield Road (SR 1900) – From East Best Street (SR 1901) to NC 50
- **WARS0022-P:** East North Street – From US 117 to NC 50

- **WARS0023-P:** West Wards Bridge Rd (SR 1300) – From NC 50 to Doolittle Street
- **WARS0024-P:** Yancey Street – From West Hill Street (SR 1340) to West Dudley Street

The Eastern Carolina Rural Planning Organization Bike and Pedestrian Routes, adopted October 20, 2005, identifies existing and recommended bicycle and pedestrian routes throughout Duplin County. These facilities are shown on the Pedestrian Map as recommended multi-use paths. Additionally, the following multi-use paths were recommended during the development of the CTP:

- **WARS0001-M:** US 117 – From Southern Planning Boundary to West Garfield Street
- **WARS0002-M:** US 117 – From Bruce Costin Road (SR 1387) to Northern Planning Boundary
- **WARS0003-M:** NC 24BUS/NC 50 From Lanefield Road (SR 1900) to Eastern Planning Boundary

APPENDICES

Appendix A
Resources and Contacts

North Carolina Department of Transportation

Customer Service Office

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

1-877-DOT-4YOU
(1-877-368-4968)
https://apps.dot.state.nc.us/dot/directory/authenticated/ToC.aspx

Secretary of Transportation

1501 Mail Service Center
Raleigh, NC 27699-1501
(919) 733-2520
http://www.ncdot.org/about/leadership/secretary.html

Board of Transportation Member

http://www.ncdot.gov/about/board/default.html

Highway Division Engineer

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

http://www.ncdot.gov/doh/operations/division3/

Division Project Manager

Contact the Division Project Manager with questions concerning transportation projects within each Division.

http://www.ncdot.gov/doh/operations/division3/

Division Construction Engineer

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

http://www.ncdot.gov/doh/operations/division3/

Division Traffic Engineer

Contact the Division Traffic Engineer for information concerning traffic signals, highway signs, pavement markings and crash history.

http://www.ncdot.gov/doh/operations/division3/

Division Operations Engineer

Contact the Division Operations Engineer for information concerning facility operations.

http://www.ncdot.gov/doh/operations/division3/

Division Maintenance Engineer

Contact the Division Maintenance Engineer information regarding maintenance of all state roadways, improvement of secondary roads and other small improvement projects. The Division Maintenance Engineer also oversees the District Offices, the Bridge Maintenance Unit and the Equipment Unit.

http://www.ncdot.gov/doh/operations/division3/

District Engineer

Contact the District Engineer for information on outdoor advertising, junkyard control, driveway permits, road additions, subdivision review and approval, Adopt A Highway program, encroachments on highway right of way, issuance of oversize/overwidth permits, paving priorities, secondary road construction program and road maintenance.

http://www.ncdot.gov/doh/operations/division3/

Transportation Planning Branch (TPB)

Contact the Transportation Planning Branch for information on long-range multi-modal planning services, including Strategic Highway Corridors.

1554 Mail Service Center
Raleigh, NC 27699-1554
(919) 707-0900
http://www.ncdot.gov/doh/preconstruct/tpb/

Eastern Carolina Rural Planning Organization (RPO)

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

http://www.eccog.org/document.asp?document_name=rpo/ecrpo

Strategic Planning Office

Contact the Strategic Planning Office for information concerning prioritization of transportation projects.

https://apps.dot.state.nc.us/dot/directory/authenticated/UnitPage.aspx?id=11054

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) 707-6000
http://www.ncdot.gov/doh/preconstruct/pe/

Secondary Roads Office

Contact the Secondary Roads Office for information regarding the status for unpaved roads to be paved, additions and deletions of roads to the State maintained system and the Industrial Access Funds program.

1535 Mail Service Center
Raleigh, NC 27699-1535
(919) 733-3250
http://www.ncdot.gov/doh/operations/secondaryroads/

Program Development Branch

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

1534 Mail Service Center
Raleigh, NC 27699-1534
(919) 733-2039
http://www.ncdot.org/planning/development/

Public Transportation Division

Contact the Public Transportation Division for information public transit systems.

1550 Mail Service Center
Raleigh, NC 27699-1550
(919) 733-4713
http://www.ncdot.org/transit/nctransit/

Rail Division

Contact the Rail Division for rail information throughout the state.

1553 Mail Service Center
Raleigh, NC 27699-1553
(919) 733-7245
http://www.bytrain.org/

Division of Bicycle and Pedestrian Transportation

Contact this Division for bicycle and pedestrian transportation information throughout the state.

1552 Mail Service Center
Raleigh, NC 27699-1552
(919) 707-2600
http://www.ncdot.gov/transit/bicycle/

Bridge Maintenance Unit

Contact the Bridge Maintenance Unit for information on bridge management throughout the state.

1565 Mail Service Center
Raleigh, NC 27699-1565
(919) 733-4362
http://www.ncdot.gov/doh/operations/dp_chief_eng/maintenance/bridge/

Highway Design Branch

The Highway Design Branch consists of the Roadway Design, Structure Design, Photogrammetry, Location & Surveys, Geotechnical, and Hydraulics Units. Contact the Highway Design Branch for information regarding design plans and proposals for road and bridge projects throughout the state.

1584 Mail Service Center
Raleigh, NC 27699-1584
(919) 250-4001
http://www.ncdot.gov/doh/preconstruct/highway/

Other State Government Offices

Department of Commerce – Division of Community Assistance

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

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

Appendix B
Comprehensive Transportation Plan Definitions

Highway Map

For visual depiction of facility types for the following CTP classification, visit http://www.ncdot.gov/doh/preconstruct/tpb/SHC/facility/.

Facility Type Definitions

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

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

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

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

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

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

Other Highway Map Definitions

- **Existing** – Roadway facilities that are not recommended to be improved.
- **Needs Improvement** – Roadway facilities that need to be improved for capacity, safety, 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 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.
- **Existing Grade Separation** – Locations where existing rail facilities and are physically separated from existing highways or other transportation facilities. These may be bridges, culverts, or other structures.
- **Proposed Grade Separation** – Locations where rail facilities are recommended to be physically separated from existing or recommended highways or other transportation facilities. These may be bridges, culverts, or other structures.

Bicycle Map

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

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

Pedestrian Map

- **Sidewalk-Existing** – Paved paths (including but not limited to concrete, asphalt, brick, stone, or wood) on both sides of a highway facility and within the highway right-of-way that are adequate to safely accommodate pedestrian traffic.

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

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

Appendix C
CTP Inventory and Recommendations

Assumptions/ Notes:

- **Local ID:** This Local ID is the same as the one used for the Prioritization Project Submittal Tool. If a TIP project number exists it is listed as the ID. Otherwise, the following system is used to create a code for each recommended improvement: the first 4 letters of the county name is combined with a 4 digit unique numerical code followed by '-H' for highway, '-T' for public transportation, '-R' for rail, '-B' for bicycle, '-M' for multi-use paths, or '-P' for pedestrian modes. If a different code is used along a route it indicates separate projects will probably be requested. Also, upper case alphabetic characters (i.e. 'A', 'B', or 'C') are included after the numeric portion of the code if it is anticipated that project segmentation or phasing will be recommended.

- **Jurisdiction:** Jurisdictions listed are based on municipal limits, county boundaries, and MPO Metropolitan Planning Area Boundaries (MAB), as applicable.

- **Existing Cross-Section:** Listed under '(ft)' is the approximate width of the roadway from edge of pavement to edge of pavement. Listed under 'lanes' is the total number of lanes, with the letter 'D' if the facility is divided.

- **Existing ROW:** The estimated existing right-of-way is based on Duplin County parcel data provided by Duplin County GIS Department. These right-of-way amounts are approximate and may vary.

- **Existing and Proposed Capacity:** The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed using NC LOS D Standards for Systems Level Planning, as documented in Chapter I.

- **Existing and Proposed AADT** (Annual Average Daily Traffic) volumes, given in vehicles per day (vpd), are estimates only based on a systems-level analysis. The 2040 AADT E+C' is an estimate of the volume in 2040 with only existing plus committed projects assumed to be in place, where committed is defined as projects programmed for construction in the 2009 - 2015 Transportation Improvement Program (TIP). The '2040 AADT with CTP' is shown in bold if it exceeds the proposed capacity, indicating an unmet need. For additional information about the assumptions and techniques used to develop the AADT volume estimates, refer to Chapter I.

- **Proposed Cross-section:** The CTP recommended cross-sections are listed by code; for depiction of the cross-section, refer to Appendix D. An entry of 'ADQ' indicates the existing facility is adequate and there are no improvements recommended as part of the CTP.

- **CTP Classification:** The CTP classification is listed, as shown on the adopted CTP Maps (see Figure 1). Abbreviations are F= freeway, E= expressway, B= boulevard, Maj= other major thoroughfare, Min= minor thoroughfare.

- **Tier:** Tiers are defined as part of the North Carolina Mulitmodal Investment Network (NCMIN). Abbreviations are Sta= statewide tier, Reg= regional tier, Sub= subregional tier.

- **Other Modes:** If there is an improvement recommended for another mode of transportation that relates to the given recommendation, it is indicated by an alphabetic code (H=highway, T= public transportation, R= rail, B= bicycle, and P= pedestrian).

CTP INVENTORY AND RECOMMENDATIONS

HIGHWAY																			
					2010 Existing System						2040 Proposed System								
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
	I 40	N Planning Bndry - Exit 364	Duplin Co.	3.6	48	4	300	70	63200	19000	37200	37200	63200	ADQ	ADQ	F	Sta	
		Exit 364- Exit 369	Duplin Co.	5.0	48	4	300	70	63200	22000	46300	46300	63200	ADQ	ADQ	F	Sta	
		Exit 369 - S Planning Bndry	Duplin Co.	0.8	48	4	300	70	63200	21000	44100	44100	63200	ADQ	ADQ	F	Sta	
	US 117	S Planning Bndry - I 40 (Exit 369)	Duplin Co.	0.5	24	2	80	55	16400	4100	8400	8400	16400	ADQ	ADQ	Maj	Reg	M
		I 40 (Exit 369) - Perry Rivenbark Rd	Duplin Co.	0.9	24	2	80	55	16400	4500	9200	9200	16400	ADQ	ADQ	Maj	Reg	M
		Perry Rivenbark Rd - Town Limit	Duplin Co.	2.2	24	2	80	55	15800	3800	7700	7700	15800	ADQ	ADQ	Maj	Reg	M
		Town Limit - Garfield St	Town of Warsaw	0.6	24	2	60	45	13200	4200	8600	8600	13200	ADQ	ADQ	Maj	Reg	M
		Garfield St - E Best St (SR 1901)	Town of Warsaw	0.5	24	2	60	35	11100	4200	8600	8600	11100	ADQ	ADQ	Maj	Reg	P
		E Best St (SR 1901) - College St	Town of Warsaw	0.4	42	2	60	35	11100	4700	9600	9600	11100	ADQ	ADQ	Maj	Reg	P
		College St - Plank Rd	Town of Warsaw	0.1	42	2	80	35	11100	3200	7500	7500	11100	ADQ	ADQ	Maj	Reg	P
		Plank Rd - Hill St	Town of Warsaw	0.1	44	2	80	35	11100	3200	7500	7500	11100	ADQ	ADQ	Maj	Reg	P
		Hill St - NC 50 (Memorial Dr)	Town of Warsaw	0.5	44	2	80	35	11100	3700	7500	7500	11100	ADQ	ADQ	Maj	Reg	P
		NC 50 (Memorial Dr) - Water Tank Rd	Town of Warsaw	0.2	24	2	150	35	11100	4400	9000	9000	11100	ADQ	ADQ	Maj	Reg	
		Water Tank Rd - Town Limit (Bruce Costin Rd)	Town of Warsaw	0.3	24	2	150	35	11100	3700	7500	7500	11100	ADQ	ADQ	Maj	Reg	
		Bruce Costin Rd - N Planning Bn	Duplin Co.	3.0	24	2	150	55	16400	3300	8600	8600	16400	ADQ	ADQ	Maj	Reg	M
WARS0001-H	NC 24	Sampson County Line - Old Courthouse Rd	Duplin Co.	0.2	24	2	90	45	16400	8400	16000	7300	23600	2I	ADQ	Blvd	Sta	P,B
WARS0001-H		Old Courthouse Rd - 0.4 mi east of Old Courthouase Rd	Duplin Co.	0.4	24	2	90	45	16400	8400	20000	11300	23600	2I	ADQ	Blvd	Sta	P,B
WARS0001-H		0.4 mi east of Old Courthouse Rd - I 40 (Exit 364)	Duplin Co.	0.6	36	3	100	45	17200	9500	20000	11300	23600	2I	ADQ	Blvd	Sta	P,B
		NC 24 runs with I 40 East																
R-2303	NC 24 Bypass	Sampson County Line - I 40	Duplin Co.	1.2	48	4	140	55	32800	NA	NA	8700	32800	4A	150	Maj	Sta	
	NC 24 Business	I 40 (Exit 364) - Town Limit	Duplin Co.	0.9	60	5	100	45	39700	8600	15100	15100	39700	ADQ	ADQ	Maj	Reg	P,B
		Town Limit - S Cross St	Town of Warsaw	0.8	48	4	60	35	28100	7400	13000	13000	28100	ADQ	ADQ	Maj	Reg	P

HIGHWAY																			
					2010 Existing System						2040 Proposed System								
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
		S Cross St - Jordan St	Town of Warsaw	0.1	48	4	60	35	28100	8400	19300	19300	28100	ADQ	ADQ	Maj	Reg	P
		Jordan St - US 117(S Pine St)	Town of Warsaw	0.5	48	4	50	35	28100	7500	19300	19300	28100	ADQ	ADQ	Maj	Reg	P
WARS0003-H		US 117 (S Pine St) - Brighton St	Town of Warsaw	0.5	23	2	50	35	10700	6600	11600	11600	10700	2D	90	Maj	Reg	P
WARS0003-H		Brighton St - NC 50 (Memorial Dr)	Town of Warsaw	0.3	23	2	100	35	10700	5700	11600	11600	10700	2D	ADQ	Maj	Reg	P
WARS0004-H		NC 50 (Memorial Dr) - Lanefield Rd	Town of Warsaw	0.4	36	3	100	35	12700	6400	12800	12800	12700	3B	ADQ	Maj	Reg	B, P
		Lanefiled Rd - Town Limit	Town of Warsaw	0.3	36	3	100	35	14000	6400	13400	13400	12700	ADQ	ADQ	Maj	Reg	MA
		Town Limit - Johnson Church Rd	Duplin Co.	2.1	24	2	100	55	16400	5300	13400	13400	16400	ADQ	ADQ	Maj	Reg	MA
WARS0005-H	NC 50 (Memorial Dr)	US 117 Pine St - NC 24	Town of Warsaw	0.9	19	2	60	35	10700	3900	10000	10000	11100	2E	ADQ	Maj	Reg	B, P
WARS0006-H	E Best St (SR 1901)	US 117 - Lanefield Rd (SR	Town of Warsaw	0.8	18	2	60	35	9500	900	1200	1200	9500	2F	ADQ	Maj	Reg	B, P
WARS0007-H	Blackmore Rd (SR 1340)	Penny Branch Rd (SR 1341) - Bruce Costin (SR 1387)	Duplin Co.	0.3	18	2	60	45	12000	400	1400	1400	12000	2A	ADQ	Min	Sub	
WARS0007-H		Bruce Costin Rd (SR 1387) - Jim Saul Rd (SR 1338)	Duplin Co.	2.6	18	2	60	45	13600	200	500	500	13600	2A	ADQ	Min	Sub	
WARS0008-H	Bowdens Rd (SR 1301)	US 117 - N Works Farm Rd (SR 1346)	Duplin Co.	2.9	22	2	60	45	14100	800	1100	1100	14100	2A	ADQ	Min	Sub	
WARS0008-H		N Works Farm Rd (SR 1346) - Revelle Rd (SR 1305)	Duplin Co.	1.6	22	2	60	45	14100	700	1000	1000	14100	2A	ADQ	Min	Sub	
WARS0008-H		Revelle Rd (SR 1305) - Wards Bridge Rd (SR 1300)	Duplin Co.	3.2	22	2	60	45	14100	700	1000	1000	14100	2A	ADQ	Min	Sub	
WARS0008-H		Wards Bridge Rd (SR 1300) - 0.2 mi North of Airport Rd (SR 1398)	Duplin Co.	1.1	22	2	60	45	14100	700	1000	1000	14100	2A	ADQ	Min	Sub	
WARS0009-H	Bruce Costin Rd (SR 1387)	Blackmore Rd- US 117	Duplin Co.	1.2	19	2	60	45	12400	600	1400	1400	12400	2A	ADQ	Min	Sub	
WARS0010-H	Carrolls Rd (SR 1108)	Blanchard Rd - NC 24	Duplin Co.	0.2	19	2	60	45	13100	800	1400	1400	13100	2A	ADQ	Min	Sub	

