

2008

Granville County

Comprehensive Transportation Plan



“A Comprehensive Transportation Plan is an essential element in the future growth and development of our county.”

Hubert L. Gooch, Granville County Commissioner



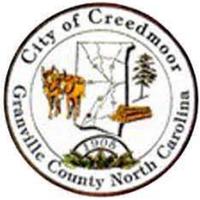
“One way to measure the effectiveness of any process is to assess the input and the outcome. In our case, we were committed to quality data and a collective voice from multiple jurisdictions and agencies. The outcome will be measured by how well the county and each municipality keep the plan alive by using it as a guide for land use planning and future funding opportunities.”

Scottie K. Cornett-Wilkins, Granville County Transportation Planner



“The best part of the planning process was that everyone had a voice. The representatives from NCDOT, the Kerr-Tar RPO, the Capitol Area MPO, and the County Transportation Planner were very helpful and knowledgeable. They were willing to help the smaller towns. We are all more knowledgeable about transportation planning.”

Mayor Janet Parrott, Town of Stovall



“The planning process throughout the development of this new CTP was very effective. As a result of multiple jurisdictions working together, we have a plan that addresses a broader scope of transportation issues. This process forced Creedmoor to take a much longer view of our transportation needs. The best part was getting a relatively current view of our current traffic counts and conditions.”

Mayor Darryl Moss, City of Creedmoor



“The City of Oxford has had an excellent experience working with the planning process for the new CTP. The information and guidance provided to the City by the Granville County Transportation Planner has been very helpful. This process provided an orderly and convenient way to have the City’s preferences included in the CTP.”

Mark Donham, Manager for the City of Oxford



“The communication was excellent throughout the planning process. Our Board learned a lot about transportation planning through the different updates and presentations given throughout the planning process. By the time we had to vote on the plan, it passed easily; our Board approved everything 100%. All of the projects we needed in our jurisdiction were in the new CTP Plan.”

Mayor Jack Day, Town of Stem



“The planning process for the CTP has been very positive. The ability to openly discuss the issues between the stakeholders greatly accelerated the process. The rating of the various projects has helped all understand what is needed throughout the county. Having the input of NCDOT, RPO, MPO, and the County Transportation Planner available at all the meetings helped the process immensely. The result of the effort gives us better data and justification as we compete with other localities for funding of our projects.”

Mayor Thomas Lane, Town of Butner



“ The Granville County Comprehensive Transportation Plan was one of the first plans in the state to combine municipal governments, a county government, and a rural and metropolitan planning organization. The process went incredibly smoothly thanks to the collaborative efforts of the CTP Planning Committee and the staffs of the County, RPO, MPO, and NCDOT. The process won a National Association of Development Organizations Transportation Innovation Award in 2006, and is likely to be mirrored across the state as more regional plans are developed.”

Shelby Powell, Kerr-Tar RPO Planner



“ The process for development of the Comprehensive Transportation Plan for Granville County was without a doubt one of the best planning events I have seen or in which I have had the opportunity to be involved. The process itself was well thought out, clearly presented and truly an outstanding example of the 3-C planning process involving multiple jurisdictions, the general public and elected officials. This plan is clearly an outstanding example of how to coordinate and bring consensus to planning for the future.”

Diane Wilson, Member Services Manager, NC Capital Area MPO

“I’ve been working on transportation plans for nearly 17 years, and this was by far the best transportation planning effort that I have been a participant. Usually, NCDOT drives the planning process, but in this case, it was truly all the major players – locals, MPO, RPO, and NCDOT. Each member pulled some weight and all helped move this forward, and each were willing to “try something new”. The local transportation committee should also be commended for their participation throughout the process. This effort was the first MPO/RPO plan and it will serve as a model throughout the state.”

Scott Walston, PE, NCDOT Transportation Planning Branch



“Throughout the Comprehensive Transportation Planning process we strived to create as open a planning process as possible, such that opportunities for public input were not limited to the minimum requirements and they were given the chance to speak together and express their comprehensive vision. This planning process has also been deliberately designed to engage and involve local government, County, MPO and RPO to a very high level. The planning process throughout the development of CTP was very successful. I am grateful to be a part of this team and thank everyone for their support.”

Rupal Desai, EIT, NCDOT Transportation Planning Branch

Comprehensive Transportation Plan for Granville County

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

In Cooperation with: Granville County and its municipalities
Capital Area Metropolitan Planning Organization
Kerr-Tar Rural Planning Organization
The Federal Highway Administration
U.S. Department of Transportation

March 2010

Rupal Desai, PE

Acknowledgments

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Special thanks to:

Kerr-Tar RPO Planner	Shelby Powell, AICP
Granville County Planner	Scottie K. Cornett-Wilkins

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Chapter 1

Introduction

1.1 Background

An area's transportation system is its lifeline, contributing to its economic prosperity and social well being. The importance of a safe and efficient transportation infrastructure cannot be overstressed. This system provides a means of transporting people and goods from one place to another quickly, conveniently, and safely. A well-planned system should meet the existing travel demands, as well as keep pace with the growth of the region.

Officials from Granville County and all municipalities within the county, with assistance from the Kerr Tar Rural Planning Organization (RPO) and the NC Capital Area Metropolitan Planning Organization (MPO), recognized the importance of the transportation planning process, and worked cooperatively with the North Carolina Department of Transportation (NCDOT) Transportation Planning Branch to complete this Comprehensive Transportation Plan (CTP).

Granville County, located in north central North Carolina, was established in 1746 and named in honor of Lord John Carteret, Earl of Granville. For a short period Granville County was a frontier county and extended as far West as the Mississippi River. The current land use is a mix of residential, agricultural and commercial with most of the development in the central to southern portion of the County. The major routes in Granville County include I-85, US 15, US 158, NC 96, NC 56 and NC 50. The geographical location of the county is shown in **Figure 1**.

This report documents the development of the 2007 Granville County Comprehensive Transportation Plan as shown in **Figure 2**. In addition, this report presents recommendations for each mode of transportation, (highway, bicycle/pedestrian, transit and rail) as reflected in the CTP maps.

A Comprehensive Transportation Plan (CTP) is developed to ensure that the transportation system should be progressively developed, meeting the needs of the county. It should serve as an official guide to providing a well-coordinated, efficient, and economical transportation system using all modes of transportation. This document should be used by local officials to ensure that planned transportation facilities reflect the needs of the public while minimizing the disruption to local residents, businesses, and the environment.

The purpose of this plan is to examine present and future transportation needs of the county and develop a Comprehensive Transportation Plan to meet these needs. The plan

recommends improvements deemed necessary to provide an efficient transportation system within the 2005-2035 planning period.

The initiative for implementation of the Comprehensive Transportation Plan rests predominately with the policy boards and citizens of Granville County. The proposed Comprehensive Transportation Plan is based on the projected growth for the county determined through a coordinated effort with the County, Kerr Tar RPO, and Capital Area MPO representatives. It is possible that actual growth patterns should differ from those anticipated. As a result, it may be necessary to accelerate or delay the development of some recommendations found in the plan. Some portions of the plan may require revision in order to accommodate unexpected changes in urban development. The best use of this plan is to make sure that any changes made to one element of the transportation plan should be consistent with the remaining elements.

1.2 CTP Community Vision, Goals and Objectives Statement

The CTP Committee developed a goals and objectives statement to ensure that the final CTP met its community vision.

Vision:

- 1) Enhance connectivity throughout the county by developing a transportation network that promotes and adequately supports economic development and is compatible with the environment and land use patterns.
- 2) Provide convenient, safe, reliable and affordable transportation choices and education to the public on those choices.
- 3) Develop a regional transportation network that improves quality of life while protecting and enhancing the environment.

Goals:

- 1) Improve Economic Development Countywide
Objective 1: Improve access to major retail developments and industrial sites such as Triangle North and Falls Lake Commerce Center.
Objective 2: Provide adequate facilities for truck travel on all truck-route designated roads in the county, including safe alternatives that reduce freight traffic within downtown districts.
- 2) Create better connectivity and mobility throughout the county and municipalities.
Objective 1: Improve major NC and US routes to four-lane facilities where appropriate, and widen to a standard 24' cross section in other areas.
Objective 2: Provide adequate facilities to accommodate commuter traffic within Granville County as well as between Granville County and the Wake/Durham/RTP area.
- 3) Provide a comprehensive multi-modal transportation network that should improve air quality through reduction of single-occupancy vehicle trips.

Objective 1: Provide transit, bicycle, and pedestrian options for transportation within the county.

Objective 2: Educate the public about transportation options, and the benefits of choosing alternative modes of transportation.

Figure 1: Geographic Location

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Figure 2: Comprehensive Transportation Plan

Back of Figure 2, Sheet 1 Adoption sheet

Figure 2: Comprehensive Transportation Plan (Sheets 2-4)
Highway Map

Back of Figure 2, Sheet 2 Highway map

Figure 2A: Comprehensive Transportation Plan (Sheets 2-4)
Highway Map

Back of Figure 2A Inset

Figure 2B: Comprehensive Transportation Plan (Sheets 2-4)
Highway Map

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Figure 2: Comprehensive Transportation Plan (Sheets 3-4)
Bike Map

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Figure 2B Inset: Comprehensive Transportation Plan (Sheets 3-4)
Bike Map

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Figure 2B Inset: Comprehensive Transportation Plan (Sheets 3-4)
Bike Map

Back of Figure B

Figure 2: Comprehensive Transportation Plan (Sheets 4-4)
Public Transportation and Rail

Back of Figure 2, Sheet 4, Public Transportation and Rail

Chapter 2

Recommendations

This chapter contains recommended improvements based on the ability of the existing system to serve current and anticipated travel desires as the area continues to grow. The recommended plan represents a system of transportation elements including highway, public transportation and rail, bicycle, and pedestrian which should serve the anticipated traffic and land development needs for the area. The primary objective of this plan is to reduce traffic congestion and improve safety by eliminating both existing and projected deficiencies in the transportation system.

2.1 Bicycle and Pedestrian Recommendations

The NCDOT envisions that all citizens and visitors of North Carolina should be able to walk and bicycle safely and conveniently to their chosen destinations with reasonable access to roadways. Information on events, funding, maps, policies and processes dealing with these modes of transportation is available by contacting the NCDOT Division of Bicycle and Pedestrian Transportation.

The bicycle element of the Granville County Comprehensive Transportation Plan (CTP) is presented in **Figure 2, Sheet 3**. These maps classify the bicycle routes into two categories depending on the type of service each route provides. These classifications are On-road and Off-road, and are described in detail in Appendix B.

The CTP bicycle map includes several improvements recommended to meet future travel demands. These improvements were developed based on the needs assessment, the goals and objectives of the area and the known environmental limitations of the planning area.

On-Road Recommendations:

All of the on-road bicycle routes are identified in the CTP Bicycle map legend and are shown as "Needs Improvement". Due to this shared, or multi-modal, use of these facilities, it is recommended that sub-standard roadway sections be widened to a standard 24-foot cross section with 4-foot paved shoulders. These improvements should enhance safety and the functional design of the facility. The Granville County CTP Committee also recommends that bicycle accommodations be considered during the planning and funding for all future pavement rehabilitation or re-surfacing projects. The facilities that are part of the designated bicycle routes in Granville County with substandard pavement /shoulder widths are listed in the Project Proposal Spreadsheet, and are illustrated in the Bicycle Maps with the brown lines. For more information, please check the Project Proposal Spreadsheet and Roadway Inventory **Appendix C** & Granville County Cross Sections **Appendix D**.

When considering the widening of these facilities, it is recommended that the division of Bicycle and Pedestrian Transportation (NCDOT) be consulted. They can help provide the most appropriate improvements based on present and future bicycle traffic. The county should contact the coordinator of this branch for further consideration and assistance.

Off-Road Recommendations:

All of the off-road bicycle routes evolved from the Granville County Greenway Master Plan 2006 and are walking paths or greenway corridors that connect destinations within Granville County. These facilities would typically reduce short vehicle trips by providing citizens with an alternative method of transportation. For detail information please see Figure 3, Greenway Master Plan 2006 Map. Some of the Off-Road Bike Routes include:

- G1 (Proposed Granville County Greenway Corridor): North-South route connecting Oxford with NC Bike Route 4 (North Line Trace) and Clarksville, VA/Tobacco Heritage Trail. (Along US 15 North, or Norfolk Southern Railroad).
- G2 (Proposed Granville County Greenway Corridor): Spur off of G1 connecting over to an historical marker, the John Penn Gravesite. (Rockwell Road over to John Penn Road).
- G4 (Proposed Granville County Greenway Corridor): East-West route connecting Oxford (Granville Medical Center) to NC Bike Route 1 (Carolina Connection) and Henderson, passing Oxford-Henderson Airport (along Salem Road / Norfolk Southern Railroad).
- G5 (Proposed Granville County Greenway Corridor): Connect East Oxford industrial/residential complex (Revlon, Dill Manufacturing, and Autumn Park) with Mary Potter School and Oxford City Hall. (along sewer easements).
- G6 (Proposed Granville County Greenway Corridor): Oxford Loop Trail around Oxford (along US 158, Oxford Outer Loop, Industry Drive, Service Road[I-85]/sewer easements).
- G7 (Proposed Granville County Greenway Corridor): Larger loop north of Oxford connecting inner loop with Oxford Park, with US 15 with Kinton Forks/NC 96 with Lake Devin, with trail G12b.
- G8 (Proposed Granville County Greenway Corridor): North-South route connecting Lake Devin Recreation Area to Jonesland/Granville Athletic Park.
- G9 (Proposed Granville County Greenway Corridor): East-West route connecting Lake Devin to Oxford Loop Trail (G6).

- G12a (Proposed Granville County Greenway Corridor): North-South route connecting Granville Athletic Park to Granville Central High School, to Stem, to Holt Lake to Butner. Branch off before Butner to connect with nearby planned trails in Durham County along Old 75 (SR 1004).
- G12b (Proposed Granville County Greenway Corridor): North-South rail with trail route connecting Oxford to Butner along Norfolk Southern Railroad Line. At South-West Corner, at Falls of Neuse Lake, branch trail to connect with planned Durham County trails (Railroad easement).
- G13a (Proposed Granville County Greenway Corridor): Complete section of Virginia Tobacco Heritage Trail near Virgilina that dips into Granville County (along Norfolk Southern Railroad).
- G15 (Proposed Granville County Greenway Corridor): North-South route connecting Oxford Loop to Creedmoor, including an extension to Vance County line (along Seaboard Railroad).
- G17 (Proposed Granville County Greenway Corridor): East-West route connecting North Butner to Creedmoor to Wilton and NC Bike Route 1 (Carolina Connection) include connections to schools, development, new shopping area (along sewage easement, or NC 56).
- G19 (Proposed Granville County Greenway Corridor): East-West route running the length of the Tar River.
- G21 (Proposed Granville County Greenway Corridor): East-West route connecting central Butner to Creedmoor accessing residential, commercial and industrial developments.

Figure 3: Greenway Master Plan 2006

Back of Greenway Master Plan 2006

2.2 Public Transportation and Rail Recommendations:

The Public Transportation and Rail Map of the CTP considers other modes of transportation and gives the public other options of traveling from one place to another. Today, the emphasis is on obtaining a balance between a walking society and a riding society. The Kerr Area Rural Transit System (KARTS) and Granville County CTP Committee recommended some additional public transportation routes for the plan. The recommended Public Transportation and Rail map for Granville County is presented in **Figure 2, Sheet 4**.

Bus Route Recommendations:

- Along I-85 from Durham County line to Oxford.
- Along US 15 from Oxford to Stovall.
- Along NC 50 from Wake County line to Creedmoor.
- Along US 158 from Oxford to Vance County Line.

Loop Service Recommendations:

- Providing service between Butner, Creedmoor and Stem.
- Providing service in and around Creedmoor.
- Providing service in and around Oxford.

Park and Ride Locations:

- Primary facilities along I-85.
- One facility recommended serving Butner Federal Institution areas.

Fixed guideway:

- None Recommended.

High speed rail:

- None Recommended.

2.3 Highway Recommendations

The recommended highway improvements are illustrated in **Figure 2, Sheet 2**. The plan includes roadways within the planning area that fall into five categories: freeways, expressways, boulevards, other major thoroughfares, and minor thoroughfares. See **Appendix B** for a more detailed description of the each category and **Appendix C** for an inventory of the highway recommendations.

The process of determining and evaluating recommendations for the roads in the plan involves many considerations including the goals and objectives survey of the public in the

area, existing roadway properties, identified roadway capacity deficiencies, environmental impacts, and existing and anticipated land development. Considerations of these factors led to the cooperative development of the recommended improvements. For more information please see **Figure 4, Project Proposal Map**.

2.4 Primary Highway Route Improvements

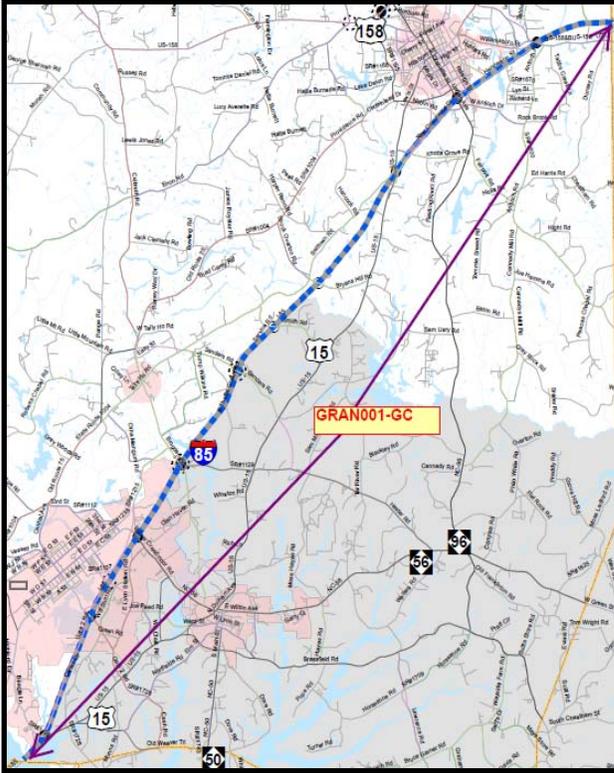
The following pages should summarize and describe major recommendations. For more information please refer to Appendix C.

I-85

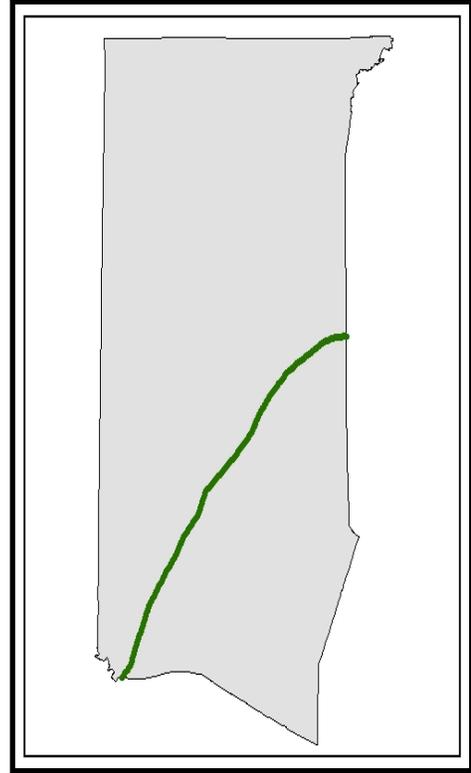
Proposed improvements from Durham County Line to Vance County Line

Project #: GRAN001

Last updated on:
10/29/09



I-85



Project Location within County



I-85 looking south from NC 96

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

- It is recommended that I-85 be widened to a 6-lane divided freeway facility throughout the county. (The need for an additional interchange has been identified and is recommended for study under **project GRAN001-GC**).

Purpose:

- The widening of this route should improve the north-south travel along I-85 through Granville County. It was determined that the traffic volumes projected in this section should be near to over capacity in 2035. This widening is intended to improve the safety and capacity of the existing roadway.

County:	Granville
MPO/RPO Planning Area	MPO/RPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	Freeway-NI
Highway Tier	Highway Tier
Total Project Length	25 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Number of Segments	1

Additional Information

Existing Conditions:
I-85 is a 4-lane interstate facility in Granville County, and it is the only north-south interstate facility in the central part of North Carolina.

Economic Development Impacts:
I-85 widening should have a positive impact on economic development, and improve automobile and freight mobility in Granville County.

Land Use Impacts:
This project should cause no land use changes.

Safety:
If I-85 is not widened, congestion and delays should worsen, and crashes may increase due to the projected increased volumes.

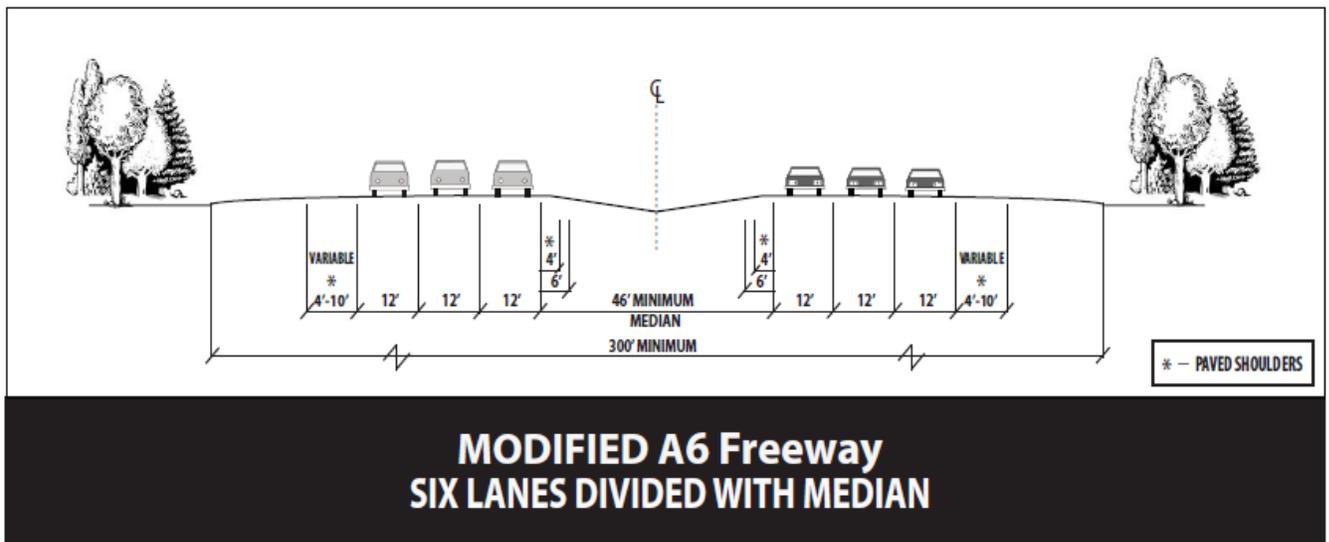
Bike/Ped/Transit:
I-85 is recommended as a future bus route corridor for service from Durham / Granville County Line to Oxford. Park and ride facilities are also recommended at various locations along this corridor.

Environmental/Historic Features:
There are various sightings of rare plants and animals throughout Granville County. A detailed field investigation is recommended prior to construction in this area.

Project History/Relationship to Other Plans:
The improvements to I-85 were identified in the 2004 City of Creedmoor Thoroughfare Plan.

Project Detail Table

Project: I-85	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN001-GC (Durham County line to Vance County line)							
Current Conditions	25.0	48	350	4	45000	28000-39000	-
Future Conditions	25.0	72	350	6	110000	72500-90500	A6

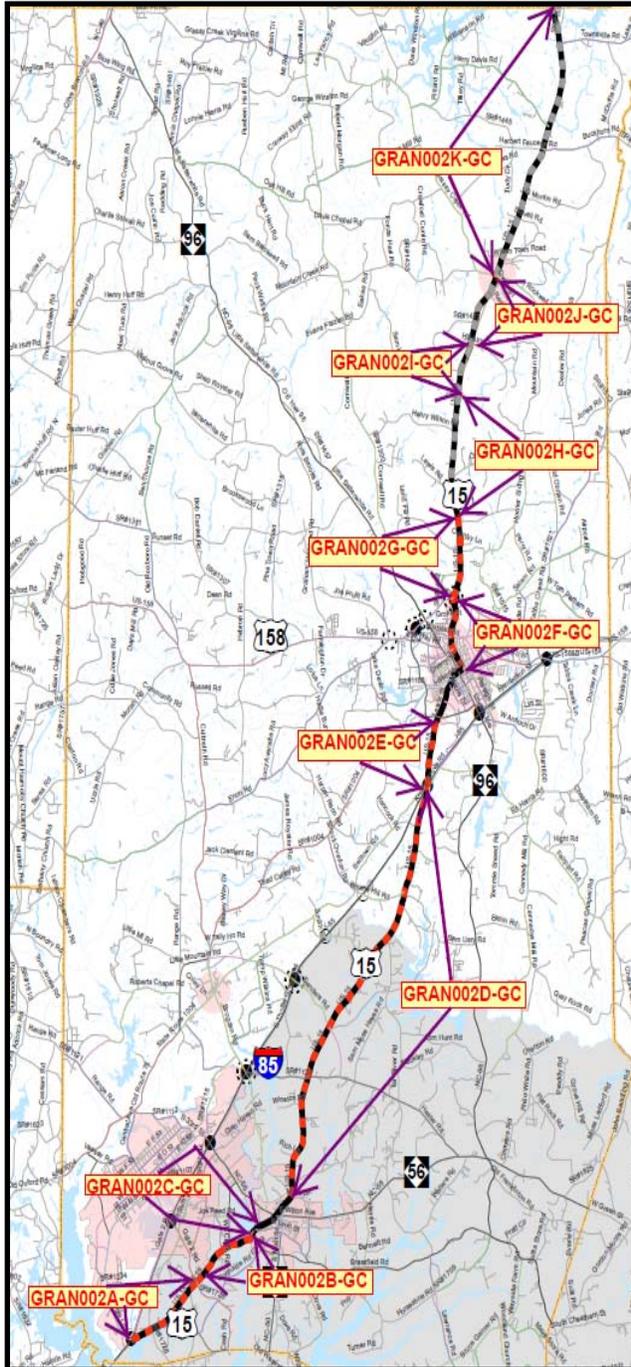


US 15

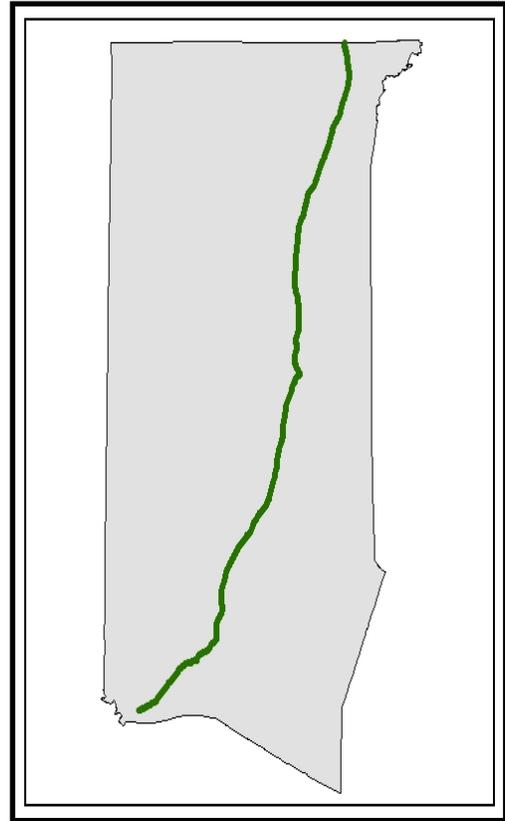
Proposed improvements from I-85 Exit 189 to Virginia State Line

Project #: GRAN002

Last updated on:
10/29/09



US 15



Project Location within County



US 15 North looking towards I-85

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

Widening the current 2-lane facility to a 3-lane urban section or 4-lane divided boulevard facility with raised median as specified on the Project Detail Table that follows.

