

**MACY GROVE ROAD IMPROVEMENTS
TOWN OF KERNERSVILLE, FORSYTH COUNTY
NORTH CAROLINA**

**STIP PROJECTS U-2800 AND U-4734
WBS NO. 34858.1.1 AND 36600.1.2
FEDERAL AID PROJECT NO. STP-2601 (1) AND STP-2601(3)**

**ADMINISTRATIVE ACTION
FINDING OF NO SIGNIFICANT IMPACT**

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**

**DOCUMENT PREPARATION BY:
URS CORPORATION – NORTH CAROLINA**



Submitted Pursuant to the National Environmental Policy Act 42 USC 4332(2)(C)

6/30/11
Date

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JUNE 2011

6/29/2011
Date

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6/29/2011
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Project Commitments

Macy Grove Road Improvements

Federal Aid Project No. STP-2601 (1) and STP-2601(3)
WBS No. 34858.1.1 and 36600.1.2
STIP Projects U-2800 and U-4734
Forsyth and Guilford Counties, North Carolina

Hydraulics Unit

FEMA Coordination. The Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP) to determine the status of the project with regard to applicability of NCDOT's Memorandum of Agreement or approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).

Division 9

Reedy Fork Crossing. This project involves construction activities on or adjacent to a FEMA-regulated stream; therefore, the Division shall submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction, certifying that the drainage structure and roadway embankment that are located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically.

Hydraulics Unit, Roadway Design Unit

Future Piedmont Greenway Crossing. Through coordination with Triad Park, preliminary designs were developed to accommodate the future Piedmont Greenway. A concrete path, immediately adjacent to the sloping abutments associated with the proposed bridge crossing of Reedy Fork, will be built during construction of STIP U-4734 at NCDOT's expense. Results of coordination with the park officials suggest the pathway be constructed above the 10-year storm elevation (approximate elevation 886.5 pending final design verification), with a recommended vertical clearance of 9 feet.

Project Development and Environmental Analysis Branch, Roadway Design Unit

Traffic Noise Analysis Review. This project will be let for construction after July 13, 2011, the effective date of the 2011 NCDOT Traffic Noise Abatement Policy. The project Traffic Noise Analysis shall be reviewed under the criteria of the 2011 Policy prior to construction. The approval date of the FONSI is the Date of Public Knowledge and shall remain unchanged for all traffic noise abatement considerations.

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1.0 TYPE OF ACTION

This is a Federal Highway Administration (FHWA) administrative action, Finding of No Significant Impact (FONSI).

The North Carolina Department of Transportation (NCDOT) and FHWA have determined this project will not have any significant impact on the human or natural environment. This FONSI is based on the September 30, 2010 Environmental Assessment (EA), which has been independently evaluated by the FHWA and determined to adequately and accurately disclose the environmental issues and impacts of the proposed project. The EA, together with the information contained in this FONSI (including responses to comments on the EA), provides sufficient evidence and analysis for determining that an Environmental Impact Statement (EIS) is not required.

2.0 DESCRIPTION OF THE PROPOSED ACTION

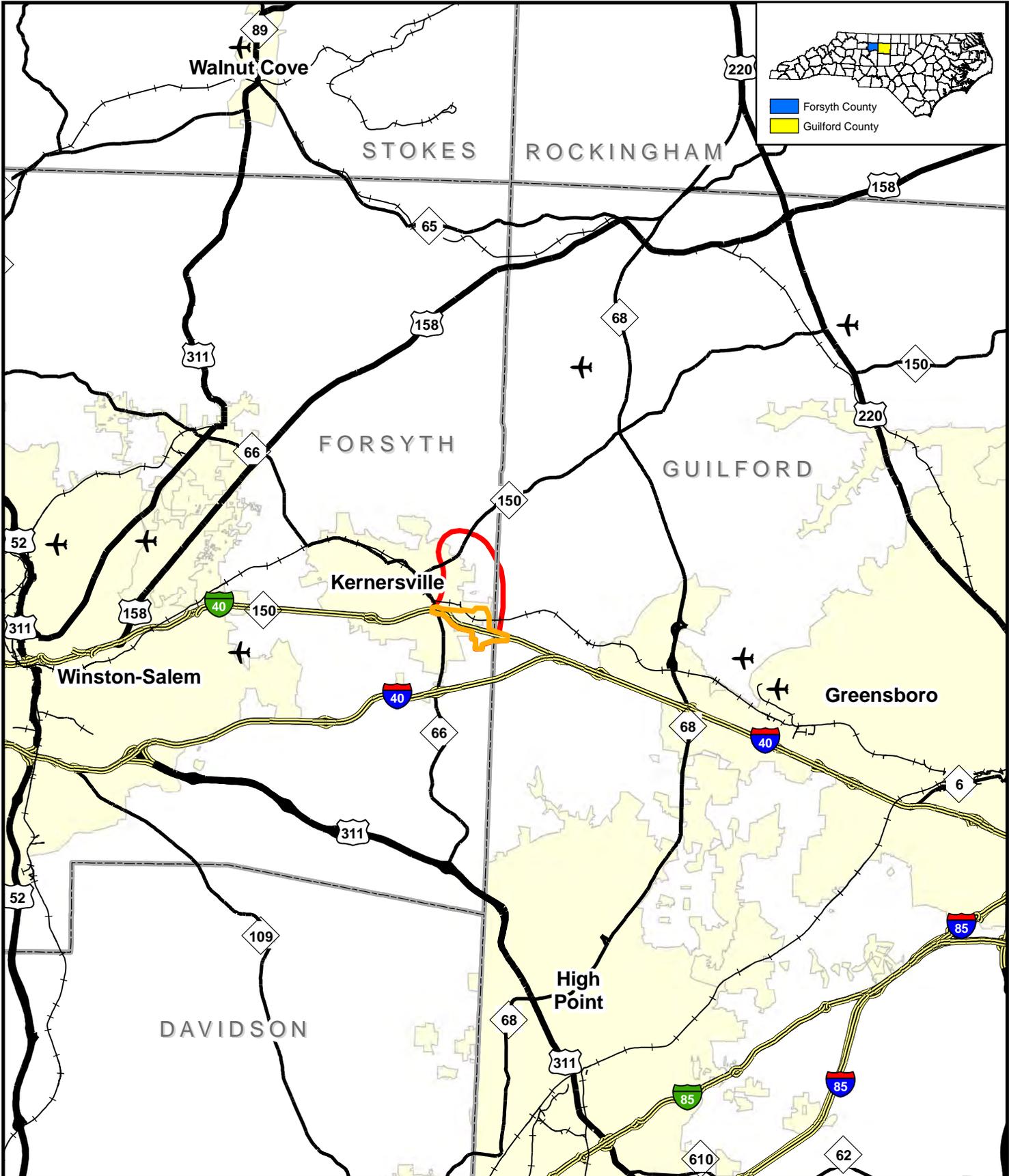
The NCDOT 2012-2018 Draft State Transportation Improvement Program (STIP) and the Winston-Salem Urban Area Metropolitan Planning Organization's 2009-2015 Metropolitan Transportation Improvement Program (MTIP) include the proposed widening and extension of SR 2601 (Macy Grove Road) in Forsyth County, North Carolina, near the Town of Kernersville. In both the STIP and MTIP, the projects are referred to as U-2800 and U-4734.

U-2800 consists of:

- widening Macy Grove Road to multi-lanes,
- extending Macy Grove Road from Old Greensboro Road to north of East Mountain Street, and
- converting the bridge crossing at I-40 Business to an interchange. Bridge crossings are also proposed on new location over the Norfolk Southern Railroad and East Mountain Street.

U-4734 includes extending Macy Grove Road on new location from north of East Mountain Street to NC 150.

NCDOT prepared a combined EA for both projects, given the proximity and dependent relationship of the two projects. For clarity in describing details within this document, the two projects will be referred to as the "project" unless otherwise noted. The project vicinity and project study area are shown on Figure 1 and Figure 2, respectively.



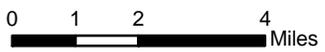
North Carolina
Department of Transportation



Date: May 2010

Legend

-  U-2800 Study Area
-  U-4734 Study Area
-  Interstate
-  US Route
-  NC Route
-  Railroad
-  County Boundary
-  Municipal Boundary
-  Airport

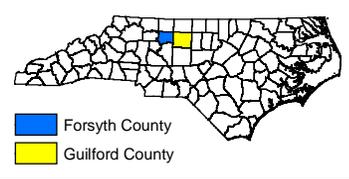
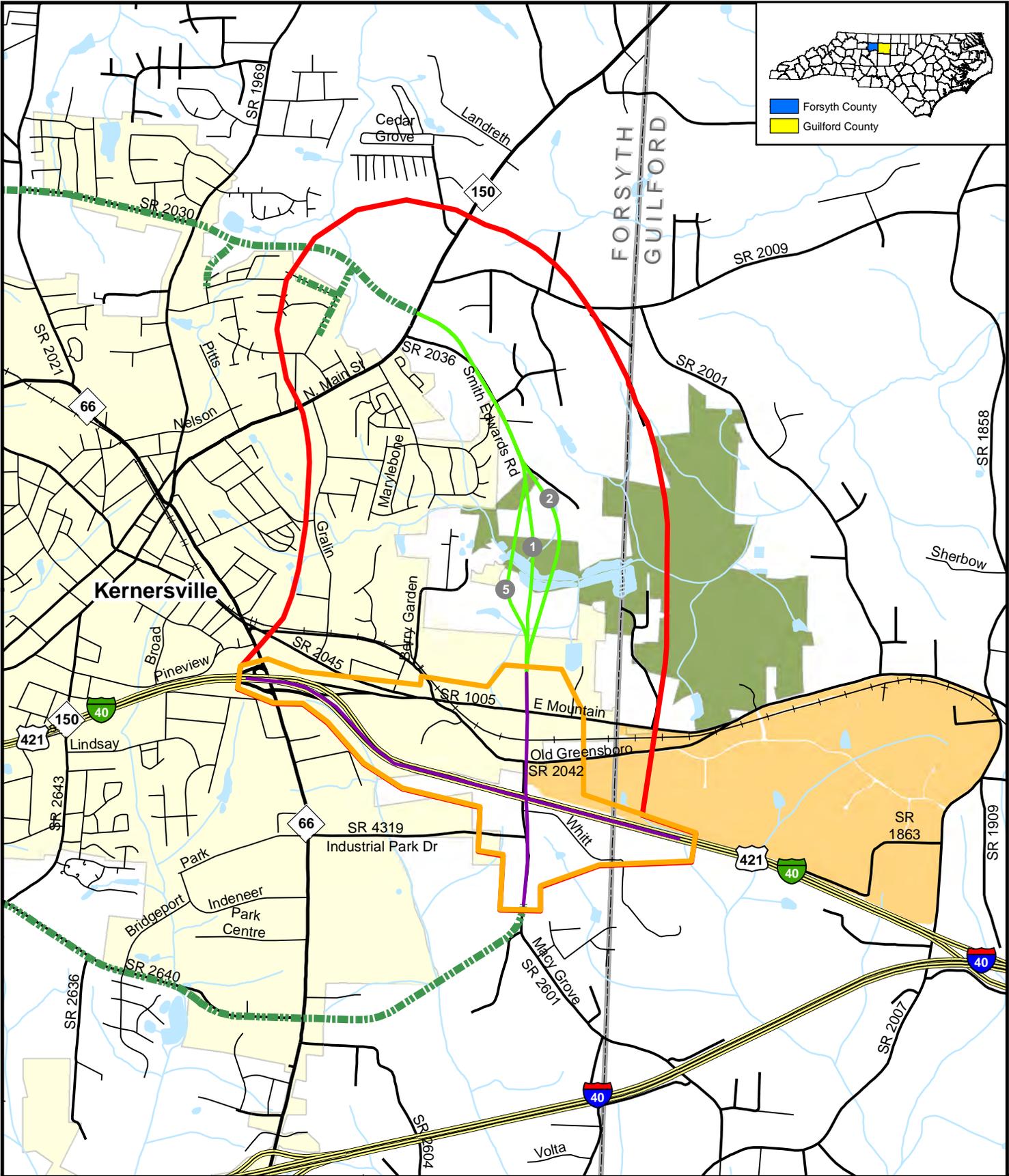


Macy Grove Road Improvements
Forsyth County, NC

STIP U-2800 & U-4734

Figure 1

Project Vicinity



■ Forsyth County
■ Guilford County

North Carolina
 Department of Transportation



Date: May 2010

Legend

- U-2800 Alignment
- U-4734 Alignment (Alternatives to Carry Forward)
- U-2800 Study Area
- U-4734 Study Area
- - - Future Kenersville Loop Road
- Ⓜ Build Alternatives to Carry Forward
- Municipal Boundary
- Triad Park
- Triad Business Park



0 0.25 0.5 1 Miles



Macy Grove Road Improvements
 Forsyth County, NC

STIP U-2800 & U-4734

Figure 2

Project Study Area

2.1 SUMMARY OF PROJECT NEED

The needs for the proposed project include the following:

- There is no direct roadway link between I-40 Business and NC 150 north of Kernersville.
- Congestion exists in downtown Kernersville and at the existing NC 66/NC 150 interchange with I-40 Business/US 421.
- Future Kernersville Loop Road System --The proposed project is a component of the Town of Kernersville Loop Road System, which is included in the Kernersville *Thoroughfare and Street Plan* (Town of Kernersville, July 2005) and the *Winston-Salem Urban Area 2035 Long Range Transportation Plan* (2035 LRTP) (Winston-Salem Urban Area Metropolitan Planning Organization, January 2009).

2.2 SUMMARY OF PROJECT PURPOSE

The primary purpose of the proposed project is to:

- Provide a roadway link between I-40 Business/US 421 and NC 150 (N. Main Street) north of Kernersville.

In addition to addressing the primary purpose, other potential benefits may result from the proposed project including the following:

- Reduce congestion in downtown Kernersville and at the existing NC 66/NC 150 interchange with I-40 Business/US 421.
- Provide a segment of the future Kernersville Loop Road.

3.0 ALTERNATIVES CONSIDERED

A full range of alternatives including the No-Build Alternative, Travel Demand Management Alternative, Mass Transit/Multi-Modal Alternative, Transportation Systems Management Alternative, Improve Existing Facility Alternative, and New Location Build Alternative were presented and evaluated in the EA. Three New Location Build Alternatives were carried forward for detailed study in the EA and are described below.

3.1 DETAILED STUDY ALTERNATIVES

As previously noted, the project consists of two STIP projects given their close proximity and dependent relationship. Detailed Study Alternatives consist of U-2800 recommendations in conjunction with the U-4734 recommendations.

3.1.1 U-2800

U-2800 consists of widening SR 2601 (Macy Grove Road) to multi-lanes, extending the roadway on new location from SR 2042 (Old Greensboro Road) to north of SR 1005 (Old US 421/East Mountain Street) and converting the grade separation at I-40 Business/US 421 to a compressed diamond interchange.

In order to thoroughly consider potential interchange locations, existing I-40 Business was reviewed. Based on the American Association of State Highway Transportation Officials (AASHTO) guidelines on interchange spacing, it is recommended the proposed interchange be located within the vicinity of the existing Macy Grove Road grade separation.

Grade separations are also proposed on new location crossing the Norfolk Southern Railroad and SR 1005 (Old US 421/East Mountain Street). The partial I-40 Business interchange with East Mountain Street will be eliminated because the movements provided at the partial interchange will be redundant with the proposed movements provided by the proposed Macy Grove Road interchange. Also, the distance between the NC 66 and East Mountain Street does not meet the minimum interchange spacing as

recommended by AASHTO. In order to allow for vehicles to easily accelerate or decelerate when either entering or exiting I-40 Business between NC 66 and the proposed Macy Grove Road interchange, auxiliary lanes will be provided along I-40 Business in both directions.

An intersection currently exists with Old Greensboro Road and Macy Grove Road north of the proposed Macy Grove Road interchange with I-40 Business. In order to reduce impacts to businesses and residents in this area, the existing western connection of Old Greensboro Road to Macy Grove Road will be closed and provided via East Mountain Street. The eastern connection of Old Greensboro Road to Macy Grove Road will include a full movement intersection; however, it will be moved slightly to the north of its existing location to provide more spacing between the proposed I-40 Business/Macy Grove Road interchange and Old Greensboro Road.

North of the Old Greensboro Road intersection improvements, new access will be provided to East Mountain Street via quadrant service roads in the northwest and northeast quadrants. Access to these proposed quadrant service roads consists of right-in and right-out movements only, in both the northbound and southbound directions along the proposed Macy Grove Road. The turning movements will be completed where the service roads intersect with East Mountain Street via two roundabouts.

3.1.2 U-4734

All U-4734 New Location Build Alternatives begin at the U-2800 match point, then vary in location near the Reedy Fork crossing, and ultimately converge, at Smith Edwards Road before terminating at NC 150.

Alternative 1, the central alternative, begins on new location north of SR 1005 (Old US 421/East Mountain Street) heading north crossing one unnamed tributary to Reedy Fork before passing through the Triad Park property which includes crossing Reedy Fork and the associated wetland system. The alignment would then widen a portion of existing SR 2035 (Smith Edwards Road), before going back on new location ultimately terminating at NC 150 (North Main Street), north of the existing intersection at Smith Edwards Road and NC 150 (North Main Street).

Alternative 2, the eastern most alternative, begins on new location north of SR 1005 (Old US 421/East Mountain Street) heading north crossing one unnamed tributary to Reedy Fork before passing through the Triad Park property which includes crossing Reedy Fork and the associated wetland system. The alignment would then widen a portion of existing SR 2035 (Smith Edwards Road), before going back on new location ultimately terminating at NC 150 (North Main Street), north of the existing intersection at Smith Edwards Road and NC 150 (North Main Street).

Alternative 5, the western most alternative, begins on new location north of SR 1005 (Old US 421/East Mountain Street) heading north crossing two unnamed tributaries to Reedy Fork before passing through the Triad Park property which includes crossing Reedy Fork and the associated wetland system. The alignment would then widen a portion of existing SR 2035 (Smith Edwards Road), before going back on new location ultimately terminating at NC 150 (North Main Street), north of the existing intersection at Smith Edwards Road and NC 150 (North Main Street).

