

FEASIBILITY STUDY



MACY GROVE ROAD EXTENSION East Mountain Street to North Main Street Forsyth County, North Carolina

prepared for:

**TOWN OF KERNERSVILLE,
NCDOT DIVISION 9, &
NCDOT PROGRAM DEVELOPMENT BRANCH**



prepared by:



I. GENERAL DESCRIPTION

This feasibility study describes the proposed extension of Macy Grove Road from East Mountain Street to North Main Street (NC 150) in Kernersville, North Carolina, a distance of approximately 1.5 miles. This project is an extension of the proposed extension of Macy Grove Road / Business Interstate 40 Project (NCDOT TIP Project U-2800). The project location is shown in Figure 1.

As part of this study, two alternative cross-sections were investigated as follows:

- **Alternative #1:** Construct a two-lane curb and gutter section with 110 feet of right-of-way.
- **Alternative #2:** Construct a four-lane divided curb and gutter section with 110 feet of right-of-way.

The primary reason for documenting Alternative #1 was to develop a project estimate for constructing an interim improvement should project funding be an issue in future years.

This feasibility study is the initial step in the planning and design process for this project. Although the Town of Kernersville has conducted an Environmental Evaluation and Roadway Planning Project Report for this project in the past, the purpose of this study is to develop the following information which can be used in the planning and design phase of this project:

- Need For Project
- Description of Project
- Preliminary Environmental Information
- Project Cost Estimate
- Identification of “project stopping concerns”

II. BACKGROUND

History of Community Support

The Town of Kernersville has long supported the construction of a loop road in the northeast Kernersville area. A functional roadway plan and an environmental evaluation and roadway planning assessment were prepared for the Town of Kernersville by a private consultant in 1996 and 2000. This represented a significant financial commitment to participate in pro-active planning activities for this project.

Past Planning Efforts

In March 2000, an Environmental Evaluation and Roadway Planning Project was prepared by the consulting firm DS Atlantic for the Town of Kernersville. The purpose of this study was to document the transportation benefits and provide an environmental evaluation of the Town of Kernersville's Loop Road System from Piney Grove Road (SR 2030) to East Mountain Street (SR 1003). Additionally, this study has been used by the

Town of Kernersville in providing information to the Winston-Salem Area Metropolitan Planning Organization (MPO) regarding the need for this project.

Other Planned Projects

Planning for the Macy Grove Road / Business Interstate 40 Interchange Project (NCDOT TIP Project U-2800) is underway. Design is currently scheduled for FY 04, right-of-way acquisition is scheduled for FY 06, and construction is scheduled in FY 08. This project includes the construction of the proposed interchange plus the widening and extension of Macy Grove Road from Industrial Park Drive to East Mountain Street (SR 1003).

Winston-Salem Area MPO Action

On September 19, 2002, the Winston-Salem Area MPO passed a resolution requesting the North Carolina Department of Transportation to conduct a feasibility study. A copy of this resolution is included in the appendix.

III. PURPOSE AND NEED

Based on discussions with the Town of Kernersville and the Winston-Salem Area MPO, the need for the proposed Macy Grove Road Extension is described as follows:

- The construction of the Northern Loop Road is one of the Town of Kernersville's most important needs. The construction of the proposed Macy Grove Road Extension Project will provide a valuable link to move local and regional traffic away from a congested downtown Kernersville toward the future interchange at Macy Grove Road / Business Interstate 40. This project will improve travel patterns by providing a direct connection between the residential areas north of Kernersville and employment / retail centers in Forsyth and Guilford Counties and the Piedmont Triad International Airport area, including the proposed Federal Express site.
- This project will assist in stimulating economic growth in and around the planned Macy Grove Road / Business Interstate 40 interchange. The Town of Kernersville Land Use Plan recommends an employment center with industrial, office and commercial growth in the area near this proposed interchange.
- The construction of this section of roadway will allow the proposed Macy Grove Road / Business Interstate 40 Interchange project to meet a critical element of the projects' purpose and need. A recent Technical Memorandum prepared by Wilbur Smith Associates (WSA) for NCDOT Division 9 and Town of Kernersville concludes

that this important project is compromised by not including the proposed section of the proposed Macy Grove Road Extension.

