



# **Comprehensive Transportation Plan**



# **Town of Beulaville**

February 2011

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In Cooperation with:	Duplin County

Town of Beulaville Eastern Carolina Rural Planning Organization

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Travis K. Marshall, PE Eastern Planning Unit Head In March of 2009, the Transportation Planning Branch of the North Carolina Department of Transportation and the Town of Beulaville initiated a study to cooperatively develop the Town of Beulaville Comprehensive Transportation Plan (CTP), which is in Duplin County. This is a long range multi-modal transportation plan that covers transportation needs through 2035. Modes of transportation evaluated as part of this plan include: highway, public transportation and rail, bicycle, and pedestrian. This plan does not cover standard bridge replacements, routine maintenance, or minor operations issues. Refer to Appendix A for contact information on these types of issues.

Findings of this CTP study were based on an analysis of the transportation system, environmental screening, and public input. Refer to Figure 1 (Sheets 1 - 5) for the CTP maps, which were mutually endorsed or adopted in the summer of 2010. Implementation of the plan is the responsibility of Town of Beulaville, Duplin County, and NCDOT. Refer to Chapter 1 for information on the implementation process.

This report documents the recommendations for improvements that are included in the Town of Beulaville CTP. The major recommendations for improvements are listed below. More detailed information about these and other recommendations can be found in Chapter 1.

- NC 24 Freeway: Construct a new location four-lane divided freeway from existing NC 24 near Sandlin Rd. (SR 1962) to existing NC 24 near Penny Rd. (SR 1720). Interchanges are recommended on NC 24 near Sandlin Rd. (SR 1962), NC 24 near Penny Rd. (SR 1720), and where the new location intersects NC 241. See page I-3 (BEU0001-H) for more information.
- **NC 24 Expressway:** Widen to a four-lane divided expressway from the Beulaville Planning Area Boundary (PAB) to NC 24 near Sandlin Rd. (SR 1962) and from NC 24 near Penny Rd. (SR 1720) to the Beulaville PAB. See page I-7 (BEU0002-H) for more information.
- NC 24 Boulevard: Upgrade the current facility to a boulevard from existing NC 24 near Sandlin Rd. (SR 1962) to existing NC 24 near Penny Rd. (SR 1720). See page I-11 (BEU0003-H) for more information.
- NC 24 Off-road Bicycle Path: Construct a new location Off-road bicycle facility adjacent the ROW along the expressway portions of NC 24. See page I-19 (BEU0001-B) for more information.

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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 the environment.

This report documents the development of the Town of Beulaville CTP as shown in Figure 1 (Sheets 1 - 5). This chapter presents recommendations for each mode. Refer to Appendix I for documentation of project alternatives and scenarios that were studied, but are not included in the adopted CTP.

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

#### A. Problem Statements

### 1. Highway



#### **Problem Statement**

Existing NC 24 is designated a Strategic Highway Corridor (SHC) Expressway within the Beulaville Planning Area Boundary (PAB) and is expected to operate over-capacity by the year 2035.

#### **Justification of Need**

NC 24 is a Major Arterial within Beulaville, Duplin County, and eastern North Carolina. It is heavily used by commuters travelling to Camp Lejeune, Jacksonville, Kinston, Kenansville, and North Carolina beaches. This corridor is also a vital link between the costal regions of North Carolina and Interstate 40.

NC 24 is currently a 4-lane divided Boulevard facility from the western PAB to near Miller Rd. (SR 1726) and also from east of Lyman Rd. (SR 1801) to the eastern PAB. NC 24 is currently a 5-lane Major Thoroughfare from near Miller Rd. (SR 1726) to east

of Lyman Rd. (SR 1801). The facility's main purpose is to safely improve regional and statewide mobility and connectivity.

In addition to NC 24 being a SHC, the facility is expected to be over capacity by the year 2035 within the Beulaville municipal limits. Current traffic volumes along the corridor within the municipal limits are approximately 15,000 vehicles per day (vpd). The capacity of the existing facility is 33,200 vpd. By 2035, traffic is projected to increase 34,400 vpd. Based on these projections, the facility would be over capacity in this future year (2035).

#### **Community Vision and Problem History**

While the Town of Beulaville wishes to limit access and provide a safer facility for commuters, it did not want an Expressway through the middle of town. The Town wished to provide more access along the facility in order to support existing businesses and residents, while also attracting mixed-use development.

Due to Beulaville's close proximity to Camp Lejeune, it is expected to experience moderate growth in the future. Being in the southeastern part of Duplin County, overflow growth from Onslow County and Jacksonville are expected to impact Beulaville due to anticipated increased residential development. The military base's proximity influences traffic in the area due to the flow of military goods and personnel through the town. This section of NC 24 also experiences heavy seasonal and through traffic as it provides access to beach communities and ports in the region.

#### CTP Project Proposal

#### Project Description and Overview

The project is intended to provide a 4-lane divided freeway bypass of the Town of Beulaville. A freeway was chosen over an Expressway because it would provide full control of access while being more environmentally friendly by limiting increased development adjacent to the corridor. This bypass will be from near the intersection at NC 24 and Sandlin Rd. (SR 1962) to near the intersection of NC 24 and Penny Rd. (SR 1720). Interchanges are proposed near Penny Rd. (SR 1720), Sandlin Rd. (SR 1962), and at NC 241 just north of the Town's municipal limits. Two grade separations are proposed where the proposed facility crosses NC 111 and NC 41.

#### Linkages to Other Plans and Proposed Project History

The proposed improvements for this SHC provide a recommendation for NC 24 that was not included in the 2008 Duplin County CTP. This particular recommendation has not been in any previous transportation plan and is currently not funded in the 2012-2018 DRAFT State Transportation Improvement Program (STIP).

#### Land Use Patterns

The area near the proposed project is mostly rural land. There are some residential, commercial, and industrial developments near the proposed alignment. The CTP proposal for a freeway facility would provide full control of access. This will help the Town of Beulaville and Duplin County better plan their land-use patterns around this facility.

#### Natural & Human Environmental Context

The proposed project will have an impact on the natural and human environment. The chosen bypass alignment will have a length of approximately 4.8 miles, require approximately 87 acres of Right-of-Way (ROW) acquisition, impact approximately 14 acres of watershed area, and impact approximately 1 acre of wetland area. Also the project is expected to affect approximately 1 business and 13 houses. No parks, school, or churches will be impacted by the proposed project. This data was estimated using current aerial photography and numerous field studies within the Beulaville area.

#### Multi-modal Considerations

The proposed project does not accommodate any multi-modal facilities. Since the proposed project is classified as a freeway, it cannot carry any bicycle or pedestrian travel. There is a bus route planned for NC 24 but not on the proposed bypass. The locals preferred the bus route to follow existing NC 24 in order to cater to the population inside the municipal limits instead of bypassing the town. See BEU0001-T for more information regarding the proposed bus routes.

#### Public/ Stakeholder Involvement

As part of developing the CTP recommendation for NC 24, multiple options were considered by the Beulaville CTP Steering Committee and the Eastern Carolina Rural Planning Organization. These groups analyzed in detail three corridor options, considering transportation needs and impacts to the natural and human environment, before recommending the proposed corridor shown on the Beulaville CTP. For this proposed project, the primary concern of the CTP committee was that the project should divert through traffic from inside town to the proposed bypass, while maintaining and improving the current economic viability of the area. A public workshop was held on April 26<sup>th</sup>, 2010. Positive comments were received at this session regarding the planned new location routing of NC 24. Refer to Appendix H for further information regarding public involvement.

#### NC 24 Expressway

#### Local ID: BEU0002-H



#### NC 24 Project Location Map

#### **Problem Statement**

Existing NC 24 is designated a SHC Expressway within the Beulaville Planning Area Boundary (PAB). In order to be consistent with the SHC Plan, the current facility (Boulevard) would need to be upgraded to an Expressway.

#### Justification of Need

NC 24 is a Major Arterial within Beulaville, Duplin County, and eastern North Carolina. It is heavily used by commuters traveling to destinations such as Camp Lejeune, Jacksonville, Kinston, Kenansville, and North Carolina beaches. This corridor is also a vital link between the costal regions of North Carolina and Interstate 40.

NC 24 is currently a 4-lane divided Boulevard facility from the western Beulaville PAB to near Miller Rd. (SR 1726) and also from just east of Lyman Rd. (SR 1801) to the eastern Beulaville PAB. NC 24 is currently a 5-lane Major Thoroughfare from near Miller Rd. (SR 1726) to near Sandlin Rd. (SR 1962) where the new location NC 24 Beulaville Bypass is proposed (See BEU0001-H).

The CTP project proposal for NC 24 will reduce congestion in the Town of Beulaville by providing more efficient movement of traffic to the NC 24 Beulaville Bypass (BEU0001-H). The existing capacity of the roadway ranges from roughly 33,000 vehicles per day (vpd) to 35,000 vpd. The current traffic volume for the facility ranges from 9,000 to 14,000 vpd and expected to increase to 23,000-25,000 vpd. Therefore the current facility could accommodate the projected traffic volumes without being over capacity. However, to be consistent with the SHC Plan, it should be upgraded to an Expressway (section dependent – see CTP mapping Figure 1) so that it can safely provide improved statewide mobility and connectivity.

#### **Community Vision and Problem History**

Due to Beulaville's close proximity to Camp Lejeune, it is expected to experience moderate growth in the future. Being in the southeastern part of Duplin County, overflow growth from Onslow County and the City of Jacksonville is expected to impact Beulaville. The military base's proximity does influence traffic in the area due to the movement of military goods and personnel. This section of NC 24 also experiences through traffic as it provides access regionally to ports, beaches, towns and cities. The Town of Beulaville wants to better accommodate this increased traffic by upgrading this vital corridor.

#### CTP Project Proposal

#### **Project Description and Overview**

The proposed project, BEU0002-H, is intended to provide a 4-lane divided Boulevard to the east and west of the proposed NC 24 Beulaville Freeway (BEU0001-H). This project will be from the western Beulaville PAB to near Sandlin Rd. (SR 1962) and also from near Penny Rd. (SR 1720) to the eastern Beulaville PAB. Interchanges are proposed near Sandlin Rd. (SR 1962) and Penny Rd. (SR 1720) connecting the proposed project (BEU0002-H) to the proposed NC 24 Beulaville Freeway (BEU0001-H).

#### Linkages to Other Plans and Proposed Project History

This recommendation has not been on any previous transportation plan but does connect with the recommendation for NC 24 in the 2008 Duplin County CTP. BEU0002-H is currently not funded in the DRAFT 2012-2018 Statewide Transportation Improvement Program (STIP).

#### Land Use Patterns

The area near the proposed project is mostly rural land outside of the town's municipal limits. There are some residential and commercial developments near the existing project. The CTP proposal for the Expressway facility would limit access. Future and existing land-use designation should be monitored in order to minimize access, and improve safety and mobility along the corridor.