4.0 SUMMARY OF ENVIRONMENTAL EFFECTS

Three New Location Build Alternatives were evaluated in the EA with the summary of impacts shown in Table 1. Based on the expected direct, indirect, and cumulative effects and coordination with the Triad Park, NCDOT recommended in the EA that U-4734 Alternative 2, in conjunction with U-2800, be implemented to fulfill the purpose and need for the project.

Table 1: Summary of Impacts for New Location Build Alternatives

Impact	U-4734			U-2800
	Alternative 1	Alternative 2	Alternative 5	
Length (miles)	1.54	1.59	1.55	0.94
Bridges over Streams (#)	1	1	1	0
Major Culvert Crossings >72" (#)	1	1	1	0
Stream Crossings (#/length in ft)	1/294	1/294	2/478	10/2,343
Wetlands (#/acres)	2/1.8	2/1.1	2/1.0	1/0.1
Ponds (#/acres)	1/0.3	1/0.2	1/0.1	0
100-Year Floodplain (acres)	1.7	1.0	1.1	0
Total Protected Riparian Buffer (ft ²)	28,983	29,831	44,976	168,726
Water Supply Critical Areas (Y/N)	N	N	N	N
Prime Farmlands (acres)	95.4 (includes U-2800)	96.1 (includes U-2800)	94.3 (includes U-2800)	(included in U-4734)
VADs and EVADs (Y/N)	N	N	N	N
Significant Natural Heritage Areas (# of crossings)	0	0	0	0
Known Critical Habitat of Federally Listed Threatened & Endangered Species (#)	0	0	0	1
Presence of Threatened and Endangered Species – Federally Listed (Y/N)	N	N	N	N
Presence of Threatened and Endangered Species – State Listed (Y/N)	N	N	N	N
Forest Impacts (acres)	35.9	36.9	37.4	47.1
Historic Properties (#)	0	0	0	0
Section 6(f) Properties (Y/N)	N	N	N	N
Archaeological Sites (#)	0	0	0	0
Parks (#/acres)	1/7.1	1/6.5	1/6.0	0
Wildlife Refuge and Gamelands (Y/N)	N	N	N	N
Federal Lands (Y/N)	N	N	N	N
Greenway Crossings (#)	1	1	1	0
Potential Section 4(f) Impacts (Y/N)	N	N	N	N
Residential Relocations (#)	6	6**	5	10
Business Relocations (#)	1	1	1	6
Non-Profit Organizations (#)	0	0	0	2
Low Income/Minority Populations (Y/N)	N	N	N	N
Limited English Proficiency (LEP) Populations Present (Y/N)	Y – according to Demographic Study Area			
Schools (#)	0	0	0	0
Churches (#)	0	0	0	0
Cemeteries (#)	0	0	0	0
Railroad Crossings (#)	0	0	0	1
Major Utility Crossings (#)	1	1	1	1
Noise (# of receptors*)	5	4	6	3
Air Quality (Y/N)	N	N	N	N
Hazardous Materials Sites (#/severity)	0/none	0/none	0/none	3/low-mod 1/mod-high
Estimated Utility Cost	\$233,552	\$153,600	\$153,600	\$614,346
Estimated Right-of-way Cost	\$4,372,000	\$3,996,000	\$4,050,500	\$8,552,300
Estimated Construction Cost	\$10,800,000	\$11,400,000	\$11,900,000	\$32,700,000
Total Cost	\$15,405,552	\$15,549,600	\$16,104,100	\$41,866,646

Note: All impacts based on preliminary design slopestakes plus 25 feet except for forest impacts, which are based on preliminary design right-of-way. Additionally, prime farmlands impacts are based upon functional designs plus 40 feet. * Noise receptors may consist of houses, churches, parks, schools, libraries, or hotels. ** Since the EA was prepared, residential relocation impacts have been updated, resulting with one change to Table 2: Alternative 2 was updated from 4 to 6 residential relocations.

5.0 AGENCY COORDINATION AND PUBLIC INVOLVEMENT

Agency coordination and public involvement are integral processes leading to the successful planning and implementation of a transportation project. The following sections detail participation efforts undertaken for the proposed project.

5.1 CIRCULATION OF THE EA

The Environmental Assessment was approved on September 30, 2010 by FHWA and NCDOT. Copies of the approved EA were made available for public review at the Town of Kernersville Planning Department, the NCDOT Division 9 Office, the Kernersville Branch Library, the Forsyth County Central Library, and the Greensboro Public Library. An electronic copy of the EA was also posted on the NCDOT project website. The approved EA was circulated to the following federal, state, and local agencies for review and comment. An asterisk (*) indicates a written response was received from the agency.

Federal Agencies

Federal Highway Administration (FHWA)

Regional Offices

U.S. Army Corps of Engineers

*U.S. Environmental Protection Agency

U.S. Fish and Wildlife Service

State Agencies

*North Carolina Department of Cultural Resources

*North Carolina Wildlife Resources Commission

*North Carolina Department of Environment and Natural Resources

*North Carolina Department of Agriculture and Consumer Services

North Carolina State Clearinghouse

Local Governments

Town of Kernersville

Winston-Salem Urban Area Metropolitan Planning Organization

5.2 AGENCY COMMENTS RECEIVED ON THE EA

Comments on the EA were received from a number of federal and state, permitting and resource agencies, which are summarized in Table 2. Agency review letters are included in Appendix A.

Table 2: Summary of Agency Comments Received on the EA

No.	Agency Comment	NCDOT Response
North Carolina Department of Environment and Natural Resources, Division of Water Quality - November 4, 2010		
1	This project is being planned as part of the 404/NEPA Merger Process. As a participating team member, NCDWQ will continue to work with the team.	Comment noted.
2	Reedy Fork and its unnamed tributaries are class WSIII; Nutrient Sensitive Waters (NSW) waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control (Best Management Practices (BMPs) be implemented to reduce the risk of nutrient runoff to Reedy Fork and its unnamed tributaries. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's <i>Stormwater Best Management Practices</i> .	BMPs from NCDOT's <i>Stormwater Best Management Practices Toolbox</i> will be incorporated into the design plans and implemented where practicable. The project will be designed and constructed in accordance with the regulations noted.
3	West Fork Deep River are class WSIV; 303(d) waters of the State. West Fork Deep River is on the 303(d) list for impaired use for aquatic life due to impaired biological integrity. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that the most protective sediment and erosion control BMPs be implemented in accordance with Design Standards in Sensitive Watersheds to reduce the risk of nutrient runoff to West Fork Deep River. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's <i>Stormwater Best Management Practices</i> .	BMPs from NCDOT's <i>Stormwater Best Management Practices Toolbox</i> will be incorporated into the design plans and implemented where practicable. The project will be designed and constructed in accordance with the regulations noted.
4	This project is within the Jordan Lake and Randleman Lake Basins. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B. 0267 (Jordan) and 15A NCAC 2B.0250 (Randleman). New development activities located in the protected 50-foot wide riparian areas within the basin shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B. 0267 (Jordan) and 15A NCAC 2B.0250 (Randleman). Buffer mitigation may be required for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification.	Comment noted. The project will be designed and constructed in accordance with the regulations noted. Additional coordination with NCDWQ will be completed throughout the design phase of the project.
5	The environmental document shall provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.	Comment noted. A detailed inventory of proposed impacts to wetlands and streams is provided in the EA in Section 5.1.4. Corresponding mapping is included in the EA on Figure 20. Appropriate mitigation plans will be provided prior to issuance of a 401 Water Quality Certification.

No.	Agency Comment	NCDOT Response
6	Environmental assessment alternatives should consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ Stormwater Best Management Practices, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.	BMPs from NCDOT's <i>Stormwater Best Management Practices Toolbox</i> will be incorporated into the design plans and implemented where practicable.
7	After the selection of the preferred alternative and prior to issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.	Wetland and stream impacts were avoided where practicable and roadway design criteria would allow. However, mitigation efforts will be required due to unavoidable impacts. Mitigation for the proposed impacts to streams will be arranged through the Ecosystem Enhancement Program (EEP). Mitigation planning will take into account requirements set forward by NCDWQ.
8	In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single stream. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.	See response to Comment #7.
9	Future documentation, including the 401 Water Quality Certification Application, should continue to provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping.	Comment noted.
10	NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDOT shall address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.	Comment noted. Specific avoidance and minimization efforts conducted thus far are included in the EA in Section 5.1.4.5. Further avoidance and minimization measures will continue to be addressed as final design plans are developed.
11	An analysis of cumulative and secondary impacts anticipated as a result of this project is required. The type and detail of analysis should conform to the NC Division of Water Quality Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.	An Indirect and Cumulative Effects (ICE) Analysis was prepared in January 2010 and summarized in section 5.9 of the EA.
12	NCDOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.	Final impact calculations will include all impacts including bridging, fill, excavation, and clearing. Temporary and permanent construction impacts will be included as part of the 401 Water Quality Certification Application.

No.	Agency Comment	NCDOT Response
13	Where streams must be crossed, the DWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, DOT should not install bridge bents in the creek, to the maximum extent practicable.	Comment noted.
14	Whenever possible, the DWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allow for human and wildlife passage beneath the structure, do not block fish passage and do not block navigation by canoeists and boaters. Bridge supports (bents) should not be placed in the stream when possible.	Comment noted.
15	Bridge deck drains should not discharge directly into the stream. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NCDWQ Stormwater Best Management Practices.	BMPs from NCDOT's <i>Stormwater Best Management Practices Toolbox</i> will be incorporated into the design plans and implemented where practicable.
16	Sediment and erosion control measures should not be placed in wetlands or streams.	Comment noted.
17	Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas will need to be presented in the 401 Water Quality Certification and could precipitate compensatory mitigation.	Comment noted.
18	The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater should not be permitted to discharge directly into streams or surface waters.	Comment noted.
19	Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual Permit (IP) application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWQ. Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.	Comment noted.
20	If concrete is used during construction, a dry work area should be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.	Comment noted.

No.	Agency Comment	NCDOT Response
21	If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas should be seeded or mulched to stabilize the soil and appropriate native woody species should be planted. When using temporary structures the area should be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.	BMPs will be utilized for the control of erosion and to minimize any impacts from clearing and grubbing activities.
22	Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by DWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the DWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.	Comment noted.
23	If multiple pipes or barrels are required, they should be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.	Comment noted.
24	If foundation test borings are necessary, it should be noted in the document. Geotechnical work is approved under General 401 Certification Number 3494/Nationwide Permit No. 6 for Survey Activities.	Comment noted.
25	Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.	Comment noted.
26	All work in or adjacent to stream waters should be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures should be used to prevent excavation in flowing water.	BMPs will be incorporated into the design plans and implemented where practicable.
27	While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.	Comment noted.

No.	Agency Comment	NCDOT Response
28	Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination or surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.	Comment noted.
29	Riprap should not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.	Comment noted.
30	Riparian vegetation (native trees and shrubs) should be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.	Comment noted.
North Carolina Wildlife Resources Commission, November 30, 2010		
1	The extension portion of the project (U-4734) will cross Reedy Fork and a large, high quality wetland complex, which was previously fish hatchery ponds, within Triad Park. Reedy Fork and its unnamed tributaries in the project study area are classified WS III, NSW (Nutrient Sensitive Waters) and receive protection under the Jordan Lake Water Supply Watershed Buffer Rules. The remaining jurisdictional streams, West Fork Deep River and its unnamed tributaries, are on the 2010 Draft 303(d) list of impaired waters and fall under the Randleman Lake Water Supply Watershed Buffer Rules. Highly protective sediment and erosion control measures will be needed to minimize direct impacts to these waters.	BMPs will be utilized for the control of erosion and to minimize any impacts from clearing and grubbing activities. The project will be designed and constructed in accordance with the regulations noted. Additional coordination with NCDWQ will be completed throughout the design phase of the project.
2	An on-site Merger Team meeting, held September 16, 2009, resulted in recommendations for a minimum hydraulically-required bridge to cross Reedy Fork and the wetland complex and potential on-site mitigation options, such as kudzu removal and berm alterations to enhance wetland connectivity. NCDOT has coordinated with Triad Park regarding the location of the roadway through the park and providing for the planned greenway crossing, which is proposed as a concrete path under the Reedy Fork bridge, above the 10-year storm elevation. We also encourage any mitigating actions that would protect the surrounding wooded areas or add them to the park's property in this highly urbanized and rapidly developing region.	Further coordination with regulatory and resource agencies will continue throughout the Merger process, and avoidance and minimization measures will continue to be addressed as design plans are developed for the project.
3	Indirect and cumulative impacts are major concerns for this project. As the EA stated, "Industrial and residential in-filling is expected to continue in the area with or without the proposed project; however, increased development pressure and an increased growth rate will occur if the proposed project is constructed and access is improved to current and future industrial areas." Industrial and commercial uses are planned for the majority of the project area and the project is expected to open up additional developable lands. Numerous transportation improvement projects and non-residential development projects are planned or under construction in the vicinity, including the Triad Business Park and Kernersville Medical Center.	Comment noted.

No.	Agency Comment	NCDOT Response
4	<p>We strongly recommend strict growth management, stormwater management, and sediment and erosion control measures be implemented by NCDOT and local authorities to minimize negative indirect and cumulative impacts to water quality and to fish and wildlife habitats. Numerous studies have shown that when 10-15% of a watershed is converted to impervious surfaces, there is a serious decline in the health of receiving waters (Schueler 1994) and the quality of fish habitat and wetlands are negatively impacted (Booth 1991, Taylor 1993). Measures to mitigate secondary and cumulative impacts can be found in the Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality (NCWRC 2002). Information on Low Impact Development (LID) practices and measures can be found at www.lowimpactdevelopment.org, http://www.epa.gov/owow/nps/lid/lidnatl.pdf and http://www.stormwatercenter.net/.</p>	<p>Comment noted. A discussion of the likely indirect and cumulative impacts is included in Section 5.9 of the EA. Potential for adverse indirect and cumulative impacts to the natural environment, such as impacts to streams, wetlands, floodplains, threatened and endangered species, and degradation to water quality will be minimized in accordance with stringent buffer rules and watershed requirements within the region. Any indirect and direct impacts associated with this project will be avoided, minimized or mitigated according to the NEPA process and during permitting. The project will be designed and constructed in accordance with the regulations noted. Additional coordination with NCDWQ will be completed throughout the design and permitting phase of the project.</p>
Department of Environment and Natural Resources, Division of Environmental Health – October 18, 2010		
1	Drinking water mains to be constructed and operated in compliance with 18C PWS rules and coordinated with Winston-Salem Forsyth County Utilities.	Comment noted.
2	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900.	Comment noted.
3	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.	Comment noted.
4	401 Water Quality Certification [is required.]	Comment noted.
5	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.	Comment noted.
North Carolina Department of Cultural Resources, State Historic Preservation Office – October 20, 2010		
1	No comment.	

No.	Agency Comment	NCDOT Response
North Carolina Department of Agriculture and Consumer Services – November 8, 2010		
1	<p>The Environmental Assessment indicates that the proposed project will contribute to the ongoing loss of prime farm and forest land in our State. Farm and forest lands are important for both economic and environmental reasons. Appropriately managed agricultural lands can provide groundwater recharge, wastewater filtration, flood prevention, and wildlife habitat protection. Agricultural land enhances the quality of life for citizens within a community by offering scenic landscapes, open space, and a variety of outdoor recreational activities. In addition, loss of productive farmland has the potential for irreversible damage to the agricultural sector of our economy. Agricultural production incomes from locally grown products have a considerable multiplier effect. It is estimated that for every 40 acres converted from agricultural production, one agribusiness job and its associated economic activity is lost indefinitely.</p> <p>In addition to direct impacts associated with this project, it is anticipated that additional acreage loss will occur due to development that would likely take place once the proposed modifications are installed. Overall, farmland consumed fewer services relative to the taxes generated, compared to other types of development. Careful review of activities that result in loss of farm and forest land is warranted when consideration is given for the loss of environmental amenities, the loss of local tax revenue, the value of agricultural products no longer produced, and the decrease of agribusiness jobs associated with the loss of the land.</p> <p>Based on the secondary, cumulative, and direct impacts, this project will adversely impact the agricultural, environmental and economic resources in the proposed area. The total negative impact on the environment and agribusiness economy will be proportionately related to the total acres of farm and forest land taken out of production. Increased division of land units and its reduced accessibility for agricultural production will also increase the negative impact on agriculture. Due to these adverse impacts, additional consideration should be given to alternative routes and/or designs that would reduce the loss of farm and forest lands.</p>	<p>The Town of Kernersville and the Heart of the Triad has jurisdiction over land use planning within and adjacent to the study area, which is detailed in Section 2.5.4 of the EA.</p> <p>Review of the Farmland Conversion Impact Rating forms included in Appendix D of the EA shows that only 0.1% of available farmlands in each county is being impacted by the project.</p> <p>A full range of alternatives were evaluated in the EA with the preferred alternative being selected in an effort to balance impacts to the human and natural environment; however, further coordination with regulatory and resource agencies will continue throughout the Merger process, and avoidance and minimization measures will continue to be addressed as design plans are developed for the project.</p>
United States Environmental Protection Agency, November 17, 2010		
1	<p>In summary, EPA has environmental concerns for the proposed project and the preferred alternative with respect to the potential interchange design. EPA has not identified an environmentally preferred alternative at this time. EPA requests that NCDOT and FHWA consider all relevant and appropriate avoidance and minimization measures for the future Least Environmentally Damaging Practicable Alternative (LEDPA) recommended by the Merger team. EPA is requesting a copy of the Finding of No Significant Impact (FONSI) when it becomes available. Should you or your staff have any questions, please feel free to call me at 919-856-4206 or contact me by e-mail at militscher.chris@epa.gov. EPA plans to remain an active participant in the Merger process for this proposed project. Thank you for the opportunity to comment.</p>	<p>Various interchange locations and configurations were discussed in Sections 3.2.1 (page 34) and 3.2.2 (page 36) of the EA. Further coordination with regulatory and resource agencies will continue throughout the Merger process, and avoidance and minimization measures will continue to be addressed as design plans are developed for the project.</p>

5.3 PUBLIC INVOLVEMENT

5.3.1 COMBINED PUBLIC HEARING

A public involvement program was developed and maintained throughout the project pursuant to Part 1506.6 of NEPA (Public Involvement Regulations for Implementing the Procedural Provision of NEPA). Since distribution of the EA, Public Involvement efforts by NCDOT included holding a Pre-Hearing Open House workshop and a Combined Public Hearing in order to solicit public input on the project.