Purpose:

This two lane facility serves both residential and commercial traffic between Raleigh and Virginia State Line. The projected traffic volumes in this section should be near to over capacity in 2035. This widening is intended to improve the safety and capacity of existing roadway. The widening of this route should improve the north-south travel along US 15 through Creedmoor, Oxford, Stovall and Granville County. US 15 functions as the major detour route for I-85 during construction and emergency management conditions.

County:	Granville
MPO/RPO Planning Area	MPO/RPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	Boulevard - NI
Highway Tier	Highway Tier
Total Project Length	37 miles
TIP #	none
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	11

Additional Information

Existing Conditions:
 US 15 is Major Thoroughfare on the Federal Functional Classification System. This roadway runs southwest to northeast throughout the county. US 15 is currently operating at a less than desirable level for users.

Economic Development Impacts:
 The US 15 widening should have a positive impact on economic development, and improve automobile and freight mobility in Granville County.

Land Use Impacts:
 This project may promote urbanized development patterns in current rural areas.

Safety:
 If US 15 is not widened, congestion and delays should worsen. US 15 functions as the major detour route for I-85 during construction and emergency management conditions. More detailed information on several intersections along US 15 is available in the "Intersection Analysis Report".

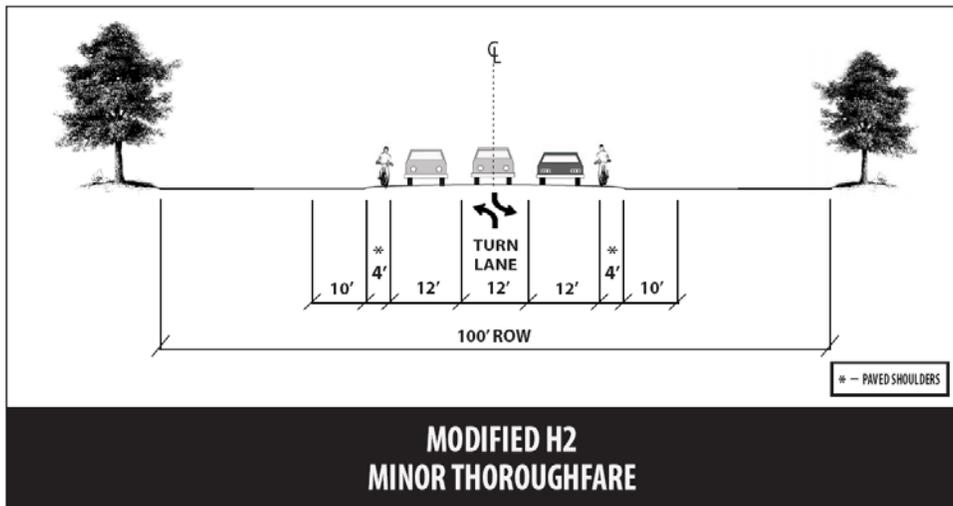
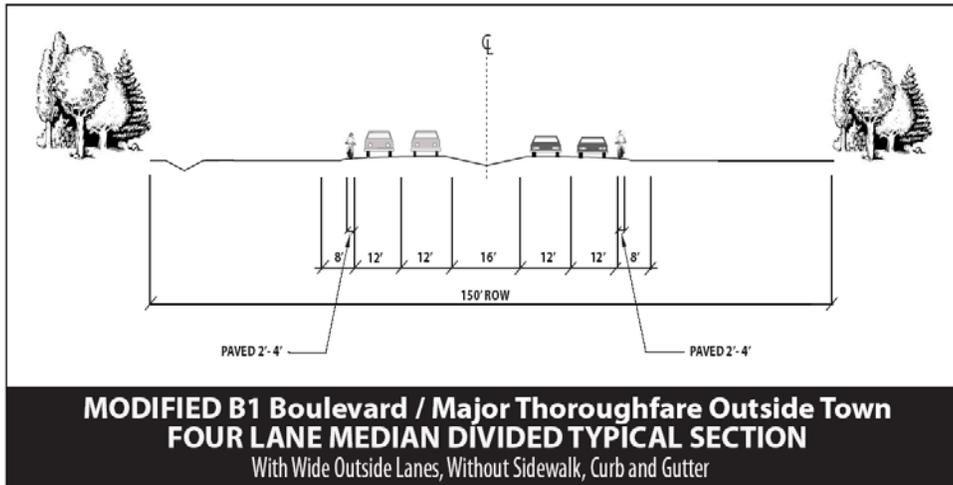
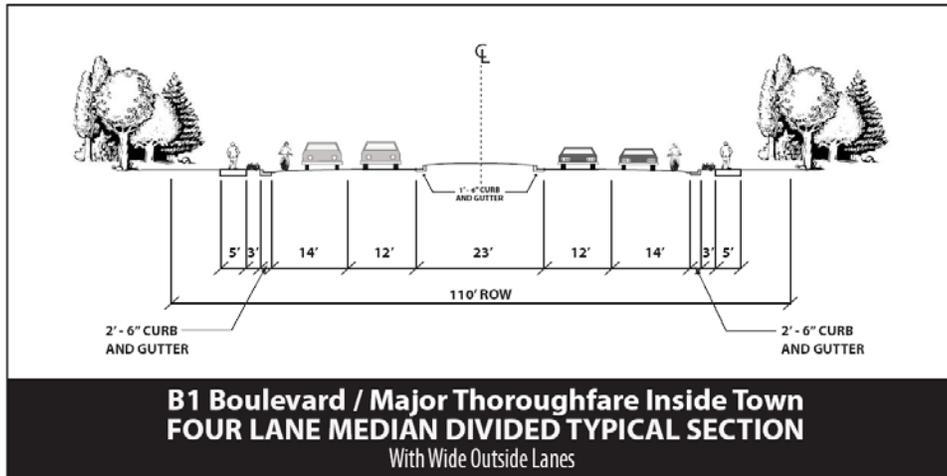
Bike/Ped/Transit:
 Local and regional cyclists frequently use the "Cannady's Mill to Bell Town Loop" route along US 15. The lack of shoulder and minimal lane width increases the potential for conflicts between cyclists and motorist. US 15 is recommended as a future bus route corridor for service from Oxford to Stovall. Ancillary bicycle routes via on-road or off-road accommodations are recommended along US 15 to enhance the county-wide bicycle network.

Environmental/Historic Features
 Various instances of rare plants and animals have been noted throughout Granville County. A large portion of southern Granville County lies within a protected watershed area. A detailed field investigation is recommended prior to construction in this area.

Project History/Relationship to Other Plans
 Improvements to US 15 were identified in previously adopted thoroughfare plans in Oxford, Creedmoor and Granville County. Portions of the improvements to US 15 have consistently been a priority of the MPO and RPO that represent the county.

Project Detail Table

Project: US15	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN002A-GC (I-85 to Gate #2 Rd)							
Current Conditions	2.30	24	100	2	9800	6200	-
Future Conditions	2.30	48	150	4	35000	22000	Modi – B1
GRAN002B-GC (Gate #2 - Relocated US 15)							
Current Conditions	1.31	24	100	2	9800	4600	-
Future Conditions	1.31	52	110	4	35000	17500	B1
GRAN002C-GC (US 15 Relocation)							
Current Conditions	0.20	21	80	2	7600	4900	-
Future Conditions	0.20	36	100	2-3	35000	11000	Modi – H2
GRAN002D-GC (Moss Rd - I-85)							
Current Conditions	10.26	24	100	2	7600	3700- 5400	-
Future Conditions	10.26	48	150	4	35000	18600	Modi – B1
GRAN002E-GC (I-85 to Oxford SCL)							
Current Conditions	1.50	24	100	2	9800	7400	-
Future Conditions	1.50	52	110	4	35000	14800	B1
GRAN002F-GC (Hillsboro St. to US 158)							
Current Conditions	1.65	24	80	2	9800	6700- 10000	-
Future Conditions	1.65	52	110	4	35000	14000	B1
GRAN002G-GC (US 158 to Chewning Rd)							
Current Conditions	2.90	24	100	2	7600	6600	-
Future Conditions	2.90	52	150	4	35000	11400	Modi – B1
GRAN002H-GC (Chewning Rd to Simpson Hill)							
Current Conditions	2.10	22	60	2	7600	4800	-
Future Conditions	2.10	36	100	2-3	15000	5500	Modi- H2
GRAN002I-GC (Simpson Hill to Hill Airy)							
Current Conditions	1.20	22	60	2	7200	4800	-
Future Conditions	1.20	36	100	2-3	15000	5500	Modi- H2
GRAN002J-GC (Hill Airy to Reavis Rd)							
Current Conditions	1.20	22	60	2	7200	4800	-
Future Conditions	1.20	36	100	2-3	15000	5500	Modi- H2
GRAN002K-GC (Reavis Rd to Virginia)							
Current Conditions	7.30	22	60	2	7200	4500	-
Future Conditions	7.30	36	100	2-3	15000	6500	Modi- H2

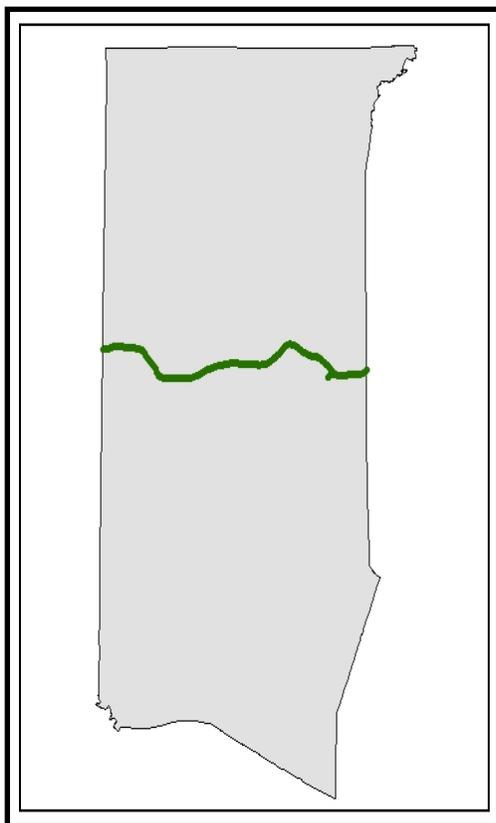
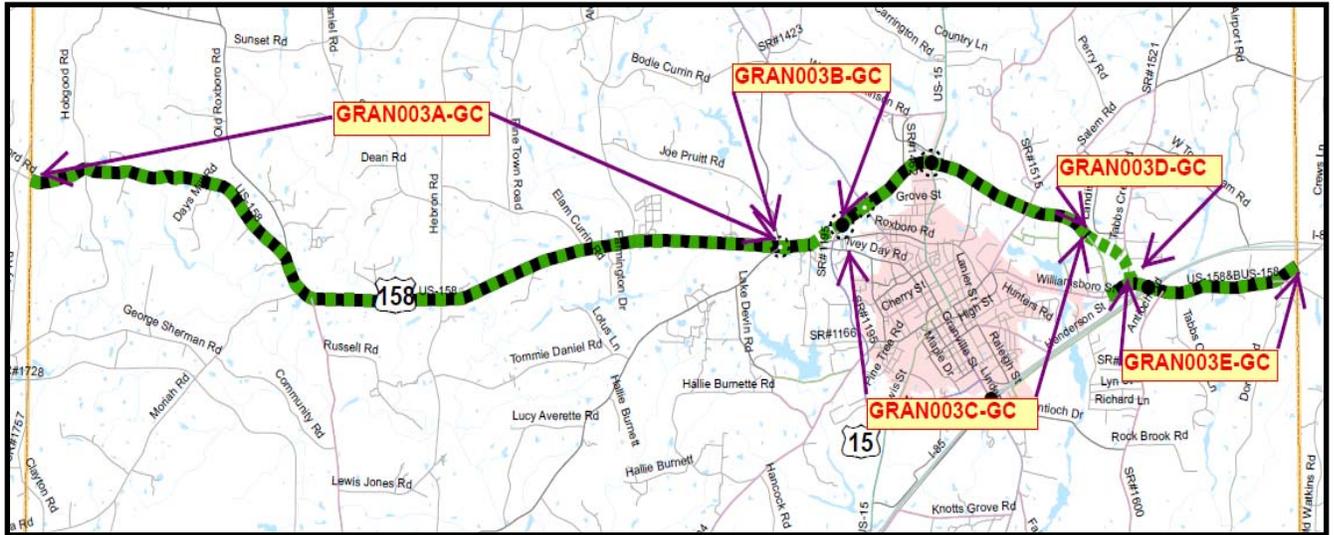


US 158

Proposed improvements from Person County Line to Vance County Line

Project #: GRAN003

Last updated on: 10/29/09



Project Location within County

US 158



US 158 in Oxford

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

Widening the current 2-lane facility to a 4-lane divided expressway facility with raised median, curb and gutter from the Person County Line to the Vance County line.

Purpose:

This 2-lane facility serves residential, commuter and commercial traffic from Person County to Vance County. It was determined that the traffic volumes projected in this section should be near to over capacity in 2035. This widening is intended to improve the safety and capacity of existing roadway. The widening of this route should help improve the east-west travel along US 158 through Oxford and Granville County.

County:	Granville
MPO/RPO Planning Area	Kerr-Tar RPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	Expressway- NI
Highway Tier	Highway Tier
Total Project Length	18 miles
TIP #	R-2585, R-2257(loop)
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	5

Additional Information

Existing Conditions:

US 158 is a 2-lane east-west connector throughout NC, traversing Granville County from Person County to Vance County. This facility serves residential, commercial, commuter and freight traffic.

Economic Development Impacts:

The US 158 widening should have a positive impact on economic development, and improve automobile and freight mobility in Granville County.

Land Use Impacts:

This project may promote urbanized development patterns in current rural areas.

Safety:

While safety is not the primary purpose of this project, several intersections have been identified as safety concerns. More detailed information on those intersections along US 158 is available in the "Intersection Analysis Report" shown in Appendix E.

Bike/Ped/Transit:

Ancillary bicycle routes via on-road or off-road accommodations are recommended along US 158 to enhance the county-wide bicycle network. US 158 is recommended as a future bus route corridor for service from Oxford to Henderson in Vance County. A circulator route has been recommended to serve Oxford using US 158.

Environmental/Historic Features

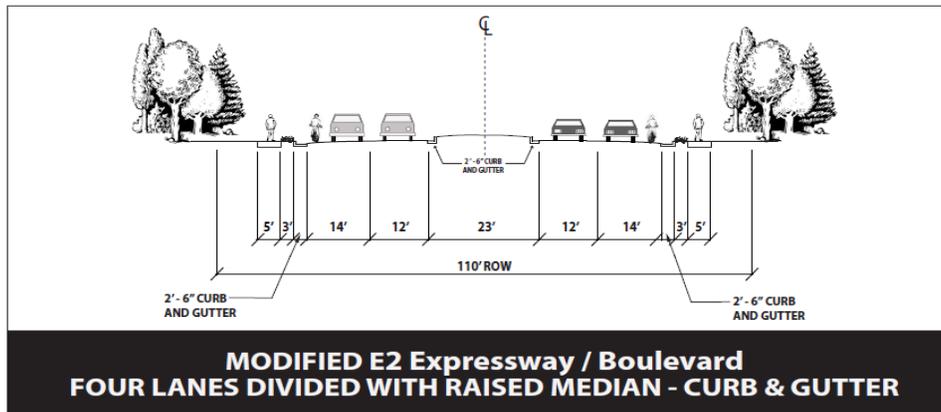
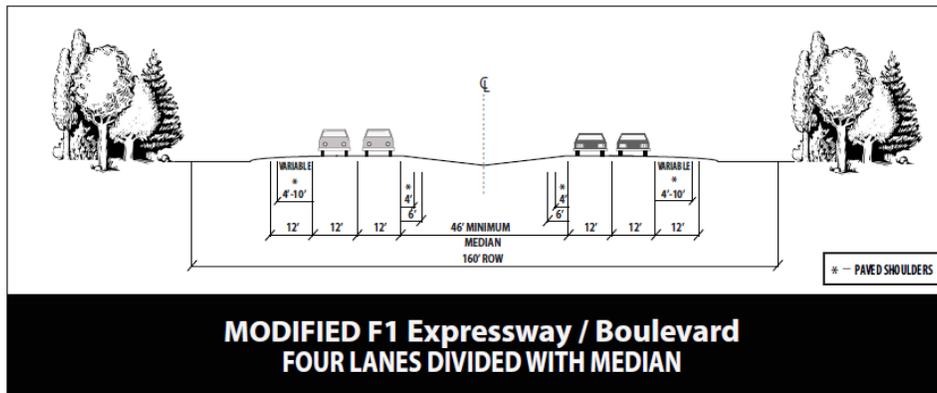
Various instances of rare plants and animals have been noted throughout Granville County. A portion of southwestern Granville County lies within a protected watershed area. A detailed field investigation is recommended prior to construction in this area.

Project History/Relationship to Other Plans

Improvements to US 158 were identified in previously adopted thoroughfare plans in Oxford and Granville County. US 158 is identified as an Intrastate facility and identified on the 2009-2015 TIP as R-2585, to be improved to a multi-lane facility. Improvements to the Oxford Loop portion of this route have been a consistent priority of the County and funding is being sought through regional channels including the RPO. See 2002 comprehensive/land use/hazardous mitigation plan. Recommended bicycle/pedestrian improvements are consistent with the adopted 2006 Granville County Greenway Master Plan. This route is also identified as Strategic Highway Corridor.

Project Detail Table

Project: US158	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN003A-GC (Person County Line to Cornwall Road)							
Current Conditions	10.20	21	80	2	9800	5700	-
Future Conditions	10.20	48	160	4	35000	12600	Modi – F1
GRAN003B-OX (Cornwall Road to US 158)							
Current Conditions	1.20	21	80	2	9800	5800	-
Future Conditions	1.20	52	110	4	35000	13000	Modi – E2
GRAN003C-OX (US 158 Outer loop)							
Current Conditions	3.60	24	60	2	7200	5900	-
Future Conditions	3.60	52	110	4	35000	13000	Modi – E2
GRAN003D-OX (US 158 to US 158 BUS)							
Current Conditions	-	-	-	-	-	-	-
Future Conditions	1.00	52	110	4	35000	14000	Modi – E2
GRAN003E-GC (I-85 to Vance County Line)							
Current Conditions	2.10	24	100	2	9800	3900	-
Future Conditions	2.10	52	110	4	35000	15900	Modi – E2

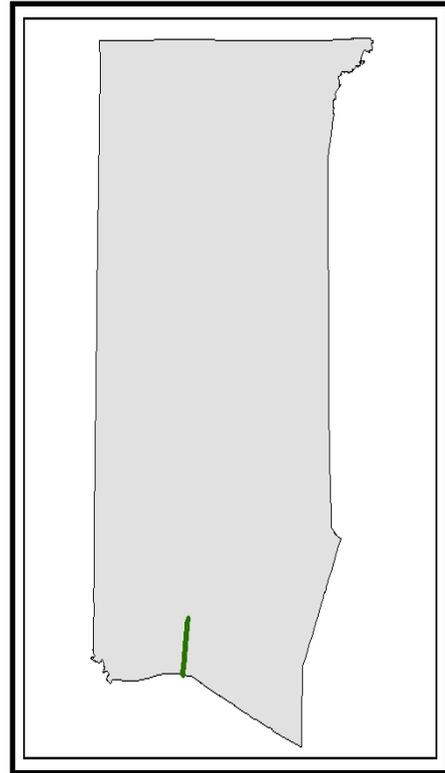


NC 50

Proposed improvements from Wake County Line to Creedmoor Loop

Project #: GRAN005

Last updated on:
10/29/09



NC 50

Project Location within County



NC 50 South of Creedmoor

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

- Widening the current 2-lane facility to a 4-lane divided boulevard facility with median from the Wake County line to the proposed Creedmoor Connector.

Purpose:

- This project is needed to improve the north-south transportation link between Creedmoor and Raleigh. The growth in Creedmoor, southern Granville County and northern Wake County has resulted in increased transportation demands on this 2-lane facility. This widening is intended to improve the safety and capacity on the existing roadway.

County:	Granville
MPO/RPO Planning Area	Capital Area MPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	Boulevard - NI
Highway Tier	Highway Tier
Total Project Length	3 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Number of Segments	1

Additional Information

Existing Conditions:

NC 50 is a Major Thoroughfare. It is the only major route providing direct access between Creedmoor and Raleigh. Citizens and motorists in Northern Granville County also rely on NC 50 for regional connectivity to the Raleigh area. The route is heavily used by commuters from Granville County into the RTP Area. Additionally, the route is used as a link between Raleigh and the State and Federal institutions in Butner. The area along NC 50 is primarily residential, with many undeveloped tracts of land. NC 50 is currently operating at a less than desirable level for users, especially during peak hours.

Economic Development Impacts:

The NC 50 widening should have a positive impact on economic development, and improve mobility and connectivity between Granville County and the greater Triangle area. Improvements to this facility should further provide sufficient roadway capacity to handle additional traffic resulting from new development and projected increases in commuter traffic. Prime development opportunities exist in Creedmoor and Butner areas which should result in increased commuter traffic along NC 50.

Land Use Impacts:

This project may promote urbanized development patterns in current rural areas.

Safety:

If NC 50 is not widened, congestion, delays and crashes should worsen. The current alignment of NC 50 contains numerous vertical curves which may affect sight distance.

Bike/Ped/Transit:

A future bus route is recommended in the NC 50 corridor to provide service from Creedmoor to Raleigh. An ancillary bicycle route accommodation is recommended along NC 50 to enhance the county-wide bicycle network.

Environmental/Historic Features

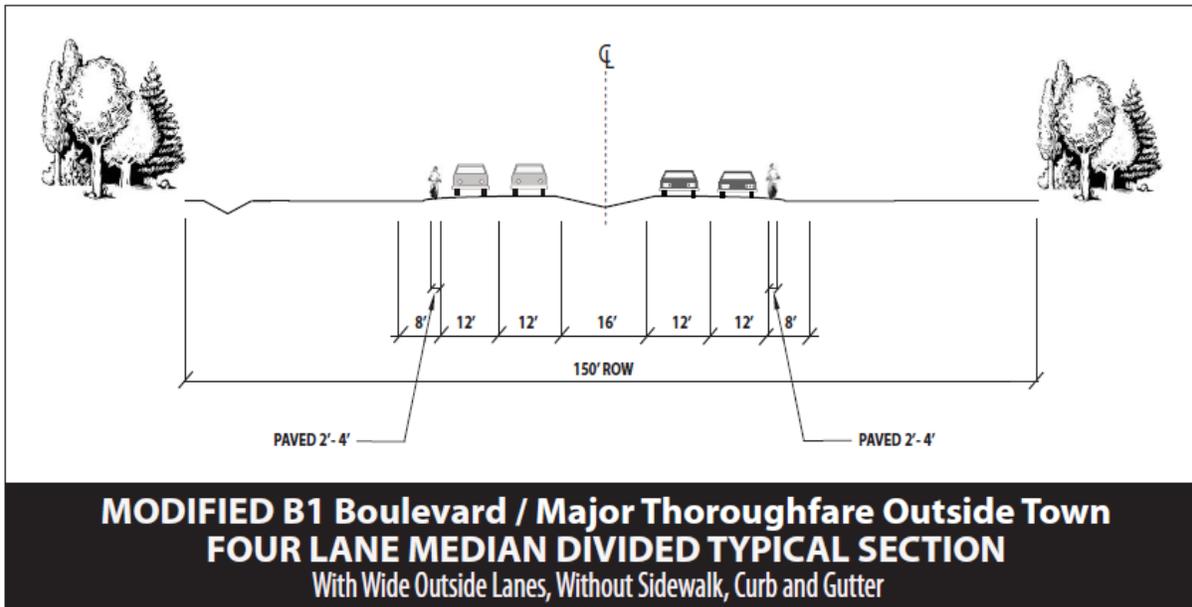
Various instances of rare plants and animals have been noted throughout Granville County. A large portion of southern Granville County lies within a protected watershed area. A detailed field investigation is recommended prior to construction in this area.

Project History/Relationship to Other Plans

Improvements to NC 50 were identified in previously adopted thoroughfare plans in Creedmoor and Granville County and supported by all other municipalities in the county. Improvements to this route have been a consistent priority of the County and funding is being sought through regional channels including the MPO and RPO. An advanced planning study to identify possible solutions to the existing problems has been funded by the Capital Area MPO. Recommended bicycle/pedestrian improvements are consistent with the adopted 2006 Granville County Greenway Master Plan.