The Town of Kernersville plans extend this loop road from Piney Grove Road to N. Main Street (NC 150). The proposed Macy Grove Road Extension Project has been described as the “missing link” between Business 40 and the residential areas north of Kernersville.

IV. PROJECTED TRAFFIC VOLUMES

To provide an estimate of future year traffic volumes, WSA requested the Winston-Salem Area MPO share projected traffic volumes for this project based on the most recent traffic projections provided by the NCDOT Statewide Planning Branch. It is estimated that this section of roadway will be carrying approximately 14,400 vehicles per day in 2025, assuming the completion of the interchange project.

In developing these traffic projections, WSA met with the NCDOT Statewide Planning staff to determine if there were other traffic projections which would be preferable to those provided through the City of Winston Salem. WSA was advised that these traffic projections were the most current future traffic projections in this area.

V. DESCRIPTION OF PROJECT

It is proposed that Macy Grove Road be extended from a point approximately 0.2 miles north of East Mountain Street (northern terminus of NCDOT Project U-2800) to North Main Street (NC 150), a total distance of approximately 1.5 miles. Approximately 0.8 miles will be on new location and 0.7 miles will include improving existing Smith-Edwards Road. The project location is shown in Figure 1. Two alternative cross-sections are proposed for consideration by the North Carolina Department of Transportation as follows:

Project estimates have been prepared for both alternatives. The estimated construction costs were provided by the North Carolina Department of Transportation Design Services Unit and the estimated right-of-way costs were provided by the Town of Kernersville.

- **Alternative #1:** Construct an interim two-lane (26' wide) cross section with curb and gutter and sidewalk along one side of the roadway. The proposed right of way width for this section would be 110 feet, which would provide the ultimate right-of-way for the future four-lane divided cross-section.

A review of preliminary functional plans prepared by the Town of Kernersville indicates there are one home, a grading equipment storage facility, and a funeral home storage building within 20 feet of the proposed Macy Grove Road Extension right-of-way.

The projected cost estimate of Alternative #1 is as follows:

Construction.....	\$5,400,000
Right-of-Way.....	\$ 985,000
Project Cost Estimate.....	\$6,385,000

- **Alternative #2:** Construct the ultimate four-lane divided section with curb and gutter along both sides of the roadway. It is proposed that sidewalks be constructed along both sides of this section of roadway. The proposed right of way for this section would be 110 feet. It is recommended that the same right-of-way described in Alternative #1 be acquired under this alternative.

The projected cost of this Alternative #2 is as follows:

Construction.....	\$7,900,000
Right of Way.....	\$ 985,000
<hr/>	
Total	\$8,885,000

VI. PRELIMINARY ENVIRONMENTAL INFORMATION

In March 2000, the consulting engineering firm DS Atlantic prepared an "Environmental Evaluation and Roadway Planning Project" report for the Town of Kernersville.

An overview of the environmental findings of this report is as follows:

- The project will impact approximately 0.71 acres of wetland.
- Potential habitat exists in the proposed corridor for two federally endangered species: the Bog Turtle and Small-anthered bittercress.
- The project will impact approximately 600 linear feet and 3.2 acres of FEMA-designated 100-year floodplains.
- The project is not anticipated to have an adverse affect on air quality.

Based on a review of this study, there are no known environmental project stopping issues associated with this project.

VII. RECOMMENDATIONS

It is recommended that this project move forward with the environmental assessment / preliminary design phase using recently authorized funding to initiate planning on non-programmed NCDOT Transportation Improvement Projects. Both of the alternatives discussed appear to be feasible for consideration at this time; however it appears that alternative #2 is the preferred alternative. This recommendation will allow the construction of this section of roadway to be consistent with the planned cross-section of Macy Grove Road generally between Old Greensboro Road and East Mountain Street.

It is further recommended that bikeway and sidewalk accommodations be considered in conjunction with the next project planning phase.