In accordance with 23 U.S.C. 128, NCDOT certifies that a public hearing for the subject project has been held and the social, economic, and environmental impacts, consistency with local community planning goals and objectives, and comments from individuals have been considered in the selection of the recommended alternative for the project.

The Pre-Hearing Open House Workshop and Combined Public Hearing were held on November 29, 2010 at the Kernersville Elementary School. A project newsletter was mailed in October 2010 informing the public of the Public Hearing. In addition to the newsletter, outreach efforts announcing the public involvement opportunity on the project included the NCDOT Public Hearing Notice advertisement, posting on the project website and the Town of Kernersville website, as well as the United States Army Corps of Engineers (USACE) Public Notice. Appendix A includes copies of the Public Hearing Notice, Project Newsletter, and the Project Handout information/Comment Sheet provided at the Public Hearing.

Alternative 2 was presented as the NCDOT Recommended Alternative at the Public Hearing. Seven citizens spoke at the hearing and 22 citizens provided written comments. Four of the citizens that spoke at the hearing provided written comments as well, for a total of 25 comments. A post-hearing meeting was held February 10, 2011 to discuss the comments expressed at or following the Public Hearing. A summary of the comments/concerns received on the project and NCDOT's responses are as follows:

- **Impacts to individual properties (six comments):** NCDOT will coordinate with property owners to further address impacts associated with the project as right of way plans are developed during the final design phase of the project. Efforts to further reduce and minimize impacts to individual properties will be evaluated.
- **Location of service roads (four comments):** NCDOT will continue to coordinate with property owners to address access issues as the right of way plans are developed in the final design phase of the project.
- **Use of directional cross overs with indirect left intersection treatments on the U-4734 portion of the project (three comments):** Directional crossovers with indirect lefts intersection treatments are recommended for median divided facilities with partial or limited control of access. This type of intersection treatment preserves the corridor mobility while offering safety benefits by converting the secondary roadway left-turn movements to right-turn and U-turn movements, which are safer than occurring at a full movement intersection. Additionally, because the turning movements are separated the need for signalization at intersections is also reduced.
- **Need for additional access via I-40 (one comment):** The High Point Metropolitan Planning Organization Long Range Transportation Plan shows a proposed interchange within this area.

- **Need for additional capacity and safety improvements to the NC 66/I-40 Business interchange (one comment):** Improvements to the NC 66 interchange with I-40 Business are beyond the purpose of and need for this project; however, the proposed U-2800 interchange will provide an alternative option to the NC 66 interchange and will eliminate weaving between the East Mountain Street and NC 66 westbound ramps.
- **Sidewalk request (one comment):** NCDOT will continue coordination with the Town of Kernersville during the development of the final designs regarding the construction of sidewalks as part of the proposed project.
- **Alternative preference recommendations (seven comments):** Five of the seven comments received regarding alternative preference were in favor of Alternative 5, with 2 comments in favor of Alternative 2 as the first choice, Alternative 1 as the second, and Alternative 5 as the last choice. Reasons for those supporting Alternative 5 included better quality of life, habitat preservation for farm animals and wildlife, reduced road noise, and generally less direct and indirect effects to residents.

5.3.2 POSTCARD SURVEY

In response to comments received from the Pre-Hearing Open House Workshop and the Combined Public Hearing regarding the NCDOT Recommended Alternative (Alternative 2), a postcard survey was mailed out to the public in February 2011 requesting additional input from the public to assist NCDOT in identifying the preferred alternative. Responses to the survey included:

- 5 suggestions for Alternative 1 as the preferred alternative
- 4 suggestions for Alternative 2 as the preferred alternative
- 11 suggestions for Alternative 5 as the preferred alternative

A copy of the postcard survey as well as a summary of the postcard survey results is included in Appendix B.

5.4 ADDITIONAL PROJECT COORDINATION

5.4.1 SMALL GROUP MEETINGS

NCDOT attended three small group meetings on February 4, 2011 as a result of comments received from the November 29, 2010 Combined Public Hearing. General topics discussed at the meetings were in regard to individual property impacts and service road discussions. Specific details of this nature will be further evaluated during the preparation of final designs in the next stage of the project development.

5.4.2 TRIAD PARK

As discussed in the EA, multiple meetings were held with Triad Park officials regarding minimizing impacts to Triad Park and developing the project corresponding to the Triad Park Master Plan. As documented in the EA, Triad Park officials preferred Alternative 2, with Alternative 5 as their second choice and Alternative 1 as their last choice. Coordination with Triad Park officials after the Combined Public Hearing confirmed that Alternatives 1, 2 or 5 are all acceptable with the Triad Park officials.

5.4.3 TOWN OF KERNERSVILLE

A letter from the Town of Kernersville Board of Aldermen was submitted to NCDOT on April 8, 2011 citing their recommendation for selecting Alternative 1 as the Preferred Alternative. See Appendix B for a copy of this letter.

5.4.4 NEPA/SECTION 404 MERGER PROCESS MERGER TEAM MEETING

The NEPA/Section 404 Merger Process (Merger Process) was developed under an agreement between NCDOT, FHWA, the USACE and other state and federal environmental resource and regulatory agencies. As discussed in the EA, the integrated approach is an attempt to streamline the project by holding interagency meetings at designated milestones or Concurrence Points (CP) during the planning and design process where team members and other interested parties discuss and agree upon project specifics.

Since the distribution of the EA, a NEPA/Section 404 Merger Team meeting was held on April 14, 2011, to obtain concurrence on the Least Environmentally Damaging and Practicable (LEDPA)/Preferred Alternative (CP 3) and to discuss and concur on avoidance and minimization efforts (CP 4A). Information presented at the meeting included a summary of the following information:

- Agency comments received on the EA
- Public comments received at or following the Combined Public Hearing
- Public response to Post Combined Public Hearing Postcard Survey

As a result of the meeting Alternative 2 was selected as the LEDPA/Preferred Alternative and concurrence was achieved on avoidance and minimization efforts performed thus far. Signed concurrence forms from the meeting are included in Appendix C.

6.0 SECTION 4(F) EVALUATION: DE MINIMIS IMPACTS

As documented in the EA, the Forsyth County Parks and Recreation Department and Guilford County Parks and Open Spaces, agreed by letter that the project will not adversely affect the activities, features, and attributes of Triad Park. Based on the coordination and agreement documented in the EA, FHWA anticipated a *de minimis* effect on the Triad Park, a Section 4(F) resource. This determination was however subject to comments received from the public (CFR 23 774.5(b)(2)) after the EA was circulated and before the preferred alternative was selected.

As discussed in previous sections, the EA was made available to the public and was circulated to federal, state, and local agencies for review and comment. As a result, no comments were received regarding impacts to Triad Park. Since no comments were received, the project will result with a *de minimis* effect on Triad Park.

7.0 PREFERRED ALTERNATIVE

Based on data gathered and presented in the Environmental Assessment (EA), comments received from the November 29, 2010 Public Hearing, and Concurrence Point 3 being achieved, Alternative 2 has been selected as the Preferred Alternative.

Alternative 2 begins on new location north of SR 1005 (Old US 421/East Mountain Street) heading north crossing one unnamed tributary to Reedy Fork before passing through the Triad

Park property which includes crossing Reedy Fork and the associated wetland system. The alignment would then widen a portion of existing SR 2035 (Smith Edwards Road), before going back on new location ultimately terminating at NC 150 (North Main Street), north of the existing intersection at Smith Edwards Road and NC 150 (North Main Street).

The constructed project would consist of a four-lane, raised median divided roadway with curb and gutter. The standard median width is 23 feet which may be narrowed in sections to facilitate turn lanes. The inner travel lane would be 12-feet wide, with a 14-foot wide outer lane to accommodate bicycle traffic. A 10-foot wide berm is incorporated into the typical section to accommodate future sidewalks on both sides of proposed Macy Grove Road.

8.0 PROJECT COSTS

The 2009-2015 STIP has a total of \$ 39,101,000 programmed for project U-2800 which includes \$3,000,000 for right of way acquisition and \$36,101,000 for construction. The 2012-2018 Draft STIP has \$41,252,000 programmed for project U-2800 which consists of \$8,552,000 for right of way acquisition and \$32,700,000 for construction. U-4734 is not funded for right of way acquisition or construction in either the 2009-2015 STIP or the 2012-2018 Draft STIP.

Updated cost estimates based upon preliminary designs for the preferred alternative for U-2800 and U-4734 are included in Table 3. These cost estimates are preliminary; therefore, more detailed cost information will be provided during the final design of the preferred alternative.

Table 3: Preferred Alternative Cost Estimates

Description	U-4734	U-2800	Project Total
Estimated Utility Cost	\$153,600	\$614,346	\$767,946
Estimated Right-of-way Cost	\$3,996,000	\$8,552,300	\$12,548,300
Estimated Construction Cost	\$11,400,000	\$32,700,000	\$44,100,000
Total Cost	\$15,549,600	\$41,866,646	\$57,416,246

9.0 PROJECT SCHEDULE

According to the 2009-2015 STIP, U-2800 is scheduled for right of way acquisition in Federal Fiscal Year 2011 and Federal Fiscal Year 2013 for construction. The project schedule for U-2800 as shown in the 2012-2018 Draft STIP has right of way acquisition programmed for Federal Fiscal Year 2012 and construction for Federal Fiscal Year 2014. Neither right of way acquisition nor construction for U-4734 is scheduled in the 2009-2015 STIP or the 2012-2018 Draft STIP.

Federal funds will be used to purchase right of way and to construct the project; therefore, the project schedule will follow the federal fiscal year (FFY) calendar. For example FFY 2013 starts October 1, 2012 and ends September 30, 2013 and FFY 2015 starts October 1, 2014 and ends September 30, 2015.

10.0 SUMMARY OF REVISIONS TO THE EA

Since the EA was prepared, residential relocation impacts have been updated, resulting with one change: residential relocation impacts associated with Alternative 2 has increased from 4 to 6.

11.0 COMPENSATORY MITIGATION

As documented in the EA, compensatory mitigation is meant to replace, on at least a one-to-one basis, the lost functions and values of natural streams and wetlands affected by development activities. NCDOT will investigate the potential for on-site stream and wetland mitigation opportunities. However, if on-site mitigation is not feasible, then mitigation for impacted wetlands and streams will be coordinated with the North Carolina Ecosystem Enhancement Program (NCEEP).

12.0 ONLY PRACTICABLE ALTERNATIVE WETLAND FINDING

Executive Order 11990 established a national policy to avoid, to the extent possible, adverse impacts on wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative.

NCDOT and the Merger Team for the proposed project have developed avoidance and minimization measures throughout the project. Bridging decisions discussed at the CP 2A Field Meeting resulted with a minimum hydraulically required bridge be utilized to cross Reedy Fork and the associated wetland system for all Detailed Study Alternatives, rather than a reinforced concrete box culvert or a bridge fully spanning the floodplain and natural system.

Alternative 2 will impact approximately 1.2 acres of jurisdictional wetlands as a result of the project. With the exception of not building the project, there are no feasible means of avoiding the taking. Avoidance and minimization measures have been implemented throughout the planning and preliminary design of the project and NCDOT will continue to minimize impacts on wetlands through the use of Best Management Practices during final design and construction.

It has been determined there is no practical alternative to the proposed construction in wetlands and that the proposed action includes all practical measures to minimize harm to these jurisdictional features which may result from such use.

13.0 BASIS FOR FINDING OF NO SIGNIFICANT IMPACT

13.1 SUMMARY FOR FINDINGS

Based upon a detailed study of the proposed project as documented in the EA and upon comments received from the public and federal, state, and local agencies, it is the finding of the NCDOT and FHWA that this project will not have a significant impact upon the human or natural environment. Impacts to the human and natural environment are summarized in Table 4.

Table 4: Summary of Findings

Section in EA	Significant Impact?
4.11 Utilities	No.
	Construction of the proposed project will require some degree of adjustment, relocation, or modification to existing public utilities. NCDOT will coordinate with utility providers during the development of the final designs to minimize impacts and reduce service interruptions during construction.
4.13 Work Zone, Traffic Control, and Construction Phasing	No.
	Given construction operations will be limited to the timeframe needed to construct the project, impacts are considered temporary. Best Management Practices (BMPs) procedures will be utilized to control and minimize construction impacts.
5.1.2 Biotic Resources	No.
	Off-site staging and stockpiling areas will be located to impact the least amount of natural habitat as possible. Stockpiling and staging areas will be revegetated after construction, which could provide replacement habitat for some species. Expected impacts to terrestrial communities due to project construction are expected to be minimal.
5.1.3.1 Aquatic Communities	No.
	Construction of the proposed project may cause temporary impacts to aquatic communities due to sedimentation and reduced water quality resulting from project construction. Permanent impacts are not expected due to the implementation of BMPs and other measures to avoid and minimize harm to natural systems in the project study area.
5.1.4.1 Streams, Rivers, Impoundments	No.
	Approximately 2,637 linear feet of streams will be impacted by the Preferred Alternative. If on-site mitigation is not feasible, mitigation will be provided by the North Carolina Ecosystem Enhancement Program (NCEEP). The NCEEP will be requested to provide off-site mitigation to satisfy the federal Clean Water Act compensatory mitigation requirements for this project.
5.1.4.2 Riparian Buffers	No.
	Approximately 130,467 square feet of Zone 1 stream buffers and approximately 68,090 square feet of Zone 2 stream buffers will be impacted by the Preferred Alternative. If on-site mitigation is not feasible, mitigation will be provided by the NCEEP. The NCEEP will be requested to provide off-site mitigation to satisfy the federal Clean Water Act compensatory mitigation requirements for this project.
5.1.4.3 Wetlands	No.
	Approximately 1.2 acres of wetlands will be impacted by the Preferred Alternative. If on-site mitigation is not feasible, mitigation will be provided by the NCEEP. The NCEEP will be requested to provide off-site mitigation to satisfy the federal Clean Water Act compensatory mitigation requirements for this project.

Section in EA	Significant Impact?
5.1.4.4 Summary of Anticipated Effects (to Waters of the United States)	No.
	Impacts to surface waters and wetlands due to project construction will be unavoidable. However, no adverse impacts are anticipated as a result of this project. NCDOT has minimized impacts to wetlands and streams during the preliminary design phase of the project and will investigate further minimization efforts during final design. Any run-off from the proposed project will be accommodated in accordance with the Jordan Lake Water Supply Watershed Buffer Rules, the Randleman Lake Water Supply Watershed Buffer Rules and Best Management Practices (BMPs) to minimize potential impacts to surface water quality in the study area.
5.1.4.6 Anticipated Permit Requirements	No.
	In addition to a USACE Section 404 permit and a North Carolina Division of Environment and Natural Resources (NCDENR) Division of Water Quality (DWQ) Section 401 Water Quality Certification, authorization certificates will be required according to NCDENR DWQ Randleman Lake Watershed and Jordan Lake Riparian Buffer Rules. A NCDENR Division of Forest Resources Open Burning Permit and NCDENR Division of Land Resources Erosion and Sediment Control Plan will also be required.
5.1.5.1 Federally-Protected Species	No.
	No Federally-Protected Species will be affected by the project.
5.1.5.4 Federal Species of Concern/State-Protected Species	None anticipated.
	No occurrences of Federal Species of Concern or State-Protected Species are within one mile of the project, therefore impacts to these resources are not anticipated.
5.1.6 Soils	No.
	As a result of earthwork and various other construction activities associated with the proposed project, the project will result in localized alterations of study area topography, geology, and soils within the right-of-way limits. The project is expected to have a negligible overall impact to the region's topography, geology, and loss of or creation of soils.
5.2 Cultural Resources	No.
	No archaeological sites or historic architectural resources listed on or eligible for inclusion in the National Register of Historic Places (NRHP) will be impacted by the proposed project.
5.3 Section 4(F)	No.
	Based on the coordination and agreement with Triad Park officials as documented in the EA, and given no comments were received regarding the potential impacts to Triad Park after the EA was distributed, FHWA has determined the project will have a <i>de minimis</i> effect on Triad Park, a Section 4(F) resource.
5.4 Section 6(F) Resources	No.
	A Section 6(F) evaluation was not necessary for properties within the study area.

Section in EA	Significant Impact?
5.5 Farmland	No.
	The scores for the project fall below the threshold of 160 maximum points necessary for further consideration of farmland impacts. Therefore, this project is in compliance with the Farmland Protection Policy Act of 1981 (7 CFR 568).
5.6.1 Neighborhoods/Communities	No.
	<p>In the northern portion of the project, residences located along Smith Edwards Road will be impacted by the proposed extension of Macy Grove Road, which will be improved to a four-lane facility which will change the character of this relatively quiet rural residential area. The addition of sidewalks will provide access to Triad Park, improving pedestrian mobility, which in turn will provide more opportunities for community interaction and cohesiveness.</p> <p>Little disruption to community/neighborhood stability will result in the project area around I-40 Business, which is mostly light industrial business or planned for commercial/retail, with small residential enclaves that will be preserved, but would continue to be surrounded by business/light industrial land use.</p> <p>In the southern portion, expansion of Macy Grove Road from a two to four-lane road will have less direct impact, as most residences are south of the proposed road expansion area; however, improvement to a four-lane facility is likely to change the character of this relatively quiet residential area. In addition, the increased access to I-40 Business will alter travel patterns for residents; however, the planned hospital/medical center will bring change to this area regardless of the proposed project.</p>
5.6.2 Relocation of Residences and Businesses	No.
	For the Preferred Alternative, 16 residences, 7 businesses and 2 non-profit organizations will be relocated by the project.
5.6.3 Environmental Justice	No.
	The Preferred Alternative will not result with a disproportionate adverse impact to protected populations.
5.6.4 Bicycle and Pedestrian Facilities	No.
	The Preferred Alternative will include a 14-foot wide outside travel lane to accommodate bicycle traffic and a 10-foot wide berm to accommodate future sidewalks on both sides of the proposed Macy Grove Road, which will improve access to Triad Park and the future Piedmont greenway.
5.6.5 Recreational Facilities	No.
	The Preferred Alternative will improve access to Triad Park and the future Piedmont Greenway by providing new pedestrian, bicycle, and motorist routes.