HIGHWAY																		
					2010 Existing System						2040 Proposed System							
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classification	Tier	Other Modes
WARS0011-H	Carlton Chapel Church Rd (SR 1105)	Buck Hall Creek Rd - Henry Best Rd	Duplin Co.	1.6	18	2	60	45	13100	300	500	500	13100	2A	ADQ	Min	Sub	
WARS0012-H	Charlie Fredric Rd (SR 1113)	Carlton Chapel Church Rd - Perry Rivenbark Rd	Duplin Co.	1.5	18	2	60	45	13100	300	1100	1100	13100	2A	ADQ	Min	Sub	
WARS0013-H	Claude Scott Rd (SR 1903)	Johnson Church Rd - Lanefield Rd	Town of Warsaw	1.7	18	2	60	45	13100	500	900	900	13100	2A	ADQ	Min	Sub	
	S Cross St (SR 1106)	Town Limit - NC 24 Business	Town of Warsaw	0.5	20	2	60	35	9800	500	1600	1600	9800	ADQ	ADQ	Min	Sub	P
	N Cross St	NC 24 Business - W Hill St (not a State Maintained Road)	Town of Warsaw	0.1	20	2	60	35	9800	900	4900	4900	9800	ADQ	ADQ	Min	Sub	
WARS0014-H	Henry Best Rd (SR 1110)	Carrolls Rd (SR 1108) - Sam Miller Rd (SR 1105)	Duplin Co.	1.3	17	2	60	45	13100	200	1000	1000	13100	2A	ADQ	Min	Sub	
	Hill St	Town Limit - US 117	Town of Warsaw	0.7	23	2	60	35	10500	3400	10400	10400	10500	ADQ	ADQ	Min	Sub	B, P
		US 117- NC 50	Town of Warsaw	0.6	20	2	60	35	9800	2300	5400	5400	9800	ADQ	ADQ	Min	Sub	P
		NC 50 - Town Limit	Town of Warsaw	0.3	20	2	60	35	9800	1300	3000	3000	9800	ADQ	ADQ	Min	Sub	
WARS0015-H	Johnson Church Rd	US 117 - Lanefield Rd	Duplin Co.	1.7	20	2	60	45	12400	900	4300	4300	12400	2A	ADQ	Min	Sub	
		Lanefiel Rd - NC 50/NC 24	Duplin Co.	1.6	20	2	60	45	12400	400	1500	1500	12400	2A	ADQ	Min	Sub	
	Lanefield Rd (SR 1900)	Johnson Church Rd - Claude Scott Rd	Duplin Co.	1.4	22	2	60	45	14100	800	1300	1300	14100	ADQ	ADQ	Min	Sub	
		Claude Scott Rd - Warsaw	Duplin Co.	0.8	23	2	60	45	14100	1000	1300	1300	14100	ADQ	ADQ	Min	Sub	
		Warsaw Town Limit - E Best St	Town of Warsaw	0.2	23	2	60	35	10500	1000	1300	1300	10500	ADQ	ADQ	Min	Sub	
		E Best St - NC 50/NC 24	Town of Warsaw	0.4	23	2	60	35	10500	1700	2000	2000	10500	ADQ	ADQ	Min	Sub	P
WARS0016-H	Old Courthouse Rd (SR 1108)	NC 24 - Sampson County Line (SR 1108)	Duplin Co.	1.5	20	2	60	45	13600	1600	7000	7000	13600	2A	ADQ	Min	Sub	
WARS0017-H	Penny Branch Rd (SR 1340)	Old Courthouse Rd (SR 1108) - W Hill St (City Limit)	Duplin Co.	2.8	19	2	60	55	14700	1300	7500	7500	14700	2A	ADQ	Min	Sub	

HIGHWAY																			
					2010 Existing System						2040 Proposed System								
Local ID	Facility	Section (From - To)	Jurisdiction	Dist. (mi)	Cross-Section (ft)	Cross-Section lanes	ROW (ft)	Speed Limit (mph)	Existing Capacity (vpd)	2010 AADT	2040 AADT E+C	2040 AADT with CTP	Proposed Capacity (vpd)	Cross-Section	ROW (ft)	CTP Classifi-cation	Tier	Other Modes
WARS0018-H	Perry Rivenbark Rd (SR 1106)	US 117 - Charlie Frederick Rd (SR 1113)	Duplin Co.	1.6	18	2	60	45	13100	700	7000	7000	13100	2A	ADQ	Min	Sub	
		Charlie Frederick Rd (SR 1113) - Town Limit	Duplin Co.	2.0	18	2	60	45	13100	700	7000	7000	13100	2A	ADQ	Min	Sub	
WARS0019-H	Revelle Rd (SR 1305)	E Hill St (Town Limit) - Water Tank Rd (SR 1396)	Duplin Co.	0.7	19	2	60	45	13600	1000	1300	1300	13600	2A	ADQ	Min	Sub	
WARS0019-H		E Hill St (Town Limit) - Bowdens Rd (SR 1301)	Duplin Co.	2.4	19	2	60	45	13600	1100	1500	1500	13600	2A	ADQ	Min	Sub	
WARS0020-H	Sam Miller Rd (SR 1105)	Henry Best Rd (SR 1110) - Stella St (Town Limit)	Duplin Co.	1.8	18	2	60	45	13100	600	1700	1700	13100	2A	ADQ	Min	Sub	
	Stella St	Town Limit - NC 24 Business	Town of Warsaw	0.2	20	2	60	35	9800	600	1700	1700	9800	ADQ	ADQ	Min	Sub	
	Wards Bridge Rd (SR 1300)	NC 24 - Town Limit	Town of Warsaw	0.6	21	2	60	35	10200	3400	6700	6700	10200	ADQ	ADQ	Min	Sub	P
WARS0021-H		Warsaw Town Limit - Bowdens Rd (SR 1301)	Duplin Co.	3.8	21	2	60	45	14100	2100	4400	4400	14100	2A	ADQ	Min	Sub	
WARS0022-H	N Works Farm Rd (SR 1346)	Water Tank Rd (SR 1396) - Bowdens Rd (SR 1301)	Duplin Co.	2.8	19	2	60	45	13600	200	700	700	13600	2A	ADQ	Min	Sub	
	Water Tank Rd (SR 1396)	N Pine St - Town Limit	Town of Warsaw	0.3	18	2	60	35	9500	600	2200	2200	9500	ADQ	ADQ	Min	Sub	
		Town Limit- Revelle Rd (SR	Duplin Co.	0.9	18	2	60	45	12000	300	1100	1100	12000	ADQ	ADQ	Min	Sub	

PUBLIC TRANSPORTATION AND RAIL

PUBLIC TRANSPORTATION[1]							
			Speed		Existing System	Proposed System	
Local ID	Facility/ Route	Section (From - To)	Limit (mph)	Distance (mi)	Type	Type	Other Modes
None							

[1] Only major public transportation routes and proposals are shown here. For further documentation of the public transportation system, refer to *[insert name of document(s)]* .

RAIL												
				Speed		Existing System			Proposed System			
Local ID	Facility/ Route	Section (From - To)	Class	Limit (mph)	Distance (mi)	Type	ROW (ft)	Trains per day	Type	ROW (ft)	Trains per day	Other Modes
	CSXT (AC - line)	Contentnea - Wallace	1	10 to 25	69.1	Freight	25 - 100	5 - 8	Freight	25 - 100	5 - 8	
	CSXT (ACA - line)	Warsaw - Clinton	1	10 to 25	9.7	Freight	25 - 100	3 - 5	Freight	25 - 100	3 - 5	

BICYCLE AND PEDESTRIAN [1]

BICYCLE								
				Existing System		Proposed System		
				Cross-Section				Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	(ft)	lanes	Type	Cross-Section	Modes
WARS0001-H	NC 24	Sampson County - I-40	1.2	36	2, 3	Raised Med	2I	H,P
WARS0004-H	NC 24 Bus/ NC 50	Wards Bridge Road (SR 1300) - Lanefield Rd (SR 1900)	0.7	23	2		3B	H,P
WARS005-H	NC 50	US 117 Pine St - Wards Bridge Rd (SR 1300)	0.9	19	2		2E	H,P
WARS0001-B	NC 24 BUS	I-40 to Gaston Street (SR 1416)	2		2			P
WARS0002-B	North Brighton Street	NC 50 to East North Street	0.2		2			
WARS0003-B	East Chelly Street	Front Street to NC 50	0.1		2			
WARS0004-B	North Cross Street	Prospect Street to West Hill Street (SR 1340)	0.2		2			
WARS0005-B	West Dudley Street	Yancey Street to Front Street	0.2		2			P
WARS0006-B	East Dudley Street	Front Street to North Gum Street (SR 1346)	0.6		2			P
WARS0007-B	Front Street (SR 1348)	West Garfield Street to Bruce Costin Road (SR 1387)	1.8		2			P
WARS0008-B	West Garfield Street	Front Street (SR 1348) to US 117	0.1		2			
WARS0009-B	Gaston Street (SR 1416)	NC 24 BUS to Prospect Street	0.1		2			
WARS0010-B	North Gum Street (SR 1346)	NC 50 to East Dudley Street	0.1		2			P
WARS0011-B	West Hill Street (SR 1340)	North Cross Street to North Front Street (SR 1348)	0.4		2			P
WARS0012-B	East North Street	NC 50 to North Brighton Street	0.1		2			P
WARS0013-B	Prospect Street	Gaston Street (SR 1416) to North Cross Stre	0.7		2			
WARS0014-B	Yancey Street	West Hill Street (SR 1340) to West Dudley Street	0.4		2			P

[1] Only major routes and proposals are shown here. For further documentation of bicycle facilities and proposals, refer to *[insert name of document(s)]* .

BICYCLE AND PEDESTRIAN [1]

PEDESTRIAN								
				Existing System		Proposed System		Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Type	Side of Street	Type	Side of Street	Modes
WARS001-P	US117	West Garfield Street - NC 24 Business	0.6	Sidewalks	West	Sidewalks	East	
WARS0001-H	NC 24	Sampson County - I-40	1.0	--		Sidewalks	Both	H,B
WARS0001-B	NC 24 BUS	I-40 - 0.2 mi east of Gaston Street (SR 1416)	1.3	--		Sidewalks	Both	B
WARS0002-P	NC 24 BUS	0.2 mi east of Gaston Street (SR 1416) - Front Street (SR 1348)	0.9	Sidewalks	North	Sidewalks	South	
WARS0003-H	NC 24 BUS	Gum Street (SR 2021) - Pine Crest Drive	0.1	Sidewalks	South	Sidewalks	North	H
WARS0003-H	NC 24 BUS	Pine Crest Drive - 0.1 miles east of Pine Crest Drive	0.1	--		Sidewalks	Both	H
WARS0003-H	NC 24 BUS	0.1 miles east of Pine Crest Drive - Frisco Street	0.1	Sidewalks	North	Sidewalks	South	H
WARS0003-H	NC 24 BUS	Frisco Street - 0.1 miles east of Frisco Street	0.1	--		Sidewalks	Both	H
WARS0003-H	NC 24 BUS	0.1miles east of Frisco Street - South Brighton Street	0.1	Sidewalks	North	Sidewalks	South	H
WARS0003-H	NC 24 BUS	South Brighton Street - NC 50	0.3	--		Sidewalks	Both	H
WARS0004-H	NC 24 BUS	NC 50 - Lanefield Road (SR 1900)	0.3	--		Sidewalks	Both	H,B
WARS0005-H	NC 50	East Dudley Street - Wards Bridge Road (SR 1300)	0.6	--		Sidewalks	Both	H,B
WARS0003-P	West Bay Street	South Cross Street - South Railroad Streeet	0.3	--		Sidewalks	Both	
WARS0004-P	East Bay Street	South Front Street (SR 1348) - US 117	0.1	--		Sidewalks	Both	
WARS0005-P	North Bell Street	NC 24 Business - West Hill Street (SR 1340)	0.1	--		Sidewalks	Both	
WARS0006-P	East Best Street	US 117 - Lanefield Road (SR 1900)	0.8	--		Sidewalks	Both	
WARS0007-P	North Center Street	NC 24 Business - West Plank Street	0.1	Sidewalks	East	Sidewalks	West	
WARS0008-P	South Cross Street	West Bay Street - NC 24 Business	0.1	--		Sidewalks	Both	
WARS0009-P	West Dudley Street	Yancey Street - Front Street (SR 1348)	0.1	--		Sidewalks	Both	

BICYCLE AND PEDESTRIAN [1]

PEDESTRIAN								
				Existing System		Proposed System		Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Type	Side of Street	Type	Side of Street	Modes
WARS0010-P	East Dudley Street	N Front Street (SR 1348) - North Gum Street (SR1346)	0.3	--		Sidewalks	Both	
WARS0011-P	South Front Street (SR 1348)	East By Street - NC 24 Business	0.1	--		Sidewalks	One	
WARS0012-P	North Front Street (SR 1348)	East Chelly Street - Bruce Costin Road (SR 1387)	0.9	--		Sidewalks	One	
WARS0013-P	South Gum Street (SR 2021)	East Best Street (SR 1901) - NC 24 Business	0.4	--		Sidewalks	Both	
WARS0014-P	North Gum Street (SR 1346)	NC 24 Business - East Plank Road	0.1	--		Sidewalks	Both	
WARS0015-P	North Gum Street (SR 1346)	East Plank Street - East Hill Street (SR 1347)	0.1	Sidewalks	East	Sidewalks	West	
WARS0016-P	North Gum Street (SR 1346)	East Hill Street (SR 1347) - East Dudley Stre	0.4	--		Sidewalks	Both	
WARS0017-P	West Hill Street (SR 1340)	North Bell Street - North Front Street (SR 1348)	0.1	--		Sidewalks	Both	
WARS0018-P	East Hill Street (SR 1347)	US 117 - North Center Street	0.1	Sidewalks	North	Sidewalks	South	
WARS0019-P	East Hill Street (SR 1347)	North Center Street - N Gum Street	0.1	Sidewalks	South	Sidewalks	North	
WARS0020-P	East Hill Street (SR 1347)	North Gum Street - North Frisco Street (SR 1	0.1	Sidewalks	South	Sidewalks	North	
WARS0021-P	East Hill Street (SR 1347)	North Frisco Street (SR 1346) - NC 50	0.2	--		Sidewalks	Both	
WARS0022-P	Lanefield Road (SR 1900)	East Best Street (SR 1901) - NC 24/50	0.4	--		Sidewalks	Both	
WARS0023-P	East North Street	US 117 - NC 50	0.2	--		Sidewalks	Both	
WARS0024-P	West Plank Street	North Front Street (SR 1348) - US 117	0.1	Sidewalks	South	Sidewalks	North	
WARS0025-P	West Wards Bridge Road (SR 1300)	NC 50 - Doolittle Street	0.6	--		Sidewalks	Both	
WARS0026-P	Yancey Street	West Hill Street (SR 1340) - West Dudley Str	0.4	--		Sidewalks	Both	

[1] Only major routes and proposals are shown here. For further documentation of pedestrian facilities and proposals, refer to *[insert name of document(s)]* .

BICYCLE AND PEDESTRIAN [1]

MULTI-USE PATH								
				Existing System		Proposed System		Other
Local ID	Facility/ Route	Section (From - To)	Distance (mi)	Side of Street	Cross-Section	Side of Street	Cross-Section	Modes
WARS0001-M	US 117	S Planning Bndry - I 40 (Exit 369)	0.5			east	MA	H
		I 40 (Exit 369) - Perry Rivenbark Rd	0.9			east	MA	H
		Perry Rivenbark Rd - Town Limit	2.2			east	MA	H
WARS0002-M	US 117	Town Limit - Garfield St	0.6			east	MA	H
		Town Limit (Bruce Costin Rd) - N Planning Bı	3			east	MA	H
WARS0003-M	NC 24 BUS/ NC 50	Lanefiled Rd - Town Limit	0.03			south	MA	H
		Town Limit - Johnson Church Rd	2.1			south	MA	H

[1] Only major routes and proposals are shown here. For further documentation of bicycle and pedestrian facilities and proposals, refer to *[insert name of document(s)]* .

Appendix D
Typical Cross Sections

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

The typical cross sections were updated on December 7, 2010 to support the Department's "Complete Streets" policy that was adopted in July 2009. This guidance established design elements that emphasize safety, mobility, and accessibility for multiple modes of travel. These "typical" cross sections should be used as preliminary guidelines for comprehensive transportation planning, project planning and project design activities. The specific and final cross section details and right of way limits for projects will be established through the preparation of the National Environmental Policy Act (NEPA) documentation and through final plan preparation.