Project Detail Table

Project: NC 50	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN005-GC (Wake County Line to Creedmoor Loop)							
Current Conditions	3.10	24	60	2	7600	7100-11000	-
Future Conditions	3.10	48	150	4	35000	30000-33400	Modi – B1

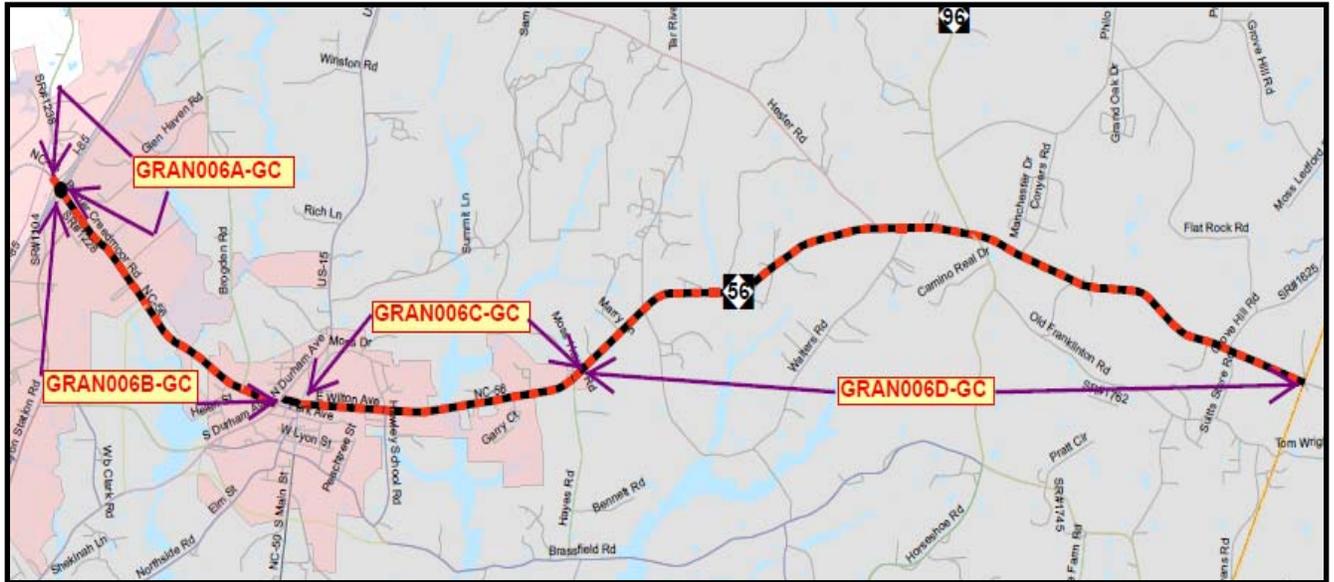


NC 56

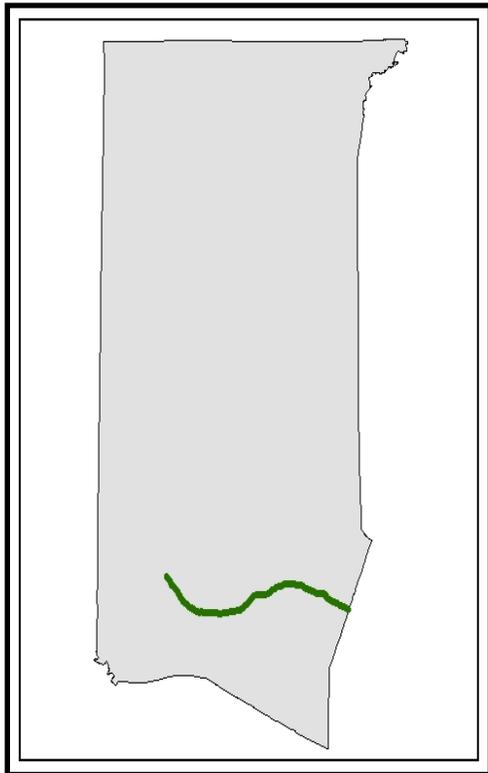
Proposed improvements from West Lyon Station Road in Butner to Franklin County Line

Project #: GRAN006

Last updated on: 10/29/09



NC 56



Project Location within County



NC 56 towards Creedmoor

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

- Widening the current 2-lane facility to a 4-lane divided boulevard facility with median from I-85 in southern Granville County to Franklin County as specified on the Project Detail Table.

Purpose:

- Portions of NC 56 are currently over capacity and the remainder is projected to exceed capacity by 2035. If no improvements are made to NC 56, the resulting congestion and delays should worsen. The widening should provide increased capacity and greater maneuverability resulting in safer driving conditions.

County:	Granville
MPO/RPO Planning Area	Capital Area MPO
Municipality	Creedmoor
Project Category	Highway
CTP Designation	Boulevard - NI
Highway Tier	Highway Tier
Total Project Length	13 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	4

Additional Information

Existing Conditions:

NC 56 is a Major Thoroughfare and is the primary east-west route in southern Granville County and provides a connection from I-85 in Butner to points eastward, including Creedmoor and Franklin County.

Economic Development Impacts:

The NC 56 widening should have a positive impact on economic development, and improve automobile and freight mobility in Granville and neighboring counties.

Land Use Impacts:

This route serves all types of development, from industrial to rural to agricultural. There are three schools near Creedmoor directly impacted by any improvements along NC 56. This project may promote urbanized development patterns in current rural areas.

Safety:

If NC 56 is not widened, congestion and delays should worsen. Access management methods should be implemented in order to provide maximum mobility and safety, particularly near I-85. Several intersection improvements along NC 56 have been identified in the "Intersection Analysis Report" shown in Table 2.

Bike/Ped/Transit:

Ancillary bicycle routes via on-road or off-road accommodations are recommended along NC 56 to enhance the county-wide bicycle network. NC 56 is recommended as part of a future bus circulator corridor to provide service from Butner to Creedmoor.

Environmental/Historic Features

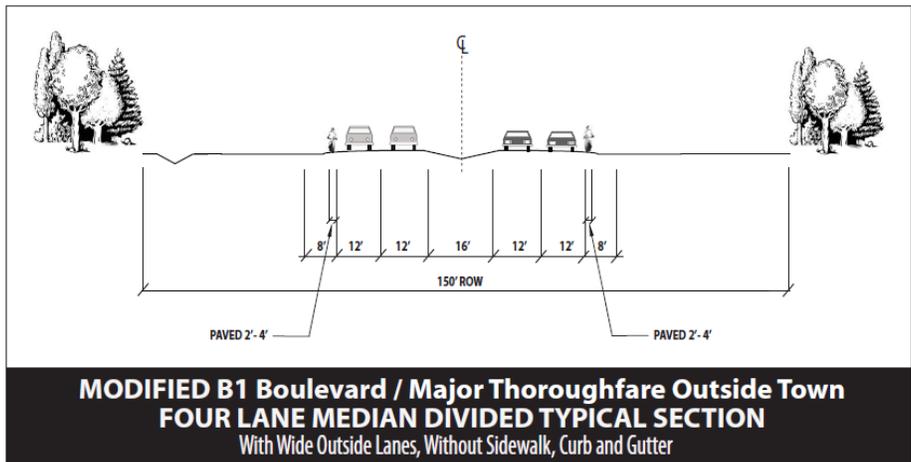
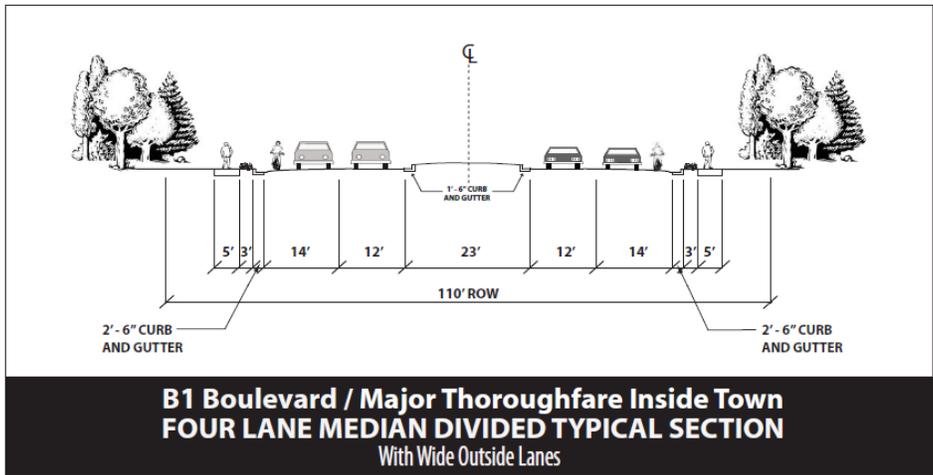
Various instances of rare plants and animals have been noted throughout Granville County. A large portion of southern Granville County lies within a protected watershed area. A detailed field investigation is recommended prior to construction in this area. This project should improve air quality by reducing emissions related to severe congestion.

Project History/Relationship to Other Plans

Improvements to NC 56 were identified in previously adopted thoroughfare plans in Creedmoor and Granville County. Improvements to this route have been a consistent priority of the County and funding is being sought through regional channels including the MPO and RPO. See 2002 comprehensive/land use/hazardous mitigation plan. Recommended bicycle/pedestrian improvements are consistent with the adopted 2006 Granville County Greenway Master Plan.

Project Detail Table

Project: NC 56	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN006A-CR (New West Lyon Station Road Extension to I-85)							
Current Conditions	0.20	24	60	2	8500	15000	-
Future Conditions	0.20	52	110	4	35000	29000	B1
GRAN006B-CR (I-85 to US 15)							
Current Conditions	2.80	24	60	2	7600	10000	-
Future Conditions	2.80	52	110	4	35000	25500	B1
GRAN006C-CR (NC 50 to Hayes Road)							
Current Conditions	2.40	24	60	2	7200	9800	-
Future Conditions	2.40	52	110	4	35000	20800	B1
GRAN006D-GC (Hayes Road to Franklin County)							
Current Conditions	7.02	25	80	2	7600	4400-6700	-
Future Conditions	7.02	48	150	4	35000	16500	Modi – B1

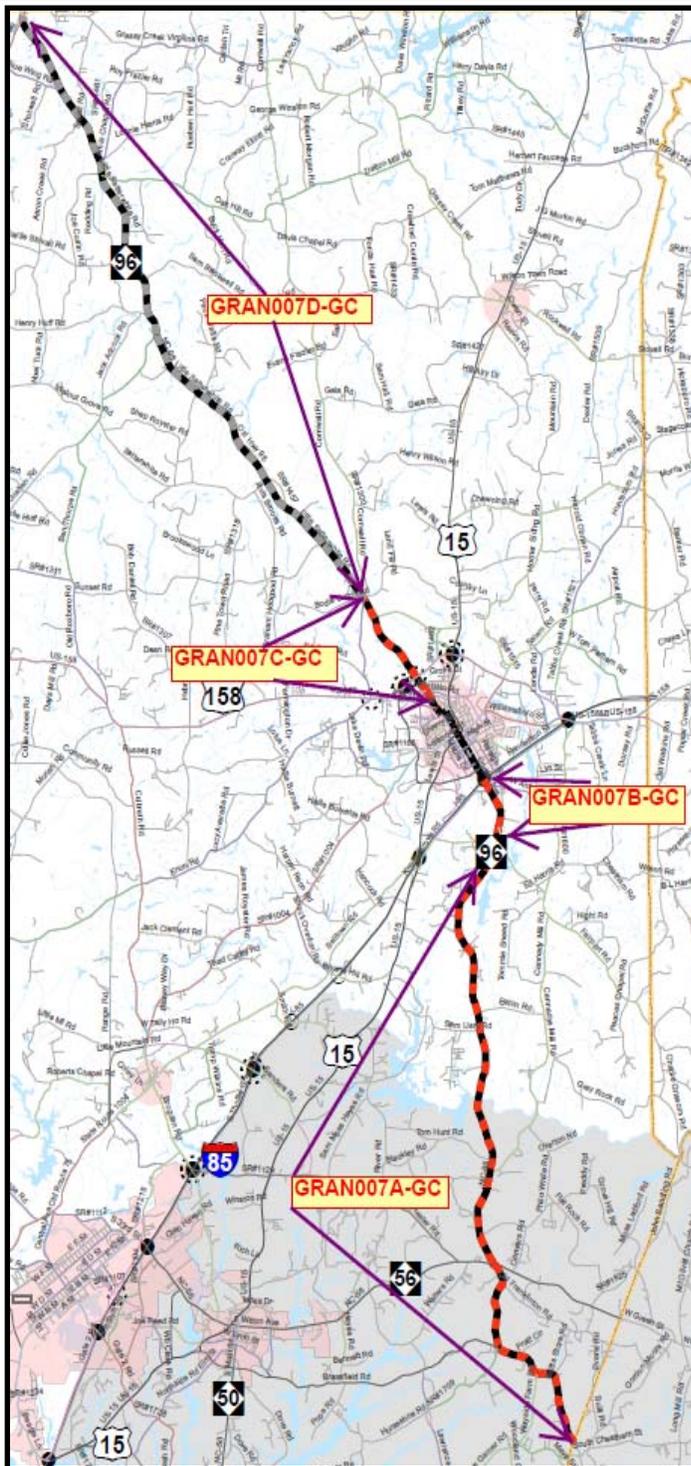


NC 96

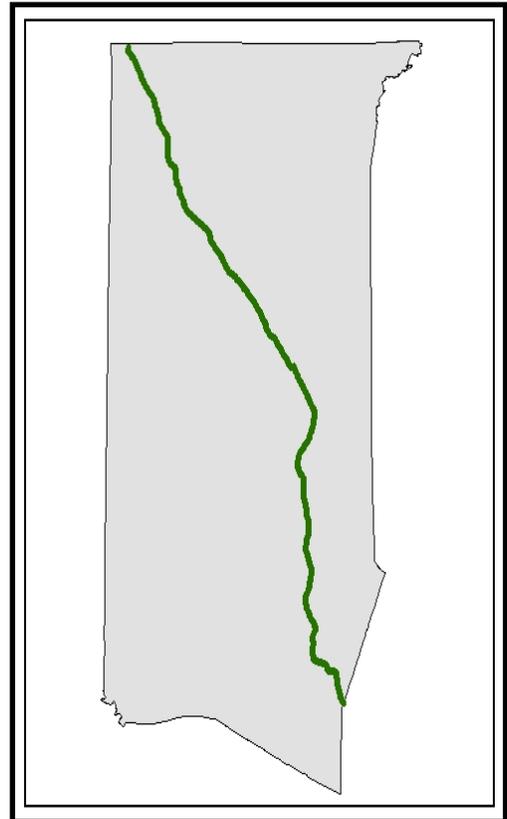
Proposed improvements from Franklin County Line to NC-49

Project #: GRAN007

Last updated on:
10/29/09



NC 96



Project Location within County



NC 96 at Broad Street in Oxford

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

- Widening the current rural 2-lane facility to a 4-lane divided boulevard facility with median, or a 2-3 lane facility with center turn lane as specified on the Project Detail Table that follows.

Purpose:

- This 2-lane facility serves both residential and commercial traffic between Raleigh and the Virginia State Line. Portions of NC 96 are currently at capacity and the remainder is projected to exceed capacity by 2035. This widening is intended to improve the safety, mobility and capacity of the existing roadway. The widening of this route should improve the north-south travel along NC 96 from Franklin County through Granville County extending to the Virginia State Line. NC 96 in southern Granville County is the primary route for access to US 1 in Franklin County, which serves as a connection to the greater Triangle Area.

County:	Granville
MPO/RPO Planning Area	MPO/RPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	various
Highway Tier	Statewide
Total Project Length	38 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	4

Additional Information

Existing Conditions:

NC 96 is a Major Thoroughfare and runs southeast to northwest throughout the county. NC 96 is currently operating at a less than desirable level for users. Narrow shoulders create a safety concern for bicyclists.

Economic Development Impacts:

The NC 96 widening should have a positive impact on economic development, and improve automobile and freight mobility in Granville County.

Land Use Impacts:

This project may promote urbanized development patterns in current rural areas.

Safety:

If NC 96 is not widened, congestion and delays should worsen. NC 96 in southern Granville County is the primary freight route for access to US 1 in Franklin County. Several intersections along NC 96 are identified for improvement and are detailed in the Intersection Improvement Summary Table shown in Table 2.

Bike/Ped/Transit:

Local and regional cyclists frequently use the State Bike Route #1 corridor along NC 96. The lack of shoulder and minimal lane width increases the potential for conflicts between cyclists and motorist. Ancillary bicycle routes via on-road or off-road accommodations are recommended along NC 96 to enhance the county-wide bicycle network.

Environmental/Historic Features

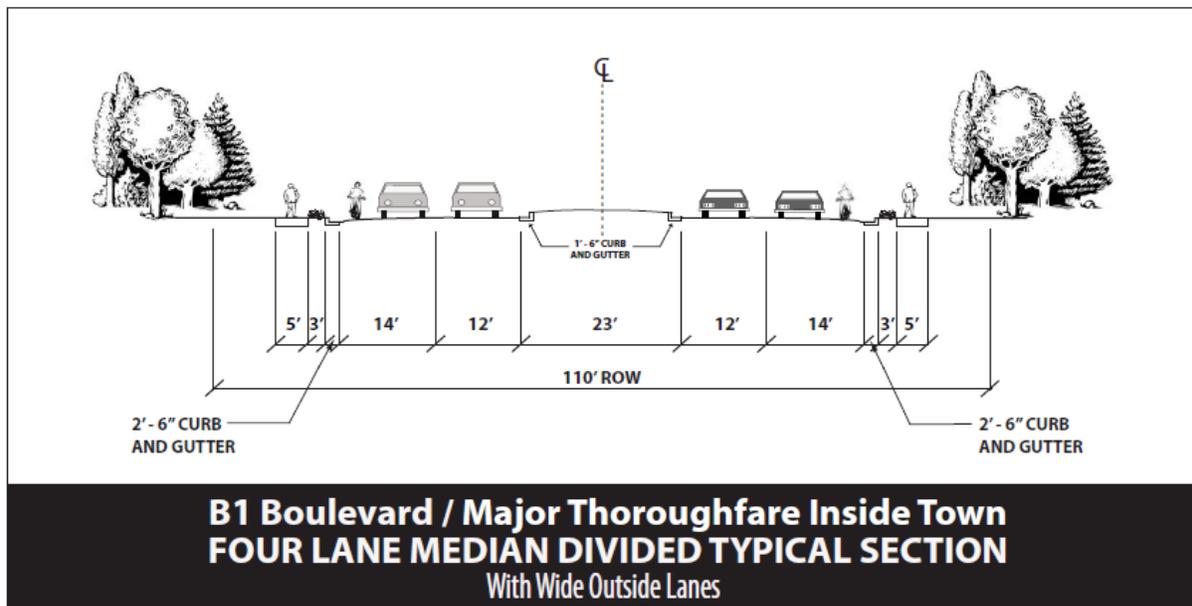
Various instances of rare plants and animals have been noted throughout Granville County. A large portion of southern Granville County lies within a protected watershed area. A detailed field investigation is recommended prior to construction in this area. This project should improve air quality by reducing vehicle emissions.

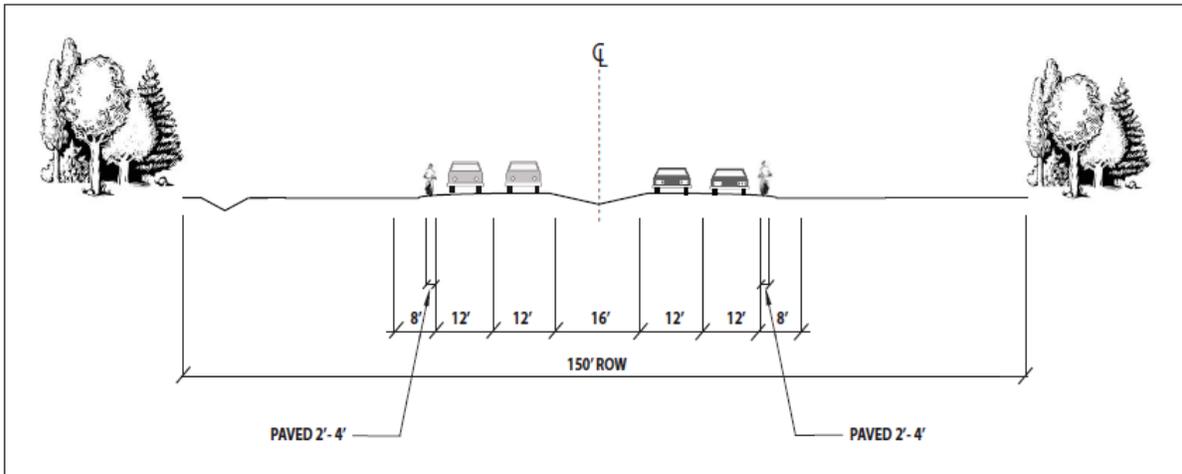
Project History/Relationship to Other Plans

Improvements to NC 96 have been identified in previously adopted thoroughfare plans in Oxford and Granville County. Improvements to this route have been a consistent priority of the County and funding is being sought through regional channels including the MPO and RPO. This project is consistent with 2002 comprehensive/land use/hazardous mitigation plan. Recommended bicycle/pedestrian improvements are consistent with the adopted 2006 Granville County Greenway Master Plan.

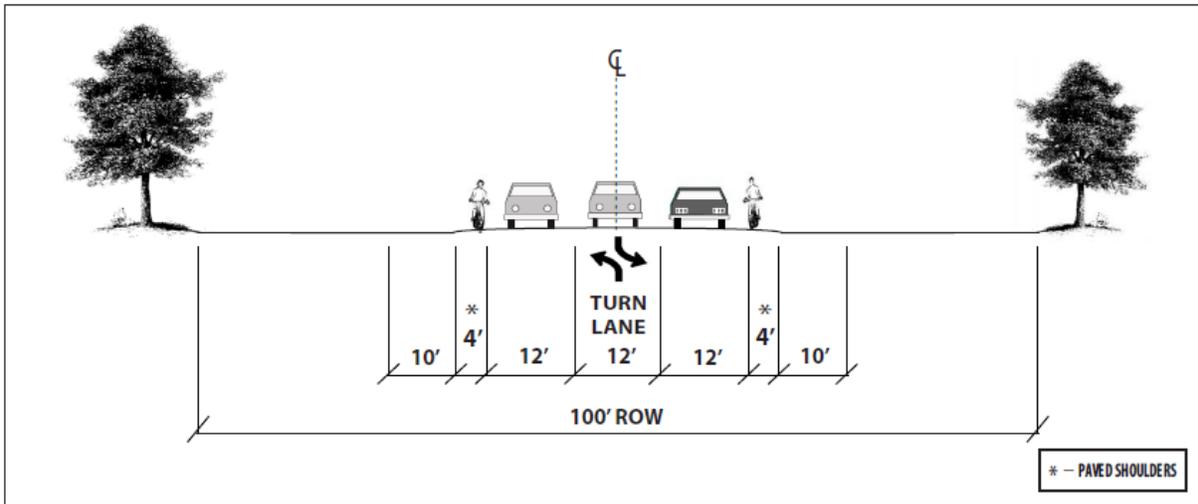
Project Detail Table

Project: NC 96	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN007A-GC (Franklin County Line to Knott's Grove Road)							
Current Conditions	13.40	24	60	2	7400	3800-4800	-
Future Conditions	13.40	48	150	4	33500	10000	Modi – B1
GRAN007B-GC (Knott's Grove Road to I-85)							
Current Conditions	3.00	24	80	2	8500	3100-5200	-
Future Conditions	3.00	52	110	4	33500	13800	B1
GRAN007C-GC (Ivey Day Road to Cornwallis Road)							
Current Conditions	4.50	24	80	2	8500	2400-13000	-
Future Conditions	4.50	52	110	4	33500	30000	B1
GRAN007D-GC (Cornwallis Road to NC-49)							
Current Conditions	16.00	24	80	2	9800	1300-6100	-
Future Conditions	16.00	36	100	2-3	15000	6000-11500	Modi – H2





MODIFIED B1 Boulevard / Major Thoroughfare Outside Town
FOUR LANE MEDIAN DIVIDED TYPICAL SECTION
 With Wide Outside Lanes, Without Sidewalk, Curb and Gutter



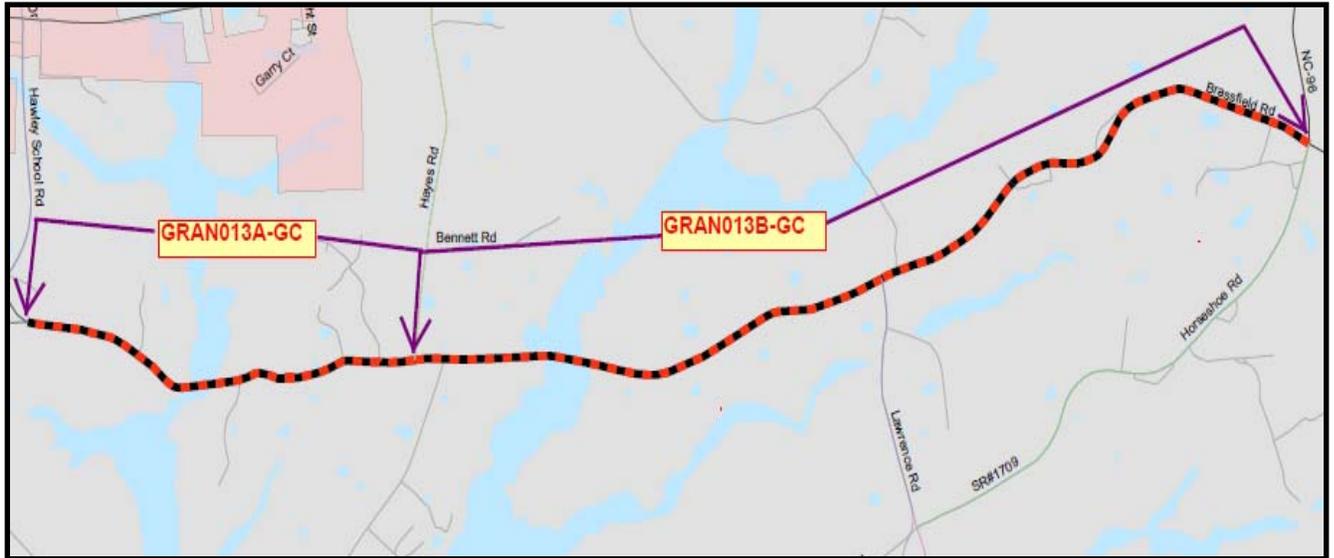
MODIFIED H2
MINOR THOROUGHFARE

Brassfield Road (SR 1700)

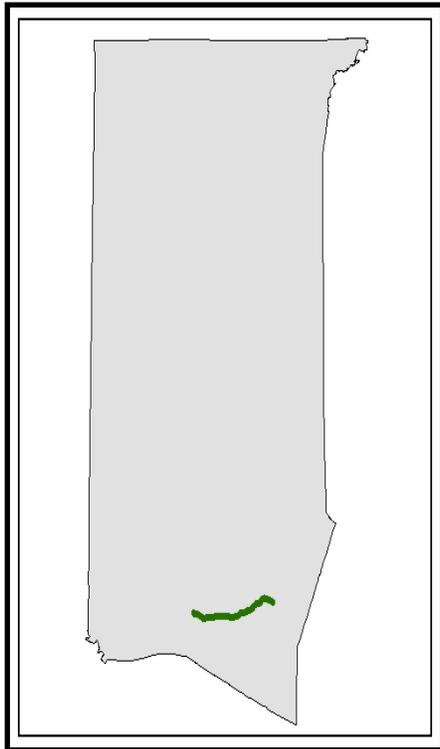
Proposed improvements from Creedmoor Loop to NC 96

Project #: GRAN013

Last updated on:
10/29/09



Brassfield Road



Project Location within County



Brassfield Road looking west toward Creedmoor

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

Widening the current 2-lane facility to a 4-lane divided boulevard facility with raised median and bicycle accommodations from the proposed Creedmoor Connector to NC 96. This recommendation also includes improvements to the intersection of Brassfield Road (SR 1700) and Hayes Road (SR 1702).