Section in EA	Significant Impact?
5.6.6 Other Public Facilities and Services	No.
	<p>The Piedmont Authority for Regional Transportation (PART) is planning a six-county regional transportation system that will include commuter and inter-city rail, as well as Bus Rapid Transit routes. The Preferred Alternatives, as a segment of the proposed Kernersville Loop Road system, would intersect with the future transit corridor, providing an opportunity for a BRT stop within the project study area.</p>
5.7 Economic Effects	No.
	<p>Construction of the Preferred Alternative is expected to support future industrial/commercial development within or adjacent to the project study area by improving efficiency of transporting goods and increased access to I-40 Business.</p> <p>Additionally, the project will provide improved access to the Piedmont Triad International Airport and planned development areas, such as the Triad Business Park and Kernersville Medical Park.</p>
5.8 Land Use	No.
	<p>The Preferred Alternative is compatible with transportation and land use planning in the region. The Preferred Alternative, in conjunction with the future widening of East Mountain Street/Old US 421 (STIP Project U-3617), could notably improve accessibility to potentially developable land in the study area.</p>
5.9 Indirect and Cumulative Effects	No.
	<p>Indirect effects in the form of change in land use as a result of the Preferred Alternative may occur in the form of increased commercial and industrial development and redevelopment. Impacts to storm water runoff and downstream water quality are not expected from this change in development patterns due to local regulations and policies. The proposed project alone will not have substantial indirect impacts.</p> <p>The Preferred Alternative alone will not have substantial cumulative impacts; however, if the other sections of the Kernersville Loop Road are constructed as presented in local and regional transportation plans, there is a possibility for increased traffic, commercial and industrial development, and associated sprawl in areas outside of the study area. When considered cumulatively with the future widening of East Mountain Street/Old US 421 (U-3617), the proposed project could notably improve accessibility to potentially developable land in the northern and middle portions of the study area, again affecting location decisions for industrial development.</p>

Section in EA	Significant Impact?
5.10 Flood Hazard Evaluation	No.
	<p>The proposed project involves the construction of a new bridge over Reedy Fork, a FEMA-regulated stream. The proposed crossing of Reedy Fork is in a designated flood hazard zone which is within a limited detailed flood study reach, having a regulated 100-year non-encroachment width regulated as a floodway. The NCDOT Hydraulics Unit will coordinate with the NC Floodplain Mapping Program (FMP), the delegated state agency for administering the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program, to determine the status of the project with regard to applicability of NCDOT's Memorandum of Agreement* with FMP for approval of a Conditional Letter of Map Revision (CLOMR) and subsequent final Letter of Map Revision (LOMR).</p>
5.11 Noise	No.
	<p>A total of 7 receptors adjacent to the Preferred Alternative will be impacted by roadway traffic noise as a result of the construction of this project. Based on the evaluation of the impacted receptors, no noise barriers were determined to be reasonable and feasible for the proposed project.</p>
5.12 Air Quality	No.
	<p>A qualitative PM 2.5 hot-spot analysis is not required for this project since it is not an air quality concern. This project meets the statutory transportation conformity requirements without a hotspot analysis.</p> <p>Based on dispersion modeling results, the planned improvements to the Macy Grove Road Improvements project are not expected to cause or contribute to a violation of the National Ambient Air Quality Standard for CO.</p> <p>With respect to the Build Alternative, Mobile Source Air Toxics (MSAT) emissions will likely be lower than present levels in the design year as a result of EPA's national programs that are projected to reduce MSAT emissions.</p>
5.13 Hazardous Materials	No.
	<p>One Underground Storage Tank (UST) facility was within the U-2800 portion of the study area, near the proposed crossing of East Mountain Street. Two unregulated dump sites were found within the U-2800 portion of the study area located near the proposed crossing of East Mountain Street. One additional site identified, also located near the proposed crossing of East Mountain Street, is the former location of a retail tire store and chemical supply business; however, there are no suspected USTs associated with this operation and no evidence of UST removal.</p> <p>All but one site are expected to present low to moderate geoenvironmental impacts to the project. The site that is expected to present moderate to high geoenvironmental impacts to the project consists of an old dump, including a tire dump, from the former retail tire store and chemical supply business disposal, as discussed above. No hazardous waste sites were identified within the project limits.</p>

Note: *see <http://www.ncdot.gov/doh/preconstruct/highway/hydro/pdf/MOAm031809.pdf> for more information on the NCDOT-FMP Memorandum of Agreement.

The project is not controversial from an environmental standpoint. No significant impacts to natural, ecological, cultural, or scenic resources are anticipated. Every effort has been made to avoid and/or minimize wetlands, streams and riparian buffers. Potential on-site mitigation opportunities may exist and will be investigated; however, it is likely that most of the mitigation requirements will be provided by the NC Ecosystem Enhancement Program (NCEEP). No significant impact on air or water quality is expected and no effects on federally listed endangered or threatened species are anticipated. The proposed project is consistent with local plans and will not disrupt any communities. In view of the above evaluation, it has been determined a Finding of No Significant Impact (FONSI) is applicable for this project. Therefore, neither an Environmental Impact Statement (EIS) nor further environmental analysis will be required.

13.2 CONTACT INFORMATION

The following persons can be contacted for additional information concerning this proposal and assessment:

Federal Highway Administration

Mr. John F. Sullivan III, P.E.
Division Administrator
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, North Carolina 27601-1418
Telephone: (919) 856-4346

North Carolina Department of Transportation

Gregory J. Thorpe, Ph.D.
Manager, Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548
Telephone: (919) 707-6001

Appendix A: Agency Comments Received on Environmental Assessment



North Carolina Department of Administration

Beverly Eaves Perdue, Governor

Moses Carey, Jr., Secretary

December 6, 2010

Mr. Gregory J. Thorpe
NC Department of Transportation
Project Development and Environmental Analysis
1548 Mail Service Center
Raleigh, NC 27699-1548

Dear Mr. Thorpe:

Re: SCH File # 11-E-4220-0107; EA; Macy Grove Road Improvement projects for TIP No. U-2800 consists of widening Macy Grove Rd to multi-lanes, extending roadway to north SR 1005 (Old US 421/East Mountain Street), converting grade separation at I-40 Business/US 421 to an interchange

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sheila Green".

Sheila Green
State Environmental Review Clearinghouse

Attachments

cc: Region I

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail state.clearinghouse@doa.nc.gov

Location Address:
116 West Jones Street
Raleigh, North Carolina



North Carolina Department of Environment and Natural Resources

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

MEMORANDUM

TO: Sheila Green
State Clearinghouse

FROM: Melba McGee ✓
Environmental Review Coordinator

RE: 11-0107 EA for the Improvements and Extension of SR 1601 in
Forsyth County

DATE: December 6, 2011

The Department of Environment and Natural Resources has reviewed the proposed information. The Department of Transportation is encouraged to consider the attached recommendations from review agencies. Addressing these comments during the review process and/or during the NEPA Merger Process will avoid delays during the permit phase.

Thank you for the opportunity to review.

Attachments



North Carolina Department of Environment and Natural Resources
Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

November 4, 2010

MEMORANDUM

To: Melba McGee, Environmental Coordinator, Office of Legislative and Intergovernmental Affairs

From: Amy Euliss, Division of Water Quality, Winston Salem Regional Office

Subject: Comments on the Environmental Assessment related to proposed improvements and extension of SR 1601 (Macy Grove Road) in Forsyth County, Federal Aid Project No. STP-0601(1) and STP-0601 (3), State Project No. WBS 34858.1.1, TIP Nos. U2800 and U4734 State Clearinghouse Project No. 11-0107.

This office has reviewed the referenced document dated September 2010. The NC Division of Water Quality (NCDWQ) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. It is our understanding that the project as presented will result in impacts to jurisdictional wetlands, streams, and other surface waters. NCDWQ offers the following comments based on review of the aforementioned document:

Project Specific Comments:

1. This project is being planned as part of the 404/NEPA Merger Process. As a participating team member, NCDWQ will continue to work with the team.
2. Reedy Fork and its unnamed tributaries are class WSIII; NSW waters of the State. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to Reedy Fork and its unnamed tributaries. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
3. West Fork Deep River are class WSIV; 303(d) waters of the State. West Fork Deep River is on the 303(d) list for impaired use for aquatic life due to impaired biological integrity. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDWQ recommends that the most protective sediment and erosion control BMPs be implemented in accordance with *Design Standards in Sensitive Watersheds* to reduce the risk of nutrient runoff to West Fork Deep River. NCDWQ requests that road design plans provide treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*.
4. This project is within the Jordan Lake and Randleman Lake Basins. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B .0267 (Jordan) and 15A NCAC 2B .0250 (Randleman). New development activities located in the protected 50-foot wide riparian areas within the basin shall be limited to "uses" identified within and constructed in accordance with 15A NCAC 2B .0267 (Jordan) and 15A NCAC 2B .0250 (Randleman). Buffer mitigation may be required for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the

North Carolina Division of Water Quality, Winston-Salem Regional Office
Location: 585 Waughtown St. Winston-Salem, North Carolina 27107
Phone: 336-771-5000 \ FAX: 336-771-4630 \ Customer Service: 1-877-623-6748
Internet: www.nowaterquality.org

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Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification. Buffer mitigation may be required for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, including use of the NC Ecosystem Enhancement Program, must be provided to NCDWQ prior to approval of the Water Quality Certification.

General Comments:

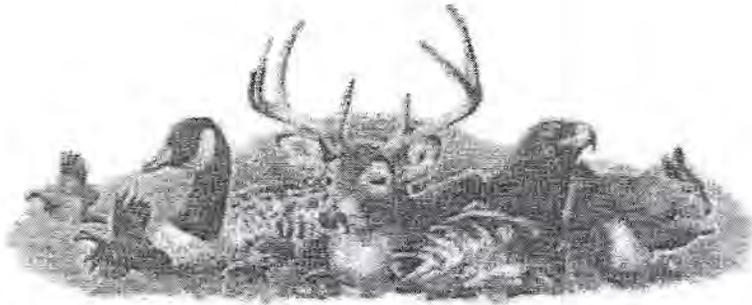
5. The environmental document shall provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.
6. Environmental assessment alternatives shall consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. These alternatives shall include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of NCDWQ's *Stormwater Best Management Practices*, such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.
7. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 1 acre to wetlands. In the event that mitigation is required, the mitigation plan should be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as wetland mitigation.
8. In accordance with the Environmental Management Commission's Rules {15A NCAC 2H.0506(h)}, mitigation will be required for impacts of greater than 150 linear feet to any single stream. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The NC Ecosystem Enhancement Program may be available for use as stream mitigation.
9. Future documentation, including the 401 Water Quality Certification Application, should continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.
10. NCDWQ is very concerned with sediment and erosion impacts that could result from this project. NCDOT shall address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.
11. An analysis of cumulative and secondary impacts anticipated as a result of this project is required. The type and detail of analysis shall conform to the NC Division of Water Quality Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.
12. NCDOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, and rip rap to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.
13. Where streams must be crossed, NCDWQ prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts shall be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, NCDOT should not install the bridge bents in the creek, to the maximum extent practicable.

14. Whenever possible, NCDWQ prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges shall allow for human and wildlife passage beneath the structure. Fish passage and navigation by canoeists and boaters shall not be blocked. Bridge supports (bents) shall not be placed in the stream when possible.
15. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of NCDWQ's *Stormwater Best Management Practices*.
16. Sediment and erosion control measures shall not be placed in wetlands or streams.
17. Borrow/waste areas shall avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas will need to be presented in the 401 Water Quality Certification and could precipitate compensatory mitigation.
18. The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater shall not be permitted to discharge directly into streams or surface waters.
19. Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual permit application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from NCDWQ. Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.
20. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
21. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas shall be seeded or mulched to stabilize the soil and appropriate native woody species shall be planted. When using temporary structures the area shall be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.
22. Placement of culverts and other structures in waters, streams, and wetlands shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWQ. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.
23. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation, floodplain benches, and/or sills may be required where appropriate. Widening the stream channel shall be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
24. If foundation test borings are necessary; it shall be noted in the document. Geotechnical work is approved under General 401 Certification Number 3687/Nationwide Permit No. 6 for Survey Activities.

25. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250. .
26. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.
27. While the use of National Wetland Inventory (NWI) maps, NC Coastal Region Evaluation of Wetland Significance (NC-CREWS) maps and soil survey maps are useful tools, their inherent inaccuracies require that qualified personnel perform onsite wetland delineations prior to permit approval.
28. Heavy equipment shall be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment should be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.
29. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures shall be properly designed, sized and installed.
30. Riparian vegetation (native trees and shrubs) shall be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

NCDWQ appreciates the opportunity to provide comments on your project. Shall you have any questions or require any additional information, please contact Amy Euliss at (336) 771-4959.

cc: John Thomas, US Army Corps of Engineers, Raleigh Field Office
Federal Highway Administration
Chris Militsher, Environmental Protection Agency (electronic copy only)
Marla Chambers, NC Wildlife Resources Commission (electronic copy only)
Wetlands/401 Transportation Permitting Unit
File Copy



☒ North Carolina Wildlife Resources Commission ☒

TO: Melba McGee, Environmental Coordinator
Office of Legislative and Intergovernmental Affairs, DENR

FROM: Marla Chambers, Western NCDOT Permit Coordinator *Marla Chambers*
Habitat Conservation Program, NCWRC

DATE: November 30, 2010

SUBJECT: Review of the Environmental Assessment for NCDOT's proposed project to improve and extend Macy Grove Road (SR 2601), including converting a grade separation at I-40 Business/US 421 to an interchange, Kernersville, Forsyth County. TIP Nos. U-2800 and U-4734. OLIA Project No. 11-0107, due 11/30/2010.

The North Carolina Department of Transportation (NCDOT) has submitted for review an Environmental Assessment (EA) for the subject project. Staff biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the information provided in the EA and are participating in the Merger process for the development of the project. These comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)), the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d), and the Clean Water Act of 1977 (33 U.S.C. 466 et seq.).

The NCDOT proposes to widen Macy Grove Road (SR 2601) to multi-lanes, convert a grade separation at I-40 Business/US 421 to an interchange, and extend Macy Grove Road to NC 150 (North Main Street) north of Kernersville. The project is a component of the Town of Kernersville Loop Road System. The extension portion of the project (U-4734) will cross Reedy Fork and a large, high quality wetland complex, which was previously fish hatchery ponds, within Triad Park. Reedy Fork and its unnamed tributaries in the project study area are classified WS III, NSW (Nutrient Sensitive Waters) and receive protection under the Jordan Lake Water Supply Watershed Buffer Rules. The remaining jurisdictional streams, West Fork Deep River and its unnamed tributaries, are on the 2010 Draft 303(d) list of impaired waters and fall under the Randleman Lake Water Supply Watershed Buffer Rules. Highly protective sediment and erosion control measures will be needed to minimize direct impacts to these waters.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 707-0220 • **Fax:** (919) 707-0028

An on-site Merger Team meeting, held September 16, 2009, resulted in recommendations for a minimum hydraulically-required bridge to cross Reedy Fork and the wetland complex and potential on-site mitigation options, such as kudzu removal and berm alterations to enhance wetland connectivity. NCDOT has coordinated with Triad Park regarding the location of the roadway through the park and providing for the planned greenway crossing, which is proposed as a concrete path under the Reedy Fork bridge, above the 10-year storm elevation. We also encourage any mitigating actions that would protect the surrounding wooded areas or add them to the park's property in this highly urbanized and rapidly developing region.

Indirect and cumulative impacts are major concerns for this project. As the EA stated, "Industrial and residential in-filling is expected to continue in the area with or without the proposed project; however, increased development pressure and an increased growth rate will occur if the proposed project is constructed and access is improved to current and future industrial areas." Industrial and commercial uses are planned for the majority of the project area and the project is expected to open up additional developable lands. Numerous transportation improvement projects and non-residential development projects are planned or under construction in the vicinity, including the Triad Business Park and Kernersville Medical Center.

We strongly recommend strict growth management, stormwater management, and sediment and erosion control measures be implemented by NCDOT and local authorities to minimize negative indirect and cumulative impacts to water quality and to fish and wildlife habitats. Numerous studies have shown that when 10–15% of a watershed is converted to impervious surfaces, there is a serious decline in the health of receiving waters (Schueler 1994) and the quality of fish habitat and wetlands are negatively impacted (Booth 1991, Taylor 1993). Measures to mitigate secondary and cumulative impacts can be found in the Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality (NCWRC 2002). Information on Low Impact Development (LID) practices and measures can be found at www.lowimpactdevelopment.org, <http://www.epa.gov/owow/nps/lid/lidnatl.pdf> and <http://www.stormwatercenter.net/>.

Thank you for the opportunity to review and comment on this project. If you have any questions regarding these comments, please contact me at (704) 485-8291.

cc: Polly Lespinasse, NCDWQ
Marella Buncick, USFWS
Christopher Militscher, USEPA

Literature Cited:

- Booth, D. 1991. Urbanization and the natural drainage system-impacts, solutions, and prognoses. *Northwest Environmental Journal*. 7(1):93-118.
- NCWRC (North Carolina Wildlife Resources Commission). 2002. Guidance Memorandum to Address and Mitigate Secondary and Cumulative Impacts to Aquatic and Terrestrial Wildlife Resources and Water Quality. NCWRC, Raleigh. Available:

http://www.ncwildlife.org/Wildlife_Species_Con/documents/pg7c3_impacts.pdf
(February 2010).

Schueler, Tom. 1994. The Importance of Imperviousness. Watershed Protection Techniques. 1:3 (pp100-111).