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

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

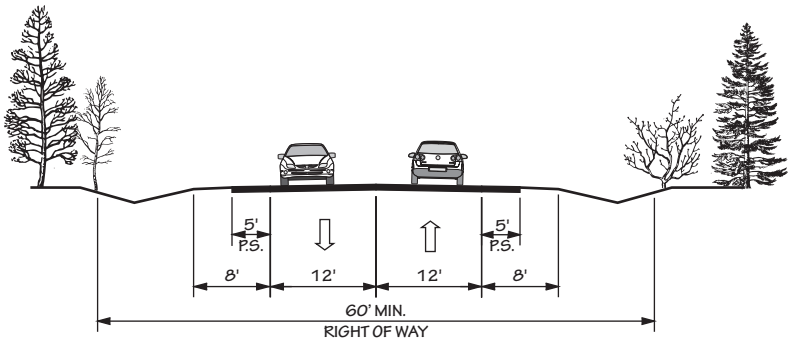
FIGURE 9

TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

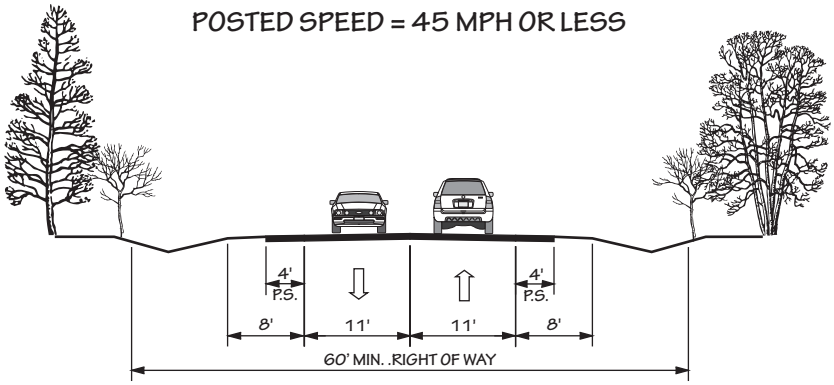
2 A

WIDE PAVED SHOULDERS
POSTED SPEED = 55 MPH



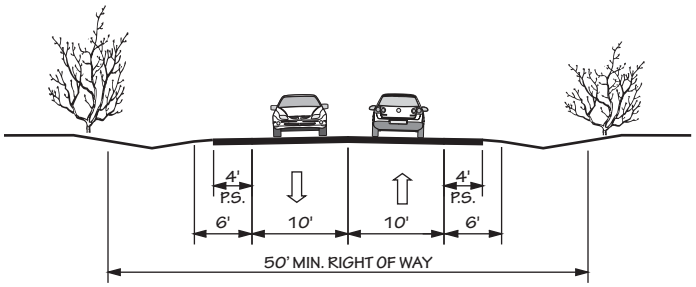
2 B

WIDE PAVED SHOULDERS
POSTED SPEED = 45 MPH OR LESS



2 C

WIDE PAVED SHOULDERS
POSTED SPEED = 35 MPH OR LESS



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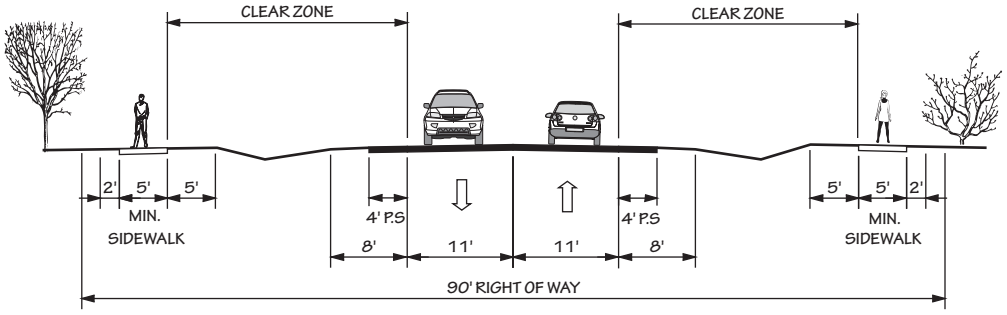
TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

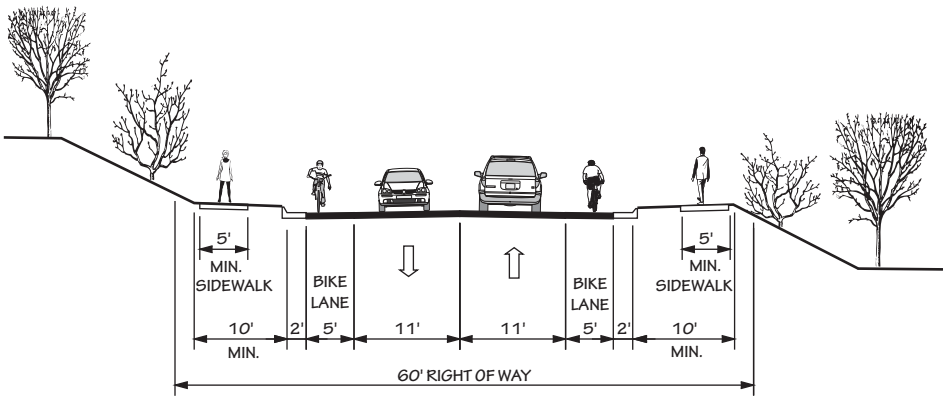
2 D

SIDEWALK PLACEMENT BEHIND A ROADWAY DITCH



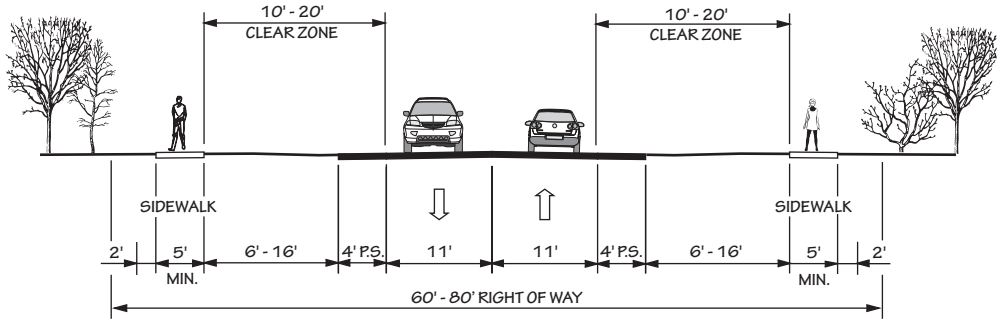
2 E

CURB AND GUTTER
WITH BIKE LANES AND SIDEWALKS



2 F

BUFFERS AND SIDEWALKS WITHOUT A ROADWAY DITCH
(20 MPH TO 45 MPH)
(TYPICALLY COASTAL AREA MANAGEMENT ACT COUNTIES)



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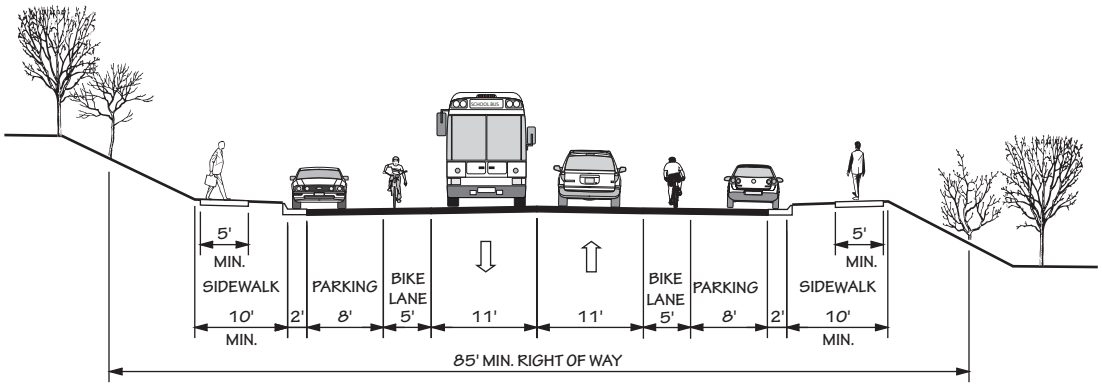
TYPICAL HIGHWAY CROSS SECTIONS

2 LANES

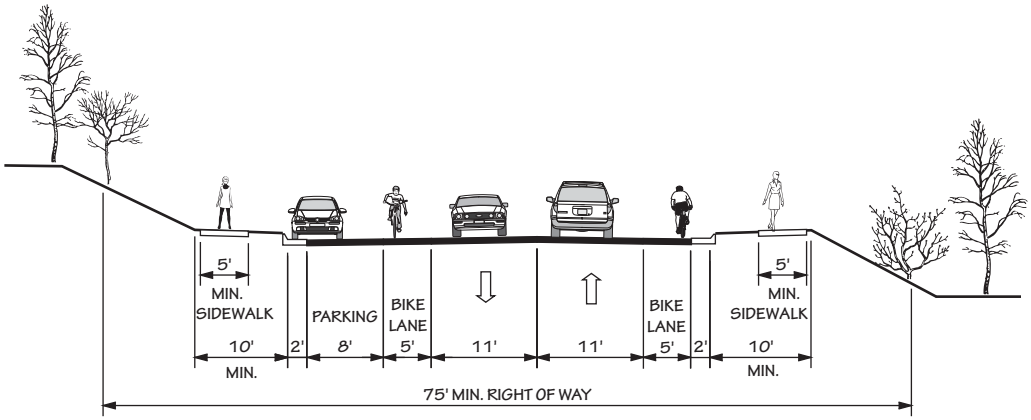
2 G

CURB & GUTTER - PARKING ON EACH SIDE



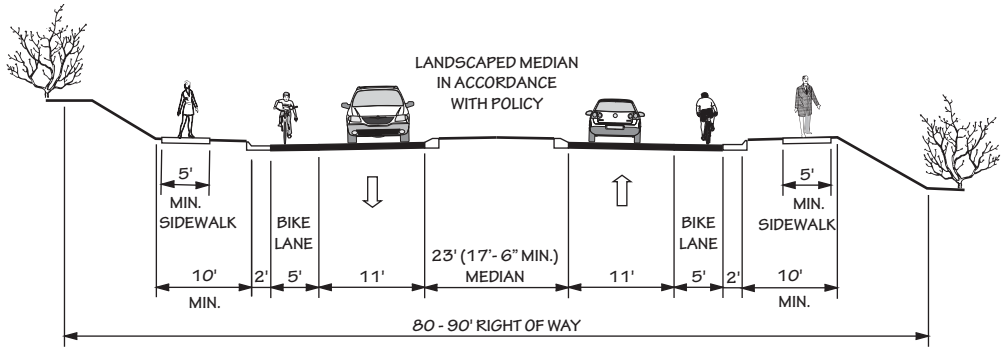
2 H

CURB & GUTTER - PARKING ON ONE SIDE



2 I

RAISED MEDIAN WITH CURB & GUTTER



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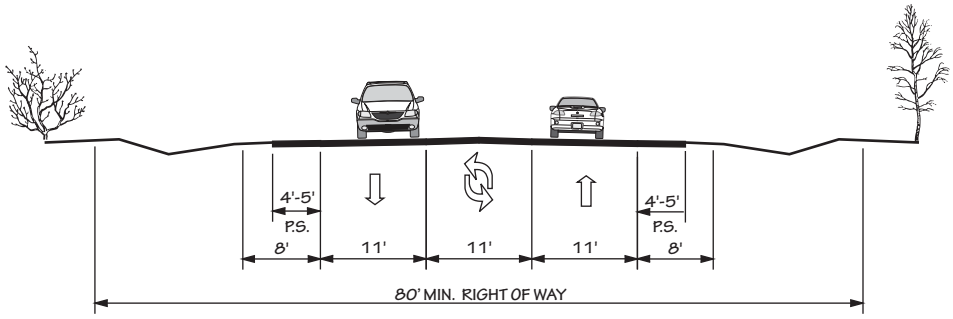
TYPICAL HIGHWAY CROSS SECTIONS

3 LANES

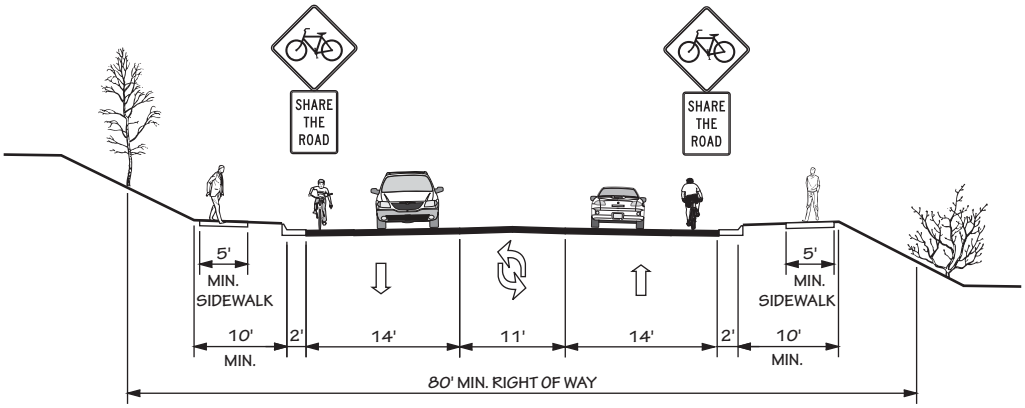
3 A

WIDE PAVED SHOULDERS



3 B

CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS



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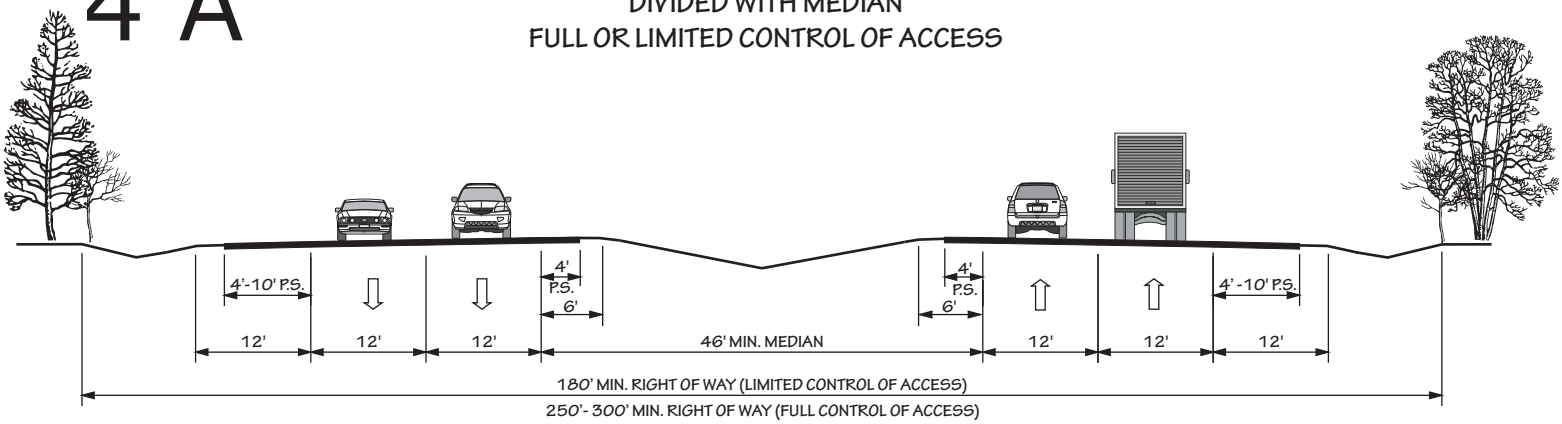
TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

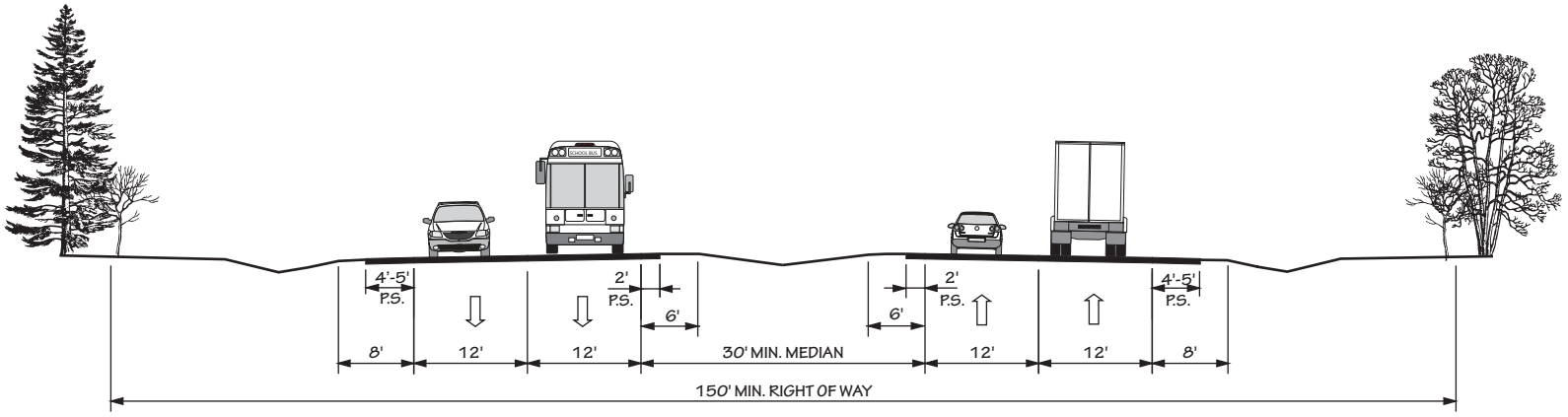
4 A

DIVIDED WITH MEDIAN
FULL OR LIMITED CONTROL OF ACCESS



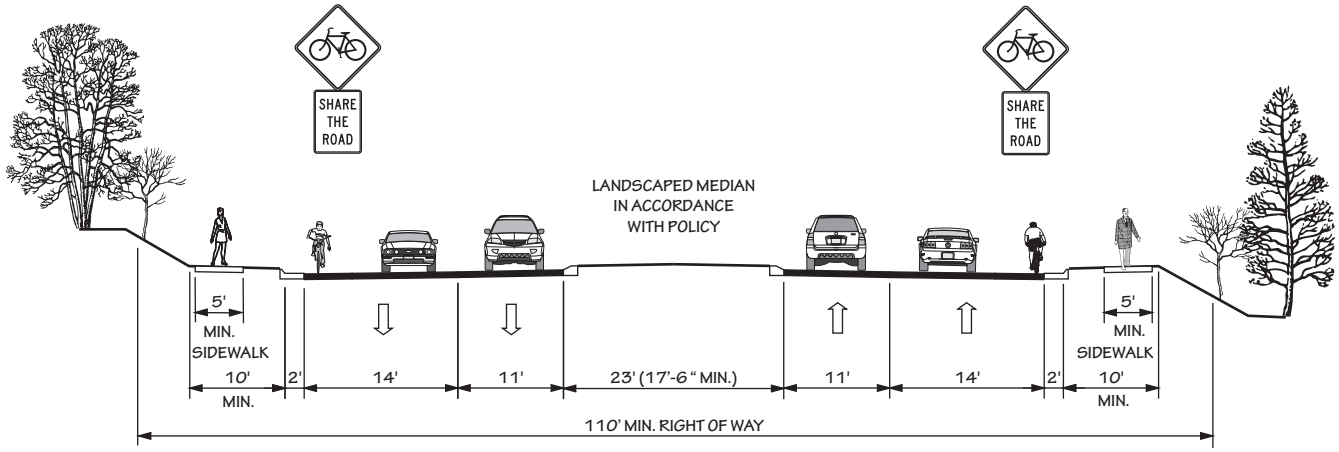
4 B

DIVIDED WITH MEDIAN - NO CURB & GUTTER
PARTIAL CONTROL OF ACCESS



4 C

RAISED MEDIAN WITH WIDE OUTSIDE LANES AND SIDEWALKS



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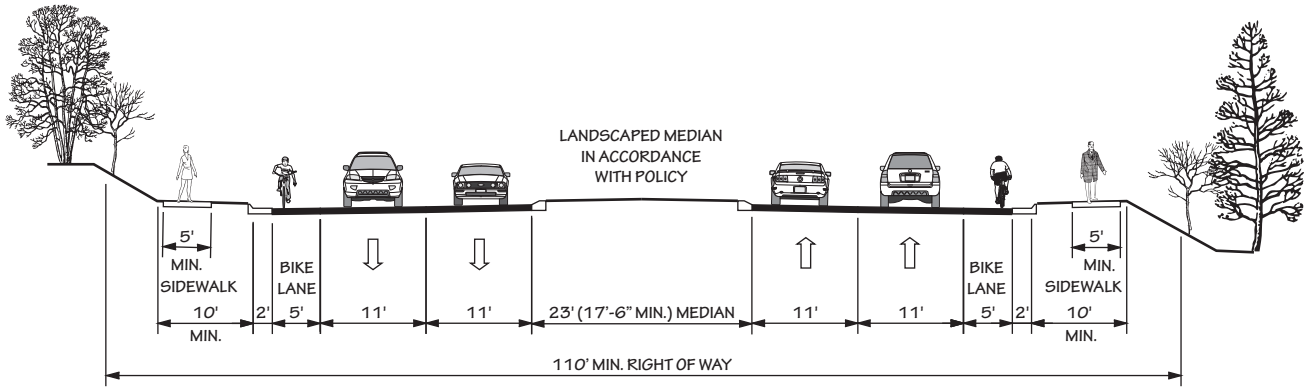
TYPICAL HIGHWAY CROSS SECTIONS