#### Natural & Human Environmental Context

The proposed project should have a minimal impact on the natural and human environment. Since the proposed project is within existing Right-of-Way (ROW), there should be minimal impacts to any houses, businesses, churches, schools, and parks. Some property, houses, and businesses will be affected at the two interchange locations where the proposed NC 24 Beulaville Freeway will tie into the proposed NC 24 Expressway.

#### **Multi-modal Considerations**

In order to accommodate bicycles for regional travel, a multi-use path is proposed adjacent to the ROW for the proposed NC 24 Expressway. The off-road bicycle path is compliant with the Eastern Carolina RPO's 2005 Regional Bike and Pedestrian Plan and recommended by the Beulaville CTP Steering Committee. See BEU0001-B for more information

#### Public/ Stakeholder Involvement

A public workshop was held on April 26<sup>th</sup>, 2010 where no comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement.

#### NC 24 Boulevard

#### Local ID: BEU0003-H



NC 24 Project Location Map

#### **Problem Statement**

Existing NC 24 is expected to be over-capacity by the year 2035 within the Beulaville municipal limits.

#### Justification of Need

NC 24 is a Major Arterial and is heavily used by commuters seeking destinations such as Camp Lejeune, Jacksonville, Kinston, Kenansville, and North Carolina beaches. This corridor is also a vital link between the coastal regions of North Carolina and Interstate 40.

NC 24 is currently a 4-lane divided Boulevard from the western Beulaville Planning Area Boundary (PAB) to near Miller Rd. (SR 1726), and also from just east of Lyman Rd. (SR 1801) to the eastern Beulaville PAB. NC 24 is currently a 5-lane Major Thoroughfare from near Miller Rd. (SR 1726) to east of Lyman Rd. (SR 1801). As part SHC Plan, its main purpose is to provide regional and statewide mobility and connectivity. In addition to NC 24 being part of the SHC Plan, the facility is expected to be over capacity by the year 2035 within the Beulaville municipal limits. Current traffic volumes along the corridor are approximately 15,000 vehicles per day (vpd). The capacity of the existing facility is 33,200 vpd. By 2035, traffic is projected to increase to 34,400 vpd. Based on these projections, the facility would be operating over capacity, at a Level of Service (LOS) D, in the future year (2035).

While the proposed NC 24 Beulaville Freeway (BEU0001-H) would relieve traffic on existing NC 24, uncertainty about the future allocation of funds and resources for the new location facility, locals favored a Boulevard option along existing NC 24 within the town limits in order to accommodate future volumes. Such improvements as limiting access, installing a median, and right-in/right-out access points are expected to help raise the existing capacity (33,200 vpd) by an extra 5,000 to 10,000 vpd. Future design and public involvement would be conducted by NC DOT prior to any improvements.

#### **Community Vision and Problem History**

While the Town of Beulaville wishes to limit access and provide a safer facility for commuters, it did not want an Expressway through the middle of town. They wished to provide more access along NC 24 in town than an Expressway could provide in order to support existing businesses and residential along with attracting newer mixed-use development.

Due to Beulaville's close proximity to Camp Lejeune, it is expected to experience moderate growth in the future. Being in the southeastern part of Duplin County, overflow growth from the base, as it expands, is expected to impact Beulaville. The military base's proximity does influence traffic in the area due to military's movement of goods and personnel by convoy. This section of NC 24 also experiences much through traffic as it provides access regionally to ports, beaches, towns and cities.

#### CTP Project Proposal

#### Project Description and Overview

Project BEU003-H is intended to provide a 4-lane divided Boulevard. This Boulevard will be from near the intersection of NC 24 and Sandlin Rd. (SR 1962) to near the intersection of NC 24 and Penny Rd. (SR 1720). Interchanges are proposed at the two secondary road locations above. These interchanges will link all three NC 24 projects (BEU0001-H, BEU0002-H, and BEU0003-H).

#### Linkages to Other Plans and Proposed Project History

The proposed Boulevard is important to many of the recommendations in the Beulaville CTP. It connects directly to NC 241, NC 41, NC111 as well as numerous local and secondary roads in and around Beulaville. This recommendation has not been on any previous transportation plan. In conjunction with the proposed NC 24 Beulaville Bypass

(BEU0001-H), this recommendation complies with the minimum requirements for the NC 24 corridor designated by the SHC Plan. This recommendation is currently unfunded in the 2012-2018 DRAFT Statewide Transportation Improvement Program (STIP).

#### Land Use Patterns

The area near the proposed project is mostly residential and commercial development and mostly within the town's municipal limits. Some residential, commercial, and rural development is located along the corridor east and west of the town's municipal limits. The Boulevard facility is consistent with current land-use plan revisions being developed by the Town of Beulaville, which is seeking denser mixed-use land development within the town.

#### Natural & Human Environmental Context

The proposed project will have a minimal impact on the natural environment but will impact the human environment. Since the project widening will be within existing Rightof-Way (ROW), there will be minimal direct impacts to houses, businesses, churches, schools, and parks. Some indirect impacts will be felt by the town due to the construction of upgrading the current Major Thoroughfare to a Boulevard facility and by limiting some access. Future coordination with NCDOT Division 3 staff will be needed in order to limit impacts to the town during construction.

#### Multi-modal Considerations

The proposed project is planned to work in conjunction with other proposed multi-modal projects for NC 24. The locals desired to improve sidewalk facilities along the corridor. Some sidewalks exist piecewise along the corridor, but the locals envisioned having a continuous sidewalk system along BEU0003-H. Refer to BEU0001-P for more information.

Wider outsides lanes are desired on portions of this project in order to accommodate bicycle traffic. On road bicycle routes are planned as part of the Eastern Carolina RPO's 2005 Regional Bike and Pedestrian Plan and by the local CTP committee. Refer to BEU0001-B for more information.

In coordination with the Duplin County Transportation Department, bus routes were recommended along the corridor as well as a park and ride facility near NC 24 off Railroad Ave. (SR 1724). These bus routes are aimed at connecting Beulaville with other locations within Duplin County and locations regionally, such as Jacksonville or Kinston. Refer to BEU0001-T for more information.

#### Public/ Stakeholder Involvement

A public workshop was held on April 26<sup>th</sup>, 2010 where favorable comments were received regarding this specific recommendation. For more information regarding public involvement for BEU0003-H, refer to Appendix H.

#### Problem Statement

NC 41/111 is a Major Thoroughfare south of existing NC 24 in Beulaville. This section of roadway is expected to be over capacity by 2035.

#### CTP Project Proposal

NC 41/111 serves as a major north-south corridor for regional travel in eastern North Carolina. The roadway is projected to be over capacity; therefore improvements are needed. This section of NC 41/111 is recommended to be widened to two 12 foot lanes with adequate paved shoulders to accommodate regional bicycle traffic (See BEU0002-B). The existing capacity of the roadway is 10,100 vehicles per day (vpd) while the 2035 proposed traffic volume is expected to be 10,800 vpd. The vision of the community is to preserve this corridor while providing better safety and mobility. This project proposal has not been included in any other transportation plan. The 2008 Duplin County Comprehensive Transportation Plan (CTP) did not recommend widening for this studied section of NC 41/111 because it did not recommend any bicycle accommodations. A public workshop was held on April 26<sup>th</sup>, 2010 where no comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0004-H.

#### NC 241

Local ID: BEU0005-H

#### Problem Statement

NC 241 is a Major Thoroughfare north of existing NC 24 in Beulaville and is expected to be near capacity by 2035 and accommodate regional bicycle traffic.

#### CTP Project Proposal

NC 241, in conjunction with NC 41/111, serves as a major north-south corridor for regional travel in eastern North Carolina. This section of NC 241 is recommended to be widened to two 12 foot lanes with adequate paved shoulders to accommodate regional bicycle traffic (See BEU0002-B). The existing capacity of the roadway is 10,100 vpd while the 2035 proposed traffic volume is expected to be 9,400 vpd. This project proposal has not been included in any other transportation plan. The 2008 Duplin County CTP did not recommend a widening for its studied section of NC 241 because it did not recommend any bicycle accommodations for NC 241. A public workshop was held on April 26<sup>th</sup>, 2010 where favorable comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0005-H.

#### **Minor Widening Improvements**

The following roads do not have capacity issues, but are recommended to be upgraded to two 12-foot lanes with 2-foot paved shoulders to improve safety or to correspond to proposed bicycle and pedestrian improvements. Some of the following routes will require turn lanes at major intersections (coordinate with local DOT staff on future project specifications/need). Refer to CTP mapping (Figure 1) for recommendation details. A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendations. Refer to Appendix H for further information regarding public involvement for the following projects.

- BEU0006-H NC 41: from NC 241 to Brown Rd. (SR 1722).
- BEU0007-H NC 111: from NC 241 to the Beulaville PAB.
- BEU0008-H Lyman Rd. (SR 1801): from NC 24 to the Beulaville PAB.
- **BEU0009-H Old Chinquapin Rd. (SR 1802):** from NC 24 to Roland Batchelor Rd. (SR 1832).
- BEU0010-H Brown Rd. (SR 1722): from NC 41 to NC 24.
- BEU0011-H Lee Ave.: from NC 111 to NC 24.
- BEU0012-H Bostic Ave.: from NC 24 to Brown Rd. (SR 1722)
- BEU0013-H Cavenaugh St.: from Cottle St. to Lee Ave.
- BEU0014-H Cottle St.: from Cavenaugh St. to Lanier St.
- BEU0015-H Lanier St.: from Cottle St. to NC 41/111.

### 2. Public Transportation and Rail

#### NC 24

Local ID: BEU0001-T

#### Problem Statement

NC 24 is expected to be over capacity by the year 2035 and is anticipated to have future bus services.

#### CTP Project Proposal

A proposed bus route is recommended on NC 24 from the Beulaville eastern Planning Area Boundary (PAB) to the western PAB. The county is in the beginning stages of planning circulatory bus routes in order to provide an alternate means of transportation for it's citizens. Duplin County is also seeking regional transit cooperation with other counties in the area. In order to connect major eastern destinations such as Jacksonville, Camp Lejeune, Kinston, and Wilmington, bus routes and other means of transit are being considered. These alternative forms of transportation would provide safe, accessible travel for citizens throughout the region. This project has not been in any previous transportation plan. A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0001-T.

NC 41/111/241

Local ID: BEU0002-T

#### Problem Statement

NC 41/111 and NC 241 are expected to be near and over capacity (section dependant) by the year 2035 and are anticipated to have future bus services.