Taylor, B.L. 1993. The influences of wetland and watershed morphological characteristics and relationships to wetland vegetation communities. Masters thesis. Dept. of Civil Engineering. University of Washington. Seattle, WA.

DEPARTMENT OF ENVIRONMENT AND
NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH

RECEIVED
OCT 26 2010

Project Number 11-0107
County Forsyth

Inter-Agency Project Review Response

Project Name NC-DOT Type of Project EA - Macy Grove Rd Improvements Project, STIP Projects U-2800 & U-4734

Comments provided by:

- Regional Program Person
- Regional Supervisor for Public Water Supply Section
- Central Office program person

Name Lisa Edwards-Winston-Salem RO Date 10/18/2010

Telephone number: 336-771-5000

Program within Division of Environmental Health:

- Public Water Supply
- Other, Name of Program: _____

Response (check all applicable):

- No objection to project as proposed
- No comment
- Insufficient information to complete review
- Comments attached
- See comments below

Drinking water ~~is~~ mains to be constructed and operated in compliance with 18C PWS rules and coordinated with Winston-Salem Forsyth County Utilities.

Return to:
Public Water Supply Section
Environmental Review Coordinator for the
Division of Environmental Health

RECEIVED
OCT 26 2010

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

After review of this project it has been determined that the ENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into sta. surface waters.	Application 180 days before begin activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
<input type="checkbox"/>	Permit to construct & operate Transportation Facility as per 15 A NCAC (2D.0800, 2Q.0601)	Application must be submitted at least 90 days prior to construction or modification of the source.	90 days
<input checked="" type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
<input type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950.		
<input type="checkbox"/>	Complex Source Permit required under 15 A NCAC 2D.0800		
<input type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) At least 30 days before beginning activity. A fee of \$65 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input checked="" type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		(30 days)
<input type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with ENR Bond amount varies with type mine and number of acres of affected land. Any acre mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/>	North Carolina Burning permit	On-site inspection by N.C. Division Forest Resources if permit exceeds 4 days	1 day (N/A)
<input type="checkbox"/>	Special Ground Clearance Burning Permit - 22 counties in coastal N.C. with organic soils	On-site inspection by N.C. Division Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to prepare plans, inspect construction, certify construction is according to ENR approved plans. May also require permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage of the total project cost will be required upon completion.	30 days (60 days)

PERMITS		SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (statutory time limit)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with ENR, running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to ENR rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with ENR at least 10 days prior to issue of permit Application by letter. No standard application form.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15-20 days N/A
<input checked="" type="checkbox"/>	401 Water Quality Certification	N/A	60 days (130 days)
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 fee must accompany application	55 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$50.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify N.C. Geodetic Survey, Box 27687 Raleigh, NC 27611		
<input type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A, Subchapter 2C.0100.		
<input checked="" type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
<input type="checkbox"/>	Tar Pamlico or Neuse Riparian Buffer Rules required.		
* Other comments (attach additional pages as necessary, being certain to cite comment authority)			
<p>① <i>[Signature]</i> 10/22/10 DWQ</p> <p>② Margaret Love, DAQ 10/22/2010</p> <p>③ Cindy Renault DWM-UST 10/22/2010</p> <p>④ Sheri V. Knight, DWQ-APS 10/25/2010</p> <p>⑤ <i>[Signature]</i> LP, 10/27/2010</p>			

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

Asheville Regional Office
2090 US Highway 70
Swannanoa, NC 28778
(828) 296-4500

Mooresville Regional Office
610 East Center Avenue, Suite 301
Mooresville, NC 28115
(704) 663-1699

Wilmington Regional Office
127 Cardinal Drive Extension
Wilmington, NC 28405
(910) 796-7215

Fayetteville Regional Office
225 North Green Street, Suite 714
Fayetteville, NC 28301-5043
(910) 433-3300

Raleigh Regional Office
3800 Barrett Drive, Suite 101
Raleigh, NC 27609
(919) 791-4200

Winston-Salem Regional Office
585 Waughtown Street
Winston-Salem, NC 27107
(336) 771-5000

Washington Regional Office
943 Washington Square Mall
Washington, NC 27889
(252) 946-6481

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: FORSYTH

F02: HIGHWAYS AND ROADS

STATE NUMBER: 11-E-4220-0107
DATE RECEIVED: 10/12/2010
AGENCY RESPONSE: 11/08/2010
REVIEW CLOSED: 11/12/2010

MS RENEE GLEDHILL-EARLEY
CLEARINGHOUSE COORDINATOR
DEPT OF CULTURAL RESOURCES
STATE HISTORIC PRESERVATION OFFICE
MSC 4617 - ARCHIVES BUILDING
RALEIGH NC



ER 08-2885 - U-2800
Previous y Centro

REVIEW DISTRIBUTION

CC&PS - DIV OF EMERGENCY MANAGEMENT
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CULTURAL RESOURCES
DEPT OF TRANSPORTATION
NORTHWEST PIEDMONT COG



ER 08-2890 - U-4734
S - 10/20/10

PROJECT INFORMATION

APPLICANT: NC Department of Transportation
TYPE: National Environmental Policy Act
Environmental Assessment

Due 10/20/10

DESC: Macy Grove Road Improvement projects for TIP No. U-2800 consists of widening Macy Grove Rd to multi-lanes, extending roadway to north SR 1005 (Old US 421/East Mountain Street), converting grade separation at I-40 Business/US 421 to an interchange - TIP No. U-4734 includes extending Macy Grove Rd on new location from north of Old US 421/East Mountain Street to NC 150

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.

If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY:

Renee Gledhill-Earley

DATE:

10.20.10

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

COUNTY: FORSYTH

F02: HIGHWAYS AND ROADS

STATE NUMBER: 11-E-4220-0107

DATE RECEIVED: 10/12/2010

AGENCY RESPONSE: 11/08/2010

REVIEW CLOSED: 11/12/2010

MS HOLLY GILROY
CLEARINGHOUSE COORDINATOR
DEPT OF AGRICULTURE
1001 MSC - AGRICULTURE BLDG
RALEIGH NC

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DEPT OF TRANSPORTATION
NORTHWEST PIEDMONT COG



PROJECT INFORMATION

APPLICANT: NC Department of Transportation
TYPE: National Environmental Policy Act
Environmental Assessment

DESC: Macy Grove Road Improvement projects for TIP No. U-2800 consists of widening Macy Grove Rd to multi-lanes, extending roadway to north SR 1005 (Old US 421/East Mountain Street), converting grade separation at I-40 Business/US 421 to an interchange - TIP No. U-4734 includes extending Macy Grove Rd on new location from north of Old US 421/East Mountain Stree to NC 150

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If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED: NO COMMENT COMMENTS ATTACHED

SIGNED BY: *Juan DeCote*

DATE: 11/8/10



Steven W. Troxler
Commissioner

North Carolina Department of Agriculture
and Consumer Services
Agricultural Services

Vernon Cox
Environmental Programs
Specialist

Ms. Valerie McMillan
State Clearinghouse
N.C. Department of Administration
1301 Mail Service Center
Raleigh, North Carolina 27699-1301



November 8, 2010

State #: 11-E-4220-0107

RE: Macy Grove Road Improvements Projects (TIP # U-2800 & U-4734)

Dear Ms McMillan:

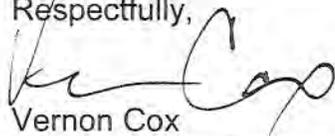
Thank you for the opportunity to comment on the proposed Macy Grove Road Improvements Project (STIP Projects U-2800 and U-4734) near Kernersville, NC. The Environmental Assessment indicates that the proposed project will contribute to the ongoing loss of prime farm and forest land in our State. Farm and forest lands are important for both economic and environmental reasons. Appropriately managed agricultural lands can provide groundwater recharge, wastewater filtration, flood prevention, and wildlife habitat protection. Agricultural land enhances the quality of life for citizens within a community by offering scenic landscapes, open space, and a variety of outdoor recreational activities. In addition, loss of productive farmland has the potential for irreversible damage to the agricultural sector of our economy. Agricultural production incomes from locally grown products have a considerable multiplier effect. It is estimated that for every 40 acres converted from agricultural production, one agribusiness job and its associated economic activity is lost indefinitely.

In addition to direct impacts associated with this project, it is anticipated that additional acreage loss will occur due to development that would likely take place once the proposed modifications are installed. Overall, farmland consumes fewer services relative to the taxes generated, compared to other types of development. Careful review of activities that result in loss of farm and forest land is warranted when consideration is given for the loss of environmental amenities, the loss of local tax revenue, the value of agricultural products no longer produced, and the decrease of agribusiness jobs associated with the loss of the land.

Based on the secondary, cumulative, and direct impacts, this project will adversely impact the agricultural, environmental and economic resources in the proposed area. The total negative impact on the environment and agribusiness economy will

be proportionately related to the total acres of farm and forest land taken out of production. Increased division of land units and its reduced accessibility for agricultural production will also increase the negative impact on agriculture. Due to these adverse impacts, additional consideration should be given to alternative routes and/or designs that would reduce the loss of farm and forest lands.

Respectfully,

A handwritten signature in black ink, appearing to read 'Vernon Cox', written over the printed name.

Vernon Cox
Environmental Programs Specialist

**U.S. EPA REGION 4 RALEIGH OFFICE
TERRY SANFORD FEDERAL COURTHOUSE
310 NEW BERN AVENUE
RALEIGH, NORTH CAROLINA 27601**

Date: November 17, 2010

Dr. Gregory J. Thorpe, Ph.D.
Manager, Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

SUBJECT: EPA Review Comments of the Federal Environmental Assessment (EA)
for Kernersville, Macy Grove Road (SR 2601) Extension, Forsyth County,
North Carolina; TIP Nos.: U-4734/U-2800

Dear Dr. Thorpe:

The U.S. Environmental Protection Agency Region 4 (EPA) has reviewed the subject document and is commenting in accordance with Section 309 of the Clean Air Act and Section 102(2)(C) of the National Environmental Policy Act (NEPA). The North Carolina Department of Transportation (NCDOT) and Federal Highway Administration (FHWA) propose widen and extend Macy Grove Road (SR 2601) in the Town of Kernersville and to provide an interchange with Interstate 40 Business where there is currently a grade separation. The length of both combined projects is approximately 2.5 miles.

The proposed project is included in the NEPA/Section 404 Merger process due to the anticipation of jurisdictional impacts to wetlands and streams. The interchange portion of the proposed project (U-2800) only details that one alternative was fully studied in the Environmental Assessment (EA). The proposed project has substantial impacts to both the human and natural environment considering the scope of the project. NCDOT and FHWA have identified a preferred alternative for the U-4734 portion of the project (i.e., Alternative 2).

The preferred alternative will impact 11 streams totaling 2,637 linear feet of jurisdictional streams, 1.2 acres of jurisdictional wetlands, 4.5 acres of protected riparian buffer, 96.1 acres of prime farmlands, 84.0 acres of terrestrial forests, 6.5 acres of the Triad Park, 14 residential relocations, 7 business relocations, 1 greenway crossing, 7 noise receptors, and 4 hazardous material sites.

In summary, EPA has environmental concerns for the proposed project and the preferred alternative with respect to the potential interchange design. EPA has not identified an environmentally preferred alternative at this time. EPA requests that

NCDOT and FHWA consider all relevant and appropriate avoidance and minimization measures for the future Least Environmentally Damaging Practicable Alternative (LEDPA) recommended by the Merger team. EPA is requesting a copy of the Finding of No Significant Impact (FNSI) when it becomes available. Should you or your staff have any questions, please feel free to call me at 919-856-4206 or contact me by e-mail at militscher.chris@epa.gov. EPA plans to remain an active participant in the Merger process for this proposed project. Thank you for the opportunity to comment.

Sincerely,

Christopher A. Militscher, REM, CHMM
Merger Team Representative

For: Heinz J. Mueller, Chief
EPA Region 4 NEPA Program Office

cc: J. Thomas, Jr., USACE
C. Coleman, FHWA
A. Euliss, NCDWQ

Appendix B: Combined Public Hearing

Appendix B-1: Public Hearing Notice

NOTICE OF A COMBINED PUBLIC HEARING FOR THE
PROPOSED MACY GROVE ROAD (STATE ROAD 2601) IMPROVEMENTS FROM
INDUSTRIAL PARK DRIVE (S.R. 4319) TO N.C. 150 (NORTH MAIN STREET)

TIP Project Nos. U-2800 & U-4734

Forsyth and Guilford Counties

The North Carolina Department of Transportation (NCDOT) will hold a pre-hearing open house and combined public hearing on Monday, November 29, at Kernersville Elementary School, located at 512 W. Mountain Street, Kernersville.

NCDOT representatives will be available at the pre-hearing open house in the school cafeteria between 4:30 - 6:30 p.m. to answer questions and receive comments regarding the proposed project. The opportunity to submit written comments or questions will also be provided. Interested citizens may attend at any time during the above hours.

A formal presentation will begin at 7 p.m. in the auditorium. The presentation will consist of an explanation of the proposed location, design, the state-federal relationship, and right-of-way and relocation requirements and procedures. Citizens will have the opportunity to comment or ask questions. The presentation and comments will be recorded and a transcript will be prepared.

Under State Transportation Improvement Program project No. U-2800, NCDOT proposes to widen Macy Grove Road to multi-lanes, extending the roadway on a new location from Old Greensboro Road (S.R. 2042) to north of Old U.S. 421/East Mountain Street (S.R. 1005), and converting a grade separation at I-40 Business/U.S. 421 to an interchange. Grade separations are also proposed on a new location crossing the Norfolk Southern Railroad and Old U.S. 421/East Mountain Street. The term grade separation means using a bridge to separate intersecting roads and/or railroads.

Under TIP Project No. U-4734, NCDOT proposes to extend Macy Grove Road on new location from north of Old U.S. 421/East Mountain Street to N.C. 150 (North Main Street).

The primary purpose of the project is to provide a roadway link between I-40 Business/U.S. 421 and N.C. 150 north of Kernersville. In addition, other potential benefits include reducing congestion in downtown Kernersville and at the existing N.C. 66/N.C. 150 interchange with I-40 Business/U.S. 421, as well as provide a segment of the future Kernersville Loop Road.

Maps displaying the location and design of the project and a copy of the Environmental Assessment (EA) are available for public review at the NCDOT District Engineer's Office located at 375 Silas Creek Parkway, Winston-Salem; Winston-Salem City Hall South – Suite 307 located at 100 East First Street, and the Kernersville Planning Department, 134 E. Mountain Street. The EA and maps are also available online at: <http://www.ncdot.gov/projects/macygroverd/>

Copies of the document are also available for review at the following libraries:

- Kernersville Branch Library, 130 E. Mountain St, Kernersville
- Forsyth County Central Library, 660 W. Fifth St., Winston-Salem
- Greensboro Public Library, 219 N. Church Street, Greensboro

Anyone desiring additional information may contact Jamille Robbins, NCDOT-Human Environment Unit at 1598 Mail Service Center, Raleigh, NC 27699-1598, by phone at (919) 431-6500, or via e-mail at jarobbins@ncdot.gov. Additional material may be submitted until December 30.

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who want to participate in this hearing. Anyone requiring special services should contact Robbins as early as possible so that arrangements can be made.

Appendix B-2: Newsletter

MACY GROVE ROAD IMPROVEMENTS

Kernersville, Forsyth & Guilford Counties
NCDOT Projects U-2800 and U-4734



Public Hearing

Monday, November 29th, 2010

4:30 p.m. to 6:30 p.m. Pre-Hearing Open House

7:00 Public Hearing Presentation

Kernersville Elementary School - 512 West Mountain St., Kernersville, NC

THIS ISSUE:

Project Description & Status.....Page 1

Alternatives Map.....Page 2

NCDOT Recommended Alternative.....Page 3

Information for Public Review.....Page 3

Next Steps.....Page 3

Project Schedule.....Page 3

Project Contacts..... Page 4

The North Carolina Department of Transportation (NCDOT) will hold a Pre-Hearing Open House and Public Hearing for the Macy Grove Road Improvements project. NCDOT representatives will be available at the Pre-Hearing Open House, which will be held in the school cafeteria, to answer questions relative to the proposed project. The opportunity to submit written comments and/or questions will also be provided. Interested citizens may attend at any time during the above mentioned hours. A formal presentation will be held in the school auditorium and will begin at 7:00 p.m. The presentation will consist of an explanation of the proposed improvements, location of the project alternatives, design, right of way, relocation requirements and procedures, and the state-federal relationship. The hearing will be open to those present for statements, questions and comments. The presentation and comments will be recorded and a transcript will be prepared. Public input will be considered in choosing the Preferred Alternative.

Comments on the project will be accepted through December 30th, 2010

Project Description & Status

NCDOT is conducting planning and environmental studies for the proposed improvements to and extension of SR 2601 (Macy Grove Road) from SR 4319 (Industrial Park Drive) to NC 150 (North Main Street) east of the Town of Kernersville in Forsyth County. The existing grade separation at Macy Grove Road over I-40 Business will be converted to an interchange as part of the project (see map on page 2). The proposed improvements are included in the State Transportation Improvement Program (STIP) as Projects U-2800 and U-4734. NCDOT combined the two projects and prepared a single environmental document due to their proximity.

In compliance with the National Environmental Policy Act (NEPA), NCDOT prepared an Environmental Assessment (EA) for the proposed project. The EA is a federally required environmental document that generally describes the purpose and need for the project, identifies project alternatives, and evaluates them for potential environmental effects. The EA and detailed designs of the project alternatives will be available at local libraries, the Town of Kernersville Planning Department, and at the NCDOT Division 9 office for public review 30 days prior to the public hearing and 30 days after the hearing.

Why is the Project Needed?

Currently, there is no road that connects I-40 Business and NC 150 north of Kernersville. Motorists experience traffic congestion at intersections in downtown Kernersville and at the NC 66/NC 150 interchange at I-40 Business.

What is the Purpose of the Project?

The purpose of this project is to provide a link between I-40 Business and NC 150 north of Kernersville with the potential to reduce congestion in downtown Kernersville and at the existing NC 66/NC 150 interchange with I-40 Business.