4 LANES

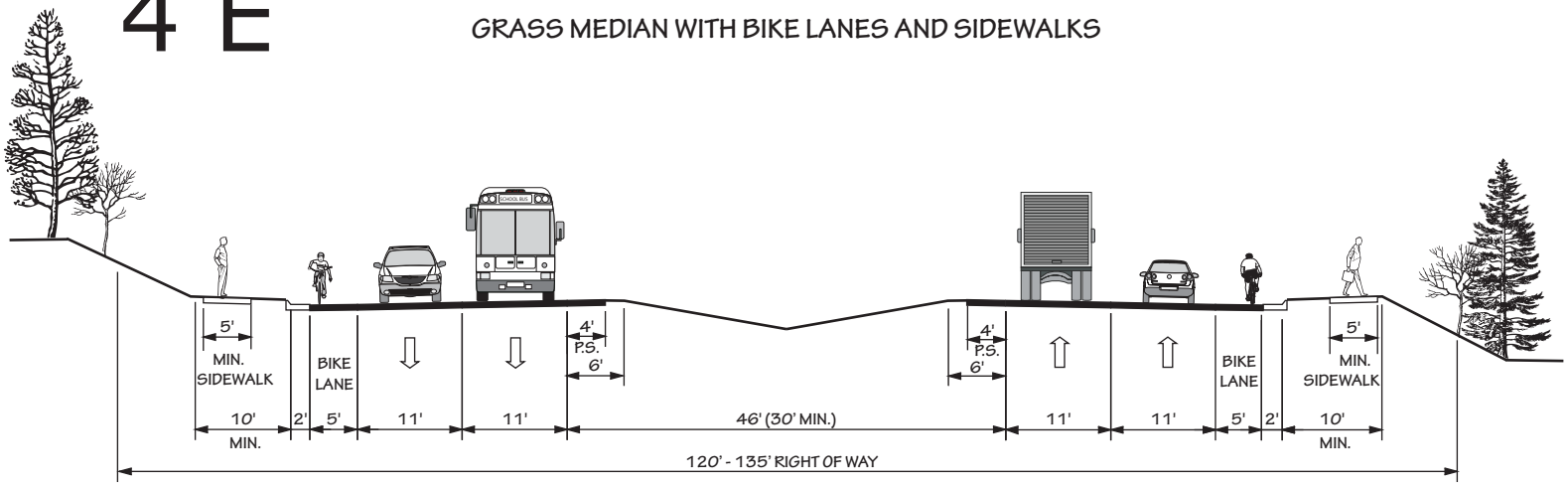
4 D

RAISED MEDIAN - CURB & GUTTER WITH BIKE LANES AND SIDEWALKS



4 E

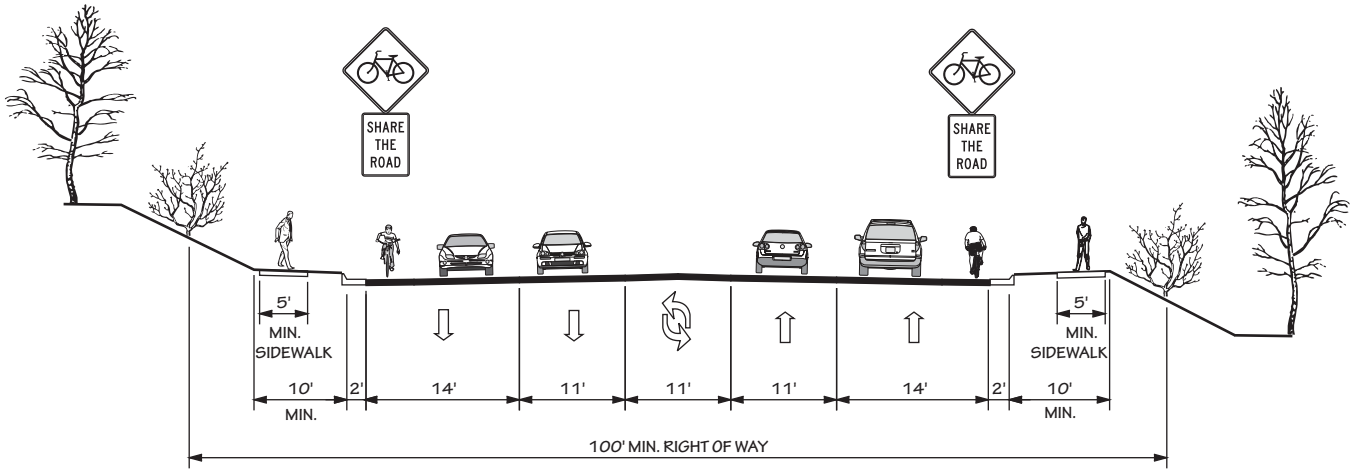
GRASS MEDIAN WITH BIKE LANES AND SIDEWALKS



5 LANES

5 A

WIDE OUTSIDE LANES



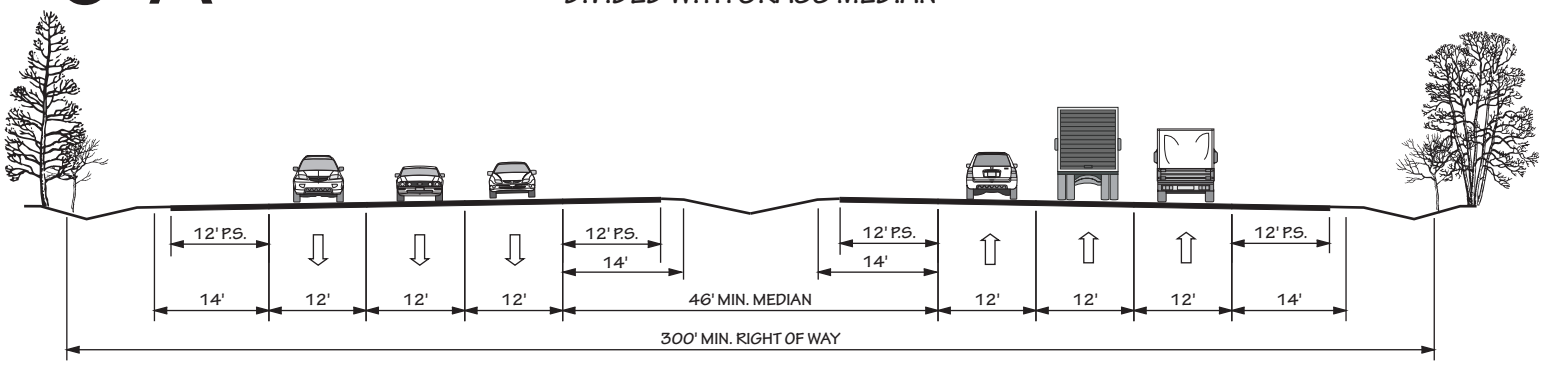
Revised 12/07/2010

TYPICAL HIGHWAY CROSS SECTIONS

6 LANES

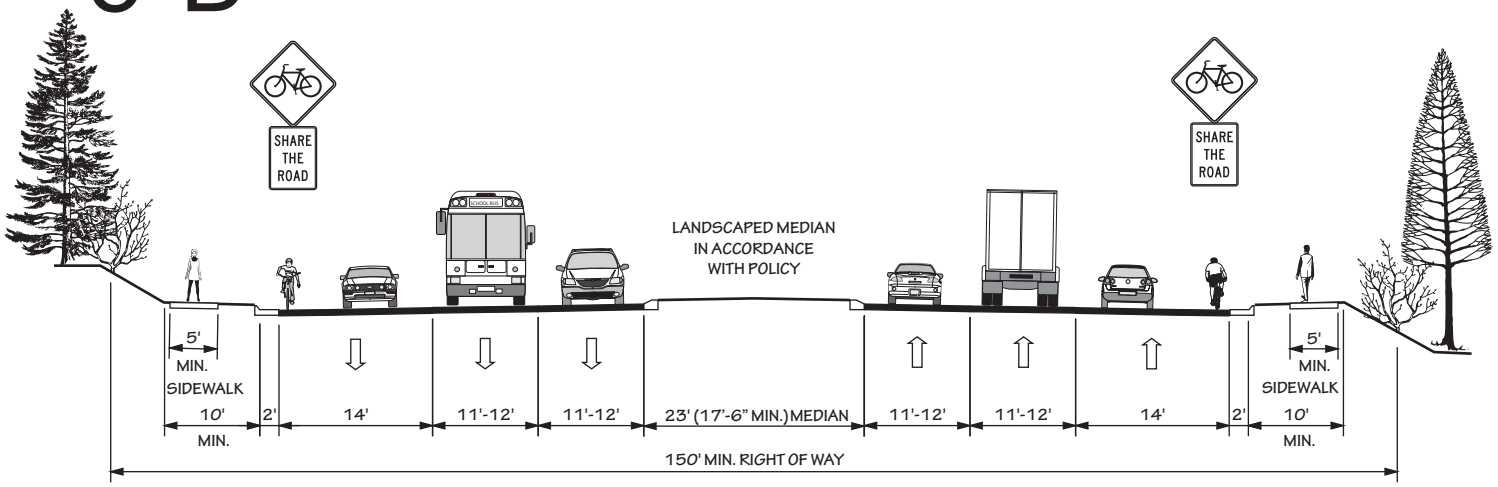
6 A

DIVIDED WITH GRASS MEDIAN



6 B

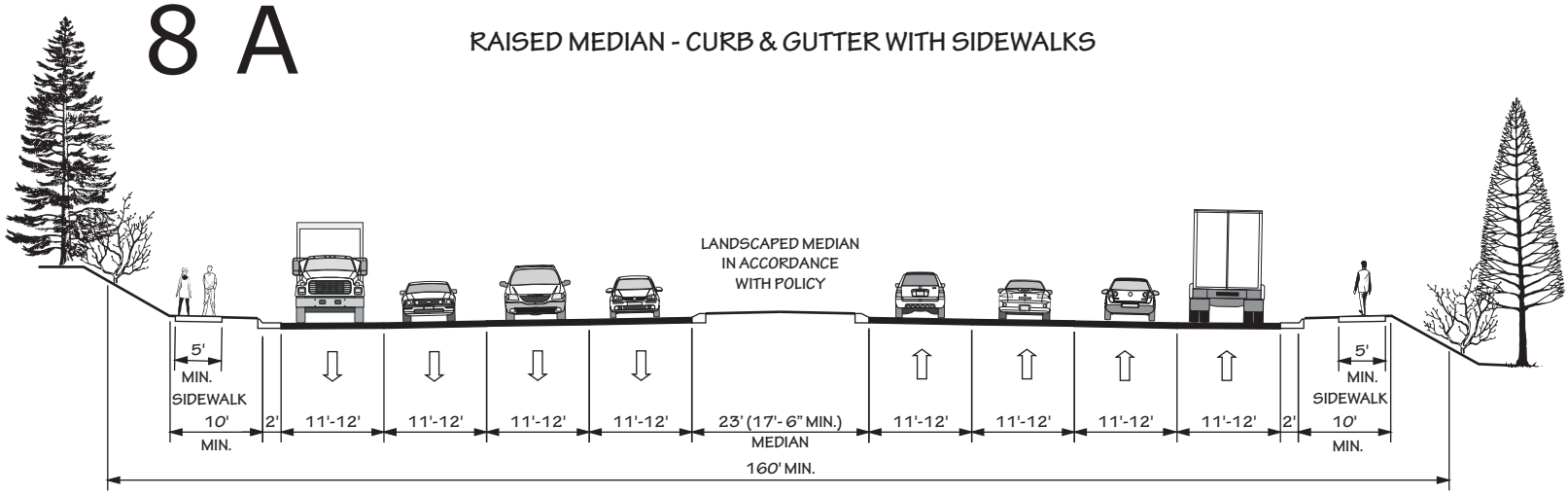
RAISED MEDIAN - CURB & GUTTER WITH WIDE OUTSIDE LANES AND SIDEWALKS



8 LANES

8 A

RAISED MEDIAN - CURB & GUTTER WITH SIDEWALKS

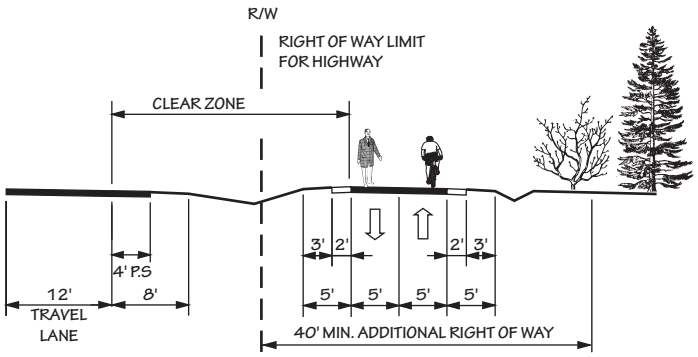


Revised 12/07/2010

TYPICAL MULTI - USE PATH

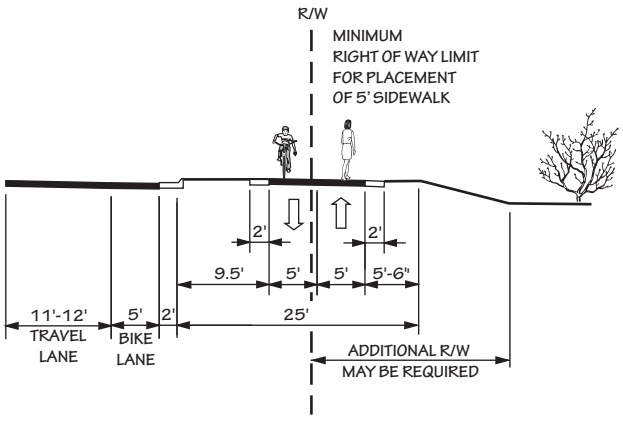
MULTI - USE PATH
ADJACENT TO RIGHT OF WAY OR SEPARATE PATHWAY

M A



MULTI - USE PATH ADJACENT TO CURB AND GUTTER

M B



Revised 12/07/2010

Appendix E
Level of Service Definitions

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

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

- **LOS A**: Describes primarily free flow conditions. The motorist experiences a high level of physical and psychological comfort. The effects of minor incidents of breakdown are easily absorbed. Even at the maximum density, the average spacing between vehicles is about 528 ft, or 26 car lengths.

- **LOS B**: Represents reasonably free flow conditions. The ability to maneuver within the traffic stream is only slightly restricted. The lowest average spacing between vehicles is about 330 ft, or 18 car lengths.

- **LOS C**: Provides for stable operations, but flows approach the range in which small increases will cause substantial deterioration in service. Freedom to maneuver is noticeably restricted. Minor incidents may still be absorbed, but the local decline in service will be great. Queues may be expected to form behind any significant blockage. Minimum average spacing is in the range of 220 ft, or 11 car lengths.

- **LOS D**: Borders on unstable flow. Density begins to deteriorate somewhat more quickly with increasing flow. Small increases in flow can cause substantial deterioration in service. Freedom to maneuver is severely limited, and the driver experiences drastically reduced comfort levels. Minor incidents can be expected to create substantial queuing. At the limit, vehicles are spaced at about 165 ft, or 9 car lengths.