#### **CTP Project Proposal**

A proposed bus route is recommended on NC 41/111 and NC 241 from the Beulaville northern PAB to the southern PAB. In the future, the county will be seeking circulatory bus routes in order to provide an alternate means of transportation for it's citizens. Duplin County is also seeking regional transit cooperation with other counties in the area (See BEU0001-T for more information). This project has not been in any previous transportation plan. A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0002-T.

#### **Problem Statement**

A Park and Ride lot is needed to provide parking and access to the proposed bus routes on NC 24, NC 41/111, and NC 241.

#### CTP Project Proposal

A Park and Ride Lot is recommended to be constructed near the corner of NC 24 and Railroad Ave. This lot will provide parking space for locals desiring to access proposed regional bus routes. Future coordination should be done between the Town of Beulaville and private property owners regarding the exact location and design of the facility. This project has not been in any previous transportation plan. A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0003-T.

### 3. Bicycle

NC 24 with signed bicycle bypass

Local ID: BEU0001-B

#### Problem Statement

Safety is the top priority for bicyclists travelling NC 24 within Beulaville and Duplin County.

#### CTP Project Proposal

A mixture of on-road and off-road bicycle facilities are recommended for NC 24. In order to be consistent with the SHC Plan's recommendation of NC 24 as an Expressway, it is recommended that an off-road bicycle facility be built adjacent to the NC 24 Expressway (BEU0002-H). Future connection within the county and eastern NC should be examined.

On the proposed NC 24 Boulevard (BEU0003-H), it's recommended that the facility be designed for wider outside lanes to accommodate bicycle traffic from the proposed NC 24 Freeway bypass near Sandlin Rd. (SR 1962) to Bostic Ave. and from Brown Rd. (SR 1722) to the proposed NC 24 Freeway bypass near Penny Rd. (SR 1720).

The Comprehensive Transportation Plan (CTP) Steering Committee wished to channel regional bicycle traffic to local roads within the municipal limits as a signed bicycle route. This would provide greater safety for through bicyclists. The route would follow Bostic Ave. and Brown Rd. (SR 1722) which are recommended to be widened to two 12 foot lanes with wider paved shoulders (See BEU0010-H and BEU0012-H). This project has not been in any previous transportation plan. A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0001-B.

#### NC 241 and NC 41/111 with signed bicycle bypass

Local ID: BEU0002-B

#### **Problem Statement**

Safety is the top priority for bicyclists travelling NC 241 and 41/111 within Beulaville and Duplin County.

#### CTP Project Proposal

On-road bicycle facilities (bicycle route signage and wider paved shoulders) are recommended along these NC routes. The CTP Steering Committee wished to channel regional bicycle traffic within the municipal limits to local roads as a signed bicycle route (similar to BEU0001-B). This would provide greater safety for north-south through bicyclists. The bypass would follow Lee Ave, Cavenaugh St., Cottle St., and Lanier St.,

which are all recommended to be widened to two 12 foot lanes with wider paved shoulders (See BEU0011-H, BEU0013-H, BEU0014-H, and BEU0015-H). This project has not been in any previous transportation plan. Future connection within the county and region should be examined in future transportation studies for Duplin County and in other regional planning efforts. A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0002-B.

#### **Minor Bicycle Improvements**

### Problem Statement

Increased bicycle safety and connectivity within the Town of Beulaville is needed.

### CTP Project Proposals

#### **Project Description**

The following routes have been identified for improvement to enhance bicycle use. These routes should be widened to 2 - 12 foot lanes with wide paved shoulders. Additional signage for bicycle routes may be needed and should be pursued by the town in the future. A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for these recommended minor bicycle improvements. The routes recommended for minor bicycle improvements are:

- BEU0003-B NC 41: from NC 241 to Brown Rd. (SR 1722).
- **BEU0004-B NC 111:** from NC 241 to the Beulaville PAB.
- **BEU0005-B Old Chinquapin (SR 1802):** from Bostic Ave. to Roland Batchelor Rd. (SR 1832).
- BEU0006-B Lyman Rd. (SR 1801): from NC 24 to the Beulaville PAB.
- BEU0007-B Brown Rd. (SR 1722): from NC 41 to NC 24.

### 4. Pedestrian

#### NC 24

#### Problem Statement

Safety needs to be improved for pedestrians along NC 24 within Beulaville and Duplin County.

#### CTP Project Proposal

Sidewalks are recommended on both sides of the road from Turkey Branch Rd. (SR 1725) to Lyman Rd. (SR 1801). Portions of the facility have existing sidewalks on both sides of the road or on just one side of the road. Completing the sidewalks will provide better safety and connectivity for pedestrians along NC 24. This project should have a positive impact on economic development as connectivity of sidewalks will provide better access to businesses for pedestrians. This pedestrian facility will help provide access to proposed bus routes anticipated to be planned for the county and eastern Carolina region (See BEU0001-T). A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0001-P.

#### NC 241 and NC 41/111

Local ID: BEU0002-P

Local ID: BEU0001-P

#### Problem Statement

Safety needs to be improved for pedestrians along NC 241 and NC 41/111 within Beulaville and Duplin County.

#### **CTP Project Proposal**

Sidewalks are recommended on both sides of the road from near the NC 24 Beulaville Freeway (See BEU0001-H) proposed interchange to Turner Rd. There currently are no sidewalk facilities along NC 241 but there are sections of existing sidewalk facilities on NC 41/111 that need improvement. Completing the sidewalks will provide better safety and connectivity for pedestrians along the corridor. This project should have a positive impact on economic development as connectivity of sidewalks will provide better access to businesses for pedestrians. This pedestrian facility will help provide access to proposed bus routes currently being planned for the county and eastern Carolina region (See BEU0002-T). A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0002-P.

#### Problem Statement

Safety needs to be improved for pedestrians along NC 41 and NC 111 within Beulaville and Duplin County.

#### CTP Project Proposal

Sidewalks are recommended on both sides for NC 41 from NC 241 to Brown Rd. (SR 1722) and on NC 111 from NC 241 to near East Duplin High School. Adding the sidewalks while provide better safety and connectivity for pedestrians on NC 41 and 111. There currently are no sidewalk facilities on this facility. This project should have a positive impact on economic development as connectivity of sidewalks will provide better access to businesses for pedestrians. Pedestrian access between the Town of Beulaville and Eastern Duplin High School will be improved by this recommendation along with access to industry on NC 41. A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0003-P.

#### **Minor Sidewalk Improvements**

#### Problem Statement

The pedestrian network in the Town of Beulaville needs improvement for increased safety and connectivity.

#### **CTP Project Proposals**

#### Project Description

The following routes have been identified for pedestrian improvements in the development of the 2010 Beulaville CTP. A public workshop was held on April 26<sup>th</sup>, 2010 where positive comments were received regarding this specific recommendation. Refer to Appendix H for further information regarding public involvement for BEU0003-T. The following secondary and local routes were suggested to be improved for better pedestrian facilitation.

- **BEU0004-P Old Chinquapin Rd. (SR 1802):** from NC 24 to Roland Batchelor Rd. (SR 1832).
- BEU0005-P Lyman Rd. (SR 1801): from NC 24 to Broad St.
- BEU0006-P Brown Rd. (SR 1722): from NC 41 to NC 24.
- BEU0007-P Turkey Branch Rd. (SR 1725): from 24 to NC 111.
- BEU0008-P Bostic Ave.: from NC 24 to Brown Rd. (SR 1722).

- **BEU0009 Mercer Court Apartments Ln.:** from NC 41/111 to Turner Rd.
- BEU0010 Broad St.: from NC 41/111 to Lyman Rd. (SR 1801).
- BEU0011 Smith St.: from NC 24 to Broad St.
- **BEU0012 Turner Rd.:** from NC 41/111 to end-of-road.
- BEU0013 Crossover Rd.: from NC 241 to NC 41.

#### B. 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 Comprehensive Transportation Plan should be consistent with the other elements.

Initiative for implementing the CTP rests predominately with the policy boards and citizens of the Town of Beulaville and Duplin County. 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.





# Figure 1 Beulaville

Duplin County North Carolina

## Comprehensive Transportation Plan

Plan date: 5/18/10

Sheet 1	Adoption Sheet
Sheet 2	Highway Map
Sheet 3	Public Transportation and Rail Map
Sheet 4	Bicycle Map
Sheet 5	Pedestrian Map
	Planning Area Boundary
	Water Features

Boulovillo Municir

Beulaville Municipal Boundary

Schools

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Sheet 1 of 5



Base map date: 11/09/09 Refer to CTP document for more details



# Highway Map



# Figure 1 Beulaville Comprehensive Transportation Plan

Plan date: 5/18/10

Freeways	
	Existing
	Needs Improvement
	Recommended
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### II. Analysis of the Existing and Future Transportation System

In order to develop a Comprehensive Transportation Plan (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.

### A. 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.

### 1. 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, or additional radial routes.

In the development of this plan, travel demand was projected from 2007 to 2035 using a Hand Allocated – Travel Demand Model (TDM). TDMs are developed to replicate travel patterns on the existing transportation system as well as to estimate travel patterns for a future year (2035). In addition, local land use plans and growth expectations were used to develop future growth projections. The established future growth rates were endorsed by the Beulaville Town Commissioners on November 2, 2009. For more information regarding the Hand Allocated – TDM and growth projections, see Appendix J.

In conjunction with the TDM, travel demand was projected using a trend line analysis from 2007 to 2035 for Old Chinquapin Rd. (SR 1802). This road could not be accurately assessed by the TDM; therefore, it was left out of the model. .A trend line analysis uses historic traffic counts, based on Annual Average Daily Traffic (AADT) data from 1991 to 2007, to project future travel volumes.

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 Figure 2 for 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 North Carolina Level of Service (NCLOS) program developed by the Institute for Transportation Research and Education (ITRE) at North Carolina Stave University (NCSU). 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 Beulaville CTP for crashes occurring in the planning area between January 1, 2007 and December 31, 2009. During this period, 1 intersection (NC 24 and NC 41/111) was identified as a high crash location (20 crashes) as illustrated in Figure 3. 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 Bridge Maintenance 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. Currently, there are no deficient bridges identified within the planning area. Refer to Appendix G for more detailed information.



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### 2. 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: 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. Prior to the development of the Beulaville CTP, there were no public transportation services planned for the area. The 2008 Duplin County CTP did not recognize any public transportation recommendations other than existing rail corridors in the County. All recommendations for public transportation were coordinated with the local governments and the Public Transportation Division of NCDOT. Refer to Appendix A for contact information.

#### Rail

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

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. There are no rail systems that serve the immediate area within the Beulaville Planning Area. There are rail systems that serve Duplin County, for more information, please see the 2008 Duplin County CTP or contact the NCDOT Rail Divison. Refer to Appendix A for contact information.