Purpose:

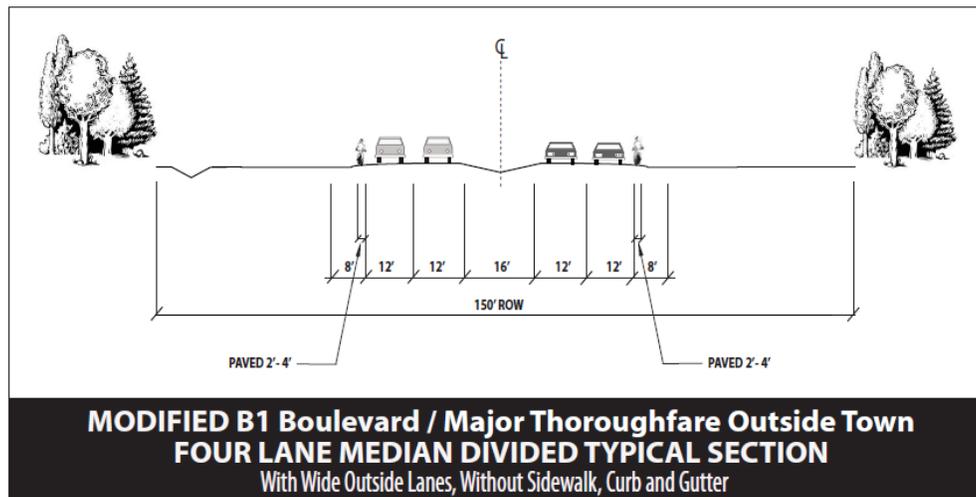
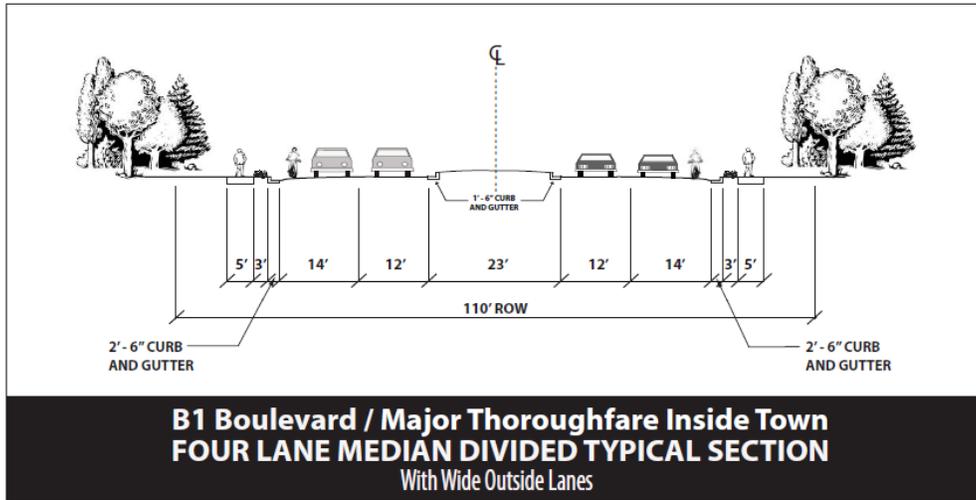
This widening, in conjunction with the Creedmoor Connector and improvements to Hayes Road (SR 1702), is intended to improve capacity, mobility and safety while providing an alternative to NC 56. The intersection improvements should allow for smoother traffic flow, completing the connection between Brassfield Road (SR 1700) and NC 56, thus completing Creedmoor Connector. Portions of Brassfield Road (SR 1700) are projected to be over capacity by 2035. The construction of the Creedmoor Connector and widening of Brassfield Road (SR 1700) should provide a needed alternative that relieves congestion on NC 56.

County:	Granville
MPO/RPO Planning Area	Capital Area MPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	Boulevard - NI
Highway Tier	Highway Tier
Total Project Length	6 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	2

Additional Information	
Existing Conditions:	Brassfield Road (SR 1700) is a minor collector on the Federal Functional Classification System. This roadway is currently serving rapidly developing residential areas. It helps provide regional connectivity between I-85 and US 1 in Franklin County. Narrow shoulders create a safety concern for bicyclists.
Economic Development Impacts:	Proposed improvements should enhance economic development opportunities in Creedmoor.
Land Use Impacts:	Land use along this corridor is projected to be medium density residential (as per the 2002 Granville County Comprehensive Plan). Mixed use development is possible along this corridor. Mobility function of this 4-lane facility could be impaired by excessive driveway access. Future land use plan amendments should consider the functionality of this corridor when making land use decisions.
Safety:	If this facility is not widened, congestion and delays should worsen, and crashes may increase due to the projected increased volumes. NC 96-Brassfield Road (SR 1700) intersection improvements are needed as per the detailed Intersection Improvement Summary Table shown in Table 2.
Bike/Ped/Transit:	Ancillary bicycle routes via on-road or off-road accommodations are recommended along Brassfield Road (SR 1700) to enhance the county-wide bicycle network.
Environmental/Historic Features	Various instances of rare plants and animals have been noted throughout Granville County. A large portion of southern Granville County lies within a protected watershed area. A detailed field investigation is recommended prior to construction in this area.
Project History/Relationship to Other Plans	Improvements to Brassfield Road (SR 1700) were identified in previously adopted thoroughfare plans in Creedmoor and Granville County. Bicycle and Pedestrian recommendations are consistent with the 2006 Granville County Greenway Master Plan. Project recommendation connects with the Creedmoor Connector (GRAN026).

Project Detail Table

Project: Brassfield Road (SR 1700)	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN0013A-GC (Creedmoor Loop to Hayes Road)							
Current Conditions	2.00	24	100	2	9800	3200-4300	-
Future Conditions	2.00	52	150	4	33500	22000	B1
GRAN0013B-GC (Hayes Road to NC 96)							
Current Conditions	4.02	24	100	2	9800	8500	-
Future Conditions	4.02	52	110	4	33500	17500	Modified-B1

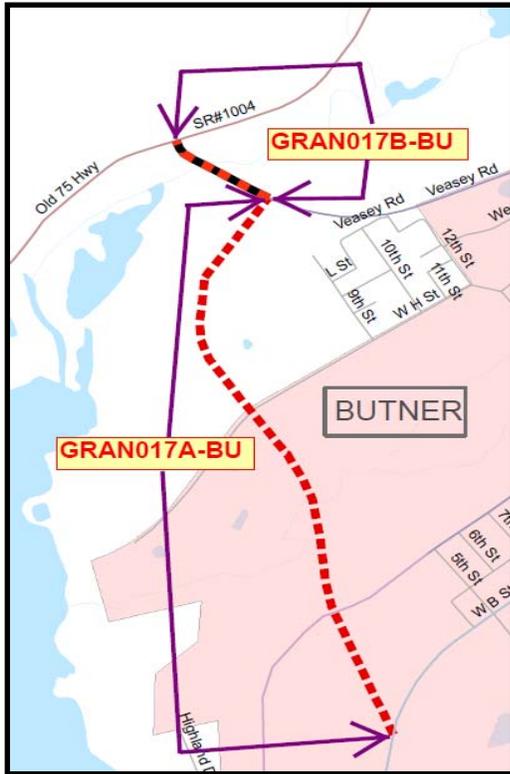


Butner Blvd

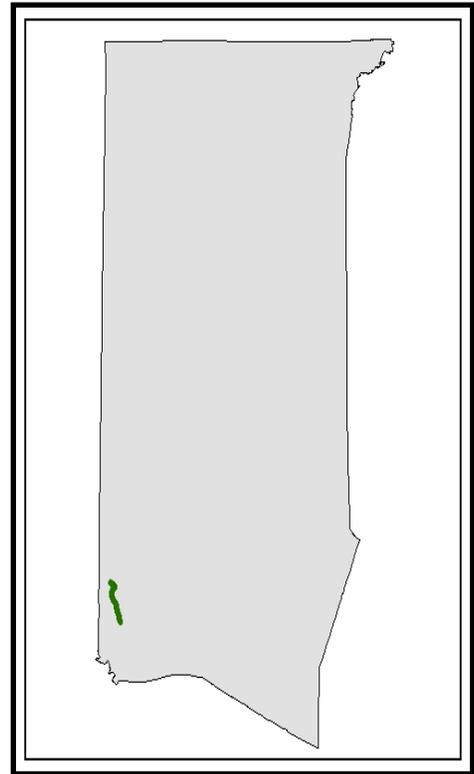
Proposed improvements from W B Street to SR1004

Project #:GRAN017

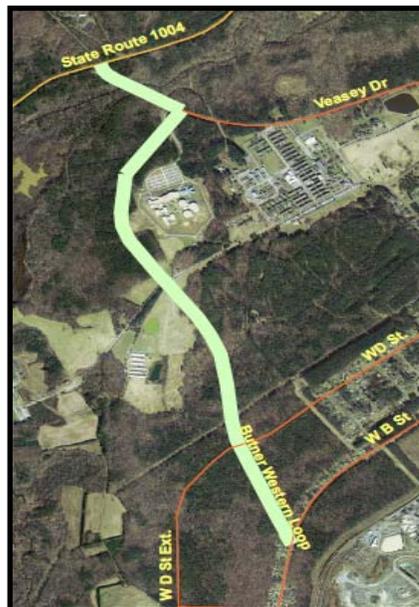
Last updated on:
10/29/09



Butner Blvd



Project Location within County



New Location Project

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

Construct a 4-lane divided boulevard facility with raised median from W. B Street to Veasey Street on new location, and widen Veasey Street to Old 75 (SR 1004) from a 2-lane road to a 4-lane divided boulevard facility.

Purpose:

The proposed Butner Boulevard facility should enhance commuter access between Raleigh and the state & federal facilities in Butner and provide better passenger and freight mobility in and around the Town of Butner. The traffic volumes projected on existing roadways in that area should be significantly over capacity in 2035.

County:	Granville
MPO/RPO Planning Area	Kerr-Tar RPO
Municipality	Butner
Project Category	Highway
CTP Designation	Boulevard - NI
Highway Tier	Highway Tier
Total Project Length	2.5 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	2

Additional Information

Existing Conditions:
This is a new location project intended to provide access and mobility on the south-western side of Butner including the State and Federal facilities and Camp Butner Training Site.

Economic Development Impacts:
It is anticipated that the proposed Butner Boulevard should bring new growth and economic development to the town, and improve regional connectivity.

Land Use Impacts:
This project may promote urbanized development patterns in current rural areas. Mixed use development is possible along this corridor. Mobility function of this 4-lane facility could be impaired by excessive driveway access. Future land use plan amendments should consider the functionality of this corridor when making land use decisions.

Safety:
If this facility is not constructed, congestion and delays on nearby roads should worsen, and crashes may increase due to the projected increased volumes. The Butner Boulevard should remove some of the current and projected traffic from downtown Butner Area.

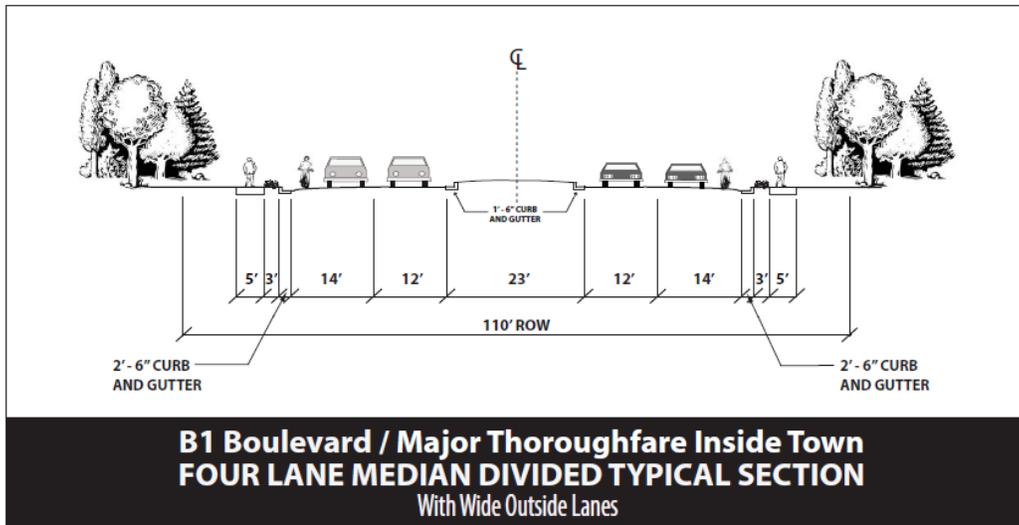
Bike/Ped/Transit:
Ancillary bicycle routes via on-road and off-road accommodations are recommended along Butner Boulevard to enhance the county-wide bicycle network.

Environmental/Historic Features
There are various sightings of rare plants and animals throughout Granville County. A detailed field investigation is recommended prior to construction in this area. A large portion of southern Granville County lies within a protected watershed area.

Project History/Relationship to Other Plans
Portions of this project were previously identified in the Butner Transportation Plan.

Project Detail Table

Project: Butner Blvd	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN017A-GC (W.B Street to Veasey Road)							
Current Conditions	2.05	22	100	2	9500	2800	-
Future Conditions	2.05	52	110	4	33500	4200	B1
GRAN017B-GC (New Butner Blvd to Old Route NC75 (SR 1004))							
Current Conditions	-	-	-	-	-	-	-
Future Conditions	0.37	52	110	4	33500	-	B1

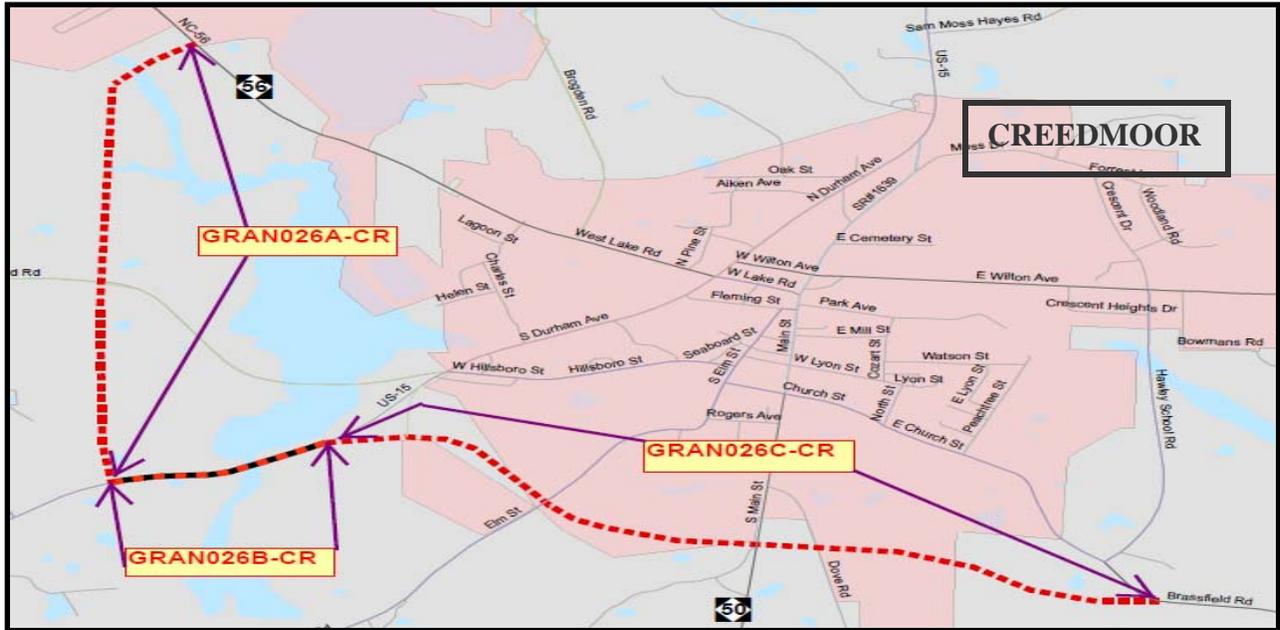


Creedmoor Connector

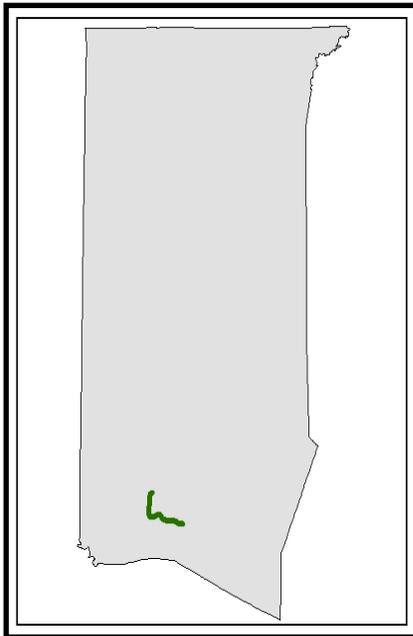
Proposed improvements from NC 56 to Brassfield Road (SR 1700)

Project #: GRAN026

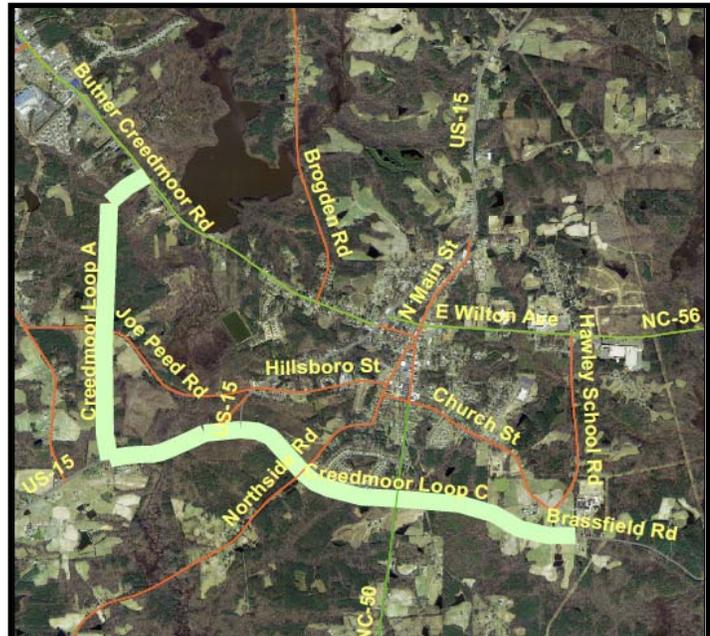
Last updated on: 10/29/09



Creedmoor Connector



Project Location within County



New Location Project

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

It is recommended that a new 4-lane divided boulevard facility with limited control of access be constructed on the southwestern and southeastern sides of Creedmoor. This new facility is divided into three sections: from NC 56 to US 15; from US 15 to Relocated US 15; and from Relocated US 15 to Brassfield Road (SR 1700). This project, in conjunction with recommendations on Hayes Road and Brassfield Road (SR 1700), should complete a southern loop around Creedmoor.

Purpose:

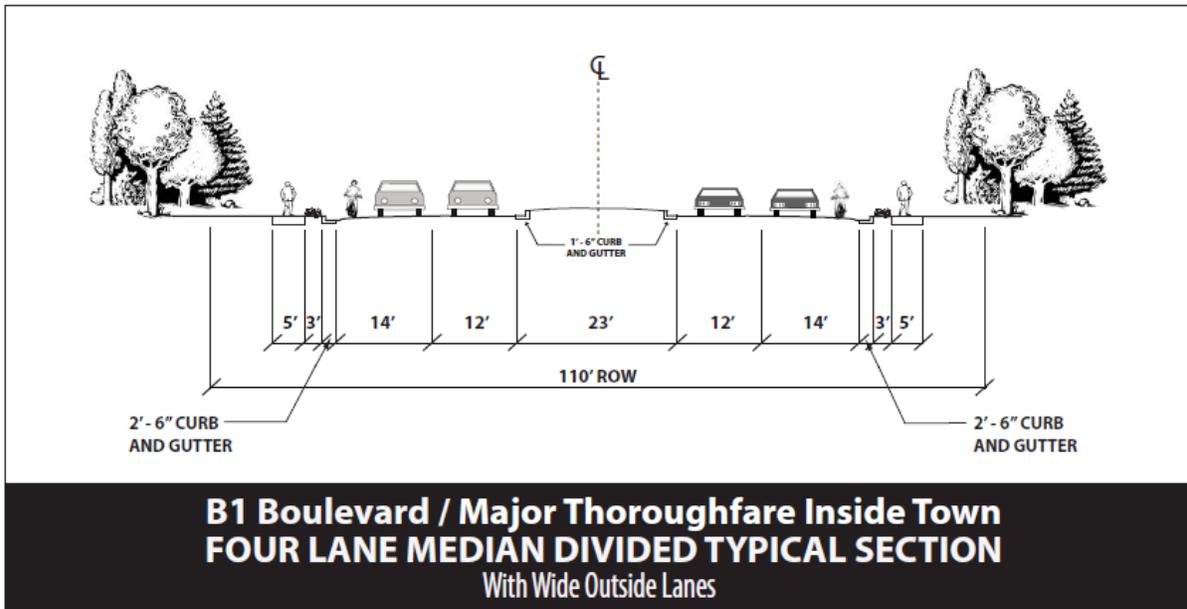
The proposed Creedmoor Connector is intended to provide better automobile and freight mobility in and around the City of Creedmoor. This facility should help to reduce congestion in downtown Creedmoor and along NC 56. The western section of Creedmoor Connector is intended to alleviate traffic on NC 56 by providing alternative access to I-85 south via US 15 south for motorists traveling from Creedmoor and points east. The traffic volumes projected on existing roadways in that area should be significantly over capacity in 2035.

County:	Granville
MPO/RPO Planning Area	Capital Area MPO Area
Municipality	Creedmoor
Project Category	Highway
CTP Designation	various
Highway Tier	Highway Tier
Total Project Length	4.5 miles
TIP #	R-2542
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	3

Additional Information	
Existing Conditions:	This is a new location project intended to improve conditions on NC 56 and Downtown Creedmoor.
Economic Development Impacts:	It is anticipated that the proposed Creedmoor Connector should bring new growth and economic development to the city, and improve automobile and freight mobility in southern Granville County.
Land Use Impacts:	This project may promote urbanized development patterns in current rural areas. Mixed use development is possible along this corridor. Mobility function of this 4-lane facility could be impaired by excessive driveway access. Future land use plan amendments should consider the functionality of this corridor when making land use decisions.
Safety:	If this facility is not constructed congestion and delays on NC 56 should worsen, and crashes may increase due to the projected increased volumes. The Creedmoor Connector should remove some of the current and projected traffic from NC 56 and NC 50 in downtown Creedmoor. The traffic volumes projected on existing roadways in that area should be significantly over capacity in 2035.
Bike/Ped/Transit:	Ancillary bicycle routes via on-road accommodations are recommended along Creedmoor Connector to enhance the county-wide bicycle network.
Environmental/Historic Features	There are various sightings of rare plants and animals throughout Granville County. A detailed field investigation is recommended prior to construction in this area.
Project History/Relationship to Other Plans	The improvements to Creedmoor Connector were identified in the 2004 Creedmoor Thoroughfare Plan. Synopsis of the alternatives can be found in Appendix A of the 2004 Creedmoor Thoroughfare Plan. With this new plan, the alignment of the Creedmoor Connector has been modified to create a more regional transportation project. Also, a portion of this project is listed on the 2009-2015 Transportation Improvement Program as R-2542.

Project Detail Table

Project: Creedmoor Connector	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN026A-CR (NC56 to US 15)							
Current Conditions	-	-	-	-	-	-	-
Future Conditions	1.91	52	110	4	35000	16000	B1
GRAN026B-CR (US 15 to Relocated US 15)							
Current Conditions	1.10	24	60	2	-	-	-
Future Conditions	1.10	52	110	4	35000	16000	B1
GRAN026C-CR (Relocated US 15 to Brassfield Road (SR 1700))							
Current Conditions	-	-	60	-	-	-	-
Future Conditions	1.60	52	110	4	35000	23000	B1

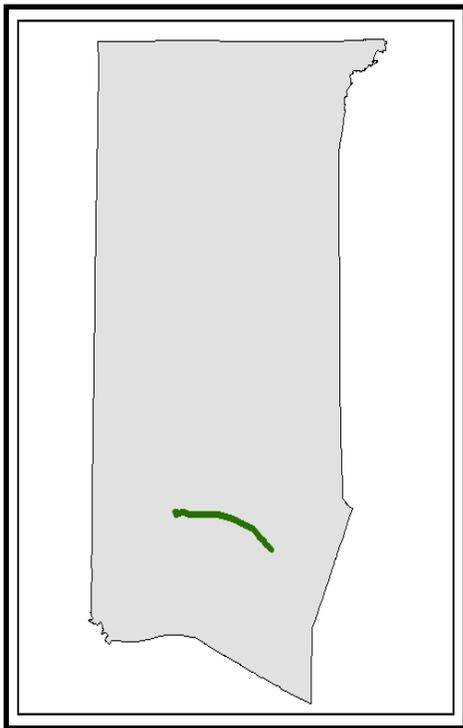
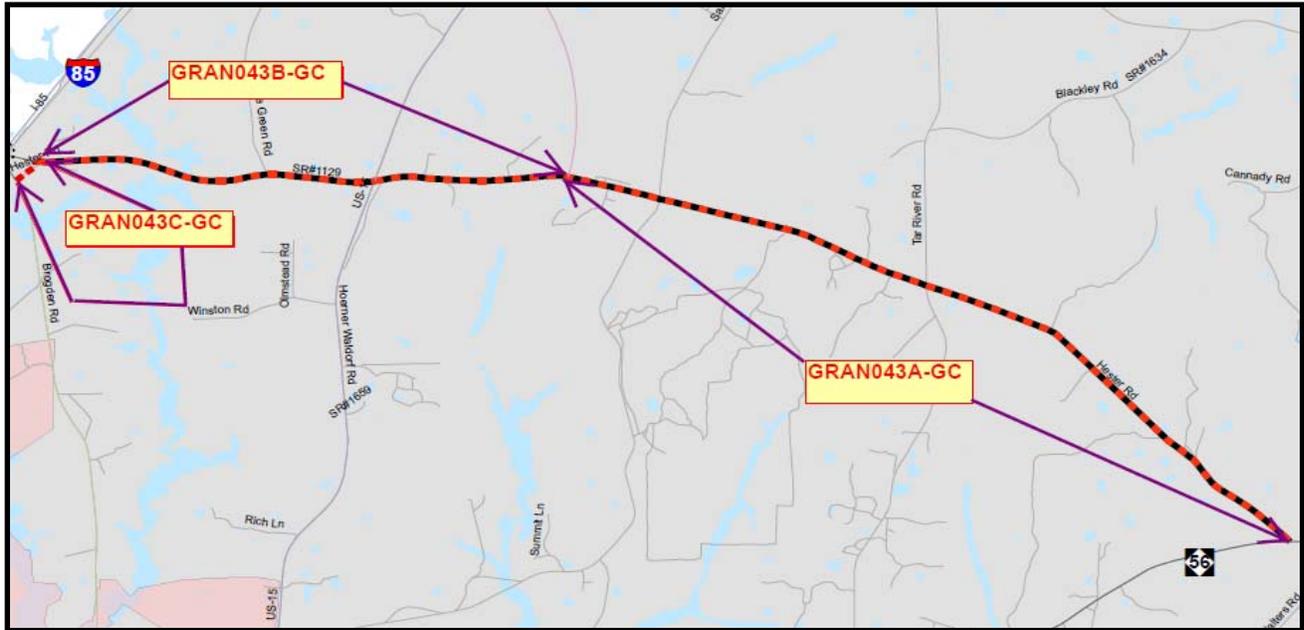


Hester Road (SR 1129)

Proposed improvements from NC 56 to Brogden Road

Project #: GRAN043

Last updated on:
10/29/09



Project Location within County

Hester Road



Hester Road at US 15

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

Hester Road (SR 1129) is recommended to widen the existing 2-lane facility to a 4-lane divided boulevard facility with raised median from NC 56 to Brogden Road (SR 1127) near I-85.