- **LOS E**: Describes operation at capacity. Operations at this level are extremely unstable, because there are virtually no usable gaps in the traffic stream. Any disruption to the traffic stream, such as a vehicle entering from a ramp, or changing lanes, requires the following vehicles to give way to admit the vehicle. This can establish a disruption wave that propagates through the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate any disruption. Any incident can be expected to produce a serious breakdown with extensive queuing. Vehicles are spaced at approximately 6 car lengths, leaving little room to maneuver.

- **LOS F**: Describes forced or breakdown flow. Such conditions generally exist within queues forming behind breakdown points.

Figure 10 - 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

Appendix F
Traffic Crash Analysis

A crash analysis performed for the Warsaw CTP factored crash frequency, crash type, and crash severity. Crash frequency is the total number of reported crashes and contributes to the ranking of the most problematic intersections. 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 crash 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 a crash 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.

Severity	Severity Index
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, 2009 and December 31, 2011. The data represents locations with 10 or more crashes and/or a severity average greater than that of the state's 4.56 index. The "Total" column indicates the total number of crashes 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 Crashes
1	I-40 & NC 24	8.53	27

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 4, or other intersections of concern, contact the Division Traffic Engineer. Contact information for the Division Traffic Engineer is included in Appendix A.

Appendix G
Bridge Deficiency Assessment

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

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

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

A bridge must be classified as deficient in order to quality 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.

Table 5 - Deficient Bridges

Bridge Number	Facility	Feature	Condition	Local ID
447	SR 1113 (Charlie Frederick Rd)	I - 40	Functionally Obsolete	WARS0001
448	SR 1105 (Sam Miller Rd)	I - 40	Functionally Obsolete	WARS0002

Appendix H
Public Involvement

This appendix includes a listing of CTP committee members: CTP Vision Statement; the goals and objectives survey results; and a summary of the public involvement opportunities including public workshops and hearings.

CTP Committee Members

George Wilson
Sharon Hilton
Earl Rouse
Robert Wilson
Lawrence Padgett
William Jeff Smith
Claude J. Morrisey
Albert Searles
Edward W. Collins

Vision Statement

The Town of Warsaw's
Community Vision & Comprehensive Transportation Plan
Goals and Objectives Statement:

Vision:

Provide a safe, reliable, efficient, and sustainable multi-modal transportation network that supports cultural and economic development and efficient movement of people and products. Develop a comprehensive transportation plan while being compatible with environmental protection and land use plans.

Goals:

1. Coordinate with the Duplin County CTP, Town of Beulaville, Eastern Carolina Rural Planning Organization, NCDOT, and other relevant local and state organizations.

2. Study capacity, crash history, and connectivity to make recommendations where needed to improve safety and mobility.

3. Coordinate with Duplin County Emergency Management and relevant organizations to ensure that emergency plans are considered in plan development.

4. Make informed transportation decisions that are sensitive to the natural and human environment.

5. Insure the integrity of the existing transportation system by encouraging planned and strategic development.

6. Encourage right of way preservation to ensure expansion of the existing system and future roadway projects.

7. Provide means to identifying and prioritizing transportation system needs on a local and regional scale.

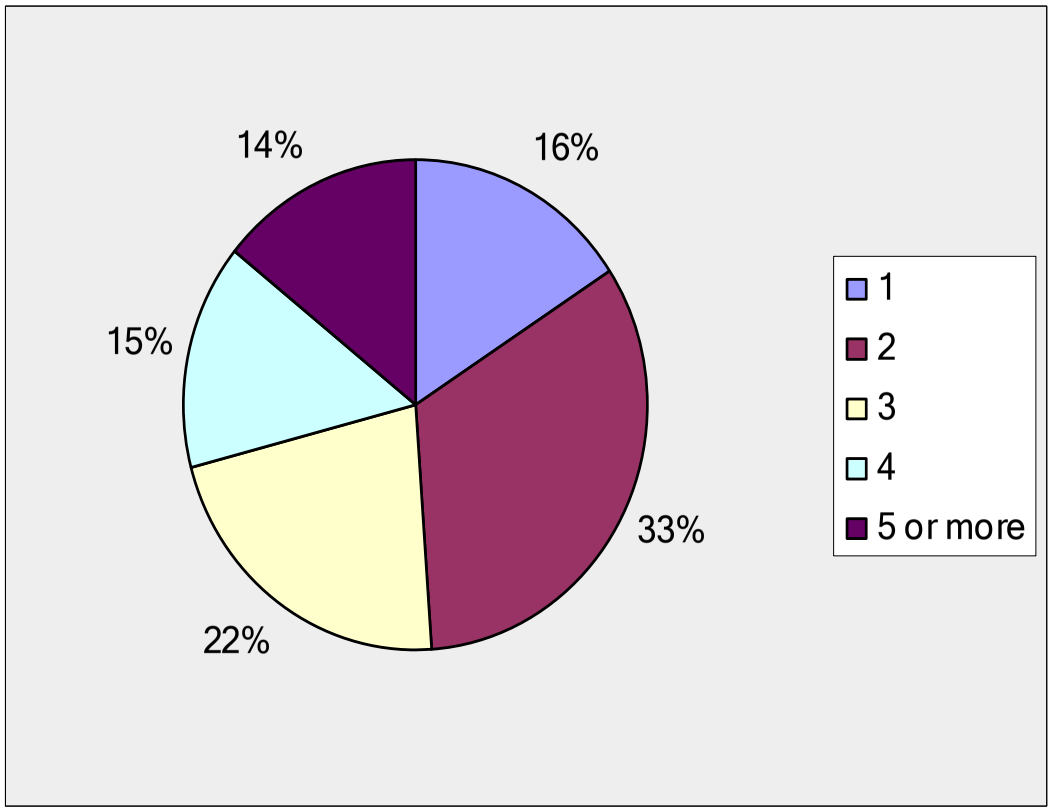
8. Promote roadways that allow and encourage alternative modes of transportation including but not limited to transit, walking, and bicycling.

9. Educate the public on general transportation issues as well as alternative forms of transportation.

Quick Survey Response Facts

- 255 total responses
- 26 of those were in Spanish
- 15 were filled out on-line

Question 1:
How many people live in your household?

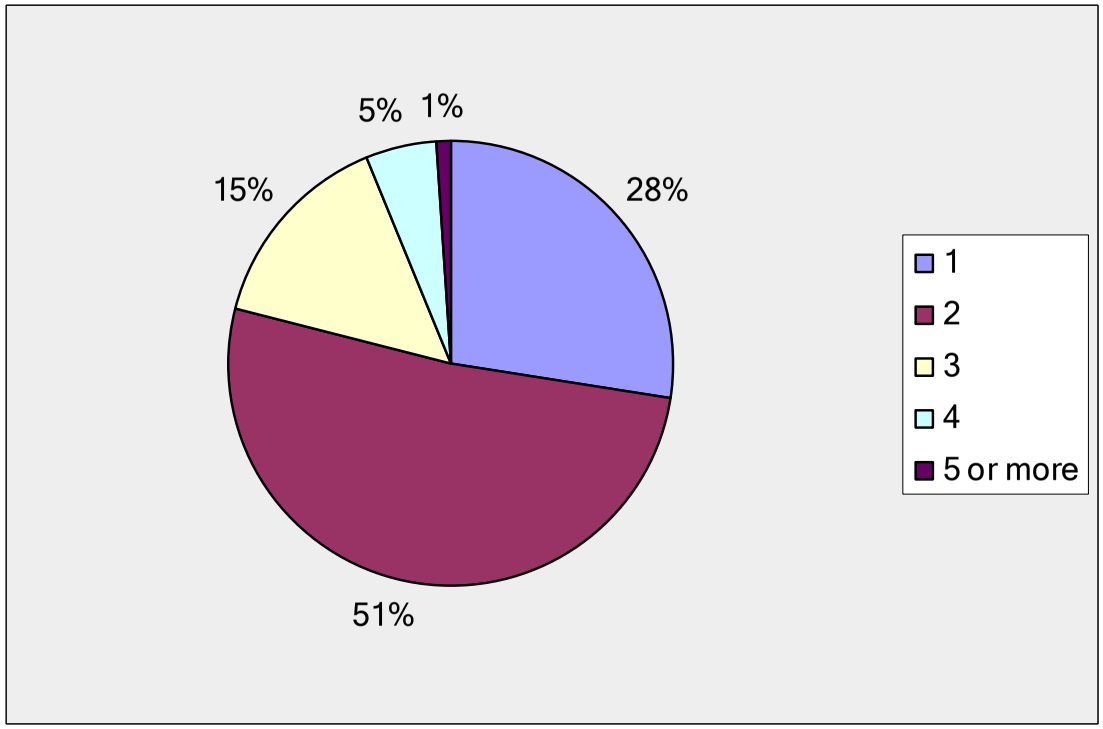


Response Count:

1	40
2	84
3	56
4	38
5 or more	36

answered question: 254
skipped question: 1

Question 2:
How many drivers are in your household?



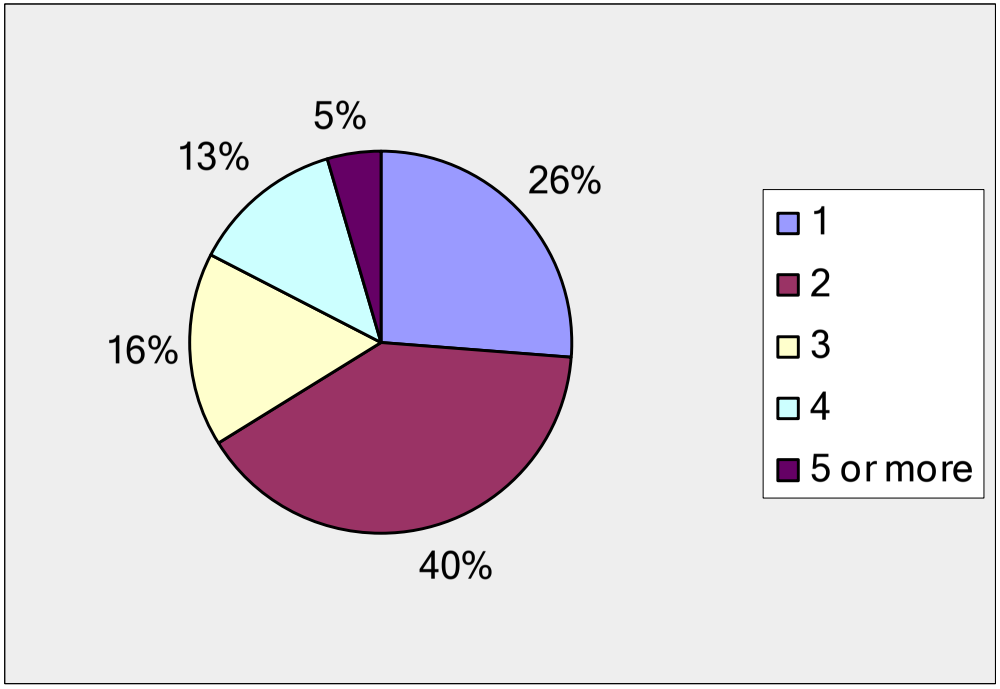
Response Count:

1	69
2	128
3	38
4	12
5 or more	3

answered question: 250

skipped question: 5

Question 3:
How many vehicles are in your household?



Response Count:

1	64
2	99
3	40
4	32
5 or more	11

answered question: 246

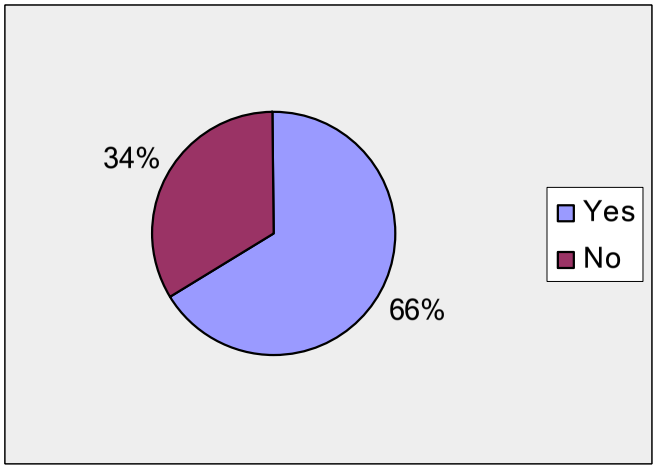
skipped question: 9

Question 4:
Are there areas where you would like to see sidewalks constructed or improved? If yes, where?

- Suggested Places:
  - Hill Street
  - Downtown
  - North Pine Street
  - Highway 24

Response Count:

Yes	155
No	80
Where	80



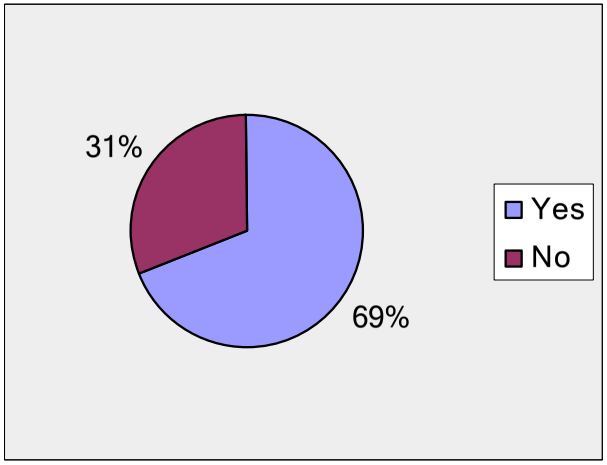
answered question:	235
skipped question:	20

Question 5:
Would you use off-road trails or greenways for walking, running and/or bicycling? If yes, where?

- Suggested Places:
  - Parks/Rec Centers
  - In/Around Town
  - Highway 24

Response Count:

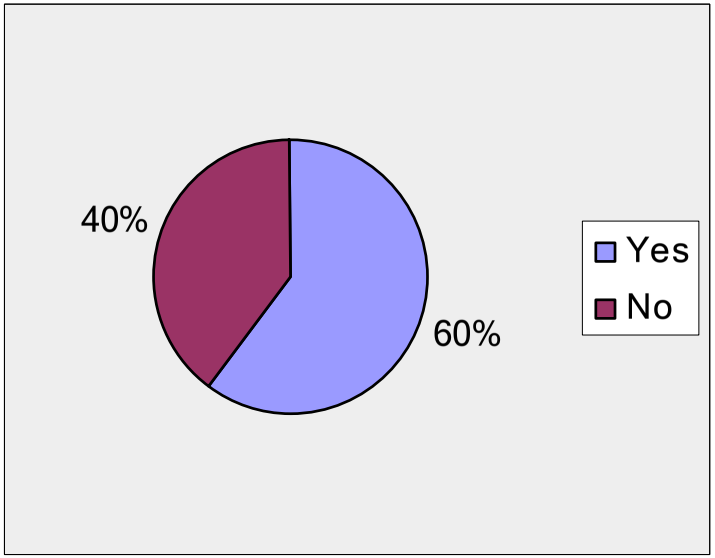
Yes	168
No	76
Where	52



answered question:	244
skipped question:	11

Question 6:
Would you use on-road bicycle lanes and/or wide shoulders? If yes, where?

- Suggested Places:
  - Parks/Rec Centers
  - In/Around Town
  - Highway 117/24



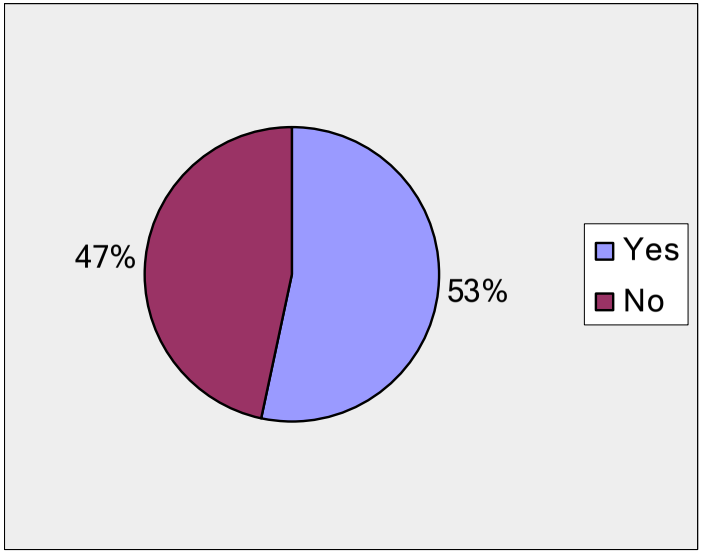
Response Count:

Yes	144
No	96
Where	39

answered question:	240
skipped question:	15

Question 7:
Would you use bus routes if provided? If yes, where?

- Suggested Places:
  - Duplin County
  - Area Towns
  - City Wide



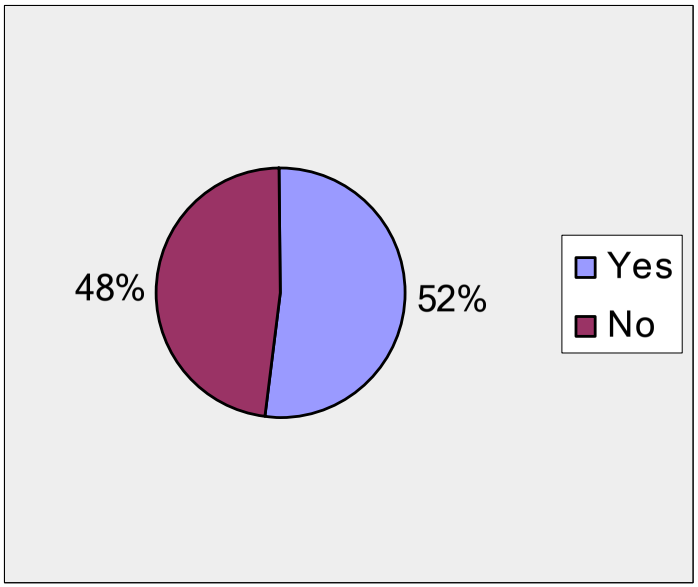
Response Count:

Yes	127
No	111
Where	34

answered question:	238
skipped question:	17

Question 8:
Would you use vanpools or carpools if available? If yes, where?