#### 3. 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 Sheet 4 and 5 of Figure 1. The 2005 Eastern Carolina Rural Planning Organization's (ECRPO) Bicycle and Pedestrian Plan was utilized in the development of

these elements of the CTP. Currently, there no statewide bicycle facilities that go through the area. The Eastern Carolina RPO, county staff, and town staff helped coordinate on future regional bicycle planning efforts for the Beulaville CTP's bicycle and pedestrian recommendations. All recommendations for bicycle and pedestrian facilities were coordinated with the NCDOT Division of Bicycle and Pedestrian Transportation. Refer to Appendix A for contact information.

## 4. 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 2007 Town of Beulaville Land Use Plan was used to meet this requirement and is illustrated in Figures 4 and 5, respectively.

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 day and the day of the week. For transportation planning purposes, land use is divided into the following categories:

- <u>Residential</u>: Land devoted to the housing of people, with the exception of hotels and motels which are considered commercial.
- <u>Commercial</u>: 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.
- <u>Industrial</u>: Land devoted to the manufacturing, storage, warehousing, and transportation of products.
- <u>Public</u>: Land devoted to social, religious, educational, cultural, and political activities; this would include the office and service employment establishments.
- <u>Agricultural</u>: 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.
- <u>Mixed Use:</u> 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.

Beulaville is anticipating growth in it's "Core Commercial" Area located in the center of Beulaville. There are many areas within and surrounding the municipal limits that are undeveloped. These areas are expected to experience growth due to agriculture, commercial, industrial, and residential expansion. Rural transitional areas are areas that are expected to experience growth on the edge of the municipal limits. These areas are located on the east, south, and north-east of the municipal limits.

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# B. Consideration of Natural and Human Environment

In recent years, the environmental considerations have come to the forefront of 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 1 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 table utilizing the best available data. Environmental features occurring within Beulaville are shown in Figure 6.

## Table 1 – Environmental Features

- Air Quality Pollution Discharge
   Points
- Ambient Water Quality Monitoring Sites
- Anadromous Fish Spawning Areas
- Animal Operation Permits
- Artificial Marine Reefs
- Beach Access Sites
- Benthic Monitoring Results
- Bottom Sediment Sampling Sites
- Citizen Water Quality Monitoring Sites
- Closed Shellfish Harvesting Areas
- Coastal Reserves
- Conditionally Approved Shellfish Harvesting Areas
- Conservation Easements, US Fish & Wildlife Service
- Conservation Tax Credit Properties
- Discharger Coalitions' Monitoring Sites
- Ecosystem Enhancement Program (EEP) Local Watershed Plans, 2004
- Ecosystem Enhancement Program (EEP) Targeted Local Watersheds, 2004
- Federal Land Ownership

- Fish Community Sampling Sites
- Fisheries Nursery Areas
- Game Lands Wildlife Resources
   Commission
- Groundwater Incidents, unverified
- Groundwater Recharge/Discharge
- Hazardous Substance Disposal Sites
- Hazardous Waste Facilities
- Heavy Metal & Organic-Rich Mud Pollutant Sample Sites
- High Quality Water and Outstanding Resource Water Management Zones
- Hurricane Storm Surge Inundation Areas
- Land Trust Conservation Properties
- Land Trust Priority Areas
- Lands Managed for Conservation & Open Space
- Macrosite Boundaries
- Megasite Boundaries
- National Pollutant Discharge Elimination System Sites (NPDES) – Major and Minor
- National Wetlands Inventory
- North Carolina Coastal Region Evaluation of Wetland Significance (NC-CREWS)

#### Table 1 – Environmental Features (cont.)

- Public Water Supply Water Sources
- Recreation Projects Land and Water
- Conservation Fund
- Shellfish Strata
- Significant Aquatic Endangered Species Habitats
- Solid Waste Facilities

- State Parks
- Submersed Rooted Vasculars
- Surface Water Intakes
- Trout Streams (DWQ)
- Water Distribution Systems Water Treatment Plants
- Water Supply Watersheds
- Well Ground Water Intakes

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

#### Table 2 – Restricted Environmental Features

- Archaeological Sites
- Dedicated Nature Preserves and Registered Heritage Areas
- Historic National Register Districts
- Historic National Register Structures
- Historic Study List Districts Historic Study List Structures
- Managed Areas National Heritage Element Occurrences
- Significant Natural Heritage Areas

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![](_page_48_Picture_11.jpeg)

![](_page_48_Picture_13.jpeg)

# C. Public Involvement

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

The Town of Beulaville requested the development of a CTP. A meeting was held with the Beulaville Town Commissioners in March 2009 to formally initiate the study, provide an overview of the transportation planning process, and to gather input on area transportation needs.

The Transportation Planning Branch cooperatively worked with the Beulaville CTP Steering Committee, which included the Town Manager, Town Commissioners, the Mayor, local citizens, members from the Eastern Carolina RPO, and others, to provide information and feedback for the CTP. Refer to Appendix H for more information on the Steering Committee's work.

The public involvement process included holding two public workshop sessions in Beulaville to present the proposed Comprehensive Transportation Plan to the public and solicit comments. The first workshop was held on April 26<sup>th</sup>, 2010 at the Beulaville Volunteer Fire Department's Training Room. This session was publicized in the local newspaper (The Duplin Times) and was held from 5PM to 7PM. One comment form was submitted during this meeting.

A public hearing was held on June 7, 2010 during the Beulaville Town Commissioners meeting. The purpose of this meeting was to discuss the plan recommendations and to seek adoption of the CTP. However, The CTP was not adopted during this meeting. The Town Commissioners wanted to receive more feedback from businesses regarding the proposed plan. A second public workshop was held on June 24, 2010. The purpose of this meeting was to discuss the plan recommendations with local businesses and to solicit further input from the public. For more information on the second public workshop, please refer to Appendix H.

The Duplin County Transportation Committee endorsed the CTP on June 15, 2010. A final public hearing was held on June 28, 2010 during a Beulaville Town Commissioners meeting. The purpose of this meeting was to discuss feedback from the second public workshop, on June 24, 2010, and to solicit further input from the public. The CTP was adopted during this meeting.

The Duplin County Board of Commissioners adopted the CTP on July 6, 2010. The Eastern Carolina RPO endorsed the CTP on July 15, 2010. The North Carolina DOT adopted the Beulaville CTP on August 5, 2010.

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# 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

<u>Secretary of Transportation</u> Eugene A. Conti, Jr., Ph.D. 1501 Mail Service Center Raleigh, NC 27699-1501 (919) 733-2520 http://www.ncdot.org/about/leadership/secretary.html

#### Board of Transportation Member

Mr. Mike Alford 1408 Western Blvd. Jacksonville, NC 28546 (910) 455-2121 <u>malford@ncdot.gov</u> <u>http://www.ncdot.gov/about/board/default.html</u>

#### Highway Division Engineer

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

Mr. Allen Pope, PE 124 Division Dr. Wilmington, NC 28401 (910) 251-5724 apope@ncdot.gov http://www.ncdot.gov/doh/operations/division3/

#### **Division Project Manager**

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

Mr. Patrick Riddle 124 Division Dr. Wilmington, NC 28401 910) 251-5724 priddle@ncdot.gov

#### **Division Construction Engineer**

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

Mr. Jackson Provost, PE 124 Division Dr. Wilmington, NC 28401 (910) 251-5724 jprovost@ncdot.gov

#### Division Traffic Engineer

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

Ms. Katie Hite 124 Division Dr. Wilmington, NC 28401 (910) 251-2693 kehite@ncdot.gov

#### **Division Operations Engineer**

Contact the Division Operations Engineer for information concerning facility operations.

Mr. Chad D. Kimes, PE 124 Division Dr. Wilmington, NC 28401 (910) 251-5724 ckimes@ncdot.gov

#### 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.

Mr. David L. Thomas, PE 124 Division Dr. Wilmington, NC 28401 (910) 251-5724 dlthomas@ncdot.gov

#### 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.

Mr. Linwood E. Reynolds, PE 220 North Boulevard Clinton, 28328 (910) 592-6174 <u>lereynolds@ncdot.gov</u>

#### Transportation Planning Branch (TPB)

Contact the Transportation Planning Branch for information on long-range multi-modal planning services.

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

Mr. Alex Rickard P.O. Box 1717 New Bern, NC 28563-1717 (252) 638-3185 Ext. 3001 arickard@eccog.org 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.

Mr. Don Voelker 1501 Mail Service Center Raleigh, NC 27699-1501 (919) 715-0951 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) 733-3141 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) 807-0777 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

<u>Department of Commerce – Division of Community Assistance</u>

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 <u>http://www.ncdot.gov/doh/preconstruct/tpb/SHC/facility/</u>.

#### 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 Uturns 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 45 mph
- Cross section ultimately three lanes (no more than one lane per direction) or less without median
- Multi-modal elements bus stops, bike lanes/wide outer lane (urban) or wide paved shoulder (rural), sidewalks (urban)
- ROW no control of access

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

### 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.

# 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. 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-ofway.
- 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

This appendix includes an inventory of CTP recommendations. Many of the categories in the CTP Inventory and Recommendations are abbreviated or require further explanation. These are outlined below.

#### 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.
- 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.
- **ROW:** The estimated existing right-of-way is based on utilizing data from the GIS unit's Road Condition layer and the examination of aerial photography using ArcMap. These right-of-way amounts are approximate and may vary.
- Existing and Proposed Capacity: The estimated capacities are given in vehicles per day (vpd) based on LOS D for existing facilities and LOS C for new facilities. These capacity estimates were developed using the North Carolina Level of Service (NCLOS) program, as documented in Chapter II. The Proposed Capacity is shown in bold if it does not meet or exceed the 2007 AADT with CTP.
- 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 '2035 No Build AADT' is an estimate of the volume in 2035 with no additional facilities / improvements assumed to be in place that were not open to traffic in the base year (2007). The '2035 AADT with CTP' is an estimate of the volume in 2035 with all proposed CTP improvements assumed to be in place. For additional information about the assumptions and techniques used to develop the AADT volume estimates, refer to Chapter II.
- Rec. (Recommended) 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).