Purpose:

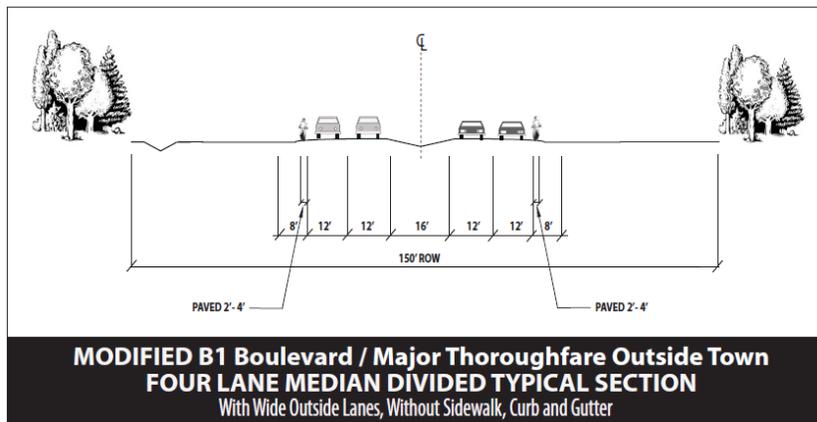
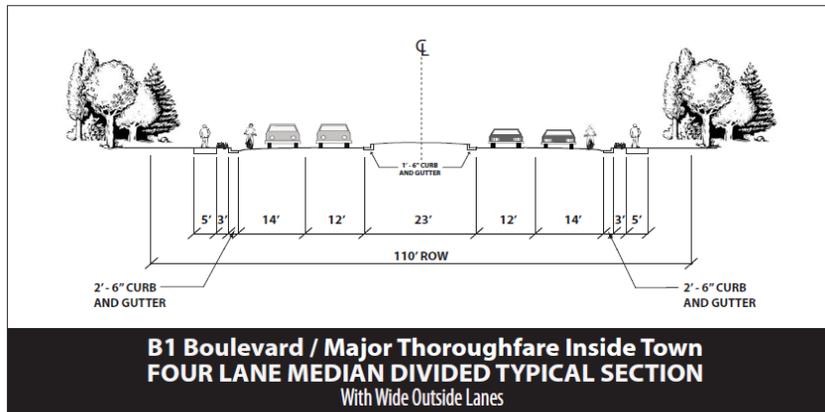
The widening of Hester Road (SR 1129) is intended to provide east-west mobility for passengers and freight in southern Granville County. This facility should also help to reduce congestion in downtown Creedmoor and along NC 56. It is possible that a new interchange proposed on I-85 could be located at either Brogden (SR 1127) or Hester Road (SR 1129). If Hester Road (SR 1129) is selected it would alleviate traffic on NC 56 by providing alternative access to I-85 north for motorists traveling from Creedmoor and points east.

County:	Granville
MPO/RPO Planning Area	Capital Area MPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	Boulevard - NI
Highway Tier	Highway Tier
Total Project Length	7 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	3

Additional Information	
Existing Conditions:	Hester Road (SR 1129) is a minor collector on the Federal Functional Classification system. This roadway runs east to west between I-85 and NC 56.
Economic Development Impacts:	The Hester Road (SR 1129) widening should have a positive impact on economic development, and improve automobile and freight mobility in Granville County.
Land Use Impacts:	This project may promote urbanized development patterns in current rural areas. Mixed use development is possible along this corridor. Mobility function of this 4-lane facility could be impaired by excessive driveway access. Future land use plan amendments should consider the functionality of this corridor when making land use decisions.
Safety:	The improvement of this facility should improve safety along NC 56.
Bike/Ped/Transit:	Ancillary bicycle routes via on-road accommodations are recommended along Hester Road (SR 1129) to enhance the county-wide bicycle network.
Environmental/Historic Features	There are various sightings of rare plants and animals throughout Granville County. A detailed field investigation is recommended prior to construction in this area.
Project History/Relationship to Other Plans	This is the first identification as a need for highway improvements. Bicycle and Pedestrian improvements recommended are consistent with the 2006 Granville County Greenway Master Plan.

Project Detail Table

Project: Hester Road	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN043A-GC (NC 56 to New Sanders Road Extension)							
Current Conditions	0.10	20	80	2	7200	1500	-
Future Conditions	0.10	52	150	4	11000	-	Modi – B1
GRAN043B-GC (New Sanders Road Extension to Brogden Road)							
Current Conditions	0.30	20	80	2	7200	1100	-
Future Conditions	0.30	52	110	4	11000	-	B1
GRAN043C-GC (Hester Road to Brogden Road)							
Current Conditions	6.80	20	80	2	7200	840	-
Future Conditions	6.80	52	110	4	11000	-	B1

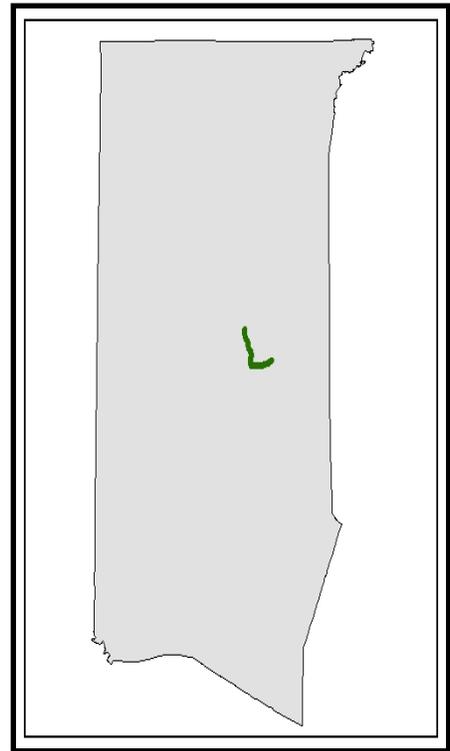
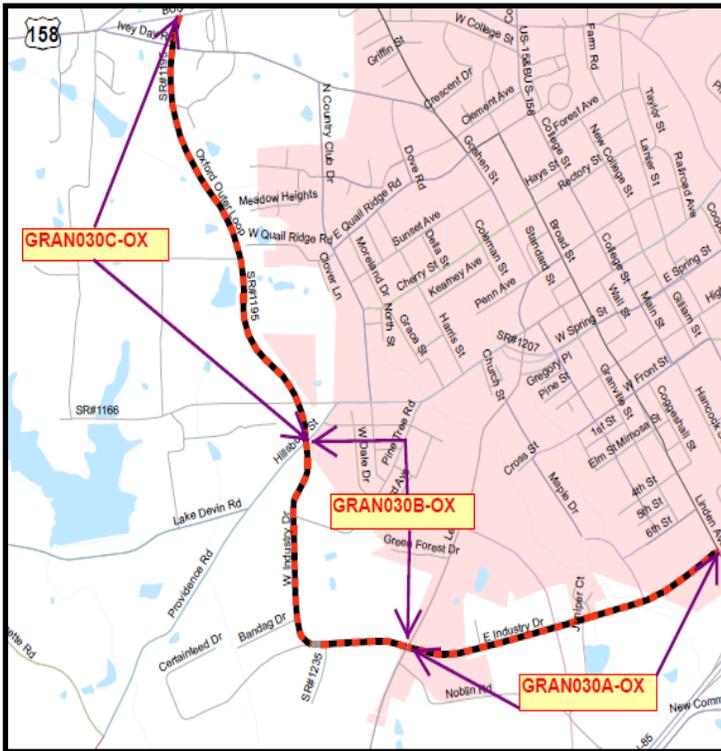


Industry Drive (SR 1646)

Proposed improvements from NC 96 to US 158

Project #: GRAN030

Last updated on:
10/29/09



Industry Drive

Project Location within County



Industry Drive

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

Industry Drive (SR 1646) is recommended to widen the current 2-lane facility to a 4-lane divided boulevard facility with raised median, from NC 96 (Linden Avenue), crossing US 15 to US 158.

Purpose:

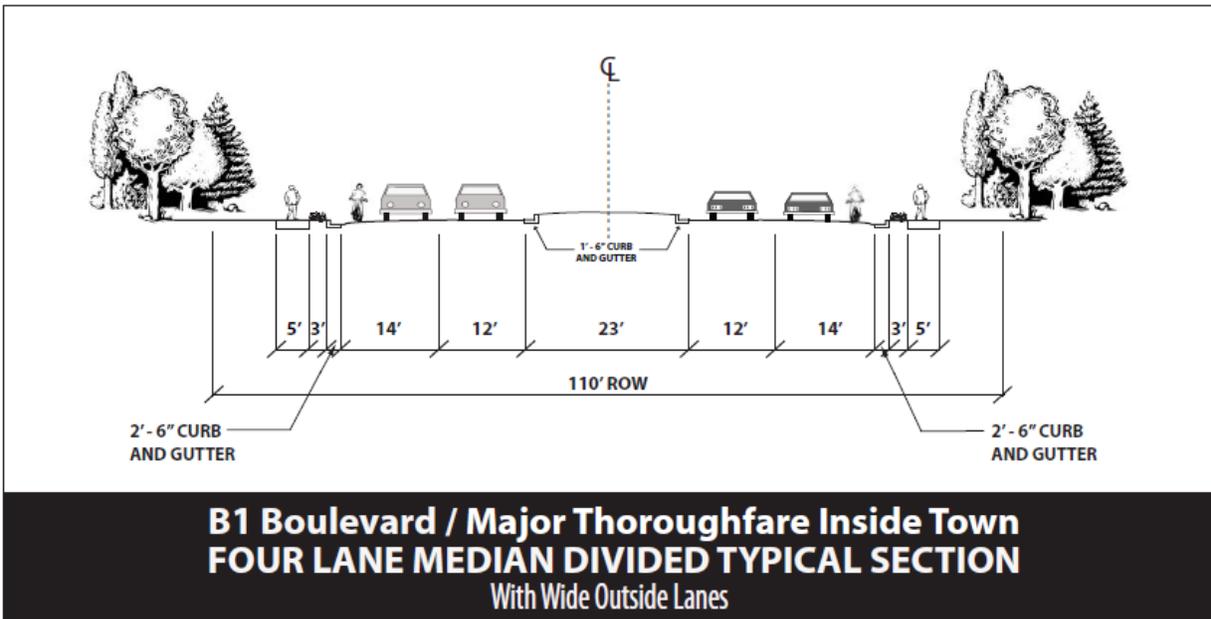
This facility has been used as a loop facility around the City of Oxford. The traffic volumes projected in this section should be near to over capacity in 2035. This widening is intended to improve the safety and capacity of existing roadway, while providing continued access and freight mobility to industrial sites in Oxford.

County:	Granville
MPO/RPO Planning Area	Kerr-Tar RPO
Municipality	Oxford
Project Category	Highway
CTP Designation	Boulevard - NI
Highway Tier	Highway Tier
Total Project Length	4.2 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	3

<p>Additional Information</p> <p>Existing Conditions: This corridor serves industrial freight traffic, commuter traffic, and residential traffic in Oxford. There is a severe curve on the existing route between US 15 (Lewis Street) and Hillsboro Street that can be a safety hazard for freight and vehicular traffic.</p> <p>Economic Development Impacts: The Industry Drive (SR 1646) widening should have a positive impact on economic development, and improve automobile and freight mobility and access in the City of Oxford.</p> <p>Land Use Impacts: This project should enhance opportunities for industrial development.</p> <p>Safety: If Industry Drive (SR 1646) is not widened, congestion and delays should occur. The traffic volumes projected in this section should be near to over capacity in 2035. The severe curve between US 15 (Lewis Street) and Hillsboro Street should be corrected to provide safe movement of freight and passenger vehicles.</p> <p>Bike/Ped/Transit: Ancillary bicycle routes via on-road or off-road accommodations are recommended along Industry Drive (SR 1646) to enhance the county-wide bicycle network. Industry Drive is recommended for use as a part of a future bus route corridor for service in and around the City of Oxford.</p> <p>Environmental/Historic Features Various instances of rare plants and animals have been noted throughout Granville County. A detailed field investigation is recommended prior to construction in this area.</p> <p>Project History/Relationship to Other Plans Portions of this project were identified for improvement in the 1998 Oxford Thoroughfare Plan. Bicycle and Pedestrian improvements recommended are consistent with the 2006 Granville County Greenway Master Plan. Industry Drive (SR 1646) is a Major Thoroughfare on the Federal Functional Classification system.</p>

Project Detail Table

Project: Industry Drive	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN030A-OX (NC 96 to US 15)							
Current Conditions	1.80	24	60	2	9500	6700	-
Future Conditions	1.80	52	110	4	11000	12800	B1
GRAN030B-OX (US 15 to SR 1004)							
Current Conditions	1.20	24	60	2	9500	6700	-
Future Conditions	1.20	52	110	4	11000	10000	B1
GRAN030C-OX (SR 1004 to US 158)							
Current Conditions	1.20	24	60	2	9500	5500	-
Future Conditions	1.20	52	110	4	11000	6500	B1

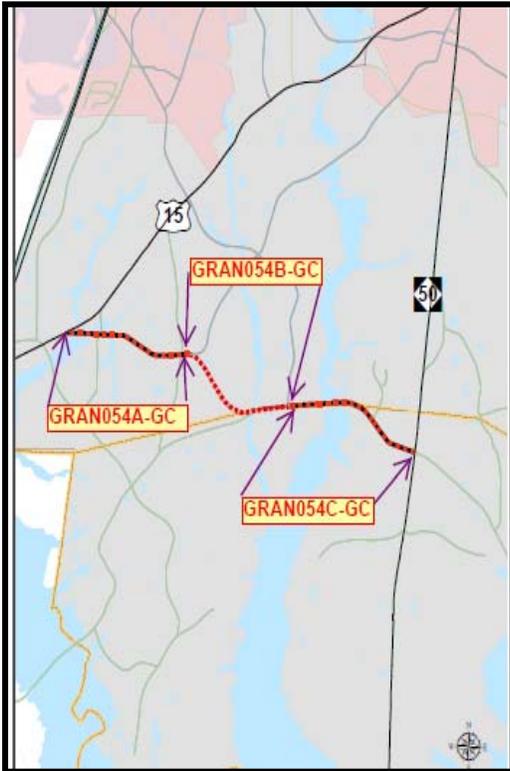


Northside Road (SR 1724)

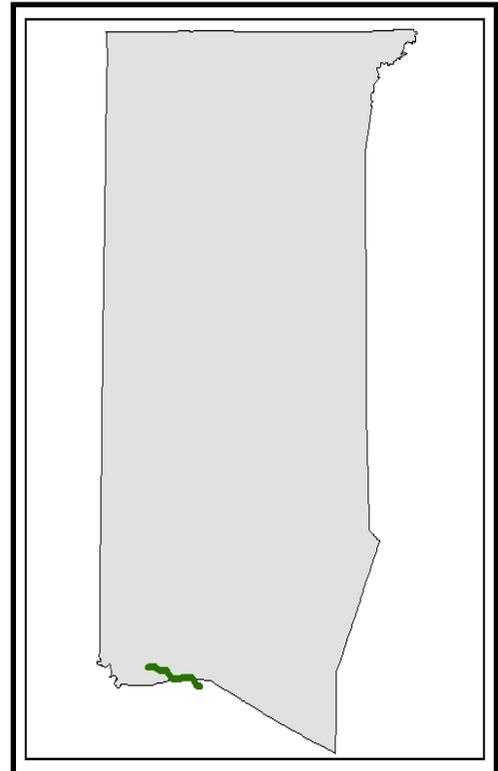
Proposed improvements from US 15 to NC 50

Project #: GRAN054

Last updated on:
10/29/09



Northside Road



Project Location within County



Northside Road

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

Widening the current 2-lane to a 4-lane divided boulevard facility with raised median along Northside Road (SR 1724) from US 15 to Munns Road (SR 1725), and along Old Weaver Trail (SR 1901) from Cash Road (SR 1728) to NC 50. Construct 4-lane divided connector facility between Munns Road (SR 1725) and Cash Road (SR 1728) on new location.

Purpose:

Alternative access from NC 50 to I-85 via US 15. It also enhances commuter access between Raleigh and the State & Federal Facilities in Butner, reducing the need of using NC 56.

County:	Granville
MPO/RPO Planning Area	Capital Area MPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	various
Highway Tier	Highway Tier
Total Project Length	4 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	3

Additional Information

Existing Conditions:

Both Northside Road (SR 1724) and Old Weaver Trail (SR 1901) are 2-lane local roads. The connector portion of this project is recommended on new location.

Economic Development Impacts:

The Northside Road (SR 1724) project should have a positive impact on economic development, and improve commuter mobility in Wake County & Granville County.

Land Use Impacts:

This project may promote additional residential development in rural areas. Mobility function of this 4-lane facility could be impaired by excessive driveway access. Future land use plan amendments should consider the functionality of this corridor when making land use decisions.

Safety:

This facility should improve safety along NC 56 and NC 50.

Bike/Ped/Transit:

Ancillary bicycle routes via on-road and off-road accommodations are recommended along Northside Road (SR 1724) and Old Weaver Trail (SR 1901) to enhance the county-wide bicycle network.

Environmental/Historic Features

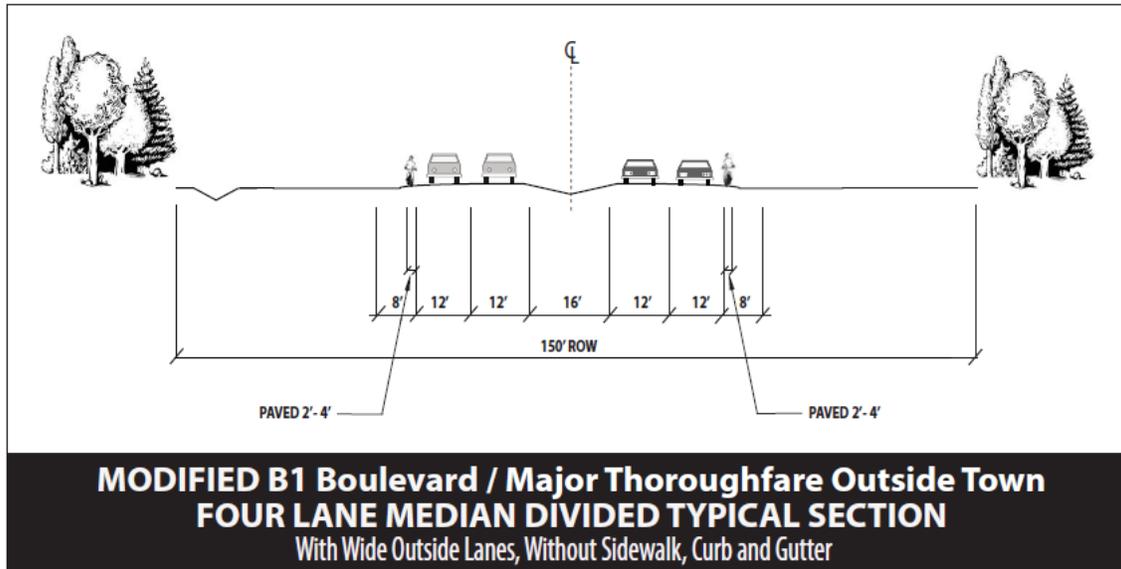
There are several stream crossings along this proposed project. There are various sightings of rare plants and animals throughout Granville County. A detailed field investigation is recommended prior to construction in this area. A large portion of southern Granville County lies within a protected watershed area.

Project History/Relationship to Other Plans

Portions of this project, East of Cash Road (SR 1728) were identified in 2004 Creedmoor Thoroughfare Plan. Bicycle and Pedestrian recommendations along this roadway are consistent with the 2006 Granville County Greenway Master Plan.

Project Detail Table

Project: Northside Road	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN054A-GC (US 15 to Munns Road)							
Current Conditions	1.80	24	80	2	7500	950	-
Future Conditions	1.80	52	150	4	11000	1700-2600	Modi – B1
GRAN054B-GC (Munns road to Cash Road)							
Current Conditions	-	-	80	-	-	-	-
Future Conditions	1.00	52	150	4	11000	5200	Modi – B1
GRAN002C-GC (New Northside Road Extension to NC 50)							
Current Conditions	1.20	24	80	2	7500	1400	-
Future Conditions	1.20	52	150	4	11000	3500	Modi – B1

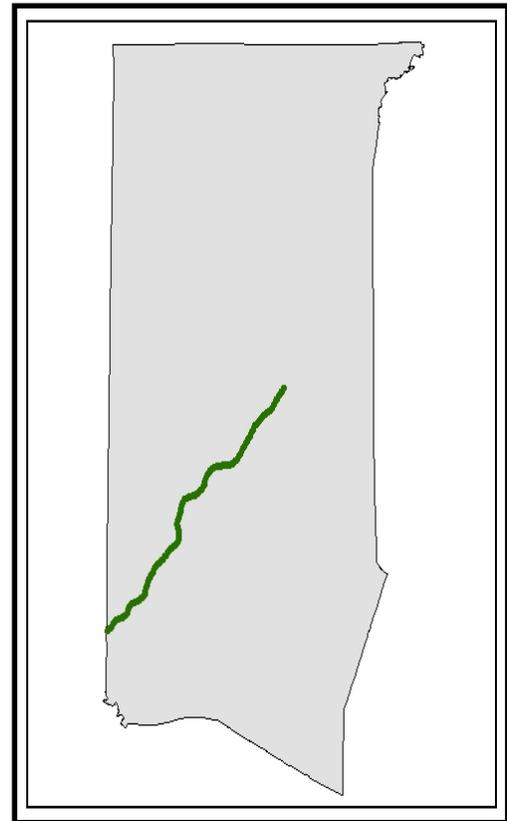
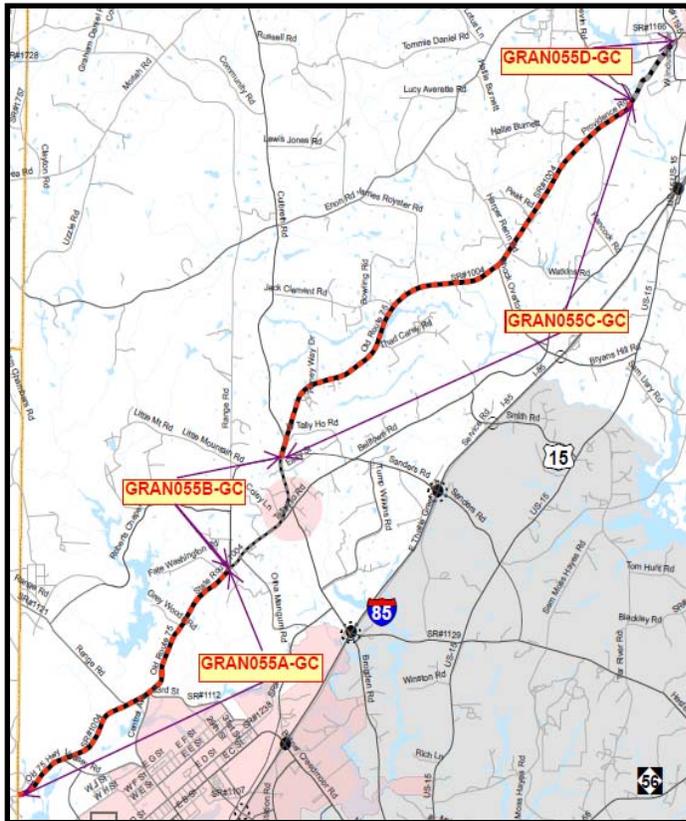


Old Route 75 (SR 1004)

Proposed improvements from Durham County line to Industry Drive

Project #:GRAN055

Last updated on:
10/29/09



Old Route 75

Project Location within County



Old Route 75 at Federal Prison in Butner

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

To improve capacity, Old Route 75 (SR 1004) is recommended to be widened as follows:

- From Durham County Line to Range Road (SR 1126) – Widen to 4-lane divided boulevard facility.
- From Range Road (SR 1126) through Stem to Sanders Road (SR 1132) – Widen to 2-3 lane facility.
- From Sanders Road (SR 1132) to Hallie Burnette Road – Widen to 4-lane divided boulevard facility.
- From Hallie Burnette Road to Industry Drive (SR 1646) – Widen to 2-3 lane facility.

Purpose:

This facility should enhance commuter access and mobility between northern Granville County and the state & federal facilities in Butner and provide better passenger and freight mobility through the Town of Stem. The traffic volumes projected on Old Route 75 (SR 1004) should be significantly over capacity in 2035. This widening is intended to improve the safety and capacity of existing roadway.

County:	Granville
MPO/RPO Planning Area	Kerr-Tar RPO
Municipality	Municipality
Project Category	Highway
CTP Designation	Boulevard - NI
Highway Tier	Highway Tier
Total Project Length	17.5 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	4

Additional Information

Existing Conditions:

Old Route 75 (SR 1004) is identified as a major collector on the Federal Functional Classification System. This roadway runs southwest to northeast throughout the county. Old Route 75 (SR 1004) is currently operating at a less than desirable level for users.

Economic Development Impacts:

It is anticipated that the proposed improvements should bring new growth and economic development to the Towns of Stem and Butner, and improve regional connectivity.

Land Use Impacts:

This project may promote mixed use and residential development patterns in current rural areas. Mobility function of this 4-lane facility could be impaired by excessive driveway access. Future land use plan amendments should consider the functionality of this corridor when making land use decisions.

Safety:

If Old Route 75 (SR 1004) is not widened, congestion and delays should occur. Old Route 75 (SR 1004) could also provide for an alternate route in the event of the crash on I-85 in Granville County. This widening is intended to improve the safety and capacity of existing roadway.

Bike/Ped/Transit:

Ancillary bicycle routes via on-road and off-road accommodations are recommended along Old Route 75 (SR 1004) to enhance the county-wide bicycle network.

Environmental/Historic Features

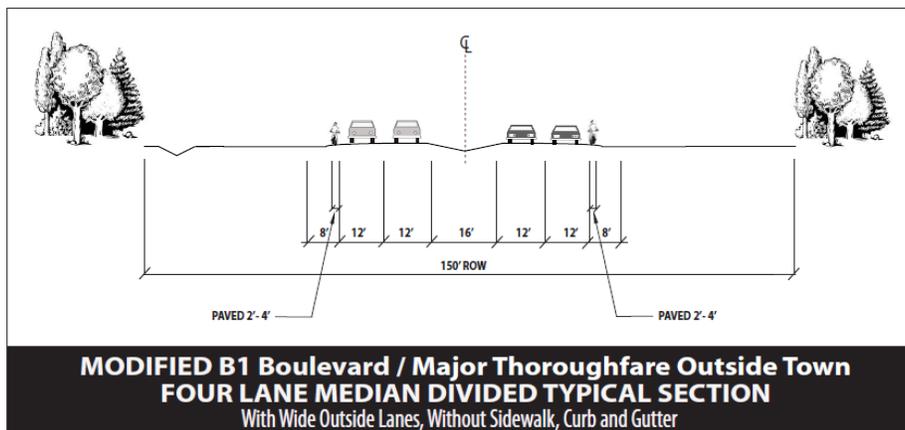
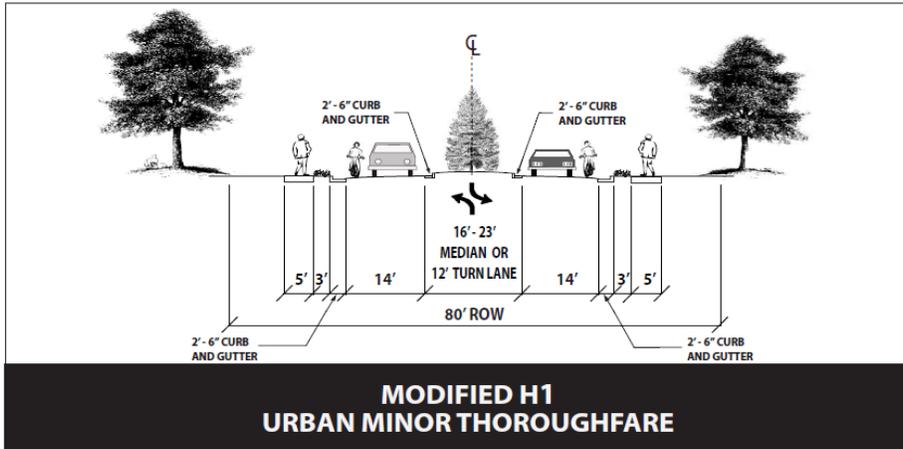
There are various sightings of rare plants and animals throughout Granville County. A detailed field investigation is recommended prior to construction in this area. Some portions of this project in southern Granville County lie within a protected watershed area.