For more information about the project, or to download the EA and/or detailed designs maps, visit the project website:

<http://www.ncdot.org/projects/macygroverd/>

If you have questions about the project call 1-800-233-6315



Pre-Hearing Open House
and Public Hearing
Location:
512 W. Mountain Street

Proposed
Interchange

Project U-4734

Project U-2800



North Carolina
Department of Transportation



Date: October 2010

Legend	
	Interstate
	US Highway
	NC Highway
	Local Road
	Build Alternative Number
	NCDOT Recommended Alternative
	Other Build Alternatives Carried Forward For Detail Study
	Future Kernersville Loop Road
	Kernersville
	County Boundary
	Triad Park

0 500 1,000
Feet

Macy Grove Road Improvements
STIP U-2800 & U-4734

Proposed Build Alternatives

NCDOT Recommended Alternative

Based on public input from previous public meetings and environmental impacts, NCDOT dropped Alternatives 3 and 4 from further study. Alternatives 1, 2, and 5 (as shown on page 2) were developed as Detailed Study Alternatives and impacts to the human and natural environments were evaluated in the Environmental Assessment (EA). Maps showing detailed designs of all three alternatives will be on display at the public hearing to give the public an opportunity to review and comment on these alternatives. NCDOT has recommended Alternative 2 due to the least amount of overall impacts and lower cost associated with construction; however, the preferred alternative has not yet been selected.

Project Information Available for Public Review

The Environmental Assessment (EA), including detailed design maps of the project alternatives, can be found on the project website at <http://www.ncdot.org/projects/macygroverd/>, the Town of Kernersville Planning Department, and the NCDOT Division 9 office:

Town of Kernersville
134 E. Mountain Street
Kernersville, NC 27284
(336) 996-3121

NCDOT Division 9
375 Silas Creek Parkway
Winston-Salem, NC 27127
(336) 703-6500

The Environmental Assessment can also be reviewed at the following public library locations:

Kernersville Branch Library
130 East Mountain Street
Kernersville NC 27284
(336) 703-2931

Forsyth County Central Library
660 West Fifth Street
Winston-Salem, NC 27101
(336) 703-3018

Greensboro Public Library
219 North Church Street
Greensboro, NC 27401
(336) 373-2716

Next Steps in the Process...

The next step in the planning process will be to summarize comments received at the public hearing and choose the Preferred Alternative. A Finding of No Significant Impact (FONSI) will then be prepared which will address comments received at the public hearing and will identify the Preferred Alternative. Your comments and recommendations will be on public record and will be considered in the choosing the Preferred Alternative and to assist in the final design of the project.

We Appreciate Your Participation!

Project Schedule

Public Hearing	November 29, 2010
Preferred Alternative Selection	Winter 2010/2011
Finding of No Significant Impact (FONSI) Document Complete	Summer 2011
Right-of-Way Acquisition Begins — U-2800	2013
Construction — U-2800	2015
Right-of-Way Acquisition and Construction —U-4734	Unfunded



NCDOT wants your input!

Please attend the Pre-Hearing Open House and Public Hearing and provide your comments on the project. Input from the public is a key component in the development of transportation projects throughout the state of North Carolina. Comments received from the public will assist the NCDOT in choosing the Preferred Alternative. Please send comments to the Public Involvement Officer, Mr. Jamille Robbins, NCDOT-Human Environment Unit at 1598 Mail Service Center, Raleigh, NC 27699-1598, by phone at (919) 431-6500, or via e-mail at jarobbins@ncdot.gov.

Need Additional Information?

Anyone desiring additional information may contact Mr. Vince Rhea with NCDOT or Mr. Chris Werner with URS at:

NCDOT

Mr. Vince Rhea, P.E.
Project Engineer
1548 Mail Service Center
Raleigh, NC 27699-1548
919.733.7844 ext. 261
vrhea@ncdot.gov

Consultant Team—URS Corporation

Mr. Chris Werner, P.E.
Project Manager
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
800.233.6315
christopher_werner@urscorp.com

NCDOT will provide auxiliary aids and services under the Americans with Disabilities Act for disabled persons who wish to participate in this hearing. Anyone desiring special services may contact Mr. Jamille Robbins as soon as possible.



Macy Grove Road Improvements
URS Corporation
1600 Perimeter Park Drive, Suite 400
Morrisville, NC 27560
ATTN: Mr. Chris Werner

CHANGE SERVICE REQUESTED

Appendix B-3: Combined Public Hearing Handout/Comment Sheet



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

MACY GROVE ROAD (S.R. 2601) IMPROVEMENTS FROM INDUSTRIAL PARK DRIVE (S.R. 4319) TO N.C.150 (NORTH MAIN STREET)

TIP PROJECT NOS. U-2800 & U-4734

WBS Number 34858 & 36600

Forsyth and Guilford Counties

Combined Public Hearing

Informal Open House 4:30 p.m. – 6:30 p.m.

Formal Presentation 7:00 p.m.

Kernersville Elementary School
512 W. Mountain St., Kernersville

November 29, 2010

PURPOSE OF PUBLIC HEARING

Today's hearing is another important step in the North Carolina Department of Transportation's (NCDOT) procedure for making you, the public, a part of the project development process. The purpose of the hearing is to obtain public input on the location and design of the project.

Planning and environmental studies on the highway project are provided in the planning and environmental document – Environmental Assessment (EA). Copies of that report together with today's hearing maps are available for public review at the following locations:

- NCDOT District Engineer's Office located at 375 Silas Creek Parkway, Winston-Salem;
- Winston-Salem City Hall South – Suite 307 located at 100 East First Street, Winston-Salem; and
- Town of Kernersville Planning Department, 134 E. Mountain Street, Kernersville.

Copies of the document are available for review at the following libraries:

- Kernersville Branch Library, 130 E. Mountain St, Kernersville
- Forsyth County Central Library, 660 W. Fifth St., Winston-Salem
- Greensboro Public Library, 219 N. Church Street, Greensboro

The EA and maps are also available online at:

<http://www.ncdot.gov/projects/macygroverd/>

YOUR PARTICIPATION

Now that the opportunity is here, you are encouraged to participate by making your comments and/or questions a part of the public record. This may be done by having them recorded at the formal Public Hearing or by writing them on the attached comment sheet. Several representatives of the North Carolina Department of Transportation are present. They will be happy to talk with you, explain the design to you and answer your questions. You may write your comments or questions on the comment sheet and leave it with one of the representatives or mail them by December 30, 2010 to the following address:

Mr. Jamille A. Robbins
NCDOT - Human Environment Unit
1598 Mail Service Center
Raleigh, NC 27699-1598
Email: jarobbins@ncdot.gov

Everyone present is urged to participate in the proceedings. It is important, however, that **THE OPINIONS OF ALL INDIVIDUALS BE RESPECTED REGARDLESS OF HOW DIVERGENT THEY MAY BE FROM YOUR OWN.** Accordingly, debates, as such, are out of place at public hearings. Also, the public hearing is not to be used as a **POPULAR REFERENDUM** to determine the location and/or design by a majority vote of those present.

WHAT IS DONE WITH THE INPUT?



A post-hearing meeting will be conducted after the comment period has ended. NCDOT staff representing Planning, Design, Traffic Operations, Division, Right of Way, Public Involvement & Community Studies and others who play a role in the development of a project will attend this meeting. The project will also be reviewed with federal agencies such as the Federal Highway Administration (FHWA) and the US Army Corps of Engineers (USACE), as well as state agencies such as the NC Department of Environment and Natural Resources. When appropriate, local government staff will attend.

All spoken and written issues are discussed at the post-hearing meeting. Most issues are resolved at the post-hearing meeting. The NCDOT considers safety, costs, traffic service, social impacts and public comments in making decisions. Complex issues may require additional study and may be reviewed by higher management, Board of Transportation Members and/or the Secretary of Transportation.

Minutes of the post-hearing meeting will be summarized and are available to the public by noting your request on the attached comment sheet.

WHAT HAPPENS NEXT

Comments received from the hearing about the location and design of the proposed Macy Grove Road improvements will be reviewed at the post-hearing meeting and incorporated, where feasible, into the design plans for the project. The design plans will also be refined including efforts to further reduce impacts to the human and natural environment. The project team will then select the Preferred Alternative. A decision will be provided in the project's final environmental document: a Finding of No Significant Impact (FONSI) – to be prepared based on the results of the items above. The FONSI will be circulated for public and federal and state agency review. The project will then proceed to the right of way acquisition phase of the project.

STATE-FEDERAL RELATIONSHIP

The proposed project is a Federal-Aid Highway Project and thus will be constructed under the State-Federal Aid Highway Program. Financing of this project will be 80% Federal funds and 20% State funds through the National Highway System Program. The Board of Transportation is responsible for the selection and scheduling of projects on the Federal Aid System, including their location, design and maintenance cost after construction. The Federal Highway Administration is responsible for the review and approval of the previously mentioned activities to ensure that each Federal Aid Project is designed, constructed and maintained to Federal Aid Standards.

PURPOSE AND NEED OF PROJECT

The primary purpose of the proposed project is to:

- **Provide a link between I-40 Business/US 421 and NC 150 (N. Main Street) north of Kernersville**

No direct link currently exists between I-40 Business and NC 150 north of Kernersville. The *Roadway Connector System Feasibility Study* notes that traffic traveling between residential areas north of Kernersville and employment/retail centers in Forsyth and Guilford counties must use the Town of Kernersville's existing thoroughfare system. This infrastructure is configured in a radial pattern where all major routes come together in the center of town before being distributed in other directions. Radial routes north of Kernersville ultimately converge at the NC 66/NC 150 intersection in downtown Kernersville and include West Mountain Street, Bodenhamer Street, SR 2024 (Old Valley School Road), SR 2021 (Kerner Road), SR 1969 (Piney Grove Road), and NC 150. At this intersection, vehicles traveling west on I-40 Business have the option of utilizing either the South Main Street interchange or the NC 66/NC 150 interchange; however, vehicles traveling east on I-40 Business/US 421 must utilize the NC 66/NC 150 interchange because it provides a more direct connection to I-40 Business/US 421.

In addition to addressing the primary need, other potential benefits may result from the proposed project including the following:

- **Reduce congestion in downtown Kernersville and at the existing NC 66/NC 150 interchange with I-40 Business/US 421**

"Kernersville's thoroughfare [road] system is configured in a radial pattern where all major routes come together in the center of town before being distributed in other directions [i.e. spokes on a bicycle]. The existing roads have become more difficult to travel over the past few years due to increased [traffic] congestion from rapid development along major thoroughfares [roads] leading into town." Traffic volumes along NC 66, Bodenhamer Street, North Main Street, and other streets in town are high enough to result in northbound peak hour traffic backing up to the I-40 Business/US 421 interchange while waiting to get through the East Mountain Street and Bodenhamer Street intersection.

- **Provide a segment of the future Kernersville Loop Road**

The proposed project is a component of the future *Town of Kernersville Loop Road System*, which is included in the *Kernersville Thoroughfare and Street Plan* (Town of Kernersville, July 2005) and the *Winston-Salem Urban Area 2035 Long Range Transportation Plan (2035 LRTP)* (Winston-Salem Urban Area Metropolitan Planning Organization, January 2009). Construction of the Loop Road System is also the top priority for Kernersville on the Winston-Salem Urban Area Metropolitan Planning Organization's Transportation Needs list (Winston-Salem Urban Area Metropolitan Planning Organization, March 2004). The Town of Kernersville is prepared to construct the portion of the Kernersville Loop Road System between NC 150 to Piney Grove Road once the Macy Grove Road extension and proposed interchange at I-40 Business is in place.

The proposed roadway improvements are consistent with the Long Range Transportation Plans for the local municipalities within the study area. Local governments within the Winston-Salem Urban Area Metropolitan Planning Organization and the Town of Kernersville, as well as NCDOT, have adopted this plan.

PROJECT DESCRIPTION

The NCDOT, Division of Highways, proposes transportation improvements to Macy Grove Road (SR 2601) from Industrial Park Drive (SR 4319) to North Main Street (NC 150). The improvements are proposed under two independent projects. These projects are identified as State Transportation Improvement Program projects U-2800 and U-4734 (See Project Study Area figure).

- U-2800 consists of widening Macy Grove Road to multi-lanes, extending the roadway on new location from SR 2042 (Old Greensboro Road) to north of SR 1005 (Old US 421/East Mountain Street), and converting a grade separation at I-40 Business/US 421 to an interchange. Grade separations are also proposed on new location crossing the Norfolk Southern (NS) Railroad and SR 1005 (Old US 421/East Mountain Street).
- U-4734 includes extending Macy Grove Road on new location from north of Old US 421/East Mountain Street to NC 150.

The proposed typical section for Macy Grove Road consists of a four-lane, raised median divided roadway with curb and gutter. The standard median width is 23 feet and includes curb and gutter on each side. The median is narrowed in sections to facilitate turn lanes.

Lane widths for the proposed cross section consist of one inner 12-foot wide travel lane and one 14-foot wide outside travel lane. The additional width of the outside lane accommodates bicycle traffic. A 10-foot wide berm is incorporated into the typical section to accommodate future sidewalks on both sides of proposed Macy Grove Road.

U-2800

The preliminary designs for U-2800 include a new service road located south of Industrial Park Drive to replace the current Whitt Road access. Improvements to the existing Industrial Park Drive intersection with Macy Grove Road are included by providing two through lanes in each direction along Macy Grove Road, with exclusive turn lanes for movements to Industrial Park Drive. The preliminary designs for U-2800 also include a new service road to Industrial Park Drive, located west of the existing Macy Grove Road and Industrial Park Drive intersection.

Currently, Macy Grove Road is grade-separated from I-40 Business. As a part of the Macy Grove Road improvements, this grade separation will be replaced with a compressed diamond interchange that provides all movements to and from I-40 Business. According to AASHTO, the minimum recommended spacing between interchanges in urban areas is 1 mile; however, interchange spacing less than 1 mile in urban areas is allowed provided the ramps are grade separated or a collector-

distributor road is utilized. East of the proposed Macy Grove Road interchange is the I-40 Business/ I-40 interchange which provides approximately 1.8 miles of interchange spacing. Less than 1 mile west of the proposed Macy Grove Road interchange is the existing I-40 Business partial interchange to East Mountain Street which has less than 0.25 miles of interchange spacing westward to the existing I-40 Business full movement interchange to NC 66. Given the movements provided at the partial interchange to East Mountain Street will be redundant with the movements provided by the proposed Macy Grove Road interchange and the distance between the NC 66 and East Mountain Street does not meet the minimum interchange spacing as recommended by AASHTO, the partial interchange with East Mountain Street will be eliminated. In order to allow for vehicles to easily accelerate or decelerate when either entering or exiting I-40 Business between NC 66 and the proposed Macy Grove Road interchange, auxiliary lanes will be provided along I-40 Business in both directions.

An intersection currently exists with Old Greensboro Road and Macy Grove Road north of the proposed Macy Grove Road interchange with I-40 Business. Improvements to this intersection include closing direct access to Macy Grove Road from Old Greensboro Road from the west, and placing a cul-de-sac immediately west of the existing intersection to accommodate turnaround traffic. On the east side of Macy Grove Road, Old Greensboro Road will be a full movement intersection; however, it will be moved slightly to the north of its existing location to provide more spacing between the proposed I-40 Business/Macy Grove Road interchange and Old Greensboro Road. This relocation of Old Greensboro Road is required to maintain the operations of the proposed Macy Grove Road interchange with I-40 Business. The profile for existing Macy Grove Road and the relocated portion of Old Greensboro Road will be raised to accommodate the proposed Macy Grove Road grade separation with the NS Railroad.

North of the Old Greensboro Road intersection improvements, new access will be provided to East Mountain Street via quadrant service roads in the northwest and northeast quadrants. Access to these proposed quadrant service roads consists of right-in and right-out movements only, in both the northbound and southbound directions along the proposed Macy Grove Road. The turning movements will be completed where the service roads intersect with East Mountain Street via two roundabouts (Figure 2).

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Figure 2: East Mountain Street Service Roads



U-4734

All U-4734 New Location Build Alternatives begin at the U-2800 match point, vary in location near the Reedy Fork crossing, and ultimately converge, improving Smith Edwards Road before terminating at NC 150. Though Alternatives 1, 2, and 5 are in slightly different locations, proposed intersection configurations are the same for all alternatives. **Note: Alternative 2 is the NCDOT Recommended Alternative.**

The first U-4734 proposed intersection provides access to Triad Park on both sides of proposed Macy Grove Road, utilizing a left-over configuration (see figure 3). This intersection configuration requires all traffic exiting the park to turn right, with median openings provided several hundred feet downstream allowing the park traffic to perform a U-turn to complete the left-turn movements.

The second U-4734 proposed intersection connects the eastern portion of existing Smith Edwards Road to the proposed Macy Grove Road. The proposed intersection consists of a right-in right-out configuration that only allows traffic to turn right onto Smith Edwards Road and requires all Smith Edwards Road traffic to turn right onto

the proposed Macy Grove Road. All left-turn movements prohibited at this intersection will be performed at adjacent median openings or adjacent intersections.

The third U-4734 proposed intersection provides access to Huntington Run Lane and Hollow Creek Lane utilizing a left-over configuration. This intersection configuration requires all traffic exiting Huntington Run Lane and Hollow Creek Lane to turn right, with median openings provided several hundred feet downstream allowing the neighborhood traffic to perform a U-turn to complete the left-turn movements.

The fourth U-4734 proposed intersection creates a three-leg full movement intersection with NC 150 (Main Street), north of the existing NC 150 (Main Street) intersection with Smith Edwards Road. The fourth leg of the intersection will be constructed as a part of the future Kernersville Loop Road.

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PROJECT INFORMATION

Length: 2.53 miles (U-2800 & U-4734 Combined)

Typical Section: See Figure 4

Right of Way: 110-foot minimum

Access Control: ***Partial Control of Access***

Parcels with less than 2,000 feet of road frontage, will result with one access point being provided. For larger parcels with more than 2,000 feet of road frontage, an additional access may be considered. Parcels with access by means of another road may not be provided direct access.