Table 3 - CTP Inventory and Recommendations																		
	HIGHWAY																	
					2007 Existing System					2035 Proposed System								
				Dist.	Cr Se	oss- ction	ROW	Speed Limit	Existing Capacity	2007	Proposed Capacity	2035 AADT	2035 AADT with	Rec. Cross	ROW	CTP Classi fi-		Other
ID	Facility	Section (From - To)	Jurisdiction	(mi)	(ft)	lanes	(ft)	(mph)	(vpd)	AADT	(vpd)	No Build	CTP	ection	(ft)	cation	Tier	Modes
BEU0001-H	NC 24	NC 24 - NC 24	Beulaville / Duplin County	4.8	N/A	N/A	N/A	N/A	N/A	N/A	52,700	N/A	15,600	4A	250	Free	Sta	
BEU0002-H	NC 24	Beulaville PAB (West) - End Highway Division	Duplin County	1.3	48	4	150	55	35,900	9,000	49,700	23,600	9,100	4A	150	Exp	Sta	в
BEU0003-H	NC 24	End Highway Division - Beulaville CL	Duplin County	1.3	64	5	150	55	33,200	14,000	48,600	23,300	8,300	4C	150	Blvd	Sta	B, P
BEU0003-H	NC 24	Beulaville CL - Beulaville CL	Beulaville	1.5	64	5	150	35	33,200	15,000	43,000	34,400	17,000	4D	150	Blvd	Sta	B, P
BEU0002-H	NC 24	Beulaville CL - Beulaville PAB (East)	Duplin County	1.8	48	4	150	55	35,100	9,300	48,600	25,400	9,000	4A	150	Exp	Sta	В
BEU0004-H	NC 41-111	Beulaville PAB (South) - Beulaville CL	Beulaville	2.0	22	2	100	55	10,100	5,400	14,900	10,800	10,800	2A	60	Maj	Sta	В
BEU0004-H	NC 41-111	Beulaville CL - NC 24	Beulaville	0.6	36	3	80	35	14,200	6,900	14,900	14,800	14,800	3B	60	Мај	Sta	В, Р
BEU0004-H	NC 41-111	NC 24 - NC 111	Beulaville	0.3	36	3	100	45	14,200	12,000	24,500	18,300	17,400	3B	60	Мај	Sta	В, Р
BEU0006-H	NC 41	NC 111 - Beulaville CL	Beulaville	0.6	36	3	100	35	14,200	2,900	14,900	8,700	7,900	3B	60	Мај	Sta	В, Р
	NC 41	Beulaville CL - Penny Rd. (SR 1720)	Duplin County	0.8	22	2	100	55	10,100	2,400	10,100	4,800	4,800	2A	60	Maj	Sta	
	NC 41	Penny Rd. (SR 1720) - Beulaville PAB	Duplin County	0.6	22	2	100	55	10,100	2,400	10,100	4,800	4,800	2A	60	Maj	Sta	
	NC 111	NC 41 - Beulaville CL	Beulaville	0.3	36	3	100	35	14,200	4,100	14,900	6,500	6,400	2E	60	Мај	Sta	В, Р
BEU0007-H	NC 111	Beulaville CL - Turkey Branch Rd. (SR 1725)	Beulaville	0.6	22	2	100	35	14,200	2,900	14,900	7,300	7,300	2E	60	Мај	Sta	B, P

	HIGHWAY																	
						2	007 Ex	isting S	ystem		2035 Proposed System							
				Dist.	Cr Se	oss- ction	ROW	Speed Limit	Existing Capacity	2007	Proposed Capacity	2035 AADT	2035 AADT with	Rec. Cross	ROW	CTP Classi fi-		Other
ID	Facility	Section (From - To)	Jurisdiction	(mi)	(ft)	lanes	(ft)	(mph)	(vpd)	AADT	(vpd)	No Build	CTP	ection	(ft)	cation	Tier	Modes
BEU0007-H	NC 111	Turkey Branch Rd. (SR 1725) - Beulaville PAB	Beulaville	1.2	22	2	100	55	10,100	2,100	14,900	3,200	7,600	2A	60	Maj	Sta	B, P
BEU0005-H	NC 241	NC 111 - Beulaville CL	Beulaville	0.1	36	3	60	35	14,200	4,700	14,900	9,400	9,400	2C	60	Мај	Sta	В, Р
BEU0005-H	NC 241	Beulaville CL - Beulaville PAB	Duplin County	0.9	22	2	60	55	10,100	4,700	14,900	9,400	9,400	2A	60	Мај	Sta	В, Р
BEU0010-H	Brown Rd. (SR 1722)	NC 41 - NC 24	Beulaville	0.7	18	2	60	35	12,500	400	14,500	600	700	2E	60	Min	Sta	В, Р
	Railroad Ave (SR 1724)	US 111 - Beulaville CL	Duplin County	0.4	20	2	60	35	12,500	600	12,500	900	800	ADQ	60	Min	Sta	
	Railroad Ave (SR 1724)	Beulaville CL - NC 24	Beulaville	0.4	18	2	60	35	12,500	600	12,500	900	800	ADQ	60	Min	Sta	
	Railroad Ave (SR 1724)	NC 24 - Beulaville CL	Beulaville	0.6	18	2	60	35	12,500	1,000	12,500	5,900	5,800	ADQ	60	Min	Sta	
	Corn Mill Rd. (SR 1724)	Beulaville CL - Sandlin Rd. (SR 1962)	Duplin County	1.4	18	2	60	55	9,700	1,000	9,700	2,500	1,500	ADQ	60	Min	Sta	
	Corn Mill Rd. (SR 1724)	Sandlin Rd. (SR 1962) - Beulaville PAB	Duplin County	0.6	18	2	60	55	9,700	1,100	9,700	1,100	1,500	ADQ	60	Min	Sta	
	Turkey Branch Rd. (SR 1725)	NC 111 - NC 24	Duplin County	1.0	20	2	60	55	11,300	400	12,200	900	600	2E	60	Min	Sta	Р
BEU0008-H	Lyman Rd. (SR 1801)	Beulaville PAB - Edwards Rd. (SR 1835)	Duplin County	1.4	18	2	60	55	9,700	1,300	16,200	2,100	2,100	2A	60	Min	Sta	В
BEU0008-H	Lyman Rd. (SR 1801)	Edwards Rd. (SR 1835) - Beulaville CL	Duplin County	2.3	18	2	60	55	9,700	2,800	16,200	4,400	4,400	2A	60	Min	Sta	В
BEU0008-H	Lyman Rd. (SR 1801)	Beulaville CL - NC 24	Beulaville	0.4	22	2	60	35	14,200	2,800	16,200	4,400	4,400	2C	60	Min	Sta	B, P
BEU0009-H	Old Chinquapin Rd. (SR 1802)	NC 24 - Beulaville CL	Beulaville	0.5	18	2	60	35	14,200	1,100	14,900	1,500	1,500	2E	60	Min	Sta	B, P
	Old Chinquapin Rd. (SR 1802)	Beulaville CL - Beulaville PAB	Duplin County	2.8	18	2	60	55	7,800	600	14,500	900	900	2A	60	Min	Sta	B, P
	Hallsville Rd. (SR 1961)	Beulaville PAB - Howard Farm Rd. (SR 1963)	Duplin County	1.4	18	2	60	55	9,700	1,600	9,700	2,100	2,100	ADQ	60	Min	Sta	
	Hallsville Rd. (SR 1961)	Howard Farm Rd. (SR 1963) - Sandlin Rd. (SR 1962)	Duplin County	0.9	18	2	60	55	9,700	1,600	9,700	2,100	2,100	ADQ	60	Min	Sta	
	Hallsville Rd. (SR 1961)	Sandline Rd. (SR 1962) - Beulaville CL	Duplin County	0.5	18	2	60	55	9,700	1,400	9,700	3,500	3,500	ADQ	60	Min	Sta	
	Hallsville Rd. (SR 1961)	Beulaville CL - Railroad Ave. (SR 1724)	Beulaville	0.6	18	2	60	35	9,700	1,400	9,700	3,500	3,500	ADQ	60	Min	Sta	

Note: Future year traffic counts for Old Chinquapin Rd. were determined by straight line projection because it was not studied in the model.

PUBLIC TRANSPORTATION AND RAIL													
				Speed		Existing System			Proposed System				
				Limit	Distance		ROW	Trains		ROW	Trains	Other	
ID	Facility	Section (From - To)	Class	(mph)	(mi)	Туре	(ft)	per day	Туре	(ft)	per day	Maps	
BELLOOO1 T	NC 24 - Proposed Rus Pouto	Beulavile Eastern PAB -		35.55	4.6		150 to		Ruc	150 to			
BL0-0001-1	NC 24 - FTOposed Bus Route	Beulaville Western PAB		33-33	4.0		250		Dus	250	em Trains per day  		
	NC 41/111/241 - Proposed	Beulavile Northern PAB -		35.55	2.9		60 to 100		Buc	60 to 100			
BE0-0002-1	Bus Route	Beulaville Southern PAB		<u> </u>	5.0		00 10 100		Dus	00 10 100			
BEU-0003-T	Proposed Park and Ride	Near Railroad Ave and NC 24											

BICYCLE												
				Existir	ng Syste	em	Proposed					
			Distance	Cross-S	ection			Cross-				
ID	Facility	Section (From - To)	(mi)	(ft)	lanes	BCI Score	Туре	Section(s)	Other Maps			
BEU-0002-B	NC 24	Beulaville Western PAB - NC 24 Bypass and NC 24 Bypass to Beulaville Eastern PAB	0.9	N/A	1	N/A	Off-Road	4A	Н			
BEU-0003-B	NC 24	NC 24 Bypass - NC 24 Bypass	3.9	72	4	N/A	On-Road	4C	Н			
BEU-0002-B	NC 241 and NC 41/111	Beulaville Northern PAB - Beulaville Southern PAB	4.0	36 to 40	2	N/A	On-Road	2A, 2C, 3B	Н			
BEU-0003-B	NC 41	NC 241 - Brown Rd. (SR 1722)	0.7	36	2	N/A	On-Road	2A, 3B	Н			
BEU-0004-B	NC 111	NC 241 - Beulaville Northern PAB	2.0	36 to 40	2	N/A	On-Road	2A, 2E	Н			
BEU-0005-B	Old Chinquapin Rd. (SR 1802)	NC 24 - Roland Batchelor Rd. (SR 1832)	0.9	36	2	N/A	On-Road	2A, 2E	Н			
BEU-0006-B	Lyman Rd. (SR 1801)	NC 24 - Beulaville Southern Eastern PAB	2.8	36	2	N/A	On-Road	2A, 2C	Н			
BEU-0007-B	Brown Rd. (SR 1722)	NC 24 - NC 41	0.7	36	2	N/A	On-Road	2E	Н			