- Suggested Places:
  - To Work
  - Area Towns



Response Count:

Yes	116
No	109
Where	23

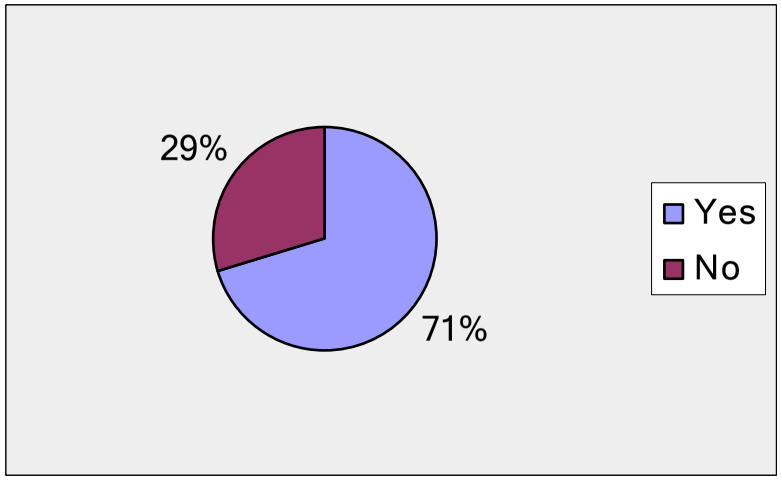
answered question:	225
skipped question:	30

Question 9:
Would you use passenger rail if there was a stop in Warsaw? If yes, where?

- Suggested Places:
  - NYC, DC, Florida, Chicago
  - Raleigh and Wilmington

Response Count:

Yes	168
No	70
Where	28



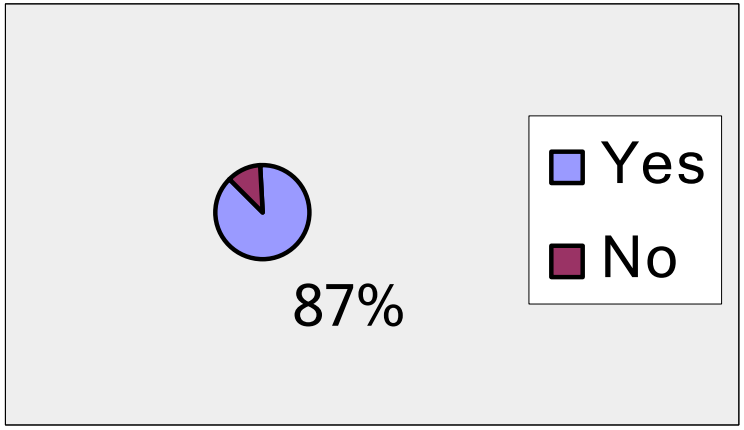
answered question:	238
skipped question:	17

Question 10:
Is your zip code 28398? If no, what is your zip code?

- Other Zip Codes:
  - 28453 (Magnolia)
  - 28349 (Kenansville)
  - 28458 (Rose Hill)

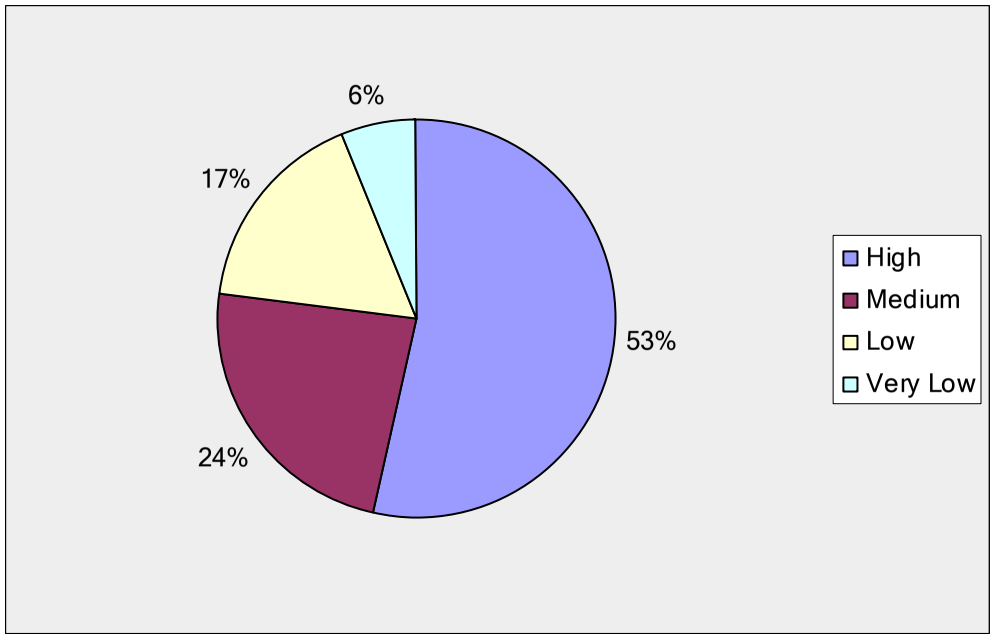
Response Count:

Yes	216
No	31
Where	26



answered question:	247
skipped question:	8

Question 11:
MORE TRANSPORTATION CHOICES: more ways to get places – buses, sidewalks, trains, etc.

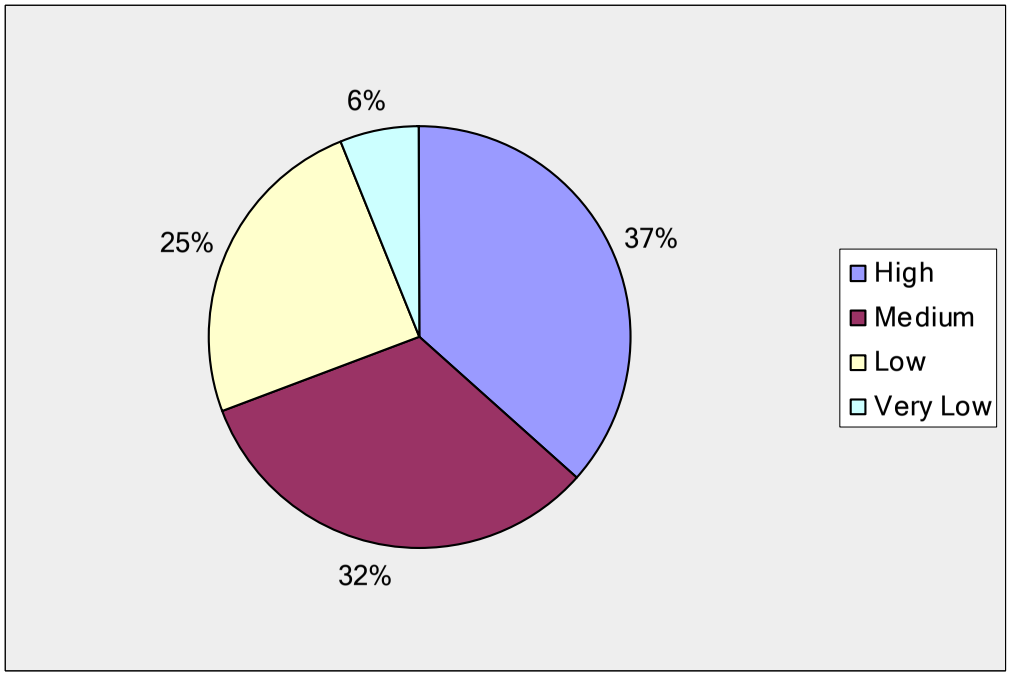


Response Count:

High	132
Medium	59
Low	42
Very Low	15

answered question:	248
skipped question:	7

Question 12:
FASTER TRAVEL TIMES: high speed roads with more lanes and fewer intersections

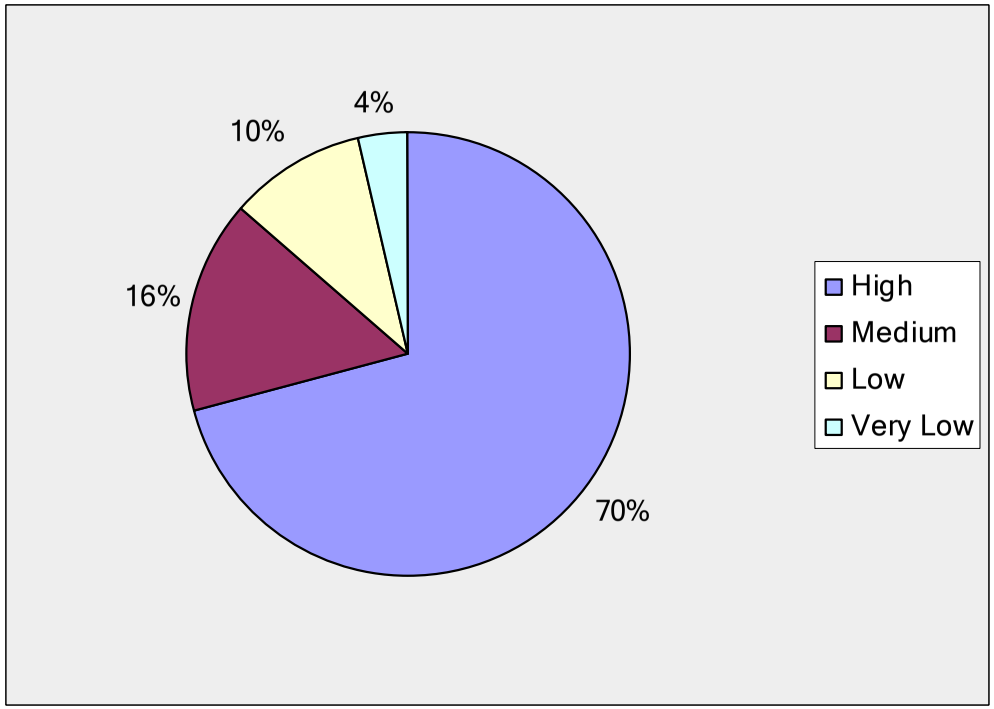


Response Count:

High	91
Medium	80
Low	61
Very Low	15

answered question:	247
skipped question:	8

Question 13:
ECONOMIC GROWTH: new and improved roads and railways to attract and expand business

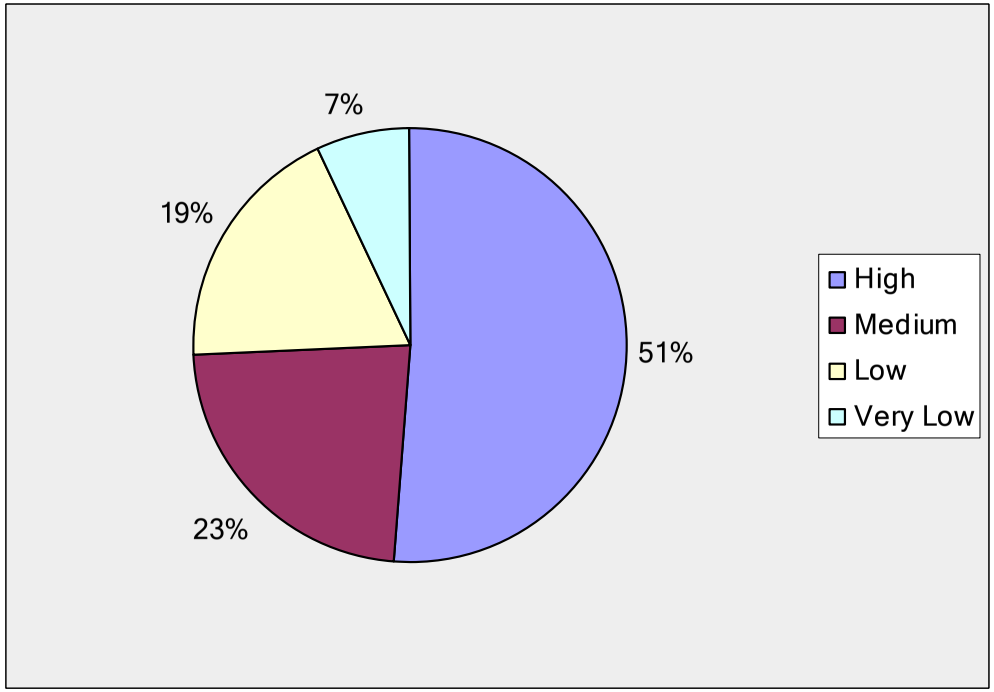


Response Count:

High	177
Medium	39
Low	25
Very Low	9

answered question:	250
skipped question:	5

Question 14:
INCREASED PUBLIC TRANSIT OPTIONS: bus service to more destinations. Park-n-Ride lots for car/van pooling

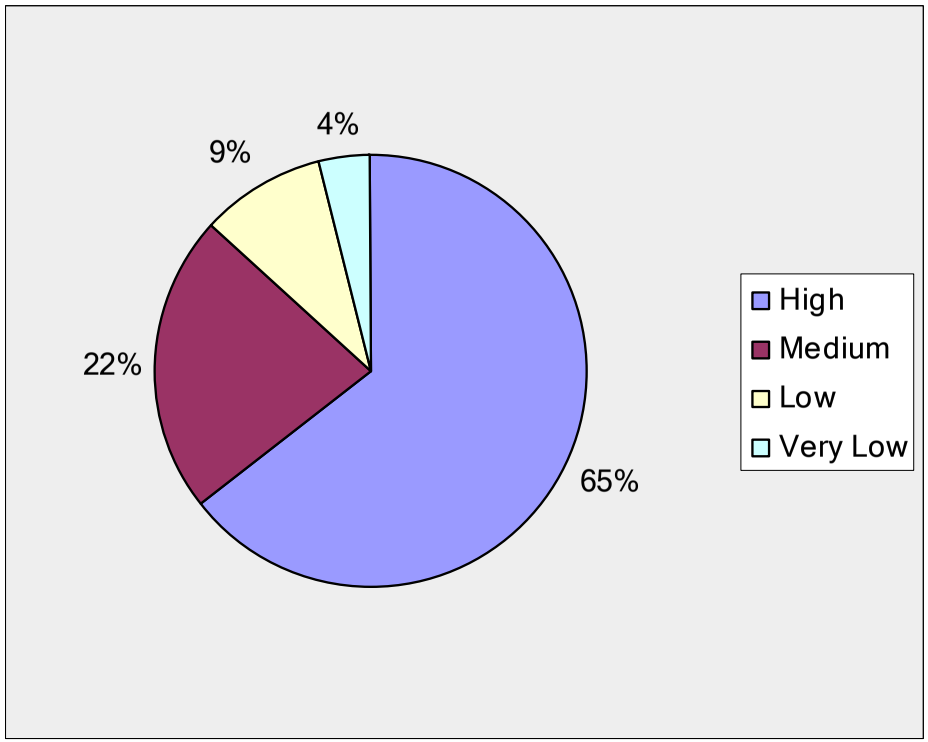


Response Count:

High	126
Medium	57
Low	47
Very Low	17

answered question:	247
skipped question:	8

Question 15: COMMUNITY AND RURAL CULTURAL PRESERVATION: keep business downtown, protect existing neighborhoods; preserve landscape

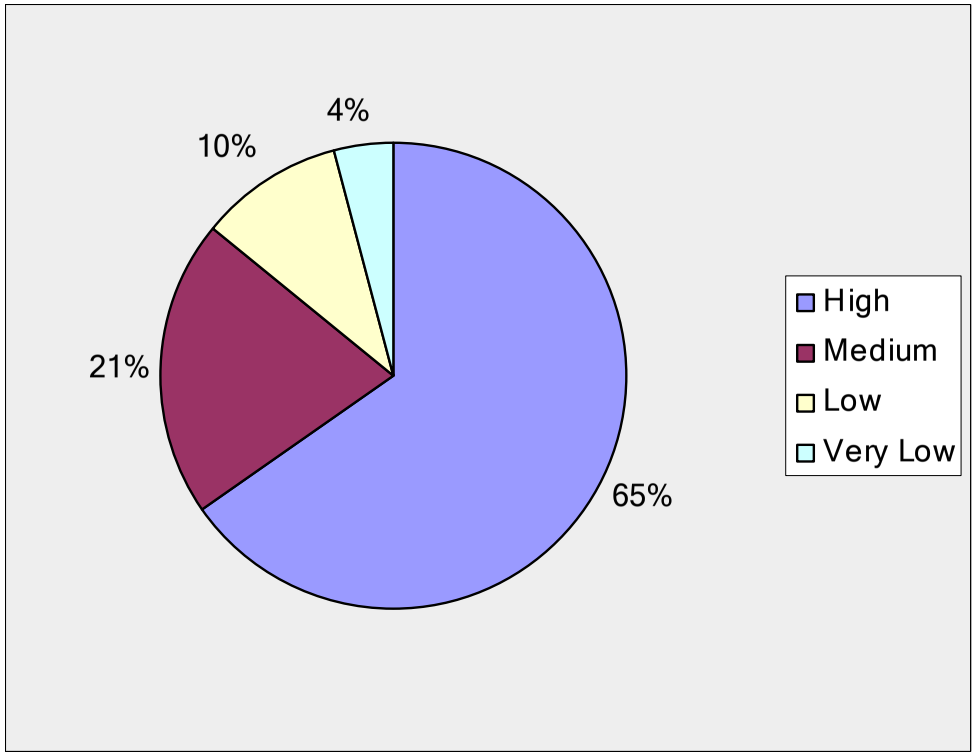


Response Count:

High	159
Medium	55
Low	23
Very Low	10

answered question:	247
skipped question:	8

Question 16:
ENVIRONMENTAL PROTECTION: protect wetlands, streams and wildlife, reduce air and noise pollution

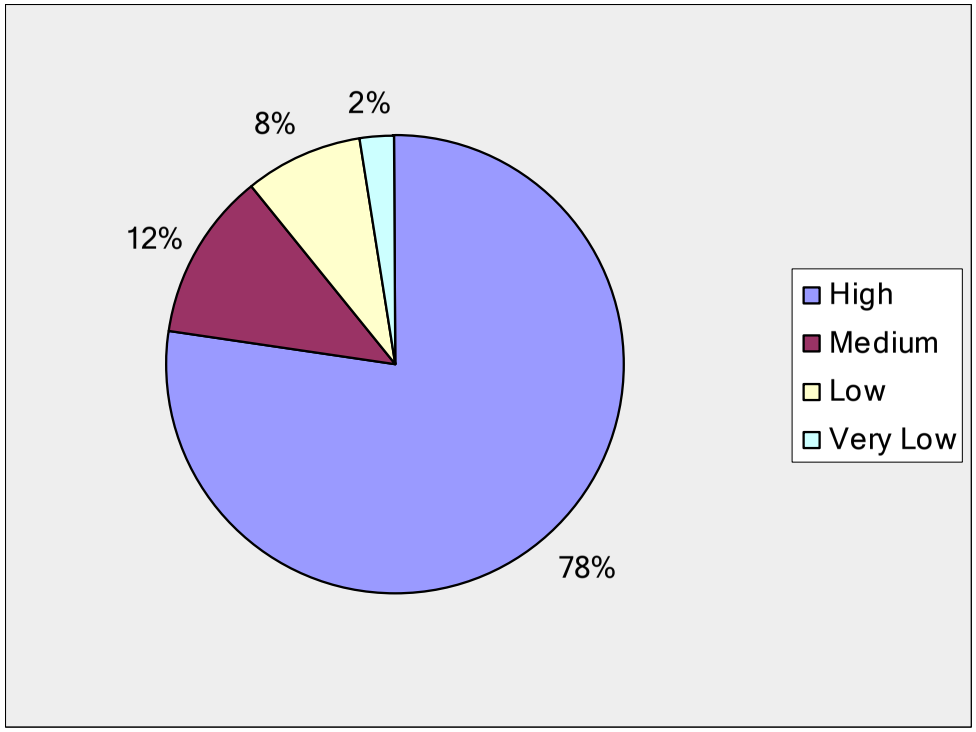


Response Count:

High	159
Medium	50
Low	25
Very Low	10

answered question:	244
skipped question:	11

Question 17:
CARE FOR SPECIAL NEEDS CITIZENS: better transportation for elderly, low-income, and disabled residents

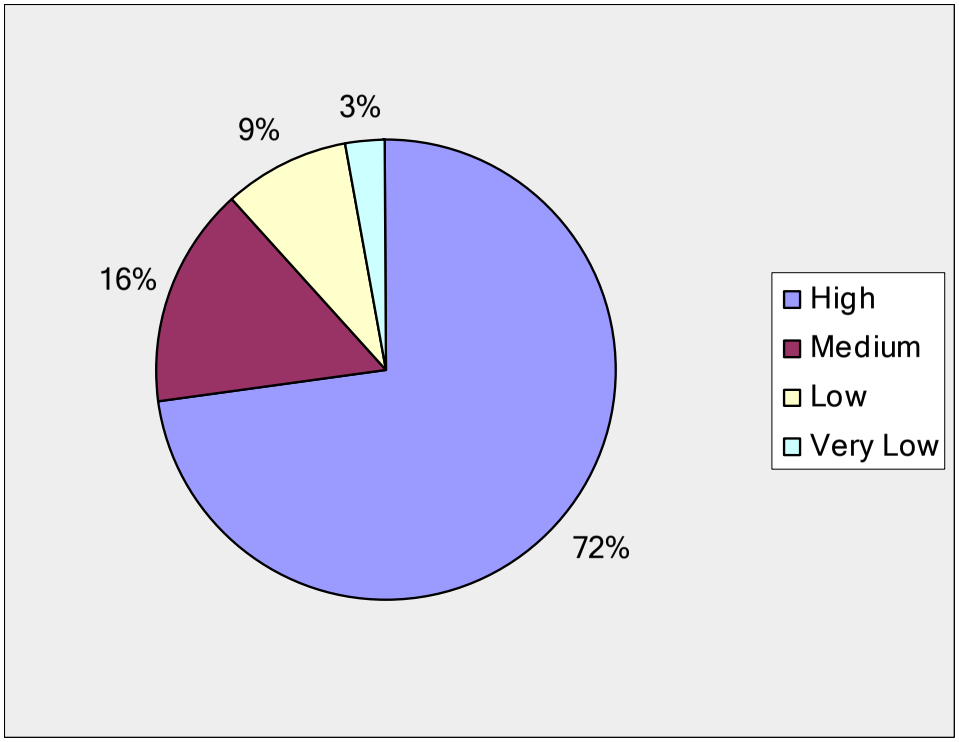


Response Count:

High	192
Medium	30
Low	21
Very Low	6

answered question:	249
skipped question:	6

Question 18:
IMPROVED ACCESS: better connections to employment, schools, services

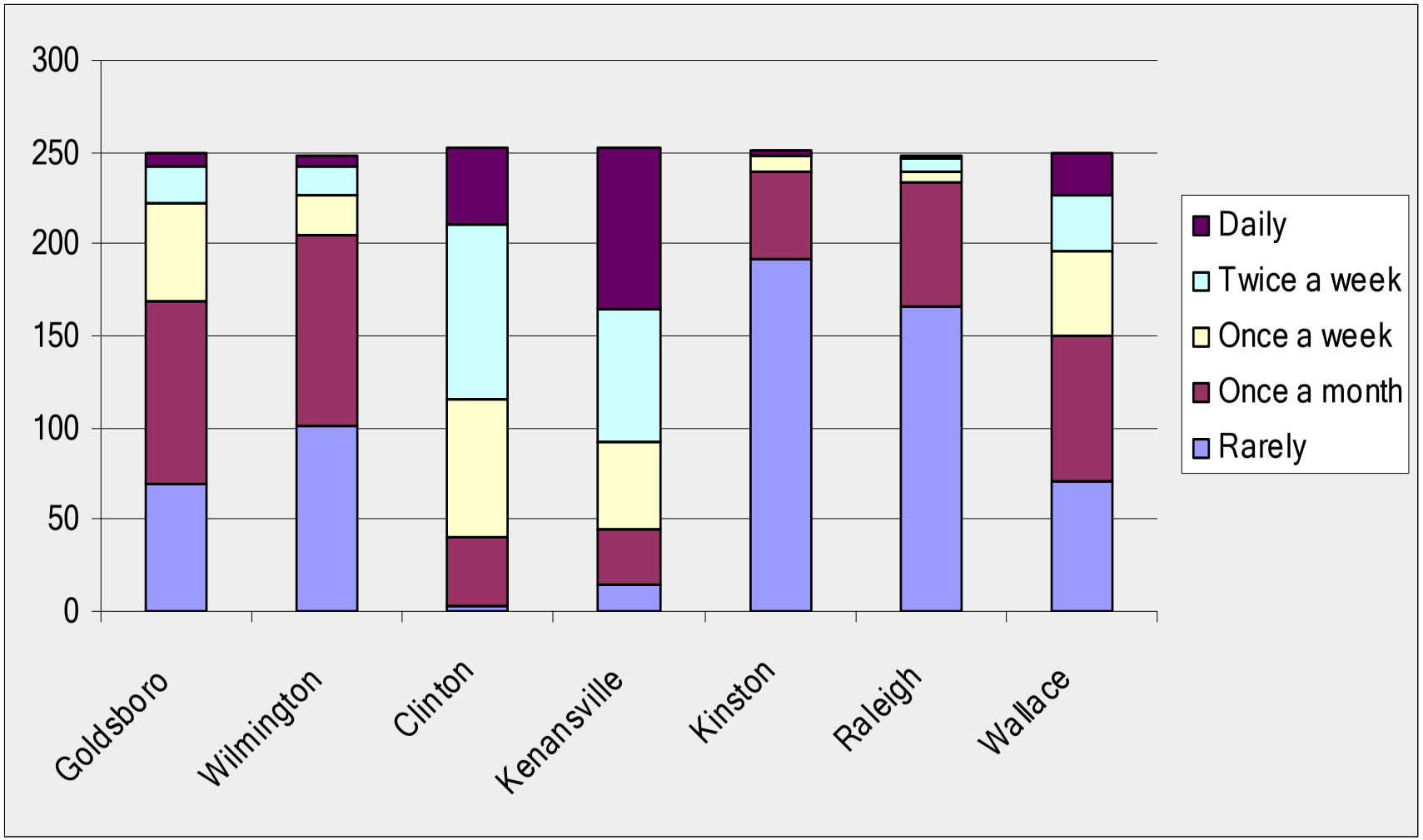


Response Count:

High	173
Medium	37
Low	21
Very Low	7

answered question:	238
skipped question:	17

Question 19-25:
How often do you go to…



Public Meetings:

Public Workshop #1 at the Warsaw Wellness and Recreation Center 211 West Hill Street, Warsaw NC

The first public workshop took place the Warsaw Wellness and Recreation Center on April 20, 2012 from 11 am to 2 pm. This workshop introduced the CTP process as well as what could be expected of the final plan. Draft CTP maps such as the adoption map, highway map, public transportation map, bicycle map, and pedestrian map were presented. Ten citizens signed the attendance sheet. They were given the opportunity to look at the draft plan and give comments about specific aspects of the plan that would need to be added, removed, or changed. No written comments were submitted. Many people asked questions about the maps and a few people made comments about the Pedestrian Map. They said that they were in favor of installing more sidewalks.

Public Workshop #2 at the Warsaw Wellness and Recreation Center 211 West Hill Street, Warsaw NC

The second public workshop took place at the Warsaw Wellness and Recreation Center on April 24, 2012 from 5 pm to 8 pm. This workshop introduced the CTP process as well as what could be expected of the final plan. Draft CTP maps such as the adoption map, highway map, public transportation map, bicycle map, and pedestrian map were presented. Three citizens signed the attendance sheet. They were given the opportunity to look at the draft plan and give comments about specific aspects of the plan that would need to be added, removed, or changed. There were two written comments. Pamela Goham wrote that the plan “was much need for jobs”. Earl Rouse and Al Searles (members of the Steering Committee) wrote that the “the roundabout was not a recommendation” at the intersection of NC 24 Business (College Road) and NC 50 (Memorial Drive) and SR 1300 (Wards Bridge Road). As a result of this comment, the Steering Committee met on May 10, 2012 to discuss this intersection. At this meeting the Steering Committee recommended the following options to address this intersection:

Option # 1 presented (7/22/2010) A stop light - Realign skew.

Option # 2 presented (7/22/2010) Convert to 3 leg intersection .

Option # 3 presented (5/10/2012) Possible roundabout.

No recommendations were made on any options and further study was deemed to be necessary.

Public Hearings:

A public hearing was held on June 11, 2012 during the Warsaw Town Council meeting. The purpose of this meeting was to discuss the plan recommendations and to solicit further input from the public. The Warsaw CTP was adopted during this meeting.

A public hearing was held on June 18, 2012 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 Warsaw CTP was adopted during this meeting.

The Eastern Carolina Rural Planning Organization endorsed the CTP on September 20, 2012.

The North Carolina Board of Transportation voted to mutually adopt the Warsaw CTP on November 8, 2012.

Warsaw Transportation Plan

This is a survey of the Town of Warsaw and NCDOT. It will be used to help design a *Transportation Plan* for the town and surrounding area and help us understand the transportation needs of citizens.

The survey should take less than 5 minutes of your time. Your answers will be completely anonymous. If you have any questions about the survey, please contact us at pflanagan@eccog.org or call 252-638-3185 x3031. ***Thanks!***

Mail completed survey to →

Patrick Flanagan – Warsaw CTP
233 Middle Street, 3rd Floor
New Bern, NC 25863-1717

Section One

		1	2	3	4	5 or more
1	How many people live in your household?	○	○	○	○	○
2	How many drivers are in your household?	○	○	○	○	○
3	How many vehicles are in your household?	○	○	○	○	○

Section Two

		Yes	No	If Yes, where:
4	Are there areas where you would like to see sidewalks constructed or improved?	○	○	*where?* →
5	Would you use off-road trails or greenways for walking, running and/or bicycling?	○	○	*where?* →
6	Would you use on-road bicycle lanes and/or wide shoulders?	○	○	*where?* →
7	Would you use bus routes if provided?	○	○	*where?* →
8	Would you use vanpools or carpools if available?	○	○	*where?* →
9	Would you use passenger rail if there was a stop in Warsaw?	○	○	*where?* →
10	Is your zip code 28398?	○	○	*- If No, what is your zip code?* _____

Section Three - *Please rate the importance of each goal.*

		High	Medium	Low	Very Low
11	More transportation choices *More ways to get to places - buses, sidewalks, trains, etc.*	○	○	○	○
12	Faster travel times *High speed roads with more lanes and fewer intersections.*	○	○	○	○
13	Economic Growth *New and improved roads and railways to attract and expand business.*	○	○	○	○
14	Increased Public Transit Options *Bus service to more destinations. Park-n-Ride lots for carpooling.*	○	○	○	○
15	Community and Rural Culture Preservation *Keep business downtown. Protect existing neighborhoods. Preserve landscape.*	○	○	○	○
16	Environmental Protection *Protect wetlands, streams and wildlife. Reduce air and noise pollution.*	○	○	○	○
17	Care for Special Needs Citizens *Better transportation for elderly, low-income, and disabled residents.*	○	○	○	○
18	Improved Access *Better connections to employment, schools, and services.*	○	○	○	○

Section Four

			Daily	Twice a week	Once a week	Once a month	Rarely
19	How often do you go to	**Goldsboro?**	○	○	○	○	○
20	How often do you go to	**Wilmington?**	○	○	○	○	○
21	How often do you go to	**Clinton?**	○	○	○	○	○
22	How often do you go to	**Kenansville?**	○	○	○	○	○
23	How often do you go to	**Kinston?**	○	○	○	○	○
24	How often do you go to	**Raleigh?**	○	○	○	○	○
25	How often do you go to	**Wallace?**	○	○	○	○	○

Warsaw Transportation Plan

La encuesta es para el Town of Warsaw y NCDOT. Se usaria para ayudar el desarollo de la *Transportation Plan* para el pueblo y la zona alrededor y las afueras. Nos aydara entender las necisidades de la poblacion relacionados con el transporte.

La encuesta es breve y requiere unos 5 minutos de su tiempo. Sus respuestas seran anonimos. Si tiene preguntas sobre la encuesta se puede llamar a Nora McCann 919-733-4705 ext. 20 tambien a namccann@ncdot.gov . ¡***Gracias!***

Enviala al siguiente dirección. →

Patrick Flanagan – Warsaw CTP
233 Middle Street, 3rd Floor
New Bern, NC 25863-1717

Parte Uno

		1	2	3	4	5 o mas
1	¿Cuantas personas viven en su casa?	○	○	○	○	○
2	¿Cuantos conductores viven en su casa?	○	○	○	○	○
3	¿Cuantos vehiculos tiene Ud. en casa?	○	○	○	○	○

Parte Dos

		Si	No	Si estas de acuerdo, escribe donde.
4	¿Quiere usted aceras nuevas o mejor mantenidas?	○	○	¿Donde? →
5	¿Quiere usted zonas verdes para caminar, correr o montar en bicicleta?	○	○	¿Donde? →
6	¿Querria usted montar en bicicleta por la carretera si tuviera carril ancho o arcen ancho para bicicletas?	○	○	¿Donde? →
7	¿Quiere usted montar en autobus con itenerario fijo?	○	○	¿Donde? →
8	¿Quiere usted montar en furgoneta o compartir el viaje en coche para ir a trabajar?	○	○	¿Donde? →
9	¿Si hubiese una parada de tren en Warsaw, la ultilizaria?	○	○	¿Donde? →
10	Mi codigo postal es 28398?	○	○	*- No, mi codigo postal es _____.*

Parte tres

Decide la importancia de cada meta.