Project History/Relationship to Other Plans

This is the first identification as a need for highway improvements. Bicycle and Pedestrian improvements recommended are consistent with the 2006 Granville County Greenway Master Plan.

Project Detail Table

Project: Old Route 75 (SR 1004)	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN055A-GC (Durham Co. to Julian Daniel Road)							
Current Conditions	5.26	24	80	2	9500	1900-3300	-
Future Conditions	5.26	48	150	4	35000	13000	Modi – B1
GRAN055B-GC (Julian Daniel Road to Culbreth Road)							
Current Conditions	2.23	20	80	2	8500	2200	-
Future Conditions	2.23	48	80	2-3	11000	10000	Modi – H1
GRAN055C-GC (Culbreth Road to Hallie Burnette Road)							
Current Conditions	8.68	20	80	2	8500	2700	-
Future Conditions	8.68	48	150	4	35000	7500-10000	Modi – B1
GRAN055D-GC (Hallie Burnette Road to Industry Drive)							
Current Conditions	1.00	20	80	2	9500	4500	-
Future Conditions	1.00	48	80	2-3	11000	6000	Modi – H1

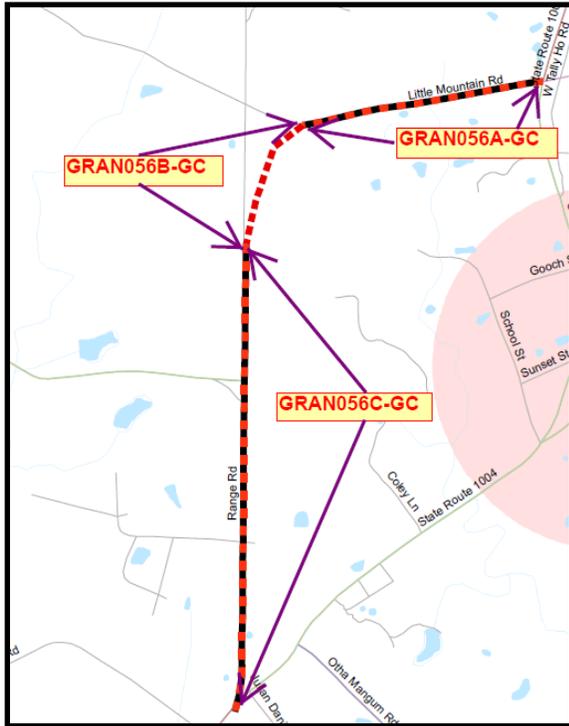


Stem Western Loop

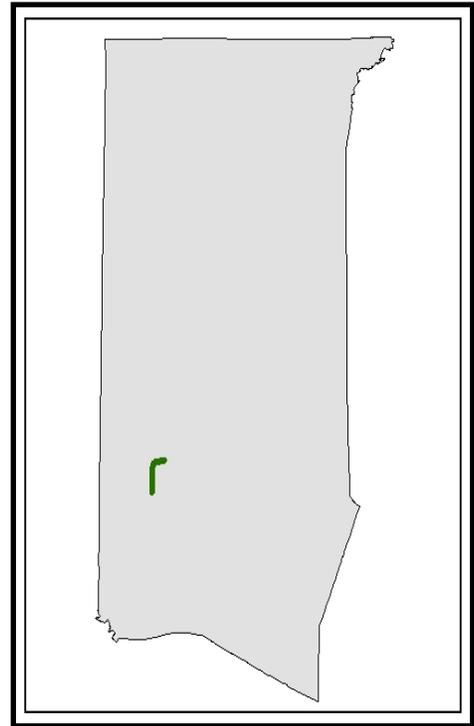
Proposed improvements for Old Route 75 (SR 1004) around Stem

Project #: GRAN056

Last updated on:
10/29/09



Stem Western Loop



Project Location Within County



Stem Western Loop

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

To provide a western bypass to the Town of Stem, the following routes are proposed to be constructed or improved:

- Along Range Road (SR 1126) from Old Route 75 (SR 1004) to south of Little Mountain Road (SR 1137) – Widen to 4-lane divided boulevard facility.
- From south of Little Mountain Road (SR 1137) to Little Mountain Road (SR 1137) east of Range Road (SR 1126) – Construct 4-lane divided boulevard facility on new location.
- Along Little Mountain Road (SR 1137) to Old Route 75 (SR 1004) north of Stem - Widen to 4-lane divided boulevard facility.

Purpose:

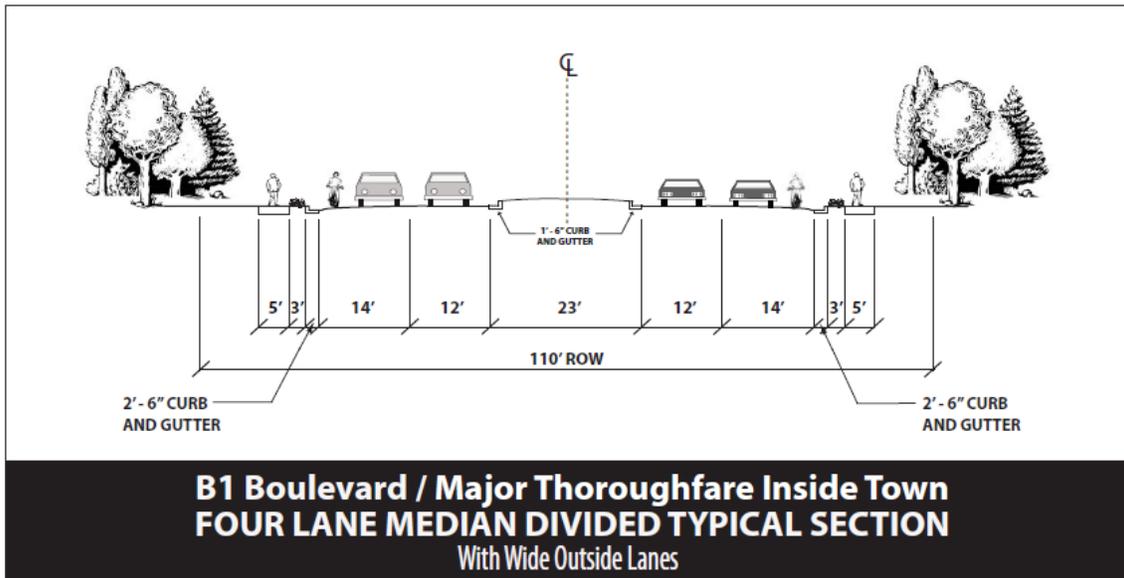
This facility serves as a western bypass to the Town of Stem. This facility, in conjunction with Old Route 75 (SR 1004) improvements, should enhance commuter access between northern Granville County and the state & federal facilities in Butner and provide better passenger and freight mobility around the Town of Stem.

County:	Granville
MPO/RPO Planning Area	Kerr-Tar RPO
Municipality	Stem
Project Category	Highway
CTP Designation	Boulevard - NI
Highway Tier	Highway Tier
Total Project Length	2.5 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	3

<p>Additional Information</p> <p>Existing Conditions: Range Road (SR 1126) and Little Mountain Road (SR 1137) are identified as 2-lane rural roads. The new location portion of this project should create a prevailing movement connecting Range Road (SR 1126) to Little Mountain Road (SR 1137), thus completing a western loop around Stem.</p> <p>Economic Development Impacts: It is anticipated that the proposed improvements should bring new growth and economic development to the Town of Stem and improve regional connectivity.</p> <p>Land Use Impacts: This project may promote mixed use and residential development patterns in current rural areas. Mobility function of this 4-lane facility could be impaired by excessive driveway access. Future land use plan amendments should consider the functionality of this corridor when making land use decisions.</p> <p>Safety: If the Stem Western Loop is not constructed, congestion and delays should occur in Stem. This widening is intended to improve the safety and capacity of Old Route 75 (SR 1004).</p> <p>Bike/Ped/Transit: Ancillary bicycle routes via on-road accommodations are recommended along Butner Boulevard to enhance the county-wide bicycle network.</p> <p>Environmental/Historic Features There are various sighting of rare plants and animals throughout Granville County. A detailed field investigation is recommended prior to construction in this area. Some portions of this project in southern Granville County lie within a protected watershed area.</p> <p>Project History/Relationship to Other Plans This is the first identification as a need for highway improvements. Bicycle and Pedestrian improvements recommended are consistent with the 2006 Granville County Greenway Master Plan.</p>

Project Detail Table

Project: Stem Western Loop	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN056A-GC (Culbreth Road to Little mountain road)							
Current Conditions	1.3	20	60	2	7200	490	-
Future Conditions	1.3	52	110	4	11000	1500	B1
GRAN056B-GC (Little mountain road to Range road (new location))							
Current Conditions	-	-	-	-	-	-	-
Future Conditions	0.4	52	110	4	11000	6000	B1
GRAN056C-GC (Range road to Julian Daniel Road)							
Current Conditions	0.7	20	60	2	7200	1300	-
Future Conditions	0.7	52	110	4	11000	9800	B1



Tabbs Creek Road (SR 1662)

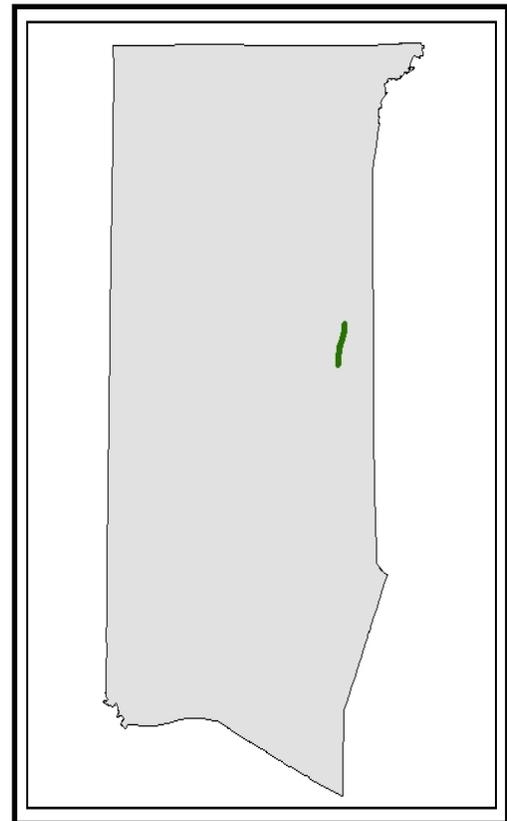
Proposed improvements from Salem Road to US 158

Project #: GRAN065

Last updated on:
10/29/09



Tabbs Creek Road



Project Location within County



Tabbs Creek Road near Triangle North Site

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

Widening the current 2-lane facility to a 2-3 lane highway with center turn lane where necessary from Salem Road (SR 1552) to Tabbs Creek Road (SR 1662) to provide an improved intersection of Tabbs Creek Road (SR 1662) and US 158 on new location.

Purpose:

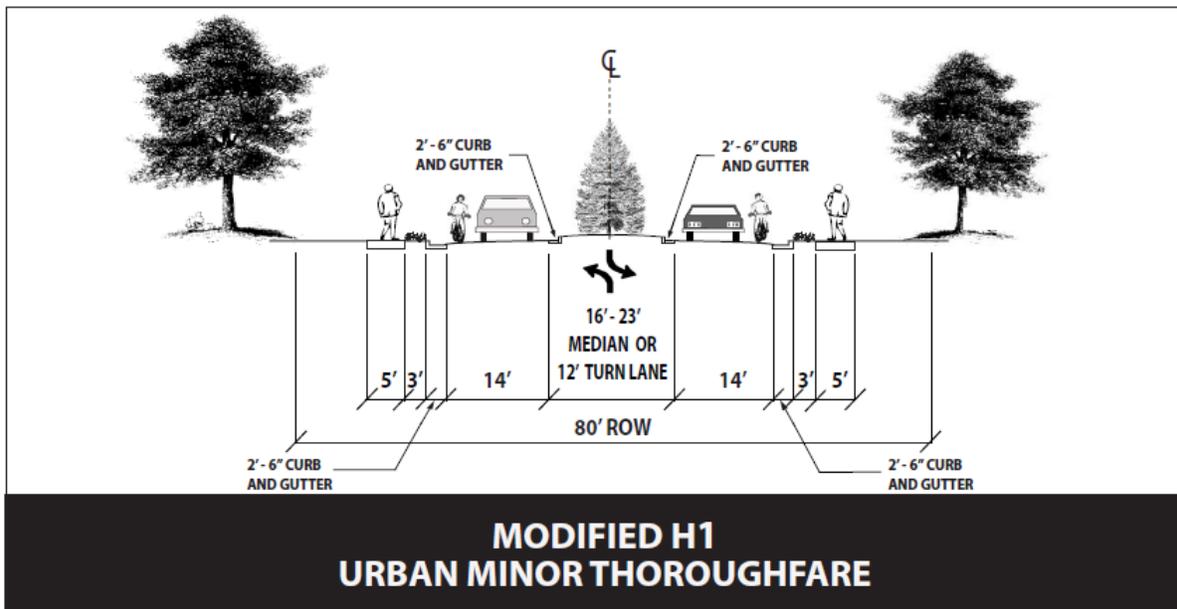
This widening is intended to improve the safety and capacity of existing roadway and to accommodate increased freight and residential traffic. Also due to development around Triangle North industrial site, traffic volumes projected in this section should be near capacity in 2035.

County:	Granville
MPO/RPO Planning Area	Kerr-Tar RPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	Major Thoro - NI
Highway Tier	Highway Tier
Total Project Length	2.1 miles
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Number of Segments	2

Additional Information	
Existing Conditions:	Tabbs Creek Road (SR 1662) is two-lane rural highway currently serving residential development with no bicycle accommodations.
Economic Development Impacts:	The area is undergoing major commercial and industrial development, including the establishment of the Triangle North industrial site.
Land Use Impacts:	Traffic pattern should shift from primarily residential to more commercial and freight.
Safety:	The widening and intersection realignment should contribute to safer driving conditions on this facility.
Bike/Ped/Transit:	Add wide paved shoulder and/or sidewalks to the facility to accommodate bicycle and pedestrian traffic.
Environmental/Historic Features	There are various sightings of rare plants and animals throughout Granville County. A detailed field investigation is recommended prior to construction in this area.
Project History/Relationship to Other Plans	This is the first identification as a need for highway improvements. Bicycle and Pedestrian improvements recommended are consistent with the Granville County 2006 Greenway Master Plan.

Project Detail Table

Project: Tabbs Creek Road	Dist Mi	Roadway Width	ROW	Number of Lanes	Capacity (VPD)	AADT (VPD)	Cross Section Or Notes
GRAN065A- GC (Salem Road to Tabbs Creek Road)							
Current Conditions	1.90	18	60	2	7500	-	-
Future Conditions	1.90	28	80	2-3	11000	-	Modi – H1
GRAN065B–GC (Tabbs Creek Road to US 158)							
Current Conditions	-	-	-	-	-	-	-
Future Conditions	0.15	28	80	2-3	11000	-	Modi – H1



I-85 Interchange Study

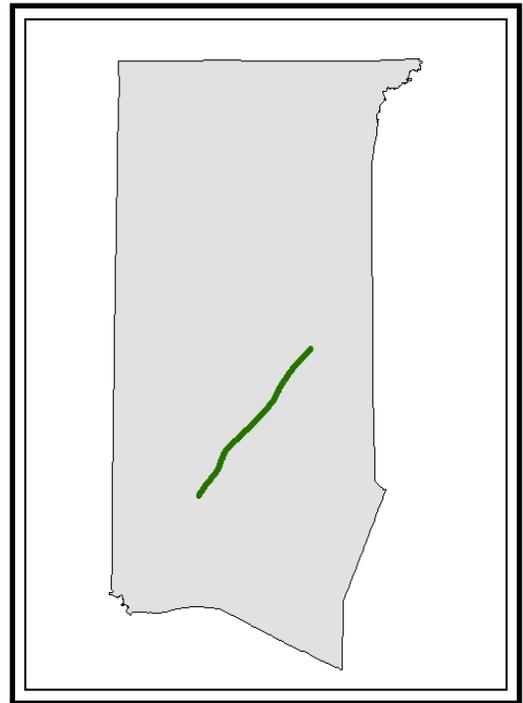
Interchange Study between Exit 191(NC 56) and Exit 202(US 15) on I-85

Project #: GRAN070

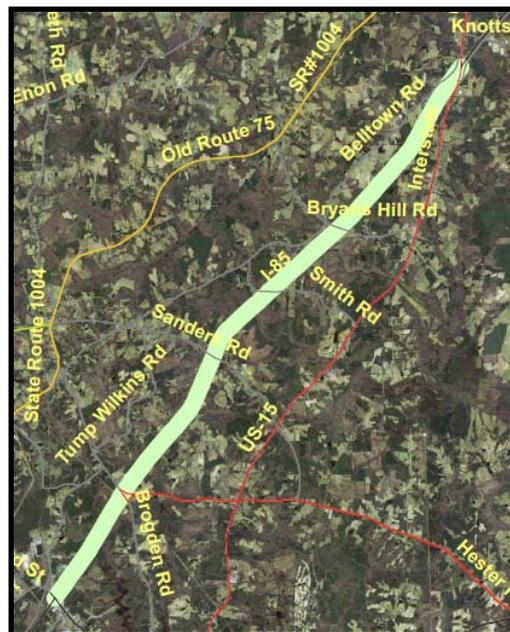
Last updated on: 10/29/09



I-85 Interchange Study



Project Study Area within County



I-85 Study Area

Note: Definitions of terms can be found in Appendix B. All Information subject to change.

Project Description:

Study the portion of I-85 between Exit-191(NC 56) and Exit-202(US 15) to determine the location for a new interchange. The Granville County CTP Committee has identified 2 potential locations: Hester Road (SR 1129) and Sanders Road (SR 1132).

Purpose:

A New Interchange is needed in order to address following needs:

- Improve Access and Mobility for emergency management purposes. There are 11 miles without any interchanges between Exit 191 and Exit 202 making access to this section of I-85 difficult. An additional interchange should improve response time for emergency vehicles and allow for enhanced traffic management in emergency.
- A new high school serving central Granville County has recently opened on Sanders Road (SR 1132). An additional Interchange would increase access to the school as well as surrounding residential and commercial development.
- An additional interchange should help relive the severe congestion at NC 56 (Exit 191), especially during peak hour.

County:	Granville
MPO/RPO Planning Area	MPO/RPO
Municipality	Granville Co.
Project Category	Highway
CTP Designation	Freeway - NI
Highway Tier	Highway Tier
Total Project Length	-
TIP #	None
Funding Source	STP
AQ Regionally Significant	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Segmented Project	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Number of Segments	0

Additional Information	
Existing Conditions:	
<ul style="list-style-type: none"> • NC 56 currently exceeds capacity. • There are 11 miles between Exits 191 and Exit 202, creating safety and access concerns specific to emergency management purposes. 	
Economic Development Impacts:	
An additional interchange should have a positive impact on economic development by providing direct access for industrial development. It should improve automobile and freight mobility in Granville County.	
Land Use Impacts:	
This project may promote urbanized development patterns in current rural areas, including Commercial and Industrial development.	
Safety:	
This facility should improve safety and mobility along this 11 mile segment of I-85.	
Bike/Ped/Transit:	
I-85 is recommended as a future bus route corridor for service from Durham / Granville County Line to Oxford. Park and ride facilities are also recommended at various locations along I-85 corridor.	
Environmental/Historic Features	
There are various sighting of rare plants and animals throughout Granville County. A detailed field investigation is recommended prior to construction in this area.	
Project History/Relationship to Other Plans	
This is the first identification as a needed interchange along I-85 in Granville County.	

The recommended highway improvements are illustrated in **Figure 4, Project Proposal Highway Map**. This map classifies the Highway facilities into three categories, depending on number of lanes each facility provides. The recommended Project Proposal Highway Map is presented for informational purpose only – this map is not part of officially adopted CTP. This map was very useful in public drop-in sessions and public involvement session.

Figure 4: Project Proposal Map



Back of Project Proposal Map

Chapter 3

Population, Land Use, and Traffic

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

3.1 Population

Since the volume of traffic on a roadway is related to the size and distribution of the population that it serves, population data is used to aid in the development of the transportation plan. The Base year population used in this analysis was based on the 2000 Census. Future population estimates typically rely on the observance of past population trends, the Travel Demand model and traffic counts. **TABLE 1** presents the population trends for Granville County and North Carolina as provided by North Carolina State Data Center.

Table 1: Population Growth					
Location	1970	1980	1990	2000	2005
North Carolina	5,082,059	5,881,766	6,628,637	8,046,487	8,869,442
Granville County	32,762	33,855	38,341	48,498	54,473
City of Oxford	7,178	7,709	7,965	8,338	8,550
City of Creedmoor	1,405	1,641	1,506	2,232	3,290
Town of Butner	3,475 *	4,100 *	4,679 *	5,792 *	7,464 *
Town of Stem	242	222	249	229	239
Town of Stovall	405	417	409	376	389

Note: * Town of Butner was incorporated in 2006; estimates prior to incorporation are based on county tract level census data.

3.2 Land Use

Land use refers to the physical development patterns of activities and functions within an area. The demand for trips on a particular transportation facility is related to the land uses adjacent to and connected by the facility. The intensity of the land use adjacent to a transportation facility affects the volume of traffic; for example, a shopping center generates higher traffic volumes than a similarly sized low-density residential area. The spatial distribution of varying land uses is the primary determinant of when, where, and why congestion occurs. Different land use types have different travel patterns associated with them, based on such factors as the proximity of other land uses and the time of day. For this study, land use has been divided into following categories:

- Residential - All land that is used for housing, excluding hotels and motels is expressed in terms of the number of households. This is further broken into categories based on the number of persons per household, children per household and workers per household.
- Commercial/Industrial – All land that is used by any type of business government, or non-profit organization is expressed in terms of number of employees. This information is further broken into following categories:
 - Highway Retail – retail businesses that are auto-oriented (often along major highways), such as gas stations and restaurants.
 - Retail – all retail businesses that are not categorized as Highway Retail, such as general merchandise stores and specialty stores.
 - Industrial – businesses that produce or handle goods, such as manufacturing plants, trucking firms, construction companies and farms.
- Institutional – Land devoted to public charitable, religious or educational organizational or entities, which include such uses as churches, schools, colleges, hospitals, civic uses, libraries, museums, parks or playgrounds.
 - Service - businesses or institutions that provide services rather than goods, such as medical offices and schools.
 - Office – businesses or institutions that are primarily administrative and have less customer interface, such as financial institutions, insurance offices, and government agencies.
- Public – Land devoted to social, religious, educational, cultural and political activities; this would include the office and service employment.

3.3 Roadway System

An important stage in development of the Comprehensive Transportation Plan is analysis of the existing roadway system and its ability to serve the travel needs of the planning area. Emphasis is placed not only on detecting the existing deficiencies, but also on understanding their causes. Travel deficiencies may be localized, resulting from problems with inadequate pavement width, intersection geometry, or intersection controls. Travel deficiencies may also result from system problems such as the need for construction of missing travel links, bypass routes, loop facilities, or additional radial routes.

An analysis of the roadway system looks at both current and future travel patterns and identifies existing and anticipated deficiencies. This is usually accomplished through a vehicle collision analysis, roadway capacity analysis, and a system deficiency analysis. This information, along with population growth, economic development potential, and land use trends, is used to analyze the future transportation system and develop recommendations for system improvements.

3.4 Current Transportation Plans for Granville County

Granville County had several mutually adopted thoroughfare plans. Thoroughfare plans are a tool to aid officials in the development of an appropriate roadway system. The following thoroughfare planning studies had previously been completed for Granville County:

- Creedmoor - plan adopted in 2003
- Granville County - plan adopted in 1998
- Oxford - plan adopted in 1997
- Butner - plan adopted in 1987

Due to a change in state law, thoroughfare plans are being phased out and replaced with Comprehensive Transportation Plans. By the mutual adoption of the Granville County Comprehensive Transportation Plan (CTP), these four thoroughfare plans have been replaced with the Granville County CTP.

3.5 Intersection / Vehicle Crashes Analysis

Vehicle crashes are often used as an indicator for locating deficiencies. While often the result of drivers or vehicle performance, crashes may also be associated with the physical characteristics of the roadway. Roadway conditions and obstructions, traffic conditions, and weather conditions may all lead to the occurrence of a collision. While some crashes are the fault of the driver, others may be prevented with physical design changes or traffic control changes such as the installations of stop signs or traffic signals.



Looking south from US 15 towards Gela Road

Crash data was obtained from the Traffic Engineering Branch of NCDOT and was studied as part of the development for this study. Transportation Planners for the Kerr-Tar RPO and Granville County also worked with the Granville County Comprehensive Transportation Planning Committee and law enforcement officers to get public input. Site visits were made to study each of the identified intersections. Analysis considered crash frequency, crash severity, and roadway

conditions. (Crash frequency is the total number of reported crashes, while crash severity is the crash rate based upon injuries and property damage incurred.) These factors helped to determine the high crash locations within the study area that are summarized in **TABLE 2**.

The intersections that resulted as High Priority projects have been compiled into a request and submitted to NCDOT for low-cost spot-safety improvements or for more detailed Traffic Engineering Studies.

To request a more detailed analysis for any of the locations listed in below table, or other intersections of concern, contact the Division Traffic Engineer. Contact information for the Division Traffic Engineer is included in **Appendix A**.