	PEDESTRIAN												
				Existing Syster	n	Proposed	Other						
ID	Facility	Section (From - To)	Distance (mi)	Туре	Side of Street	Туре	Side of Street	Maps					
BEU0001-P	NC 24	Turkey Branch Rd. (SR 1725) - Lyman Rd. (SR 1801)	1.5	Sidewalk	Both (Section Dependant)	Sidewalk	Both	-					
BEU0002-P	NC 241 and NC 41 / 111	NC 24 (Beulaville Bypass interchange at NC 241 - PER0001-H) - Turner Rd.	1.4			Sidewalk	Both	-					
BEU0003-P	NC 41 and 111	Eastern Duplin High School on NC 111 - Brown Rd. (SR 1722)	1.7			Sidewalk	Both	-					
BEU0004-P	Old Chinquapin Rd. (SR 1802)	NC 24 (Existing) - Roland Batchelor Rd. (SR 1832)	0.9			Sidewalk	Both	-					
BEU0005-P	Lyman Rd. (SR 1801)	NC 24 (Existing) - Broad St.	0.1			Sidewalk	Both						
BEU0006-P	Brown Rd. (SR 1722)	NC 24 (Existing) - NC 41	0.7			Sidewalk	Both						
BEU0007-P	Turkey Branch Rd. (SR 1725	NC 24 (Existing) - NC 111	1.0			Sidewalk	Both						
BEU0008-P	Bostic Ave.	NC 24 (Existing) - Brown Rd. (SR 1722)	1.0			Sidewalk	Both						
BEU0009-P	Mercer Court Apartments Ln.	NC 41 / 111 - Turner Rd.	0.1			Sidewalk	Both						
BEU0010-P	Broad St.	NC 41 / 111 - Lyman Rd. (SR 1801)	0.7			Sidewalk	Both						
BEU0011-P	Smith St.	NC 24 (Existing) - Broad St.	0.1			Sidewalk	Both						
BEU0012-P	Turner St.	NC 41 / 111 - End of Pavement	0.1			Sidewalk	Both						
BEU0013-P	Crossover Rd.	NC 41 - NC 241	0.3			Sidewalk	Both						

# 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 7 TYPICAL HIGHWAY CROSS SECTIONS 2 LANES

![](_page_69_Figure_1.jpeg)

![](_page_69_Figure_2.jpeg)

![](_page_69_Figure_3.jpeg)

# TYPICAL HIGHWAY CROSS SECTIONS 2 LANES

SIDEWALK PLACEMENT BEHIND A ROADWAY DITCH

![](_page_70_Figure_2.jpeg)

2 E CURB AND GUTTER WITH BIKE LANES AND SIDEWALKS

![](_page_70_Figure_4.jpeg)

2 F

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

![](_page_70_Figure_7.jpeg)

# TYPICAL HIGHWAY CROSS SECTIONS 2 LANES

![](_page_71_Figure_1.jpeg)

CURB & GUTTER - PARKING ON EACH SIDE

![](_page_71_Picture_3.jpeg)

![](_page_71_Figure_4.jpeg)

2 I

#### RAISED MEDIAN WITH CURB & GUTTER

![](_page_71_Figure_7.jpeg)
# TYPICAL HIGHWAY CROSS SECTIONS 3 LANES





~

# TYPICAL HIGHWAY CROSS SECTIONS 4 LANES



4 B **DIVIDED WITH MEDIAN - NO CURB & GUTTER** PARTIAL CONTROL OF ACCESS 4'-5' P.S. 4'-5' P.S. 2 P.S P.S. Î  $\hat{\mathbf{n}}$ Ũ Ũ 6' 6' 12' 12' 8' 8' 12' 30' MIN. MEDIAN 12' 150' MIN. RIGHT OF WAY



# TYPICAL HIGHWAY CROSS SECTIONS 4 LANES



5 LANES



# TYPICAL HIGHWAY CROSS SECTIONS 6 LANES





# 8 LANES



# **TYPICAL MULTI - USE PATH**

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



MΒ

MULTI - USE PATH ADJACENT TO CURB AND GUTTER



# 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 8.

- 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.
- <u>LOS C</u>: 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.
- <u>LOS D</u>: 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 8 - Level Of Service Illustrations





Driver Comfort: High Maximum Density: 12 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 B



Driver Comfort: High Maximum Density: 20 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 C



Driver Comfort: Some Tension Maximum Density: 30 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 Beulaville 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 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 crashes. Listed below are levels of severity for various severity index ranges.

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

Table 4 depicts a summary of the crashes occurring in the planning area between January 1, 2007 and December 31, 2009. The data represents locations with 10 or more crashes. None of the crash locations that had 10 or more total crashes were greater than the state's average Severity Index, 4.86. The "Total Crashes" 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 each location.

## Table 4 - Crash Locations

Map Index	Intersection	Average Severity	Total Crashes	
1	NC 24 and NC 41/111	2.85	20	

The NCDOT is actively involved with investigating and improving this location. 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 3 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. There were no deficient bridges within the planning area that were recognized in 2010 by a survey conducted by the NCDOT Bridge Maintenance Unit. However, bridge deficiencies do occur in Duplin County. For more information, please refer to the 2008 Duplin County Comprehensive Transportation Plan.

# Appendix H Public Involvement

- The Beulaville CTP's Steering Committee was comprised of:
  - Scotty Summerlin, *Town of Beulaville Town Manager*
  - Kenneth Smith, Town of Beulaville Mayor
  - Kenny Whaley, Town of Beulaville Town Commissioner
  - Billy Aman, *local citizen*
  - Horace Rhodes, *local citizen*
  - Alex Rickard, Eastern Carolina Council of Governments RPO Planner
  - Patrick Flannagan, Eastern Carolina Council of Governments staff
  - Mark R. Eatman, EI, NCDOT Transportation Planning Branch Project Engineer
  - Scott Walston, PE, NCDOT Transportation Planning Branch Triangle Group Supervisor
- The Beulaville CTP Steering Committee developed a Vision Statement for the CTP, outlined below:

## Beulaville's Community Vision & CTP 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.

- The Beulaville CTP steering committee decided not to complete a Goals and Objectives survey for the purpose of surveying the public on transportation needs and interests. The committee felt that an inadequate number of responses would have been surveyed to effectively gauge public opinion on local transportation planning efforts.
- A public Drop-In session (workshop) was held on April 26<sup>th</sup>, 2010 at the Beulaville Volunteer Fire Department's Training Room. This session was publicized in the local newspaper (The Duplin Times) two weeks prior to the meeting. The session was held from 5PM to 7PM. The Drop-In session presented CTP maps for all the modes required by the CTP. These maps were presented on easels for public viewing. In addition to the maps, a presentation was created to be showed if there were a high number of attendees. Attendee's to the session would receive one comment form, one information sheet (outlining the goal of the CTP and major recommendations), a set of 11"X17" maps (quantity was limited to 10 sets of maps).

Over the course of the session, one citizen attended and completed a comment form. A blank copy of the comment form and the information sheet provided to potential attendees are shown on the following pages.

A second public Drop-In session (workshop) was held on June 18<sup>th</sup>, 2010. The purpose of this meeting was to facilitate to the Beulaville Town Board's request for seeking additional feedback from the Beulaville Chamber of Commerce. At this meeting a presentation was given highlighting the CTP process and the recommendations found in the proposed plan.

Prior to this meeting, close to 70 business owners throughout the Beulaville area were contacted by letter from the Beulaville Town Manager. This letter requested the presence of each business owner to attend (if they wished) to give further input on the Beulaville CTP. A copy of this letter, dated June 15, 2010, can be found on the following pages. Approximately 12 people attended this meeting which included business owners, town staff, NC DOT staff, and a reporter from the local paper. The overall opinion on the CTP ranged from neutral to good.

The Town of Beulaville adopted the 2010 Beulaville CTP on June 28<sup>th</sup>, 2010. The Duplin County Board of Commissioners adopted the 2010 Beulaville CTP on July 6<sup>th</sup>, 2010. The Eastern Carolina RPO endorsed the plan at a joint Transportation Coordinating Committee (TCC) / Transportation Advisory Committee (TAC) meeting on July 15<sup>th</sup>, 2010. These adoptions and endorsement can be found on the following pages.

On August 5<sup>th</sup>, 2010, the NCDOT – BOT adopted the 2010 Beulaville CTP. For more information regarding the meeting minutes from this BOT session, please go to <u>http://www.ncdot.org/about/board/</u>.

Сотр	rehens Pul cc	ive Tran olic Wor	isportat kshop HEET	ion Plar	
PLEASE PRINT:					
NAME:					,
ADDRESS:					
CITY/TOWN:	ST.	ATE:	ZIP	CODE:	
E-MAIL:					
**All personal information will be	kept confident	ial and will only to opportunities	e used to inform	n you of any futur	re public participation
<ol> <li>Broadly speaking, how do you feel</li> <li>Disc. uning the cools below:</li> </ol>	about the reco	mmendations sh	own on each ma	ap of the Compre	hensive Transportatio
Plan, using the scale below	Strongly	Somewhat	Somewhat	Strongly	
Highway Man	Support	Support 2	Against	Against	
Public Transportation & Rail Map	1	2	3	4	
Bicycle Map	1	2	3	4	
Pedestrian Map	1	2	3	4	
2. What specific recommendations do	) you have con	nments, question	s, or concerns al	bout?	
Are there any recommendations th	at you would li	ke to add to the r	ilan? If ves wh	at are they and y	why would you like to s
them on the plan?					

Feel free to attach other pages of comments / suggestions/ questions.

# Town of Beulaville Comprehensive Transportation Plan Public Workshop COMMENT SHEET

All suggestions, questions, or comments may be submitted in writing by completing this form and leaving it at this public workshop. You may also mail, call, or email in your comments/questions to the mailing address, phone number, and email address provided below by May 11, 2010.

Mark R. Eatman NC DOT – Transportation Planning Branch 1554 Mail Service Center Raleigh, NC 27699 Phone: 919-733-4705 Fax to 919-733-2417, or Email: mreatman@ncdot.gov

THANK YOU FOR YOUR PARTICIPATION!

(Fold Here to Mail)

Please Place Stamp Here

Mark R. Eatman NC DOT – Transportation Planning Branch 1554 Mail Service Center Raleigh, NC 27699

### TOWN OF BEULAVILLE

111 W. QUINN ST. Phone: 910-298-4647 P.O. BCEX 130 Fax: 910-298-3481

June 15, 2010

#### **这个人们在1993年199**5

Dear Baulaville Business Owner;

Good afternoon. My name is Scotty Summerlin and I am the Benlaville Town Manager. I would like to take a moment and tell you about an important opcoming meeting. The Benlaville Board of Commissioners is scheduled to take action on a recent study completed by the NC Department of Transportation Strategic Planning Branch. Prior to final adoption of the Plan, the Board would like to offer another opportunity for your input.

Over the last year a committee made up of NCDOT and town staff, business owners, and citizens have been working to put together a comprehensive transportation plan for Beulaville, Transportation planters have taken suggestions from the committee, combined with requirements from the Strategic Highway Corridors initiative (SHC), to produce the first Beulaville Comprehensive Transportation Plan (CTP).

The Plan sets out to antioipate future traffic deficiencies (25-year outlook) and identify possible solutions to address these expected deficiencies. The Plan is comprehensive in that it looks at many different modes of transportation, including roads, pedestrian, bike, and public transit. The recommendations of the Plan are subject to change, as the identified projects move from a planning level to a more concrete design level.