		Muy importante	Algo importante	Poco importante	Nada importante
11	Mas medios de transporte. *Autobuses, aceras, trenes, etc.*	○	○	○	○
12	Carreteras rapidas. *Mas autovias con mas carriles y pocas intersecciones.*	○	○	○	○
13	Crecimiento Economico. *Mas carreteras y trenes para que crezca el comercio.*	○	○	○	○
14	Mas opciones para el transporte publico. *Servicio de autobues a destinos logicos y sitios para apacar el coche.*	○	○	○	○
15	Proteger la comunidad rural. *Mantener los negocios en el centro, Proteger las urbaizaciones de casas.*	○	○	○	○
16	Proteger el medio ambiente. *Proteger marismas, rios, y fauna. Reducir la contaminacion del aire y el ruido.*	○	○	○	○
17	Transporte para personas con necesidades especiales. *Transporte para ancianos, bajo ingresos, o minusvalidos.*	○	○	○	○
18	Mejor conexiones de transporte. *Mejor aceso al empleo, escuelas, y servicios.*	○	○	○	○

Parte Cuartro

			Cada dia	Dos vezes por semana	Una vez por samana	Una vez por mez	Casi nunca
19	¿Con que frequencia se va a	**Goldsboro?**	○	○	○	○	○
20	¿Con que frequencia se va a	**Wilmington?**	○	○	○	○	○
21	¿Con que frequencia se va a	**Clinton?**	○	○	○	○	○
22	¿Con que frequencia se va a	**Kenansville?**	○	○	○	○	○
23	¿Con que frequencia se va a	**Kinston?**	○	○	○	○	○
24	¿Con que frequencia se va a	**Raleigh?**	○	○	○	○	○
25	¿Con que frequencia se va a	**Wallace?**	○	○	○	○	○

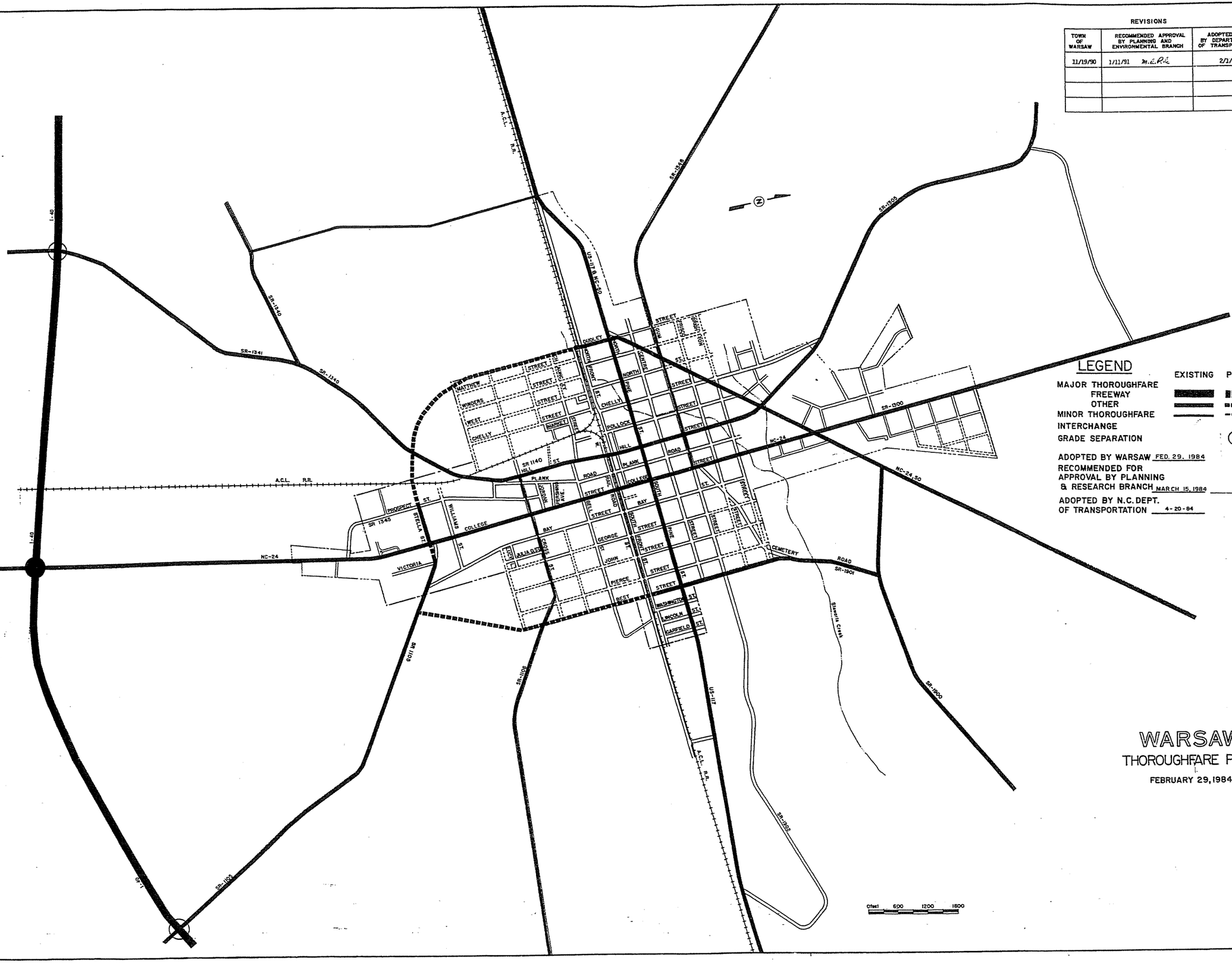
Appendix I
Existing Transportation Plans

The following CTPs or Thoroughfare Plans for areas within the County that are not included as a part of this plan are listed below and depicted in this appendix.

- 1984 Town of Warsaw Thoroughfare Plan, Revised 1991
- 2008 Duplin County CTP
- 2005 Eastern Carolina Rural Planning Organization Bike and Pedestrian Routes

REVISIONS

TOWN OF WARSAW	RECOMMENDED APPROVAL BY PLANNING AND ENVIRONMENTAL BRANCH	ADOPTED BY DEPARTMENT OF TRANSPORTATION
11/19/90	1/11/91 M.E.R.E.	2/1/91



LEGEND

	EXISTING	PROPOSED
MAJOR THOROUGHFARE		
FREEWAY		
OTHER		
MINOR THOROUGHFARE		
INTERCHANGE		
GRADE SEPARATION		

ADOPTED BY WARSAW FED. 29. 1984

RECOMMENDED FOR APPROVAL BY PLANNING & RESEARCH BRANCH MARCH 15, 1984

ADOPTED BY N.C. DEPT. OF TRANSPORTATION 4-20-84

WARSAW
THOROUGHFARE PLAN
FEBRUARY 29, 1984

Adopted by:

Duplin County
Date: March 5, 2007

NCDOT
Date: May 3, 2007

Endorsed by:

Eastern Carolina RPO
Date: March 15, 2007

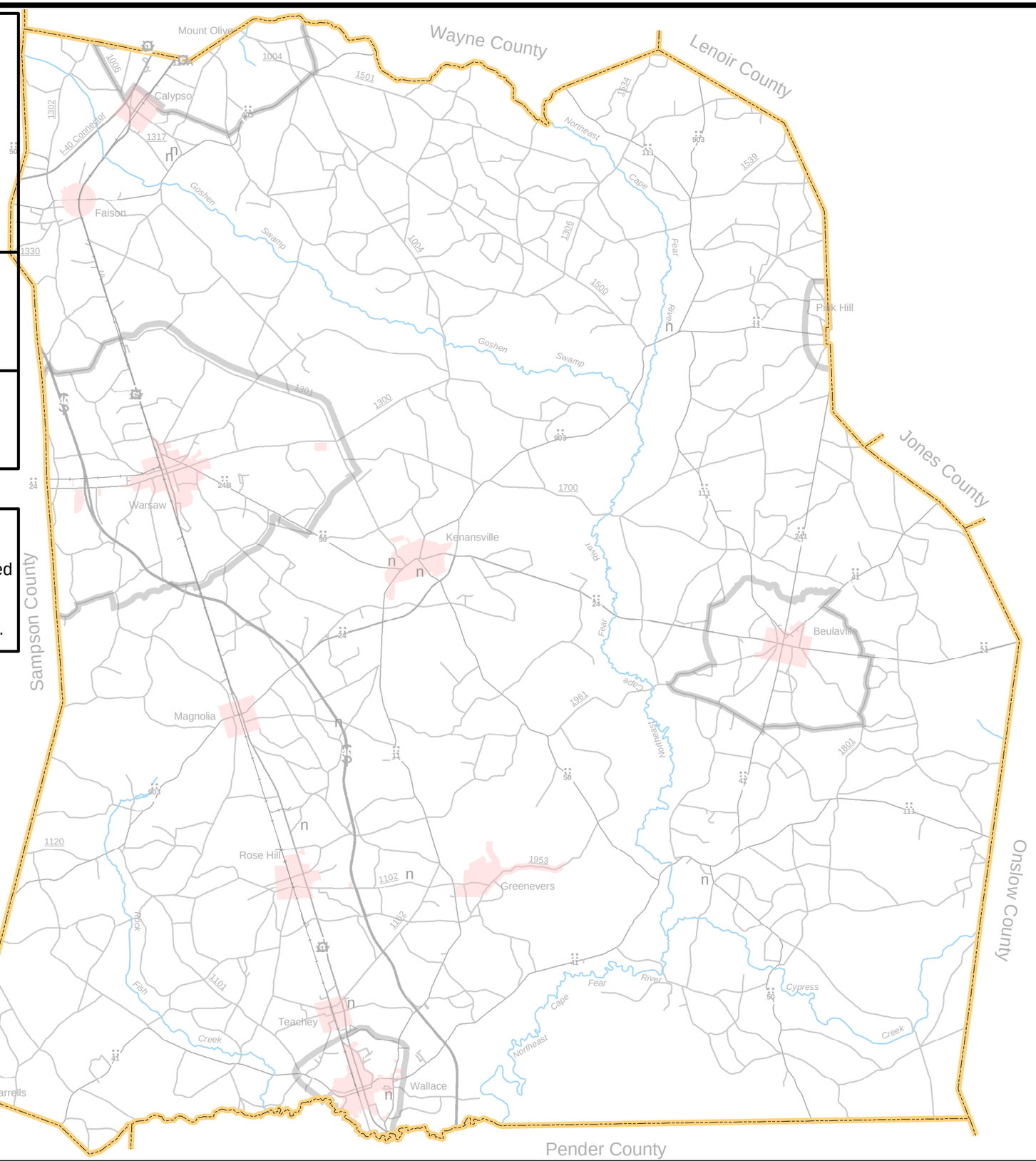
Recommended by:

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

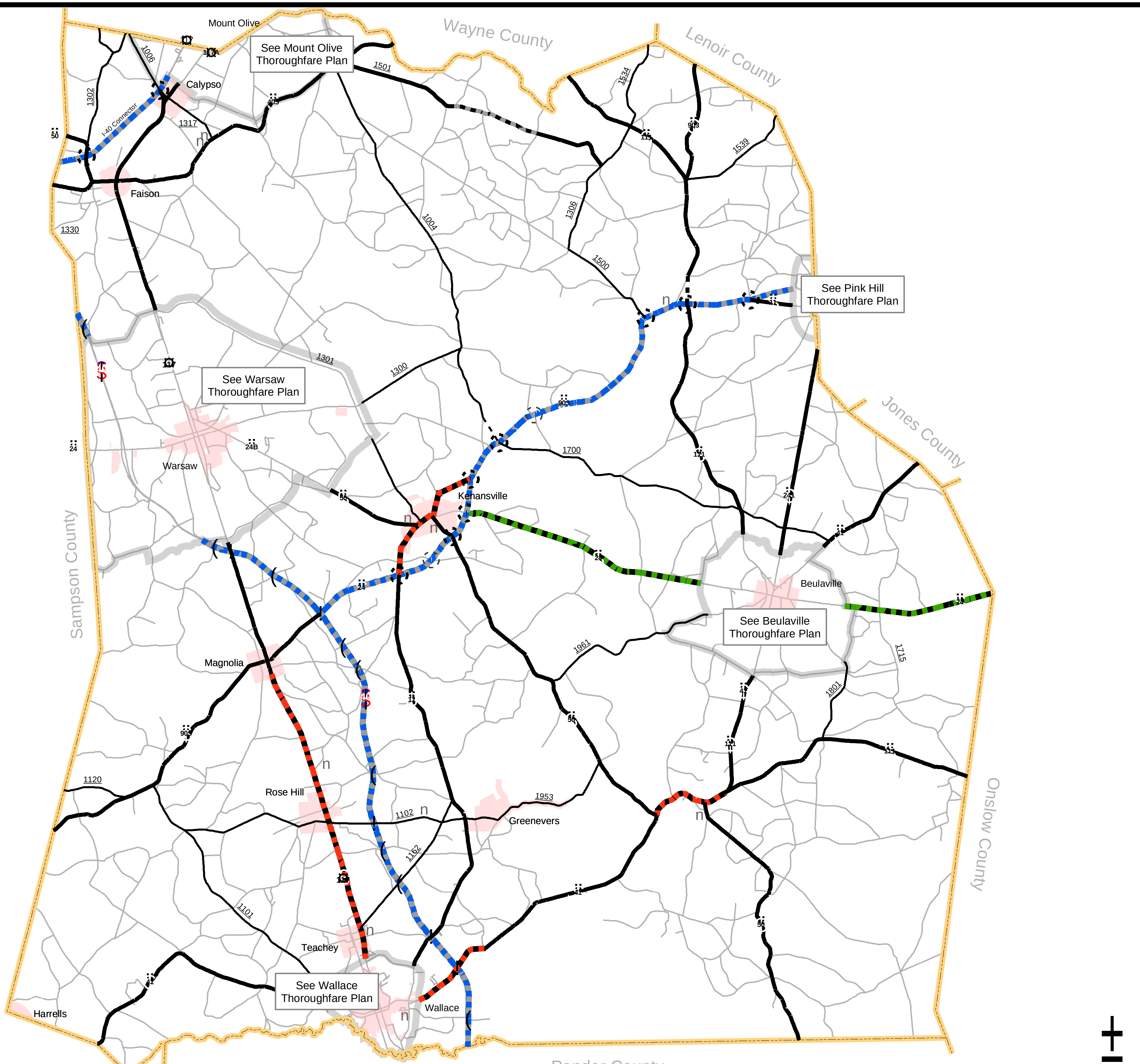
- Schools
- Railroad
- Rivers and Streams
- City Boundary
- Planning Area Boundary
- County Boundary

0 2 4 8
Miles

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

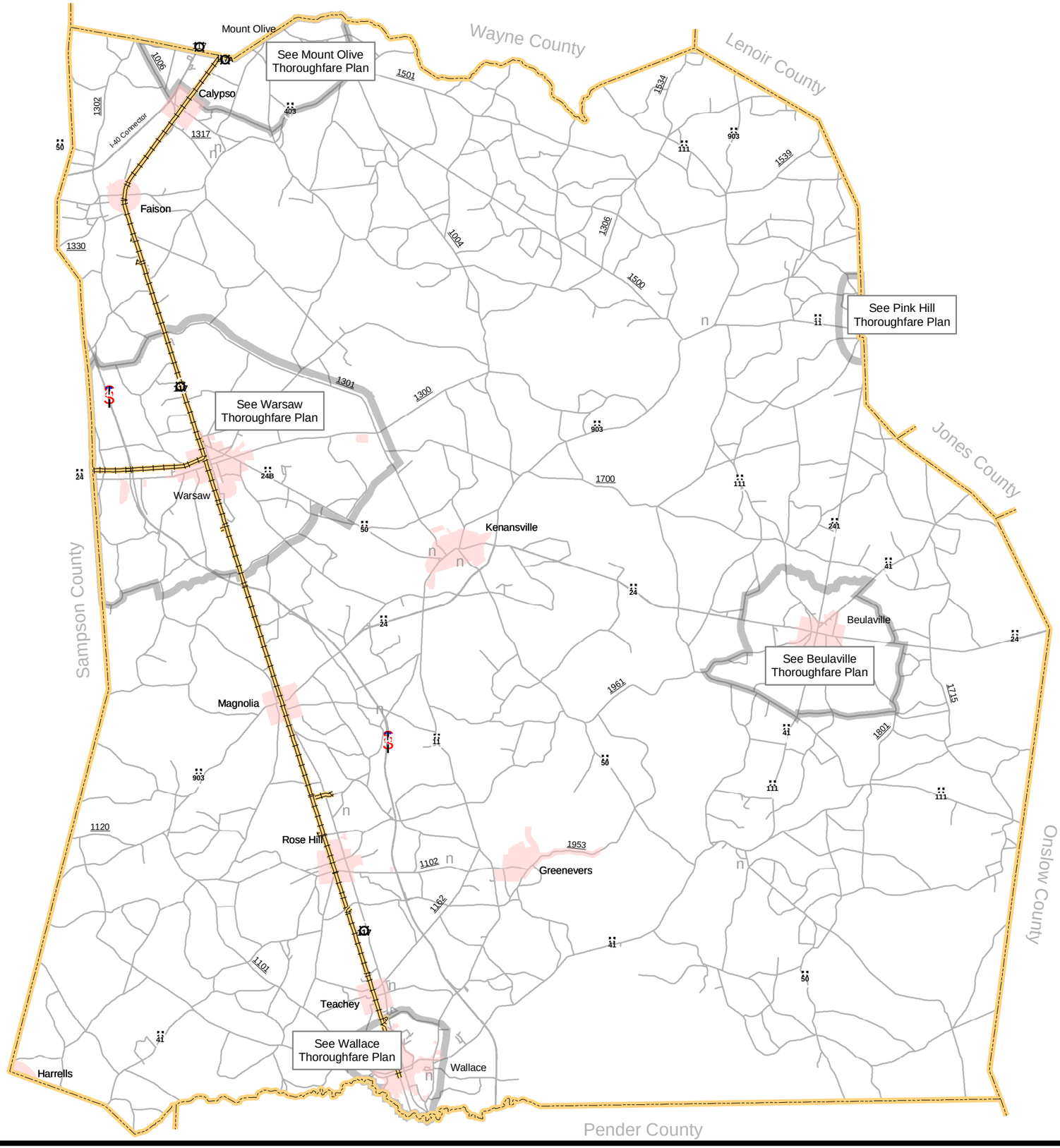
0 2 4 8

Miles

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

0 2 4 8
Miles

Figure 1 (Sheet 3 of 5)

Base map date: November 11, 2005

Refer to CTP document for more details

Eastern Carolina RPO
Bike & Pedestrian Routes
Adopted October 20, 2005

Eastern Carolina Council