Table 2: Intersection Improvement Summary Table

#	Intersection Location	General Area	High Priority	NCDOT Traffic Eng. Study Request	NCDOT Traffic Eng. Study Complete	Safety Funds Requested	Spot Safety/ Other Funds Received	Future CTP, LRTP, or TIP Project	Follow Up Year: 2010
1	US 15 at Gela Rd.	South of Stovall					X	X	X
2	Chewning Road at Dexter Rd.	NE of Oxford						X	
3	NC 96 at Cornwall Rd.	NW of Oxford						X	
4	Tabbs Creek / Huntsboro Rd at Salem Rd.	NE of Oxford						X	
5	US 15 at Webb High School Rd.	North of Oxford						X	
6	US 158 at Old Roxboro Rd.	Oxford						X	
7	US 158 at Enon St.	Oxford						X	
8	Oxford Loop at Salem Rd.	Oxford	X	X				X	
9	US 158 Business at Oxford Loop	Oxford	X	X				X	
10	US 158 at I-85	Oxford	X	X				X	
11	US 158 at Antioch Rd.	Oxford			X			X	
12	Roxboro St. at College St.	Oxford						X	
13	Main St. at Spring St.	Oxford		X					
14	Linden Ave. at Hillsboro St.	Oxford		X					
15	Hunt St. at Linden Ave.	Oxford							
16	Linden Ave. at Front St.	Oxford							
17	Industry Dr. at Linden Ave.	Oxford	X	X				X	
18	Industry Dr. at Lewis St.	Oxford	X					X	

#	Intersection location	General Area	High Priority	NCDOT Traffic Eng. Study Request	NCDOT Traffic Eng. Study Complete	Safety Funds Requested	Spot Safety / Other Funds Received	Future CTP, LRTP, or TIP Project	Follow Up Year : 2010
19	Industry Dr. at Certainteed.	Oxford						X	
20	NC 96 at I-85	Oxford	X	X				X	
21	Belltown Rd. at Sanders Rd.	NE of Stem						X	X
22	Belltown Rd. at Brogden Rd.	Stem				X	X	X	X
23	Central Ave. at "D" St.	Butner		X					
24	W. Lyon Station Rd. at NC 56	Butner		X				X	
25	NC 56 at I-85	Butner	X	X				X	
26	NC 56 at Stem Rd.	Creedmoor						X	
27	NC 56, NC 50, US 15	Creedmoor		X				X	
28	NC 56 at Hawley School Rd.	Creedmoor				X	X	X	X
29	NC 56 at Mt. Energy School	Creedmoor						X	
30	NC 96 at NC 56	East of Creedmoor					X	X	X
31	NC 96 at Brassfield Rd.	East of Creedmoor					X	X	X
32	Lawrence Rd. at Horseshoe Rd.	SE Granville Co							X
33	Bruce Garner Rd. at Lawrence Rd.	SE Granville Co		X				X	
34	Gate 2 Rd. at I-85	Butner					X	X	X
35	US 15 at Cash Rd.	SE of Butner					X	X	X
36	US 15 at Northside Dr.	SE of Butner						X	
37	US 15 at I-85 (Southern/Butner)	Southern Butner					X	X	X
38	US 15 at I-85 (Northern/Oxford)	South of Oxford	X	X				X	

Figure 5: Intersection Improvement Map

Back of Intersection Improvement Map

3.6 Roadway Capacity Deficiencies

Roadway Capacity deficiencies occur wherever the travel demand volume of a roadway is close to or higher than the vehicle capacity of that roadway. The travel demand is expressed in terms of the total number of vehicles that choose to use a particular roadway on the way to their destinations. The existing volumes for Granville County are based upon traffic count data taken annually by the NCDOT Traffic Survey Group. Projected 2035 travel volumes are based on anticipated population growth, historic traffic projections, Granville County's adopted land use plan, and is developed with the aid of the Triangle Regional Travel Demand Model. This model covers all of Durham, Orange, and Wake Counties, and portions of Chatham, Franklin, Granville, and Johnston Counties. The version of the Triangle Regional Model used in this study was (trm25v5-2001). The future year, 2030 model volumes were adjusted and projected forward to the year 2035 for the purposes of this study.

The Triangle Regional Model was in the process of being updated with new population, economic and land use data during the course of this study. The updated Triangle Regional Model has a base year of 2002 and uses future years of 2010, 2020, and 2030 for projection purposes. Due to the uncertain completion date of the updated model, the elected officials of Granville County decided in May 2006 to proceed with the study using the trm25v5-2001 version of the Triangle Regional Model.

Many factors contribute to the capacity of a roadway, including:

- Roadway Geometry, including number of lanes, horizontal and vertical alignment, and proximity of perceived obstructions to safe travel along the roadway.
- Typical roadway users, such as commuters, recreational travelers, and commercial vehicles.
- Control of access to streets and driveways along the roadway.
- Development adjacent to the roadway, including residential, commercial, and industrial land uses.
- Number of traffic signals along the roadway.
- Peaking characteristics of the traffic on the roadway (i.e a spike in traffic at rush hour versus relatively constant traffic all day).
- Characteristics of intersecting roads along a facility.
- Directional split of traffic along the roadway, or the percent of vehicles traveling in each direction at a given time of day.

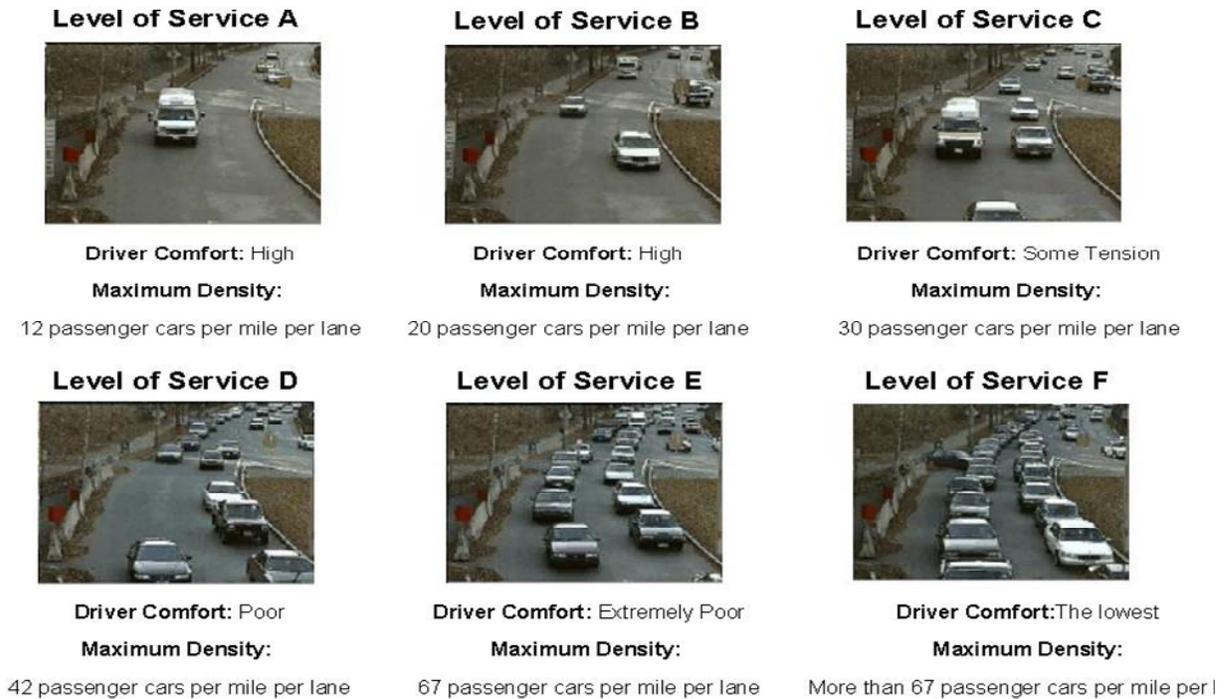
The relationship of travel demand to roadway capacity determines the level-of-service (LOS) of a roadway. Six distinct levels-of-service are possible, with letter designations ranging from LOS A, which represents the best operating conditions, to LOS F, which represents the worst operating conditions. LOS D indicates "practical capacity" of a roadway, or the capacity at which the public begins to express dissatisfaction. The six levels of service are described below and illustrated in **Figure 6**.

- **LOS A:** Describes primarily free flow conditions. The motorist experiences a high level of physical and psychological comfort. The effects of minor incidents of breakdown are easily absorbed. Even at the maximum density, the average spacing between vehicles is about 528 ft, or 26 car lengths.
- **LOS B:** Represents reasonably free flow conditions. The ability to maneuver within the traffic stream is only slightly restricted. The lowest average spacing between vehicles is about 330 ft, or 18 car lengths.
- **LOS C:** Provides for stable operations, but flows approach the range in which small increases should cause substantial deterioration in service. Freedom to maneuver is noticeably restricted. Minor incidents may still be absorbed, but the local decline in service should be great. Queues may be expected to form behind any significant blockage. Minimum average spacing is in the range of 220 ft, or 11 car lengths.
- **LOS D:** Borders on unstable flow. Density begins to deteriorate somewhat more quickly with increasing flow. Small increases in flow can cause substantial deterioration in service. Freedom to maneuver is severely limited, and the driver experiences drastically reduced comfort levels. Minor incidents can be expected to create substantial queuing. At the limit, vehicles are spaced at about 165 ft, or nine 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 six car lengths, leaving little room to maneuver.
- **LOS F:** Describes forced or breakdown flow. Such conditions generally exist within queues forming behind breakdown points.

Design requirements for roadways vary according to the desired capacity and level-of-service. 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.

Following is a visual representation of typical levels of service for a roadway:

Figure 6: Level of Service



The Level of Service (LOS) is typically represented by using the capacity of a roadway compared against the actual volume that is on the roadway.

The existing roadway network (2004) and future roadway network (2035) were evaluated based on the volume to capacity ratio. The 2035 roadway network assumes that no new roads are built and no widening of existing occurs. **Figure 7, Volume to Capacity** shows the expected roadway deficiencies, or congestion problems for year 2035. The projected Future year (2035) growth rate and average daily traffic volumes, which are based upon historic and anticipated population economic growth patterns, and land use trends, are illustrated in **Figure 8, 2035 Growth Rate Projections & Figure 9, 2035 Average Daily Traffic Projections** respectively.

Figure 7: Volume to Capacity Map

Back of Volume to Capacity Map

Figure 8: Growth Rate % Map

Back of Growth Rate % Map

Figure 9: Future Traffic Volume Map

Back of Future Traffic Volume Map

Chapter 4

Environmental Screening

In recent years, the human and natural environmental considerations associated with transportation construction have come to the forefront of the planning process. Section 102 of the National Environmental Policy Act (NEPA) requires the completion of an Environmental Impact Statement (EIS) for projects that have a significant impact on the environment. The EIS includes impacts on wetlands, wildlife, water quality, historic properties, and public lands. While this Comprehensive Transportation Plan report does not address these environmental concerns in as much detail as an EIS would, many of these factors were considered during the development of the Comprehensive Transportation Plan and the recommended improvements therein. Prior to implementing any of the transportation projects recommended in this Comprehensive Transportation Plan, further detailed environmental analysis should be necessary. Environmental features found in the area are shown in **Figure 10**.

4.1 Wetlands

Wetlands are areas where water covers the soil, or is present either at or near the surface of the soil all year (or for varying periods of time during the year), including during the growing season. Wetlands are crucial ecosystems in our environment. They help regulate and maintain the hydrology of our rivers, lakes, and streams by storing and slowly releasing floodwaters. Wetlands help maintain the quality of water by storing nutrients, reducing sediment loads, and reducing erosion. They are also critical to fish and wildlife populations by providing an important habitat for approximately one-third of the plant and animal species that are federally listed as threatened or endangered.

The National Wetland Inventory showed several wetlands in the study area as shown in **Figure 10**.

Figure 10: Environmental MAP

BACK of Environmental MAP

4.2 Threatened and Endangered Species

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

A preliminary review of the Federally Listed Threatened and Endangered Species in the study area was completed to determine what effects, if any, the recommended improvements may have on wildlife. Mapping from the N.C. Department of Environment and Natural Resources revealed occurrences of threatened or endangered plant and/or animal species in the study area.

There are various sightings of rare plants and animals throughout Granville County. Projects of particular concern with respect to plants and animals include US 15 Widening, US 158 Widening and NC 56 Widening.

A detailed field investigation is recommended prior to construction of any highway project in this area.

4.3 Historic Sites

Granville County has a rich history over which a wealth of structurally and historically significant structures has accumulated. These structures are valuable resources and should be preserved for their aesthetic and cultural significance. An inventory of the historic architecture of the Tar River basin conducted by the North Carolina Division of Archives and History has registered many significant properties in Granville County. Several of these properties are also listed on the National Register of Historic Places and others are under consideration for nomination.

<http://www.hpo.ncdcr.gov/nrhome.htm>

4.4 Archaeological Sites

The locations of recorded archaeological sites were researched to determine the possible impacts of proposed roadway projects. This initial investigation identified no known archaeological sites within Granville County, but archeological sites are often difficult to identify without actual field excavation. As a result, possible sites may not be identified during the initial planning process and each proposed project should be evaluated individually prior to construction.

4.5 Educational Facilities

The location of educational facilities in the county was considered during the development of the CTP. Granville County has fourteen public schools that serve the county. No proposed transportation facilities or improvements should displace any school or other educational facility. **TABLE 3** provides a list of Educational Facility sites in Granville County.

Table 3: Educational Facilities		
School Name	Area	Location
Butner-Stem Elementary	Butner	"D" Street (SR 1113) and Central Avenue (SR 1103)
C.G Credle Elementary	Oxford	College Street (US 15 North)
Creedmoor Elementary	Creedmoor	Creedmoor NC 56
Stovall-Shaw Elementary	Stovall	US 15 North
Toler-Oak Hill Elementary	Oak Hill	NC 96 North
West Oxford Elementary	Oxford	US 158 West and Ivy Day Road (SR 1170)
Wilton Elementary	Wilton	Wilton NC 96 South
Mary Potter Intermediate	Oxford	Oxford Lanier Street and East McClanahan
Butner-Stem Middle	Butner	"D" Street (SR 1113)
G .C. Hawley Middle	Creedmoor	Hawley School Road (SR 1733) and Brassfield Road (SR 1700) (SR 1700)
North Granville Middle	Oxford	Webb School Rd (SR 1453) and Watkins-Wilkinson Road (SR1422)
South Granville High	Creedmoor	NC 56
Webb High	Oxford	Webb School Rd (SR 1453), US 158 Bypass & US 15 North
Granville Central High	Stem	Sanders Road (SR 1132)
Vance-Granville Community College (Main Campus)	Oxford	Poplar Creek Road, Oxford
Vance-Granville Community College (South Campus)	Butner /Creedmoor	144 South Campus Drive, Creedmoor

Chapter 5

Public Involvement

5.1 Overview

Since passage of the Federal Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), the emphasis on public involvement in transportation has taken on a new role. Although public participation has been an element of long-range transportation planning in the past, the regulations from ISTEA (and later TEA-21 in 1998 and SAFETEA-LU in 2005) call for a much more proactive approach. The NCDOT Transportation Planning Branch (TPB) has a long history of making public involvement a key element in the development of any long range transportation plan, no matter the size of the city or town and/or county. This chapter is designed to provide an overview of the public involvement process used in development of Granville County Comprehensive Transportation Plan.

5.2 Study Initiation

In 2003, Granville County requested an update to its 1998 Thoroughfare Plan. The Transportation Planning Branch (TPB) met with the Granville County Planning Board on July 8, 2003 to identify primary transportation concerns and to define the scope of the study. Over the next several years, the County and its municipalities, NCDOT Transportation Planning Branch, Kerr-Tar RPO and Capital Area MPO cooperatively developed this plan.



CTP Committee Meeting

5.3 Public Outreach



Public Drop in session - Oxford

In order to gain local knowledge and opinions, a public outreach component was included in the planning efforts for the Granville County Comprehensive Transportation Plan. Public input was gathered through several different means with the chief efforts being public meetings and opinion surveys.

5.4 Survey

The CTP Committee developed a survey to assess the goals of the community at large, and to gain insight into the opinions of the community regarding transportation issues and options. The survey was distributed in hard copy in English and Spanish throughout the county and made available on the Internet. The results contained in the 430+ responses received have been compiled and used to guide the development of the CTP. For survey results please refer to the website:

<http://www.ncdot.org/doh/preconstruct/tpb/planning/granvillecounty.html>

5.5 Granville County Transportation Plan Committee

The Granville County Comprehensive Transportation Plan Committee met regularly on the first Tuesday of each month, from August 02, 2005 to December 04, 2007 to discuss the plan and related data. These meetings were open to the public and the press. The CTP Committee was comprised of representatives from each municipality, the County, general public, MPO and RPO and NCDOT staff, the Granville County Planner and elected officials from each municipality in Granville County. The CTP Committee has continued to meet quarterly since the adoption of the plan in July 2008.

GRANVILLE COUNTY <i>CTP PLANNING COMMITTEE</i> Members	
* Not pictured in photo	
Granville County Government Commissioner Hubert Gooch *Dudley Watts/*Brian Alligood *Tommy Currin, Jr. *Scott Phillips Barry Baker Scottie K. Wilkins *Leon Turner/Jay Tilley *Angela Oakley Citizens & Other Members *Tom Koinis Johnny Balmer Jackie Sergent *Becky Currin City of Oxford *Mayor Al Woodleif *Tommy Marrow/ Mark Dunham *Larry Thomas Capital Area MPO *Ed Johnson *Diane Wilson *Jake Petrosky/Robert McCain	Town of Stovall *Mayor Janet Parrott *Tonya Sneed Town of Stem Mayor Jack Day City of Creedmoor *Mayor Darryl Moss *Tim Karan Dave Roesler Town of Butner *Tom McGee/*Tommy Marrow *Edgar Smoak/ Tom Lane Melissa Hodges NCDOT Scott Walston Rupal Desai *Ellen Beckman Kerr-Tar RPO Shelby Powell Geraldine Dumas



Pictured from left to right: Geraldine Dumas, Mayor Jack Day, Commissioner Hubert Gooch, Shelby Powell, Melissa Hodges, Jackie Sergent, Mark Dunham, Rupal Desai, Jay Tilley, Johnny Balmer, Scott Walston, Tom Lane, Barry Baker, Scottie Cornett-Wilkins, Dave Roesler, Robert McCain.

5.6 Presentations

The Granville County CTP covers area within the county and its five municipalities; this means that keeping the local boards and planning boards updated on the plan’s progress is imperative to developing a plan that meets the needs of each local governments involved. Formal presentations were given at regular board meetings for each local government during the development of the plan. These presentations occurred at the start of the plan development, after capacity deficiencies for the transportation system and had been developed for endorsement/adoption of the plan. For more information please refer to **TABLE 4**.



Public Drop-In Presentation – City of Oxford

Table 4: Granville County CTP Presentations from 2005 to 2007			
Date	Purpose	Organization	Comments
8/02/05	CTP Meeting	Representatives from Granville County and Cities, NCDOT, RPO, MPO	
10/04/05	CTP Meeting		
11/01/05	CTP Meeting		
11/03/05	Public Survey	Representatives from Granville County and Cities, NCDOT, RPO, MPO	
1/24/06	CTP Meeting		

Date	Purpose	Organization	Comments
2/07/06	CTP Meeting		
3/07/06	CTP Meeting		
5/02/06	CTP Meeting		
6/19/06	CTP Tech Session		
6/26/06	CTP Tech Session		
7/21/06	CTP Tech Session		
8/1/06	CTP Meeting		
8/17/06	CTP Presentation	Granville County Planning Board	Presents Proposed Roads, Capacity Deficiency Maps for Public Input
9/05/06	CTP Presentation	Granville County Commissioners	Presents Proposed Roads, Capacity Deficiency Maps for Public Input
9/12/06	CTP Presentation	Oxford City Council	Presents Proposed Roads, Capacity Deficiency Maps for Public Input
9/18/06	CTP Presentation	Stem Town Council	Presents Proposed Roads, Capacity Deficiency Maps for Public Input
9/20/06	CTP Presentation	Butner Town Council	Presents Proposed Roads, Capacity Deficiency Maps for Public Input
9/26/06	CTP Presentation	Creedmoor City Council	Presents Proposed Roads, Capacity Deficiency Maps for Public Input
10/02/06	CTP Presentation	Stovall Town Council	Presents Proposed Roads, Capacity Deficiency Maps for Public Input
10/03/06	CTP Meeting		
11/08/06	Public Involvement	Creedmoor Planning Board	
11/14/06	CTP Meeting		
12/05/06	CTP Meeting		
12/13/06	Public Involvement	One-on-One Meeting with Stovall	To get input on recommendation
1/30/07	Public Involvement	One-on-One Meeting with Creedmoor	To get input on recommendation
2/06/07	CTP Meeting		
2/09/07	Public/Private Input		Mill ridge to Creedmoor Loop Road
2/10/07	County Commissioner Retreat	Update on CTP Plan Progress	
3/06/07	Public Involvement	One-on-One Meeting with Butner	To get input on recommendation
4/3/07	Public Involvement	One-on-One Meeting with Butner	To get input on recommendation

Date	Purpose	Organization	Comments
4/03/07	CTP Meeting		
4/25/07	CTP Tech Session		
4/27/07	Public Involvement	One-on-One Meeting with Oxford	To get input on recommendation
5/1/07	CTP Meeting		
5/21/07	Granville County Homebuilder Association	Creedmoor	Presentation/updates/CTP input
6/05/07	CTP Meeting		
6/22/07	CTP Tech Session		
6/27/07	CTP Tech Session		
7/09/07	Public Input	Granville County Commissioners	Update on CTP Plan
7/10/07	CTP Meeting		
7/18/07	CTP Public Involvement Session (Creedmoor)		
7/23/07	CTP Public Involvement Session (Butner)		
7/30/07	CTP Tech Session		
8/27/07	CTP Tech Session		
8/29/07	CTP Tech Session		
09/06/07	CTP Plan Adoption Presentation	City of Butner	
09/10/07	CTP Plan Adoption Presentation	Town of Stovall	
09/11/07	CTP Plan Adoption Presentation	City of Oxford	
09/17/07	CTP Plan Adoption Presentation	Town of Stem	
09/25/07	CTP Plan Adoption Presentation CTP Plan Adoption Presentation	City of Creedmoor	
10/01/07	CTP Plan Adoption Presentation	Granville County	
11/19/07	CTP Plan Adoption Presentation	Kerr Tar RPO	
12/19/07	CTP Plan Adoption Presentation	Capital Area MPO	

5.7 Website

As the CTP was being developed, updates were made available to the public on websites housed at NCDOT, the MPO and the RPO. These updates included maps, data, meeting reports, and other important information. For more information on CTP maps and other information, please refer to the website:

<http://www.ncdot.org/doh/preconstruct/tpb/planning/granvillecounty.html>

5.8 Public Drop-in Sessions

Two Public Workshops were held during development of the Comprehensive Transportation Plan to discuss proposed recommendations. During these public drop-in sessions, public input was taken in the form of map markups and comments and through discussions between citizens and CTP Committee members. The first drop-in session was held on July 18, 2007 at the Granville Co. South Campus Administration Building (Vance-Granville Community College Campus) in the Butner/Creedmoor area. The second workshop was held on July 23, 2007 in the Oxford area at the Oxford Public Works Building on McClanahan Street to target citizens in the northern part of the county.



These workshops opened with a brief overview of the comprehensive transportation planning process, followed by discussion of the County's goals and objectives, results of the analysis of existing traffic conditions, and based on the projected future traffic conditions, recommendations on the highway, bike and transit elements of the county's plan. After the formal presentation, the public was invited to write comments on the maps. Representatives from the County, Kerr-Tar RPO, Capital Area MPO and the NCDOT were available to explain the proposed recommendations and answer questions. Attendees were encouraged to provide comments on each Comprehensive Transportation Plan element on comment sheets.

For a list of attendees at the public drop-in sessions, a summary of questions /responses, and the results of the public involvement effectiveness survey please refer to the website:

<http://www.ncdot.org/doh/preconstruct/tpb/planning/granvillecounty.html>

Chapter 6

Conclusion

Granville County is a growing county. Improvements to the County's transportation system should be necessary over the next 30 years to keep pace with this growth. It is the responsibility of the County, its municipalities and the Capital Area Metropolitan Planning Organization (CAMPO) to take the initiative for implementation of this Comprehensive Transportation Plan. It is imperative that the local area aggressively pursues funding for desired projects. Any questions regarding funding, active projects, planning, and alternative modes of transportation should be addressed to the appropriate Branch of NCDOT. **Appendix A** includes contact information for many of these Branches. If, as time passes, revisions are required for any element of this Comprehensive Transportation Plan, all the transportation elements should also be reviewed for potential impacts. Prior to implementation of specific transportation projects, additional public involvement, traffic analysis, and analysis of impacts to the natural/human environment should be conducted as part of the project planning process. The Project Development and Environmental Analysis Branch (PDEA) branch of NCDOT is responsible for project planning.

6.1 Implementation Efforts

Below are some of the ongoing efforts that have resulted of the CTP process.

- Granville County CTP Committee should meet quarterly to discuss the maintenance of this plan, including periodic updates.
- Old Thoroughfare Plans are no longer valid for Granville County or any of its municipalities.
- Granville County and its municipalities should consider adopting measures to protect Right-of-Way for improvements recommended in this plan. When appropriate, consider requiring Traffic Impact Analysis and recommended improvements for major developments.
- This plan was developed to be consistent with all county and municipal land use plans. Future updates to those plans or this plan should consider the recommendations outlined in this CTP to maintain that consistency.
- Development review procedures within the county and municipalities should consider the recommendations outlined in this CTP.
- Granville County and its municipalities should remain active members of the RPO/MPO in order to advance project priorities on the State TIP and other plans.
- Granville County and its municipalities should actively pursue any available grant funds such as CMAQ, Transportation Enhancement, Spot Safety, etc., in order to expedite the implementation of the projects outlined in this CTP.
- Granville County CTP Plan update process is outlined in **Appendix E**.

APPENDIX A

NCDOT
Contacts

Appendix A: NCDOT Contacts

North Carolina Department of Transportation

Customer Service Office

1-877-DOT4YOU
(1-877-368-4968)

Secretary of Transportation

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

Board of Transportation Member

Contact Information for the current Board of Transportation member may be accessed from the NCDOT homepage on the Internet at:

<http://www.ncdot.org/about/board/agenda.html>

Centralized Personnel

TRANSPORTATION PLANNING BRANCH	1554 Mail Service Center Raleigh, NC 27699-1554 (919) 733-4705 (919) 733-2417 Fax
Contact the Transportation Planning Branch with long-range planning questions.	
SECONDARY ROADS OFFICE	1535 Mail Service Center Raleigh, NC 27699-1535 (919) 733-3520
Contact the Secondary Roads office for information regarding the Industrial Access Funds Program, information about paving priorities, or how to get a road added to the state maintained system.	
PROGRAM DEVELOPMENT BRANCH	1534 Mail Service Center Raleigh, NC 27699-1534 (919) 733-2039 (919) 733-3585 Fax
Contact the Program Development Branch for information about current TIP projects, or the current Roadway Official Corridor Maps.	
GEOGRAPHIC INFORMATION SYSTEMS UNIT (GIS)	New Hope center 4101 Capital Boulevard Raleigh, NC 27604 (919) 707-2152 (919) 707-2214 Fax
Contact GIS to order County Road maps and for other available maps. Online ordering available at: http://www.ncdot.org/it/gis/	

Highway Division 5

The following table lists the appropriate NCDOT Division and District contact information for Granville County. All questions or requests for construction, operations and maintenance should be forwarded to the appropriate sections within the Division.