A notable recommendation of the Plan is a fiture Hwy 24 bypass to the north of town. The recommendation satisfies the Strategic Highway Corridors Initiative. Come to the Benlaville Volunteer Fire Department (205 N. Wilson Ave.) on Thursday, June 24<sup>n</sup>, 2010, at 2:00 p.m. to learn more about the SHC Initiative and the proposed Baulaville CTP. In the meantime, feel free to contact me at Town Hall with questions or comments. Also, the draft Plan can be viewed online at <u>http://nextot.nov/doh/preconstruct/hob/planning/beulavilleCTP.</u> brnt.

Attend the presentation to learn how we are proactively working with NCDOT in shaping our future transportation networks in Boulaville. We can all gain benefit from the planning process,

Sincerely,

Scotty Summerlin

### Beulaville Comprehensive Transportation Plan (CTP) Public Drop-in Session Information Sheet April 26, 2010

#### What is a Comprehensive Transportation Plan (CTP)

The CTP is a multi-modal (Highway, Public Transportation, Rail, Bicycle, and Pedestrian) transportation plan that recognizes a <u>need</u> for FUTURE transportation improvements and recommends projects to help solve future transportation problems.

#### Purpose of a Drop-in Session

To provide you the opportunity to understand and comment on transportation planning that's happening in your area.

#### What is done with your input?

Your input will help us (the NCDOT, the Eastern Carolina Rural Planning Organization, and Town of Beulaville) develop the final CTP.

Once the final CTP is developed it will be presented to the Town of Beulaville and Duplin County for adoption. After the local governments have adopted the CTP, it is then submitted to the Eastern Carolina Rural Planning Organization for endorsement and the NCDOT Board of Transportation for their adoption.

A CTP DOES	A CTP does NOT
Aim to reduce environmental impact	Promise to build roads
Provide a safe multi-modal transportation plan for your area	Make final calls on recommended alignments
Aim to minimize negative economic impact	Fund projects recommended in the proposed plan
Coordinates with your local land-use plans	

#### Contacts:

Mark Eatman, El Transportation Engineer II NCDOT – Transportation Planning Branch 919-733-4705 mreatman@ncdot.gov

Scott Walston, PE Triangle Planning Group Supervisor NCDOT – Transportation Planning Branch 919-733-4705 swalston@ncdot.gov

Alex Rickard Rural Transportation Organization Planner Eastern Carolina Council of Governments 252-229-7088 arickard@eccog.org Allen Pope, PE Division Engineer NCDOT – Division 3 910-251-5727 apope@ncdot.gov

Linwood E. Reynolds, PE District Engineer NCDOT – Division 3 – District 2 910-592-8209 Jereynolds@ncdot.gov

Scotty Summerlin Beulaville Town Manager Beulaville, NC 910-298-4647 scottys@intrstar.net

#### Highlighted DRAFT CTP Highway Recommendations

NC 24	Freeway - Recommended	New Location Bypass from the NC 24 near Sandlin Rd. (SR 1962) to NC 24 near Penny Rd. (SR 1720)
NC 24	Expressway - Needs Improvement	Upgrade existing facility to a 4 lane expressway from the Eastern Beulaville Planning Area Boundary (PAB) to the NC 24 freeway bypass near Penny Rd. (SR 1720) and from the Western Beulaville PAB to the NC 24 freeway bypass near Sandlin Rd. (SR 1962)
NC 24	Boulevard - Needs Improvement	Upgrade existing facility to a 4-lane boulevard from the proposed NC 24 Bypass near Sandlin Rd. (SR 1962) to near Penny Rd. (SR 1720)

#### Other Recommendations

The following roads are recommended to be widened to a good two-lane road width of 24 ft, with turn lanes at major intersections (where needed). Some of the roads will carry Bike traffic which could include bike route signage, wider paved shoulders, and/or wider outside lanes. (SEE the DRAFT CTP Highway and Bicycle Map)

NC 41 NC 41/111 NC 111 NC 241 Lyman Rd. (SR 1801) Old Chinquapin Rd. (SR 1802) Bostic Ave. Lee Ave. Cottle St. Cottle St. Extension Lanier St. Brown Rd. (SR 1722) Cavenaugh St.

The CTP is recommending future Bus Routes along NC 24, NC 241, and NC 41/111. These
bus routes would connect to major regional destinations and cities in eastern NC. Future
regional planning is required. A future Park-and-Ride lot is also recommended in the vicinity
of NC 24 and Railroad Ave. (SEE the DRAFT CTP Public Transportation and Rail Map)

 Pedestrian improvements are recommended for roads inside the Beulaville Planning Area. It is recommended that all facilities recommended below have sidewalks on both sides of the road to cater to pedestrian traffic. (SEE the DRAFT CTP Pedestrian Map)

NC 24 NC 111 NC 241 NC 41 NC 41/111 Turkey Branch Rd. (SR 1125) Brown Rd. (SR 1722) Lyman Rd. (SR 1801) Mercer Court Apt. Lane Turner Rd. Broad St. Smith St. Crossover Rd.



TOWN OF BEULAVILLE

Phone: 910-298-4647 Fax: 910-298-3481

PO BOX 130 • 111 W. QUINN STREET BEULAVILLE, NC 28518-0130

July 1, 2010

Mark Eatman NCDOT-TPB 1554 Mail Service Center Raleigh, NC 27699-1554

SUBJECT: Approved Resolution Adopting the Beulaville CTP

Dear Mark:

I have enclosed a signed original resolution adopting the Beulaville Comprehensive Transportation Plan. As you are aware, the Beulaville Board of Commissioners unanimously approved the resolution on Monday, June 28<sup>th</sup>, 2010, at its monthly board meeting.

We appreciate the work by the NCDOT-TPB in helping the Town produce this very important planning tool. Be sure to stop by Town Hall the next time you are in the area.

Sincerely, Sol

Scotty Summerlin Town Manager

enclosure

### RESOLUTION ADOPTING A COMPREHENSIVE TRANSPORTATION PLAN FOR BEULAVILLE, NORTH CAROLINA

The following resolution was offered by Commissioner Whaley, seconded by Commissioner Lanier and, upon being put to a vote, was carried 5-0 on the 28th day of June. 2010.

WHEREAS, the Town of Beulaville, Duplin County, the Duplin County Transportation Committee, Eastern Carolina Rural Planning Organization, and the Transportation Planning Branch, North Carolina Department of Transportation, have actively worked to develop a Comprehensive Transportation Plan for the Town of Beulaville; and

WHEREAS, the Town and the Department of Transportation are directed by North Carolina General Statutes 136-66.2 to reach agreement for a transportation system that will serve present and anticipated volumes of traffic in and around the Town; and

WHEREAS, it is recognized that the proper movement of traffic within and through the Town of Beulaville is a highly desirable element of the comprehensive plan for the orderly growth and development of the Town; and

WHEREAS, after full study of the plan, and following a public hearing, the Town Board of Commissioners feel it to be in the best interests of the Town of Beulaville to adopt a plan pursuant to General Statutes 136-66.2;

NOW THEREFORE, BE IT RESOLVED: That the Beulaville Town Board of Commissioners hereby adopts the Beulaville Comprehensive Transportation Plan dated June 28, 2010, that is within its planning jurisdiction. This plan should be approved and adopted as a guide in the development of the transportation system in Beulaville and the same is hereby recommended to the North Carolina Department of Transportation for its subsequent adoption:

I. Lori T. Williams, Clerk of the Town of Beulaville, North Carolina, hereby certify that the above is a true and correct copy of the excerpts from the minutes of the Town Board of Commissioners meeting of said Town.

WITNESS my hand and the official seal of the Town of Beulaville this the 28th day of June, 2010.



ATTEST

nulliams

Lori T. Williams Town Clerk

### RESOLUTION ADOPTING A COMPREHENSIVE TRANSPORTATION PLAN FOR BEULAVILLE, NORTH CAROLINA

The following resolution was offered by Commissioner <u>Rayner</u>, seconded by Commissioner <u>Williams</u> and, upon being put to a vote, was carried upanimeusly on the <u>6</u> day of <u>July</u>. <u>2010</u>.

WHEREAS, the Board of Commissioners, Duplin County, the Duplin County Transportation Committee, Eastern Carolina Rural Planning Organization, and the Transportation Planning Branch, North Carolina Department of Transportation, have actively worked to develop a Comprehensive Transportation Plan for the Town of Beulaville; and

WHEREAS, the Board of Commissioners and the Department of Transportation are directed by North Carolina General Statutes 136-66.2 to reach agreement for a transportation system that will serve present and anticipated volumes of traffic in and around the Town; and

WHEREAS, it is recognized that the proper movement of traffic within and through the Town of Beulaville is a highly desirable element of the comprehensive plan for the orderly growth and development of the Town; and

WHEREAS, after full study of the plan, and following a public hearing, Board of Commissioners feel it to be in the best interests of the Town of Beulaville to adopt a plan pursuant to General Statutes 136-66.2;

NOW THEREFORE, BE IT RESOLVED: That the Board of Commissioners hereby adopts the Beulaville Comprehensive Transportation Plan dated June 7, 2010, that is within its planning jurisdiction. This plan should be approved and adopted as a guide in the development of the transportation system in Beulaville and the same is hereby recommended to the North Carolina Department of Transportation for its subsequent adoption:

I, \_\_\_\_\_\_\_, Chairman of County Commissioners, North Carolina, hereby certify that the above is a true and correct copy of the excerpts from the minutes of the Town Board of Commissioners meeting of said Town. WITNESS my hand and the official seal of the Board of Commissioner this the \_\_\_\_\_\_ day of

2010

1

(Seal)

ary lurner 7/17/10

ATTEST

Chairman



July 16, 2010

Mr. Mike Bruff, PE, Manager - Transportation Planning Branch Attn: Travis Marshall, PE, Eastern Planning Unit Head NCDOT - Transportation Planning Branch 1554 Mail Service Center Raleigh, NC 27699

Dear Mr. Bruff,

The Eastern Carolina RPO Transportation Advisory Committee (TAC) voted July 15, 2010 to endorse the Town of Beulaville Comprehensive Transportation Plan developed by NCDOT and the Town of Beulaville. The Eastern Carolina RPO feels that a Transportation Plan adopted by the NCDOT Board of Transportation and by the Town of Beulaville will aid both the town, Duplin County and the state in transportation decisions affecting the economy, safety, and quality of life within the Town of Beulaville, thereby affecting the Eastern Carolina RPO region as a whole. Please forward this plan to the NCDOT Board of Transportation for their consideration at your earliest convenience.