It is proposed that partial control of access will be provided along Macy Grove Road, south of Industrial Park Drive. Partial control of access is also proposed to be provided along the Macy Grove Road extension from north of East Mountain Street to NC 150 (Main Street).

Limited Control of Access

When interchanges are utilized, access will be restricted via the interchange only, with no private driveway connections allowed.

It is proposed that limited control of access will be provided along the Macy Grove Road extension from north of Industrial Park Drive to north of East Mountain Street.

Relocatees: See Table 2: Summary of Impacts

Project Costs:

Table 1: Estimated Cost

Description	U-4734			U-2800
	Alternative 1	Alternative 2	Alternative 5	
Estimated Utility Cost	\$233,552	\$153,600	\$153,600	\$614,346
Estimated Right-of-way Cost	\$4,372,000	\$3,996,000	\$4,050,500	\$8,552,300
Estimated Construction Cost	\$10,800,000	\$11,400,000	\$11,900,000	\$32,700,000
Total Cost	\$15,405,552	\$15,549,600	\$16,104,100	\$41,866,646

Current

Schedule: The *tentative* schedule is shown below. A number of factors can affect a project schedule, so schedules are subject to change.

U-2800

Right of Way Acquisition – Federal Fiscal Year 2013
Construction – Federal Fiscal Year 2015

U-4734

Right of Way Acquisition – Unfunded
Construction – Unfunded

Table 2: Summary of Impacts for New Location Build Alternatives

Impact	U-4734			U-2800
	Alternative 1	Alternative 2	Alternative 5	
Length (miles)	1.54	1.59	1.55	0.94
Bridges over Streams (#)	1	1	1	0
Major Culvert Crossings >72" (#)	1	1	1	0
Stream Crossings (#/length in ft)	1/294	1/294	2/478	10/2,343
Wetlands (#/acres)	2/1.8	2/1.1	2/1.0	1/0.1
Ponds (#/acres)	1/0.3	1/0.2	1/0.1	0
100-Year Floodplain (acres)	1.7	1.0	1.1	0
Total Protected Riparian Buffer (ft ²)	28,983	29,831	44,976	168,726
Water Supply Critical Areas (Y/N)	N	N	N	N
Prime Farmlands (acres)	95.4 (includes U-2800)	96.1 (includes U-2800)	94.3 (includes U-2800)	(included in U-4734)
VADs and EVADs (Y/N)	N	N	N	N
Significant Natural Heritage Areas (# of crossings)	0	0	0	0
Known Critical Habitat of Federally Listed Threatened & Endangered Species (#)	0	0	0	1
Presence of Threatened and Endangered Species – Federally Listed (Y/N)	N	N	N	N
Presence of Threatened and Endangered Species – State Listed (Y/N)	N	N	N	N
Forest Impacts (acres)	35.9	36.9	37.4	47.1
Historic Properties (#)	0	0	0	0
Section 6(f) Properties (Y/N)	N	N	N	N
Archaeological Sites (#)	0	0	0	0
Parks (#/acres)	1/7.1	1/6.5	1/6.0	0
Wildlife Refuge and Gamelands (Y/N)	N	N	N	N
Federal Lands (Y/N)	N	N	N	N
Greenway Crossings (#)	1	1	1	0
Potential Section 4(f) Impacts (Y/N)	N	N	N	N
Residential Relocations (#)	6	4	5	10
Business Relocations (#)	1	1	1	6
Non-Profit Organizations (#)	0	0	0	2
Low Income/Minority Populations (Y/N)	N	N	N	N
Limited English Proficiency (LEP) Populations Present (Y/N)	Y – according to Demographic Study Area			
Schools (#)	0	0	0	0
Churches (#)	0	0	0	0
Cemeteries (#)	0	0	0	0
Railroad Crossings (#)	0	0	0	1
Major Utility Crossings (#)	1	1	1	1
Noise (# of receptors*)	5	4	6	3
Air Quality (Y/N)	N	N	N	N
Hazardous Materials Sites (#/severity)	0/none	0/none	0/none	3/low-mod 1/mod-high
Estimated Utility Cost	\$233,552	\$153,600	\$153,600	\$614,346
Estimated Right-of-way Cost	\$4,372,000	\$3,996,000	\$4,050,500	\$8,552,300
Estimated Construction Cost	\$10,800,000	\$11,400,000	\$11,900,000	\$32,700,000
Total Cost	\$15,405,552	\$15,549,600	\$16,104,100	\$41,866,646

Note: All impacts based on preliminary design slopestakes plus 25 feet except for forest impacts, which are based on preliminary design right-of-way. Additionally, prime farmlands impacts are based upon functional designs plus 40 feet.

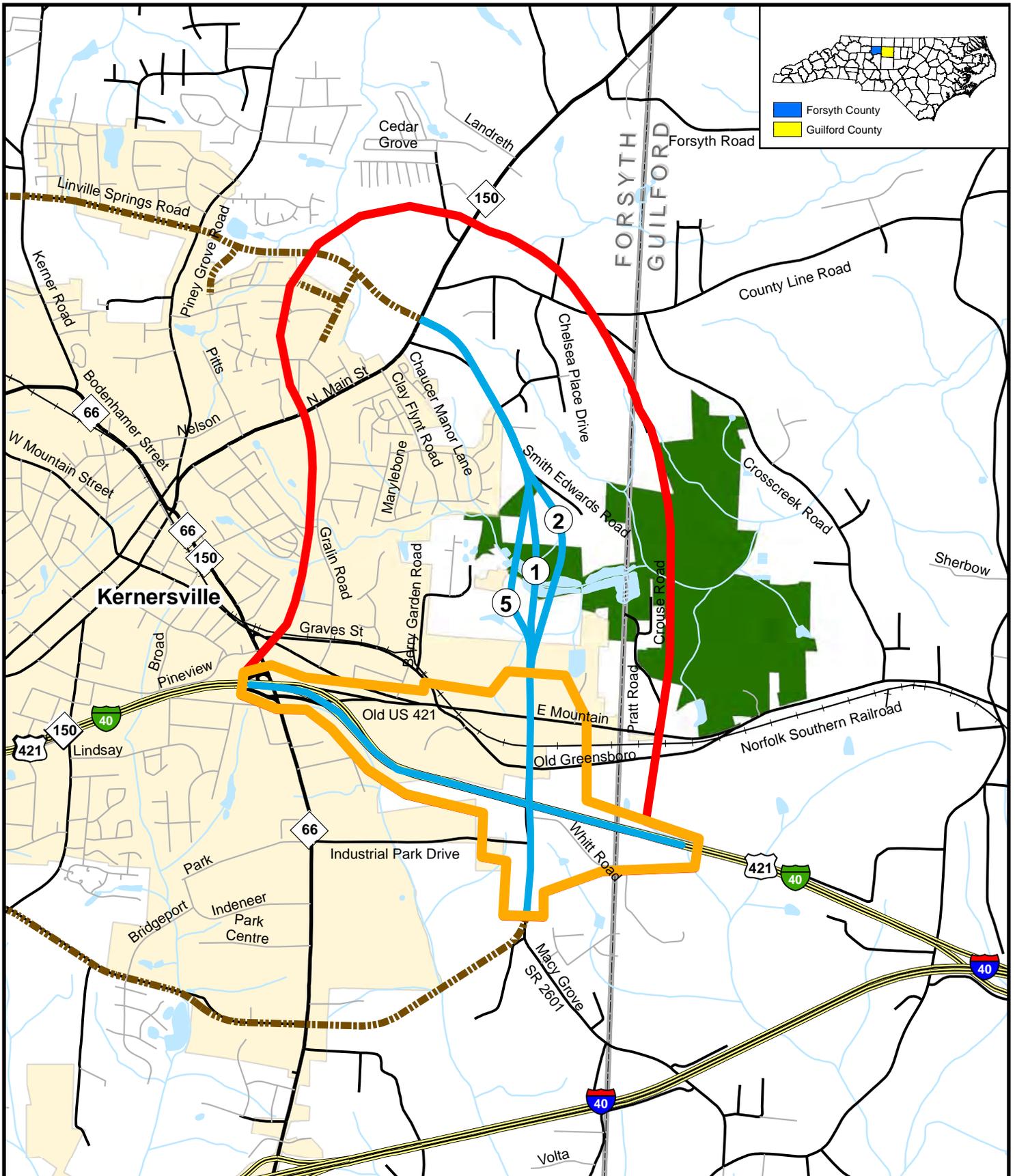
* Noise receptors may consist of houses, churches, parks, schools, libraries, or hotels.

Table 3: Other STIP Projects in the Vicinity of the Study Area

STIP No.*	Description	Schedule (Fiscal Years)
I-4924	I-73/74 Connector – Winston-Salem Beltway north of Kernersville to NC 68 west of Greensboro. Multi-lane freeway on new location.	Programmed for planning and environmental study only Future North Carolina Turnpike Authority Project
B-4510	I-40 Business/US 421 – West of US 158 in Forsyth County to west of SR 1850 in Guilford County. Pavement and bridge rehabilitation.	ROW – unfunded Construction – unfunded
R-0609	US 311 Bypass – High Point, South of SR 1920 East of Archdale to West of High Point Reservoir. Four lanes divided, new location.	Under construction
R-2611	SR 1008 (West Market Street) – SR 2007 at Colfax to NC 68. Widen to multi-lanes.	ROW – FY 09 Construction – FY 11
R-2577	US 158 – Multi-lanes north of US 421/I-40 Business in Winston-Salem to US 220. Widen to multi-lanes.	Programmed for planning and environmental study only. ROW – unfunded Construction – unfunded
R-2247	New route – Winston-Salem Northern Beltway. Four lane expressway on new location.	ROW – unfunded Construction – unfunded
R-2413	US 220-NC 68 – SR 2113 (Pleasant Ridge Road) to US 220-NC 68. Multi-lane connector on new location, NC 68 to US 220 and multi-lane US 220 to NC 68.	Planning/design – in progress: ROW – 2011 Construction - 2015
R-0952	West of US 158 in Forsyth County to west of SR 1850 in Guilford County. Pavement and Bridge Rehabilitation (8.5 miles)	Section A complete Section B unfunded
U-3617	SR 2045 (East Mountain Street/Old US 421), SR 1005, SR 1008, NC 66 in Kernersville (Forsyth County) to SR 2001 (Guilford County). Widen to multi-lanes.	ROW – unfunded Construction – unfunded
U-2579	Winston-Salem Northern Beltway, Eastern section (Future I-74), US 52 to US 311. Multi-lane freeway on new location.	Planning/design – in progress ROW – FY 08 (Section B) Construction – FY 13 (Section B)
U-4909	SR 2643 (Union Cross Road), SR 2691 (Wallburg Road) to SR 2632 (Sedge Garden Road). Widen to multi-lanes.	ROW – In progress Construction - 2012
U-2826	US 52, I-40 Bypass to proposed western loop interchange. Widen and upgrade roadway and interchanges.	Planning/Design – In progress ROW – unfunded Construction - unfunded
U-3615	SR 1003-SR 1820 (Skeet Club Road), US 311 to NC 68 (Eastchester Drive). Widen to multi-lanes.	ROW – unfunded Construction – unfunded
U-2524	Western Loop, North of I-85 to Lawndale Drive. Construct freeway on new location.	ROW – unfunded Construction – unfunded

Source: NCDOT 2009-2015 State Transportation Improvement Program, Divisions 7 and 9.

* I – Interstate Projects. B – Bridge Projects. R – Rural Projects. U – Urban Projects.



Forsyth County
 Guilford County

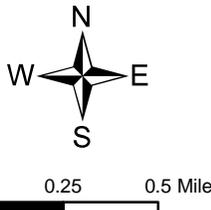
North Carolina
 Department of Transportation



Date: September 2010

Legend

- U-2800 Study Area
- U-4734 Study Area
- Build Alternatives
- Future Kernersville Loop Road
- Stream
- Open Water
- Kernersville Municipal Boundary
- Triad Park
- Interstate
- US Route
- NC Route
- Local Road
- Railroad
- County Boundary
- # Build Alternative Number



0 0.25 0.5 Miles

Macy Grove Road Improvements
 Forsyth County, NC

STIP U-2800 & U-4734

Project Study Area

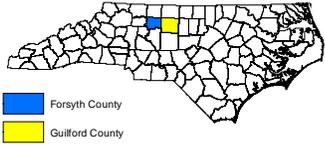


Pre-Hearing Open House
and Public Hearing
Location:
512 W. Mountain Street

Proposed
Interchange

Project U-4734

Project U-2800



North Carolina
Department of Transportation

Date: October 2010

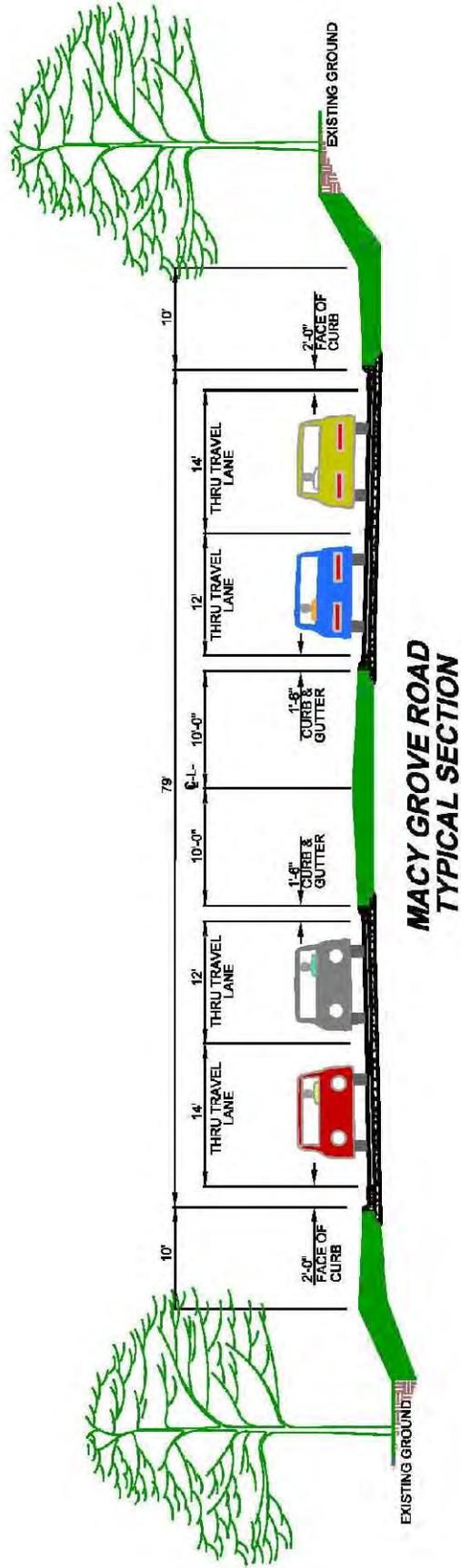
Legend

- Interstate
- US Highway
- NC Highway
- Local Road
- Build Alternative Number
- NCDOT Recommended Alternative
- Other Build Alternatives Carried Forward For Detail Study
- Future Kernersville Loop Road
- Kernersville
- County Boundary
- Triad Park

0 500 1,000
Feet

Macy Grove Road Improvements
STIP U-2800 & U-4734

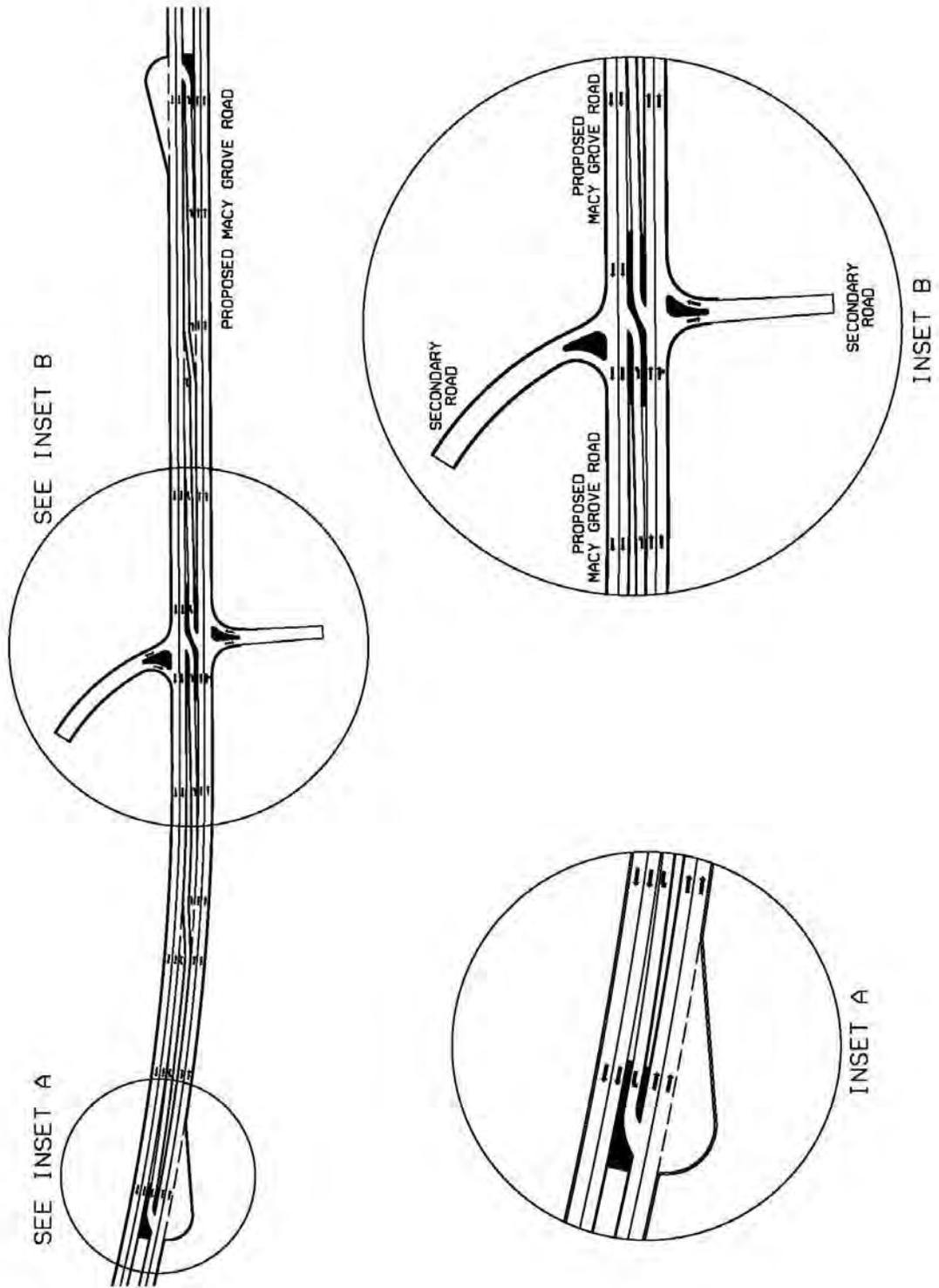
Figure 1
Proposed Build Alternatives



**MACY GROVE ROAD
TYPICAL SECTION**



Figure 3: Left-over Intersection Configuration Concept



RIGHT-OF-WAY PROCEDURES

After decisions are made regarding the final design, the proposed right-of-way limits will be staked in the ground. If you are an affected property owner, a Right-of-Way Agent will contact you and arrange a meeting. The agent will explain the plans and advise you as to how the project will affect you. The agent will inform you of your rights as a property owner. If permanent right-of-way is required, professionals who are familiar with real estate values will evaluate or appraise your property. The evaluations or appraisals will be reviewed for completeness and accuracy, and then the Right-of-Way Agent will make a written offer to you. The current market value of the property at its highest and best use when appraised will be offered as compensation. The Department of Transportation must:

1. Treat all owners and tenants equally.
2. Fully explain the owner's rights.
3. Pay just compensation in exchange for property rights.
4. Furnish relocation advisory assistance.