<p style="text-align: center;">DIVISION ENGINEER</p> <hr/> <p>Contact the Division Engineer with general questions concerning NCDOT activities within Division 5.</p>	<p style="text-align: center;">2612 N Duke Street Durham, NC 27704 (919) 220-4600</p>
<p style="text-align: center;">DIVISION CONSTRUCTION ENGINEER</p> <hr/> <p>Contact the Division Construction Engineer for information concerning major roadway improvements under construction.</p>	<p style="text-align: center;">2612 N Duke Street Durham, NC 27704 (919) 220-4600</p>
<p style="text-align: center;">DIVISION TRAFFIC ENGINEER</p> <hr/> <p>Contact the Division Traffic Engineer for information concerning high-collision locations.</p>	<p style="text-align: center;">2612 N Duke Street Durham, NC 27704 (919) 220-4600</p>
<p style="text-align: center;">DISTRICT ENGINEER</p> <hr/> <p>Contact the District Engineer for information regarding Driveway Permits, Right of Way Encroachments, and Development Reviews.</p>	<p style="text-align: center;">815 Stadium Drive Durham, 27704-2713 (919)220-4750</p>
<p style="text-align: center;">COUNTY MAINTENANCE ENGINEER</p> <hr/> <p>Contact the County Maintenance Engineer with any maintenance activities, such as drainage, re-paving, dead animals, or roadway conditions.</p>	<p style="text-align: center;">5674 Cornwall Rd. Oxford, 27565 (919)-693-8164</p>

APPENDIX B

Comprehensive Transportation Plan Definitions

Appendix B: Comprehensive Transportation Plan Definitions

Definitions for Categories

Highway Map

Freeways

- Functional purpose – high mobility, high volume, high speed
- Posted speed – 55 mph or greater
- Cross section – minimum four lanes with continuous median
- Multi-modal elements – High Occupancy Vehicles/High Occupancy Transit 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 1,000 feet or for 350 feet plus 650 feet 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 – High Occupancy Vehicle 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 2,000 feet; median breaks only at intersections with minor roadways or to permit U-turns; use of frontage roads, rear service roads; driveways limited in location and number; use of acceleration/deceleration or right turning lanes
- Intersecting facilities – interchange; at-grade intersection for minor roadways; right-in/right-out and/or left-over or grade separation (no signalization for through traffic)
- Driveways – right-in/right-out only; direct driveway access via service roads or other alternate connections

Boulevards

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

Other Major Thoroughfares

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

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 Guide way – 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, also includes plane, cable car, automated Guide way transit, and ferryboats.
- Operational Strategies – Plans geared toward the non-single occupant vehicle. This includes but is not limited to High Occupancy Vehicle (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 corridors in North Carolina).
 - Recommended – Proposed corridor for high-speed rail service.
- Rail Stop – A railroad station or stop along the railroad tracks.
- Intermodal Connector – A location where more than one mode of public transportation meets 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.
- Needs Improvement – At the systems level, it is desirable for the highway facility to accommodate bicycle transportation; however, highway improvements are necessary to create safe travel conditions for the cyclists.
- Recommended – At the systems level, it is desirable for a recommended highway facility to accommodate bicycle transportation. The highway should be designed and built to safely accommodate cyclists.

Off-Road

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

Miscellaneous Definitions

CTP – Comprehensive Transportation Plan

MPO- Metropolitan Planning Organization

RPO- Rural Planning Organization

TIP- Transportation Improvement Program

MTIP – Metropolitan Transportation Improvement Program

NI- Needs Improvement

SR –State Route

AQ – Air Quality

APPENDIX C

Comprehensive
Transportation Plan
Project Proposal
Spreadsheet
And
Roadway Inventory

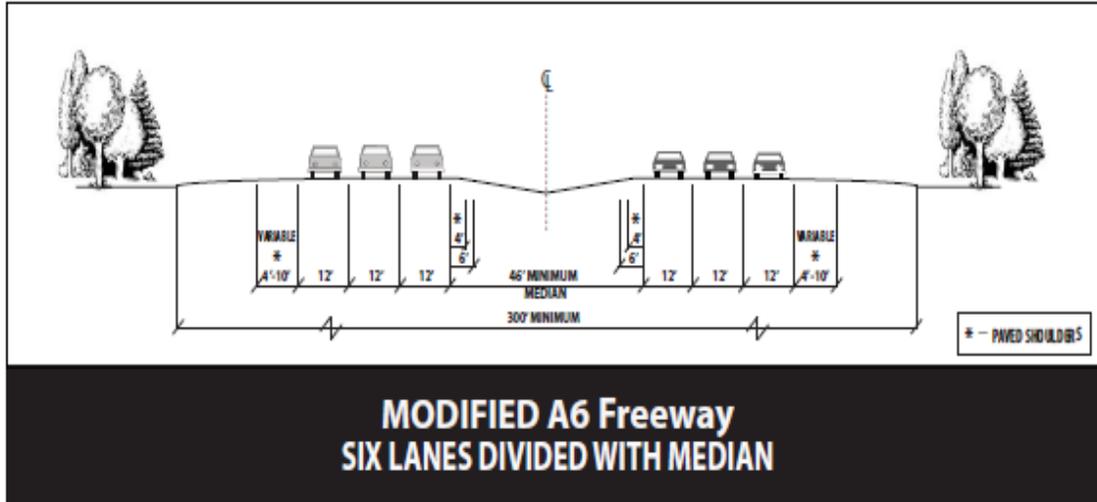
**Appendix C: Comprehensive Transportation Plan Project Proposal
Spreadsheet and Roadway Inventory**

APPENDIX D

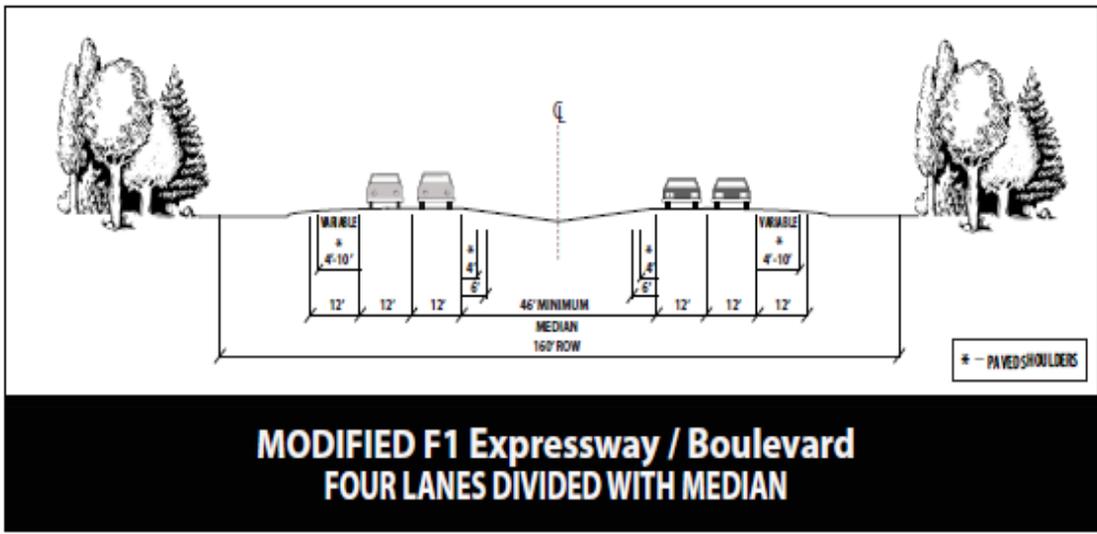
Granville
County
Cross Sections

Appendix D: Granville County Cross Sections

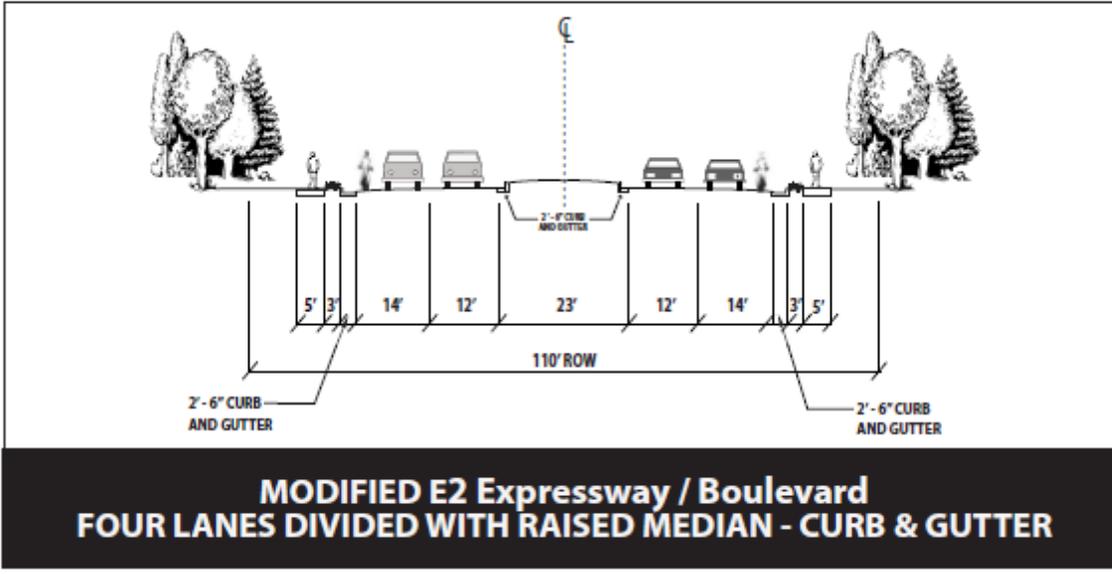
A6 (Freeway): Six-lane divided highway in rural area with fully controlled access and 46' minimum median. ROW 300' minimum.



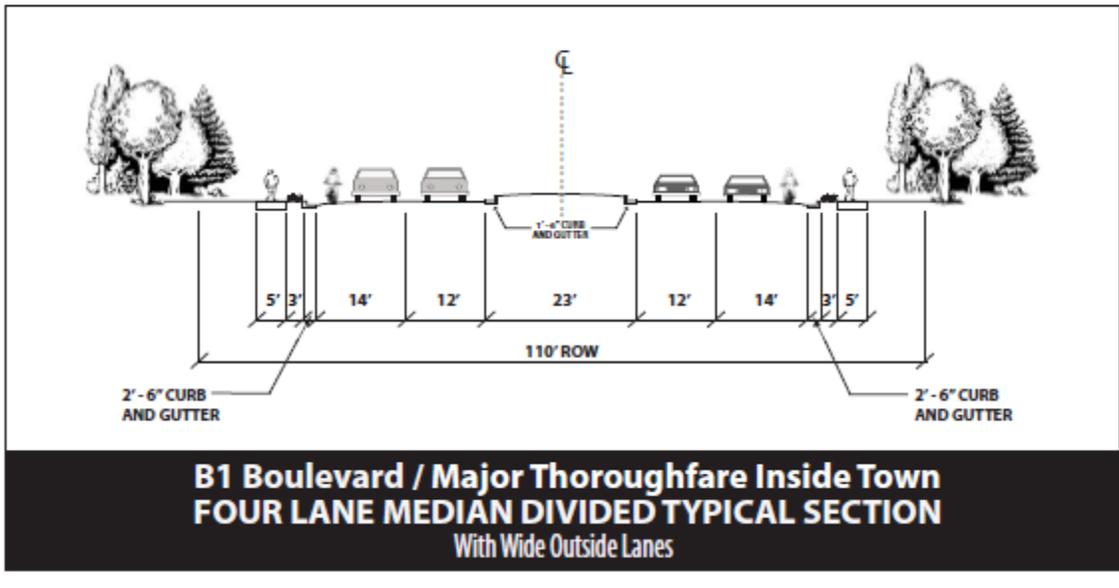
Modified F1 (Expressway/Boulevard): Four-lane divided with 46' median. Partially controlled access 160' ROW.



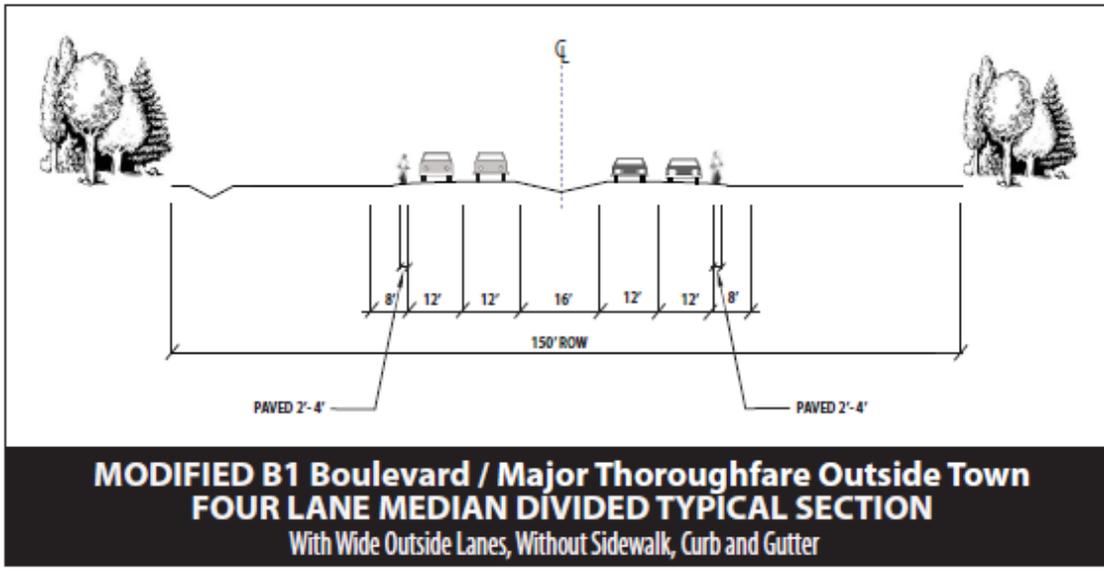
Modified E-2 (Expressway/Boulevard): Four-lane divided with Raised Median and Curb and Gutter with minimum 16' median (23' Median Recommended). Partially controlled access. 110' ROW



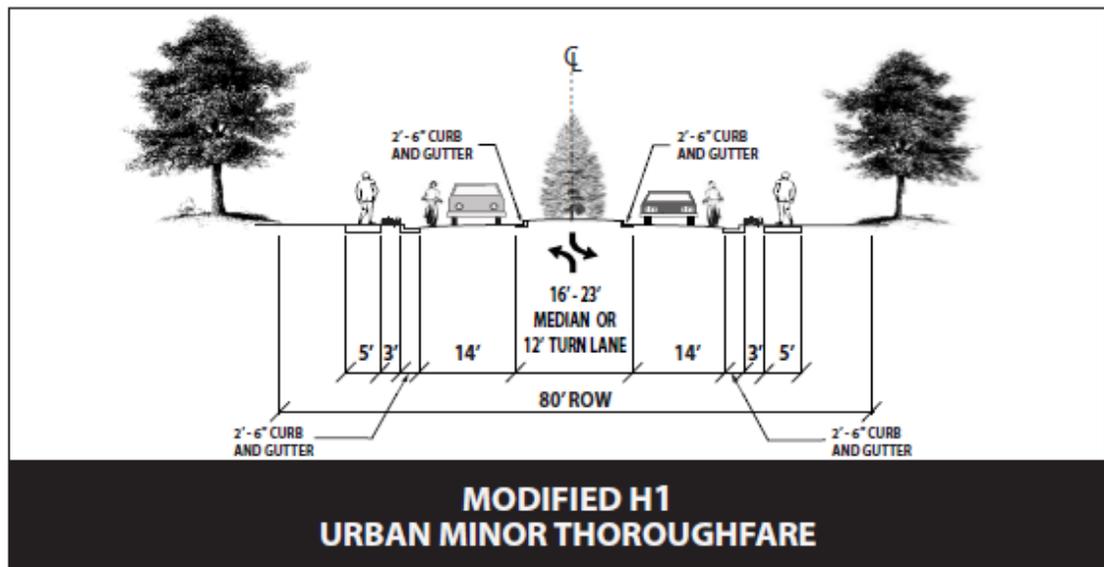
B1 (Boulevard / Major Thoroughfare Inside Town): Four-lane divided with Raised Median and Curb and Gutter and 16-ft median (23' Median Recommended). 110' ROW



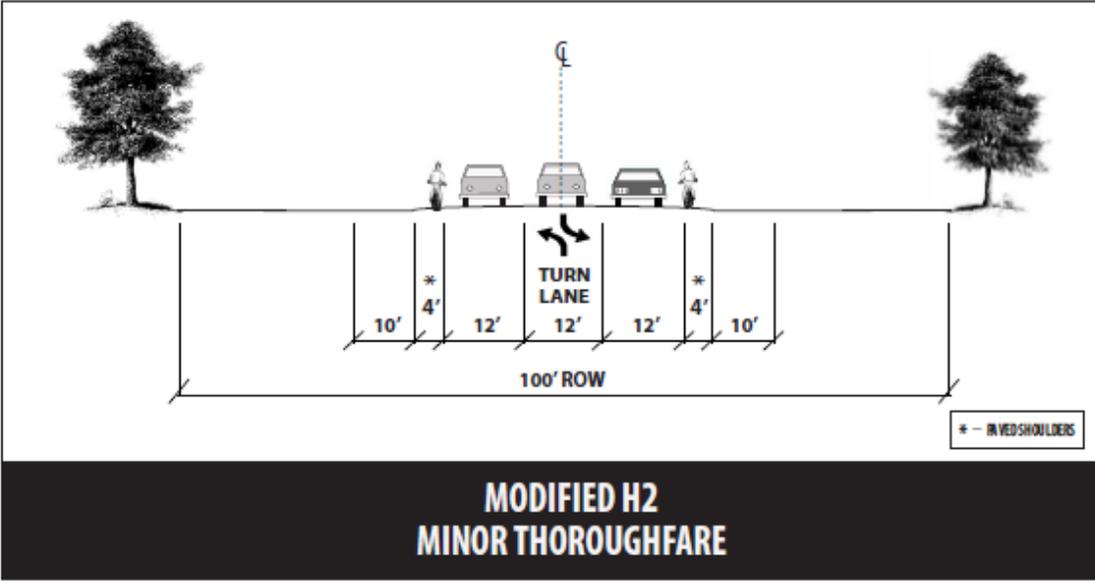
Modified B-1 (Boulevard / Major Thoroughfare Outside Town): Four-lane Divided with Median. No curb and gutter. 150' ROW



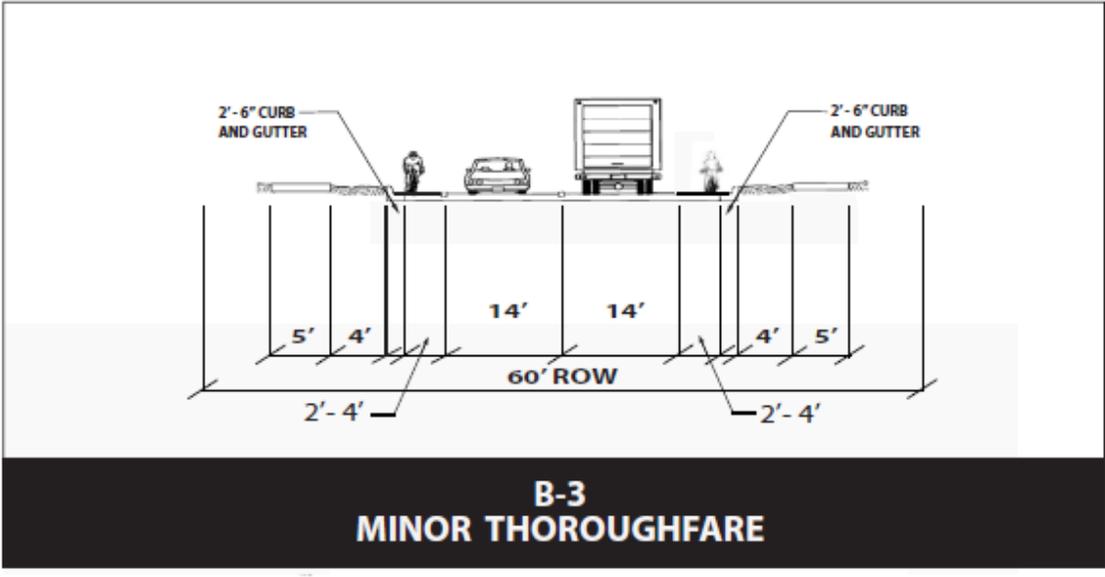
Modified H-1 (Minor Thoroughfare Inside Town): Two-lane Highway with 12' center turning lane or with 16'-23' Median with sidewalk and curb and gutter. 80' ROW



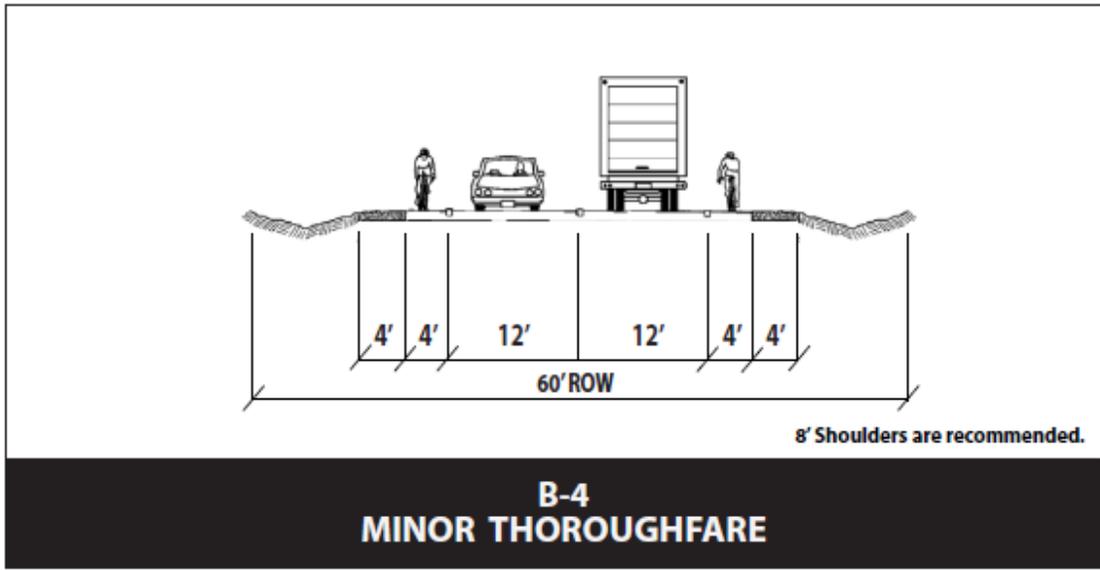
Modified H-2 (Minor Thoroughfare Outside Town): Two to Three-Lane Highway with Center turn lane where necessary with Paved Shoulders. 100' ROW



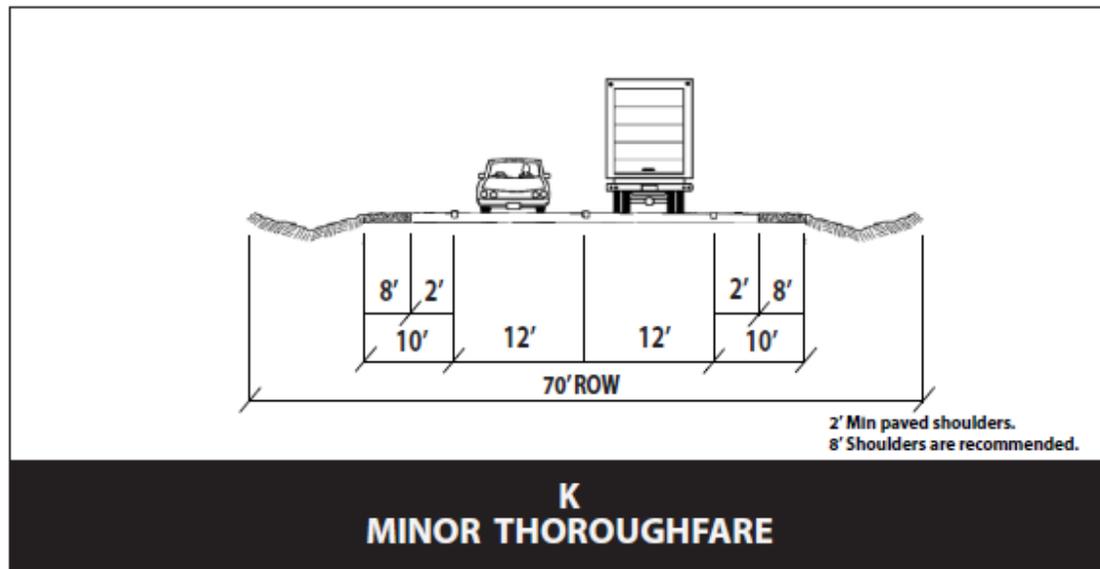
B-3 (Minor Thoroughfare): Two-lane with curb and gutter and sidewalks. 60' ROW



B-4 (Minor Thoroughfare): Two-lane with paved shoulders. 60' ROW



K (Minor Thoroughfare): Two-lane with paved shoulders. 70' ROW

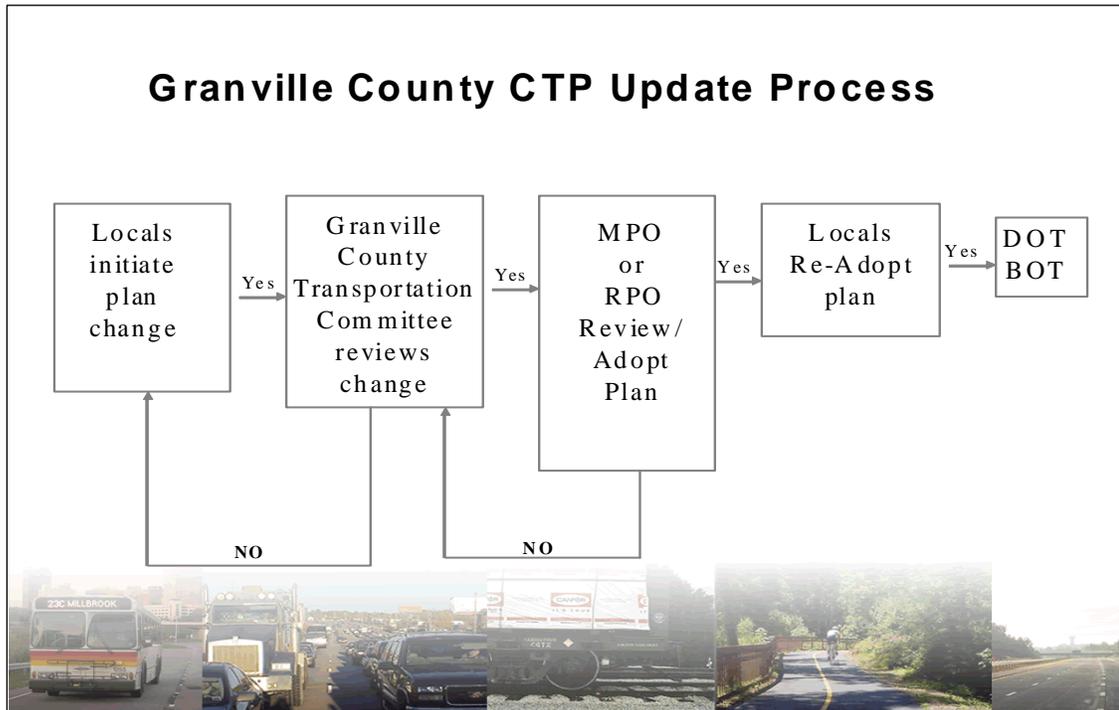


APPENDIX E

Comprehensive
Transportation Plan
Modification/
Update
Record

Appendix E: CTP Plan Modification/Update Record

The Granville County CTP committee adopted the following process on 08/29/07 for changing or updating the CTP.



The following changes have been made since the creation of this report in October 2009.

Type of Edit	Date of Edit	Summary of Changes