Sinceraly Chris Humphrey

Chairman, Eastern Carolina RPo Transportation Advisory Committee

4 Alex Rickard

Eastern Carolina RPO Transportation Planner

CC: James Upchurch, Southeast Planning Group Supervisor, NCDOT Mark Eatman, Transportation Engineer II, NCDOT

#### A RESOLUTION FOR ENDORSEMENT OF THE TOWN OF BEULAVILLE COMPREHENSIVE TRANSPORTATION PLAN

WHEREAS, the Transportation Advisory Committee (TAC) is the duly recognized transportation planning policy board for the Eastern Carolina Rural Planning Organization (RPO); and

WHEREAS, the North Carolina Department of Transportation Planning Branch has completed the Town of Beulaville Comprehensive Transportation Plan in June 2010; and

WHEREAS, the Town of Beulaville Comprehensive Transportation Plan is consistent with the local land use plans, the Eastern Carolina RPO transportation needs and the statewide transportation plan; and

NOW, THEREFORE BE IT RESOLVED that the Eastern Carolina RPO TAC hereby endorses the Town of Beulaville Comprehensive Transportation Plan.

A motion was made by Jack Best and seconded by Elmer Flake for the endorsement of the resolution, and upon being put to a vote was duly adopted, on this, the 15th day of July, 2010.

Chris Humphrey, Chairman Eastern Carolina RPO TAO

Alex Rickard, Secretary Eastern Carolina RPO

# Participants needed for Beulaville transportation study

### By Stephanie Cole Staff Writer

The Town of Beulaville, in conjunction with the N.C. Department of Transportation (DOT) Planning Branch, is about to begin the process of compiling a Comprehensive Transportation Plan (CTP) for Beulaville.

Individuals are needed to serve on a committee to complete this CTP, which will look closely and comprehensively at the road network in and around town and related subjects and plan for future growth.

"We anticipate 10 or 12 monthly meetings to complete our work," said Beulaville Town Manager Scotty Summerlin. "We will be working with Mark Eatman, a transportation engineer with DOT."

Eatman said that the CTP will help develop a long-range plan to forecast the growth for the area and best determine the transportation needs to handle that growth.

"The main objectives of this study are to reduce traffic congestion and improve safety," Eatman added. "The purpose of the study is to identify existing and future transportation deficiencies.

"We especially encourage elected officials like commissioners and members of other boards and committees to participate in this process," Eatman said.

But, according to the engineer, members of the community at large are also invited to take part. Individuals such as bicycle enthusiasts or frequent pedestrians would be good voices to have on the committee.

This transportation plan will not only look at roads and highways in and around Beulaville, but also public transportation and rail service, as well as bicycle and pedestrian needs.

Citizens interested in participating in this important study should contact Town Manager Scotty Summerlin at 910-298-4647 or scottys@intrstar.net.

Source:

Stephanie Cole, Advertiser News – Cape Fear Newspapers. Received by Project Engineer - Mark Eatman, EI, on February, 6<sup>th</sup> 2009.



### STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE GOVERNOR EUGENE A. CONTI, JR. Secretary

January 29, 2009

Scotty Summerlin Town Manager, Town of Beulaville P.O. Box 130 111 W. Quinn St. Beulaville, NC 28518

Subject: Beulaville Comprehensive Transportation Plan

Dear Mr. Summerlin:

It was a pleasure speaking with you on January 26, 2009, regarding our assistance in cooperatively developing a Comprehensive Transportation Plan for Beulaville.

As you know, Mark Eatman has been reassigned this study. Mark is actively working on collecting background data, and we hope a "kickoff" meeting can be held in February or March.

The Transportation Planning Branch looks forward to working with the Town of Beulaville in developing a plan. If you have any other questions please contact us at (919) 733-4705.

Sincerely,

Scott W. Walston, P.E. Triangle Group Supervisor NCDOT Transportation Planning Branch

 cc: Lanny T. Wilson, Member, Board of Transportation Calvin Leggett, P.E., Director of Planning and Programming H. Allen Pope, P.E., Division Engineer Alex Rickard, Eastern Carolina RPO Mike Bruff, P.E., Branch Manager, Transportation Planning Branch Travis Marshall, P.E., Group Manager, Transportation Planning Branch James Upchurch, Southeast Planning Group Supervisor, Transportation Planning Branch
 Carlos Moya, Transportation Planning Branch Mark Eatman, Transportation Planning Branch

MAILING ADDRESS: NC DEPARTMENT OF TRANSPORTATION TRANSPORTATION PLANNING BRANCH 1554 Mail SERVICE CENTER RALEIGH NC 27699-1554



LOCATION: TRANSPORTATION BUILDING 1 SOUTH WILMINGTON STREET RALEIGH, NC 27601 Phone: 919-733-4705 Fax: 919-733-2417

# Appendix I Additional Transportation Alternatives & Scenarios Studied

This appendix includes documentation for alternatives and scenarios that were studied but not included in the CTP. As stated in BEU0001-H, NC 24 is designated in the Strategic Highways Corridor (SHC) Plan to be an expressway through the Beulaville planning area. In order to be consistent with the SHC Plan, a new location facility was studied. During the study of possible new location for NC 24, three separate alternatives were studied. See Figure 9 for scenarios. Table 5 includes a summary of the three different alternatives.

Table 5 - Alternative Analysis Tables for NC 24 Bypass of							
Alt-1 Alt-2 Alt-3							
Project Factors							
Mainline New Location Length (Miles)	4.8	5	4.6				
Right-Of-Way required (acres)	87.3	90.9	83.6				
Number of New Interchanges	3	3	3				
Number of Grade Separations	2	6	6				
Estimated Cost (\$)	\$83,439,000	\$96,845,000	\$93,106,000				
Socioeconomic Factors							
Businesses Impacted	1	1	1				
Churches	0	0	0				
Employees Impacted (estimation)	5	6	3				
Houses Impacted	13	16	15				
Parks Impacted	0	0	0				
Schools Impacted	0	0	0				
Aprrox. Number of Parcels Impacted	48	44	44				
Environmental Impacts							
Total Wetland Impacts (Acres)	0.59	2.24	2.89				
Watershed (Acres)	13.64	60.00	54.55				

Alternate 1 goes to north of Beulaville, while Alternates 2 and 3 go to the south. While this option is not the shortest, it will cost the least and minimizes the effects to houses, businesses, watershed area, and wetlands. Alternate 1 also would require 4 fewer interchanges than needed in either Alternate 2 or 3. The CTP Steering Committee chose Alternate 1 because it seemed to be the most cost-effective option while minimizing the effects to the natural and human environment.





# Figure 9 Beulaville, NC Comprehensive Transportation Plan

Plar	n date: 1/15/10
Legend	
	Roads
	Bypass Alternative 1
	Bypass Alternative 2
	Bypass Alternative 3
_	CTP Planning Area Boundary
	Rivers/Streams
	NC Wetlands
	National Wetland Inventory
	Public Schools
ullet	Proposed Interchange
$\bigcirc$	Proposed Grade Separation
0 0.125 0.25	Miles 0.5 0.75 N
	W

Base map date: 11/09/09 Refer to CTP document for more details

# Appendix J Hand Allocated – Travel Demand Model

This appendix includes documentation of a Hand Allocated – Travel Demand Model that was created for the 2011 Beulaville CTP. The *Hand Allocation Method* (also known as Travel Allocation Method, or Manual Allocation Model) is usually prepared in small urban areas generally under 5,000 in population. Also, this methodology is best for an area where growth is anticipated with new facilities.

Travel Demand Models (TDM) utilize data from many sources such as the US Census Bureau, NCDOT, local governments, and many others, to create a tool that predicts travel demand in present and future years. Areas of homogeneous land-use (i.e. an industrial park, central commercial district, or a large residential subdivision) are grouped into Transportation Analysis Zones (TAZ). TDMs estimate trips (traffic) produced and attracted by these TAZs and assigns them to a roadway network. Given a defined Planning Area Boundary (PAB), TAZs help predict traffic in a given study area. In addition to TAZs, external stations (which behave like TAZs outside of the planning area) allow the TDM to account for traffic coming, going, or passing through the study area. Figure 10 on the following page shows the TAZs and external station locations that were used for the 2011 Beulaville CTP.

Table 6 shows basic parameters used in the base year of the TDM (2007) and the future year (2035). This data was approved by the Beulaville CTP Steering Committee on August 24<sup>th</sup>, 2009.

Table 6 – Model Parameters					
<u>Parameter</u> <u>2007</u> <u>2035</u>					
Planning Area Population	2,575	3,907			
Persons per Dwelling Unit	2.4	2.4			
Trip Rate – (Trips / Day / Household)	8	8			
Percent Commercial Vehicles	12.5%	12.5%			
Percent Internal-Internal Trips	30%	30%			
Percent Non-Home Based Trips	20%	20%			

On June 30<sup>th</sup>, 2009 a field survey was conducted by TPB staff to estimate housing and employment data, by TAZ, for the Beulaville CTP study area. In cooperation with the Beulaville CTP Steering Committee, a growth rate of 1.5% was used to estimate future growth in housing and employment. This resulted in an estimated increase of 555 houses and 429 jobs in a period from 2007 to 2035. The committee then allocated the

future houses and jobs to the TAZs in the study area. Table 7 shows the estimated house and job data in the study area for 2007 and 2035.

	Table 7 – TAZ Data						
Zone #	2007 # of Houses	2007 # of Jobs	2035 # of Houses	2035 # of Jobs			
1	48	206	78	216			
2	34	108	104	118			
3	18	30	48	60			
4	174	21	354	51			
5	192	109	252	209			
6	143	1	193	51			
7	100	0	115	50			
8	178	186	188	296			
9	62	78	162	98			
10	83	91	93	111			

External station traffic volumes collected in 2007 in the form of Average Annual Daily Traffic (AADT) were developed by the NCDOT – Traffic Survey's Unit. The Steering Committee applied a growth rate to forecast future travel demand at these external stations for the year 2035. Table 8 shows the data related to the survey of the external stations.

Table 8 – External Station Data						
External Station	Route	2007 AADT (vpd)	Growth Rate (%)	2035 AADT (vpd)	Through Trips (%)	
1	NC 241	4700	2.5	9,400	20.0	
2	NC 41	2400	2.5	4,800	25.0	
3	NC 24	8700	3.5	22,800	85.0	
4	Lyman Rd. (SR 1801)	1200	2	2,100	10.0	
5	NC 41 / 111	5400	2.5	10,800	30.1	
6	Corn Mill Rd. (SR 1724)	500	3	1,100	4.9	
7	Hallsville Rd. (SR 1961)	1600	1	2,100	10.0	
8	NC 24	9000	3.5	23,600	85.5	
9	NC 111	2100	1.5	3,200	25.1	

For any additional information regarding the Hand Allocated – Travel Demand Model for the 2011 Beulaville CTP, please contact the NCDOT – TPB at (919) 733-4705 or <u>http://www.ncdot.gov/doh/preconstruct/tpb/</u>.