RELOCATION ASSISTANCE

If you are a relocatee, that is, if your residence or business is to be acquired as part of the project, additional assistance in the form of advice and compensation is available. You will also be provided with assistance on locations of comparable housing and/or commercial establishments, moving procedures, and moving aid. Moving expenses may be paid for you. Additional monetary compensation is available to help homeowners cope with mortgage increases, increased value of comparable homes, closing costs, etc. A similar program is available to assist business owners. The Right-of-Way Agent can explain this assistance in greater detail.

NOTE: PAMPHLETS SUMMARIZING RIGHT OF WAY AND RELOCATION PROCEDURES ARE AVAILABLE AT THE SIGN-IN TABLE.

Appendix B-4: Postcard Survey



Macy Grove Road Improvements
 ATTN: Mr. Chris Werner
 URS Corporation—North Carolina
 1600 Perimeter Park Drive, Suite 400
 Morrisville, NC 27560



CHANGE SERVICE REQUESTED

DETACH HERE

DETACH HERE

February 2011



MACY GROVE ROAD IMPROVEMENTS

Kernersville, Forsyth & Guilford Counties

NCDOT Projects U-2800 and U-4734

Your input is needed on the Macy Grove Road Improvements. At the public hearing held November 29, 2010, Route 2 was shown as the recommended route. Since that meeting we have received some comments that indicate another route may be favored. Therefore, we are seeking additional input from you to assist us in choosing the preferred route.

Please fill out the survey for ranking routes and provide a brief reason for your preference. Your form must be mailed to us by March 11, 2011.

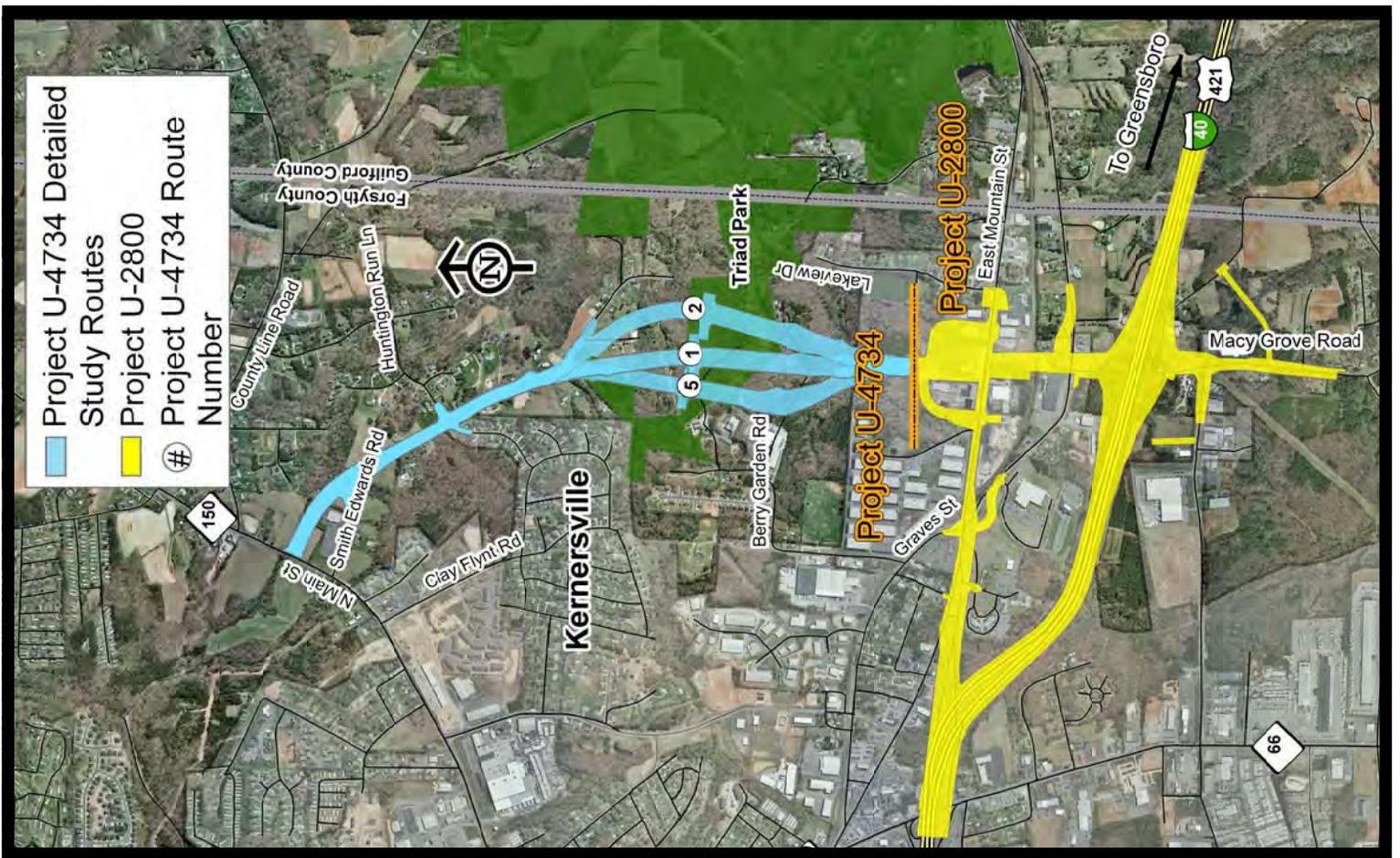
More information about the project is available at the project website at: <http://www.ncdot.org/projects/macygroverd/>.

If you have questions about the project please contact the NCDOT Project Manager, Vince Rhea, by phone at (919) 733-7844 extension 261, or by email at vrhea@ncdot.gov.

Route 1

Route 2

Route 5



DETACH HERE

DETACH HERE

Place Postage Here

North Carolina Department of Transportation
 Project Development and Environmental Analysis Branch
 ATTN: Mr. Vince Rhea
 1548 Mail Service Center
 Raleigh, NC 27699-1548

Appendix B-5: Postcard Survey Summary

U-2800/U-4734 Post Hearing Survey

Alternative	Number in favor of Alternative	Comments/Reasons
1	5	<ul style="list-style-type: none"> • Miss house, shorter distance • Lowest total cost • Appears not to impact as many homes • Appears to be most direct route, less expensive • Less right-of-way, less expensive, more direct connection to tie into East Mountain Street/US 421
2	4	<ul style="list-style-type: none"> • Overall project impacts and cost • Vote for route furthest away from house located at 806 Kensal Green Ct.
5	11	<ul style="list-style-type: none"> • Will not cut farm in ½, will not destroy income, use less development, less emotional/mental/environmental impact on community • Leave Macy Grove Rd the way it is, find a totally different road, will take my house and my aunt and uncle's whole property (in their 80's) • Best for neighbors and self • Less impact on homeowners and community, less impact on wildlife, affected home owners are seniors and will not be able to make any move • Least disruption to people living here • Less disruptive on neighborhood re. traffic flow, effect on wildlife, accessibility to public safety, and decrease in property values • Disrupts less of park • Less damage/demolition to property • Provided that snail darter is least impacted in park's wetlands and that bicycle lanes will be available
TOTAL # of surveys received	20	

Appendix B-6: Letter from Town of Kernersville

TOWN OF KERNERSVILLE

Dawn H. Morgan, Mayor
Curtis L. Swisher, Town Manager

P.O. Box 728
Kernersville, NC 27285-0728

134 East Mountain Street
Telephone (336) 996-3121
Fax (336) 996-4822

April 8, 2011

Pat Ivey, PE
Highway Division 9
375 Silas Creek Parkway
Winston Salem, 27127

Subject: U-4734 Preferred Alternative

Dear Pat,

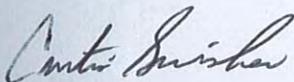
Based on NCDOT's request for a preferred alternative for the Macy Grove Road Extension (U-4734), and due to the upcoming Merger Meeting scheduled for April 14, 2011, the Town's Board of Aldermen approved a Town-preferred alignment at their April 5th meeting. The Town's Board recommended the selection of alignment #1 (the "center" alignment) as the preferred alternative.

During public hearing for the project, NCDOT presented the recommended alignment as the eastern most alignment (#2), primarily based on Triad Park's preference, which would maximize their use of the property the extension bisects. Based upon the public meetings, public comments received by NCDOT showed some residents of Smith Edwards Road want to push the alignment as far from them as possible, to the most western alignment (#5). NCDOT also received other comments from residents in the Huntington Run area wanting the eastern most alignment for the same reason.

The position of the Town's staff has been that, generally, the straightest, least costly and least impactful alternative should be chosen; so alternative #1 has been viewed as the best alignment. Taking an analytical approach, the staff's recommendation was based on the study's summary of impacts table; it shows that all three alternatives presented had similar cost and impacts, but that alternative #5 was around \$600,000 to \$700,000 more expensive. Further, while a majority of the "post-card responders" prefer alternative five, the results do not appear to establish an overwhelming consensus; slightly less than half (five responders of a total of 11) did not prefer alternative five.

Please contact Brian Ulrich, Engineering/Transportation Manager should you have further questions. He may be reached at (336) 993-7864 or bulrich@toknc.com.

Sincerely,



Curtis Swisher
Town Manager

CC: Russell I

ALDERMEN

Kevin Bugg - Dana Caudill Jones - Keith Mason - Bob Prescott - Tracey H. Shifflette



NORTH CAROLINA'S
PIEDMONT
TRIAD

Appendix C: Merger Team Concurrence Forms

Appendix C-1: CP 3 Merger Team Concurrence Form

Section 404/NEPA Merger Project Team Meeting Agreement
Concurrence Point No. 3 – Least Environmentally Damaging Practicable
Alternative (LEDPA)

Macy Grove Road Improvements
Forsyth County, North Carolina
Federal Aid Project No. STP-2601(1) and STP-2601(3)
WBS Element No. 34858.1.1 and 36600.1.2
STIP Projects U-2800 and U-4734

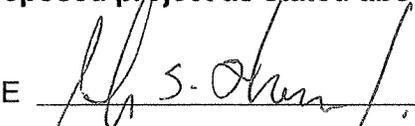
Recommended Alternative:

Alternative 2, the eastern most alternative, begins on new location north of SR 1005 (Old US 421/East Mountain Street) heading north crossing one unnamed tributary to Reedy Fork before passing through the Triad Park property which includes crossing Reedy Fork and the associated wetland system. The alignment would then widen a portion of existing SR 2035 (Smith Edwards Road), before going back on new location ultimately terminating at NC 150 (North Main Street), north of the existing intersection at Smith Edwards Road and NC 150 (North Main Street).

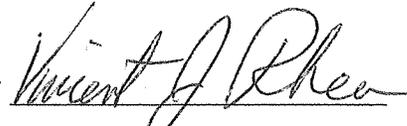
The constructed project would consist of a four-lane, raised median divided roadway with curb and gutter. The standard median width is 23 feet which may be narrowed in sections to facilitate turn lanes. The inner travel lane would be 12-feet wide, with a 14-foot wide outer lane to accommodate bicycle traffic. A 10-foot wide berm is incorporated into the typical section to accommodate future sidewalks on both sides of proposed Macy Grove Road.

The Project Team has concurred on this date of April 14, 2011 with the selection of Alternative 2 as the Least Environmentally Damaging Practicable Alternative (LEDPA) for the proposed project as stated above.

USACE



NCDOT



USEPA

 4/14/11

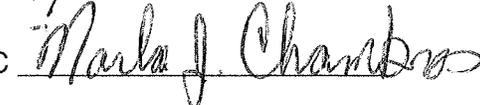
USFWS



NCDWQ



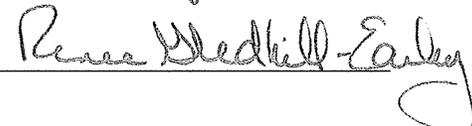
NCWRC



FHWA



SHPO



MPO

GREG ERLIETT

Appendix C-2: CP 4A Merger Team Concurrence Form

Section 404/NEPA Merger Project Team Meeting Agreement
Concurrence Point No. 4A – Avoidance & Minimization

Macy Grove Road Improvements
Forsyth County, North Carolina
Federal Aid Project No. STP-2601(1) and STP-2601(3)
WBS Element No. 34858.1.1 and 36600.1.2
STIP Projects U-2800 and U-4734

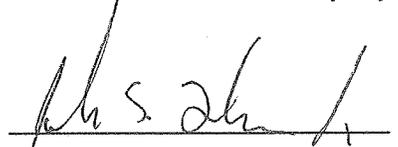
Avoidance and Minimization:

NCDOT considered avoidance and minimization strategies for all types of impacts throughout the entire project development process. Specific avoidance and minimization efforts performed thus far are summarized below.

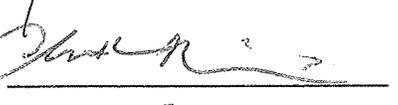
- **2:1 fill slopes are to be utilized in wetland and stream areas where possible.**
- **A minimum hydraulically required bridge (approximately 180' in length) was utilized to minimize impacts to the natural system associated with Reedy Fork.**
- **Narrow and perpendicular crossings were utilized to minimize impacts to the natural system associated with Reedy Fork.**
- **Curb and gutter typical section was implemented in order to minimize impacts to the natural system associated with Reedy Fork.**
- **During the alternative development stage:**
 - Alternatives were developed that minimized impacts to Triad Park and avoided high tension electric power transmission lines and towers.
 - Northern and southern project termini locations were evaluated to minimize stream and residential impacts.
- **During the functional design stage:**
 - The best method for the widening of Smith Edwards Road was investigated to minimize residential/business impacts (options included symmetrical, asymmetrical, and best-fit).
 - Given East Mountain Street and Old Greensboro Road are parallel roadways, it was determined the existing western connection of Old Greensboro Road to Macy Grove Road would not be replaced as a part of the proposed project as it would impact businesses and residents in the area.
- **During the preliminary design stage (for all detailed study alternatives):**
 - Through coordination with the Triad Park officials, the preliminary designs were developed to be consistent with the Triad Park's Master Plan, accommodate the future Piedmont Greenway, and to minimize impacts to the park property.
 - The mainline vertical alignments were lowered to only provide the required vertical clearance over the future Piedmont Greenway (crossing parallel to Reedy Fork) allowing for lower fill heights, reduced wetland impacts, a shorter bridge to cross Reedy Fork, and reduced impacts to Triad Park property.

- The mainline vertical alignments were also lowered at the proposed culvert crossing of the unnamed tributary to Reedy Fork, located south of the proposed crossing of Reedy Fork, which allowed for lower fill heights, reduced stream impacts, and a shorter culvert.
- Quadrant ramps were used to provide connection between East Mountain Street and the proposed extension of Macy Grove Road. These quadrant ramps were located to minimize impacts to several businesses in addition to streams S17 and S19.
- A retaining wall is proposed along the west side of Macy Grove Road to avoid impacting the Pam Trading business building.
- A retaining wall is proposed along the east side of the Macy Grove Road to avoid impacting the Corilam Fabricating business buildings.
- Revaluation of traffic data resulted with a compressed diamond interchange configuration being implemented, which allowed for a reduction in right of way, reduction in construction costs, and better pedestrian accommodations along Macy Grove Road across I-40 Business.
- The potential exists for the widening of I-40 Business to be accomplished with the proposed fill slopes tying into the existing fill slopes, thus further minimizing impacts to the existing streams and wetlands along I-40 Business. These efforts are not shown in the summary impacts table, given the methodology at this stage of the project development requires the impacts to be calculated based on the proposed slopestakes limits plus 25 feet.
- **During the Right of Way Plan development stage (for the LEDPA):**
 - The potential to minimize stream and wetland impacts along I-40 Business will be further investigated, with impacts calculated and presented to the Merger Team at CP 4B using refined designs and based on a more realistic buffer (i.e. slopestakes limits plus 5 or 10 feet).

The Project Team has concurred on this date of April 14, 2011 with the avoidance and minimization measures for the proposed project as stated above.

USACE 

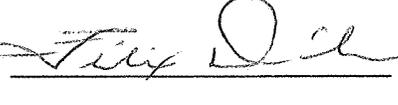
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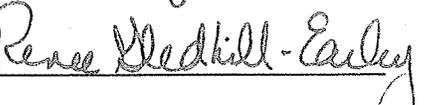
USEPA 

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