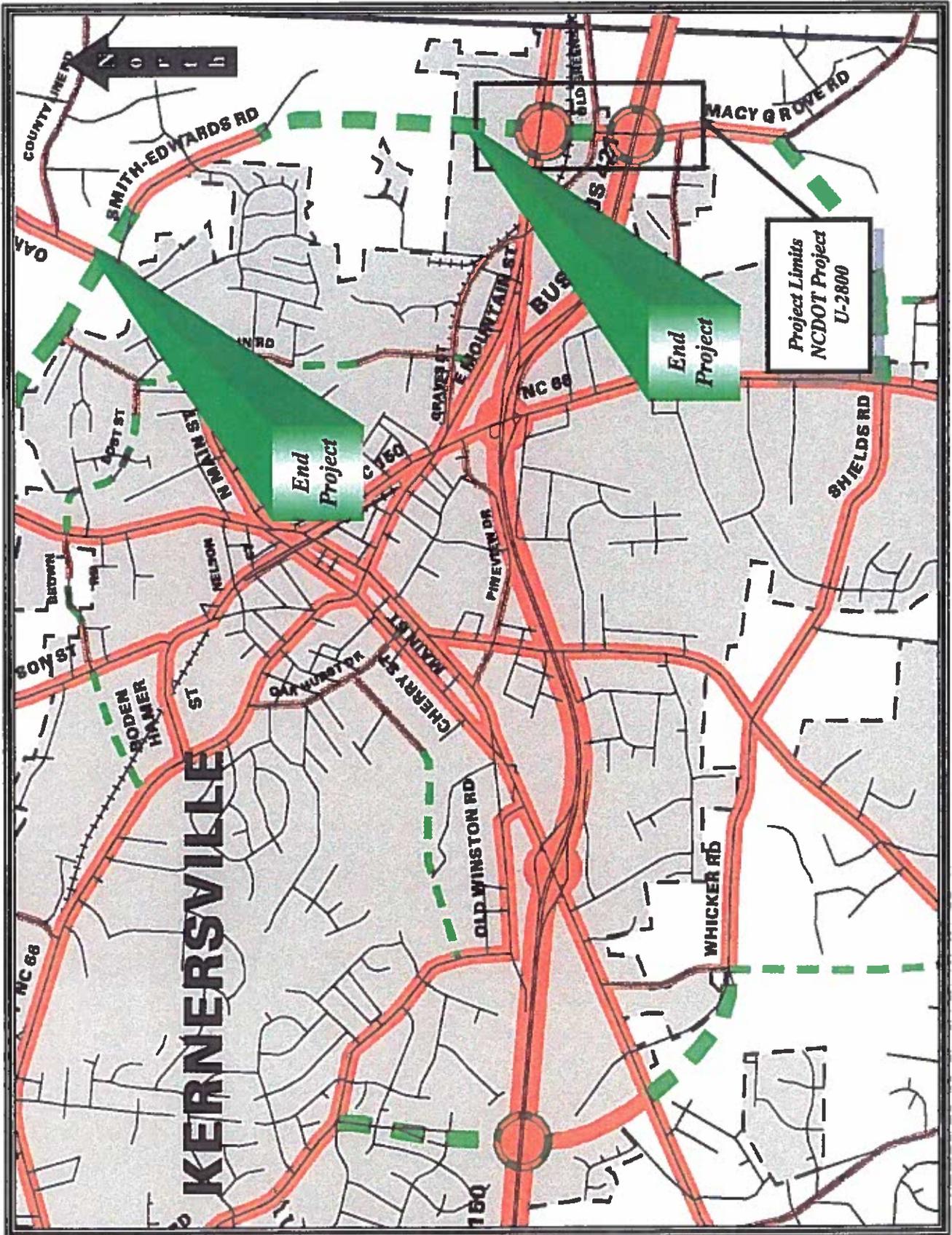
In reviewing the projected 2025 traffic volume projections, the estimated 14,400 vehicles per day is in excess of the level of traffic that can be comfortably accommodated on the proposed two lane section of roadway.

VIII. ADDITIONAL COMMENTS

It is critical that this project be accelerated to be constructed by the same time as the completion of the proposed Macy Grove Road / Business Interstate 40 interchange project (NCDOT TIP U-2800). Should this project not be accelerated, motorists traveling northbound on Macy Grove Road Extension will be forced to travel through the congested Bodenhamer Street / Main Street corridor to access the residential areas in northeast Kernersville.

The completion of the Macy Grove Road Extension project will allow the purpose and need of NCDOT TIP U-2800 to be met.

Macy Grove Road Extension
East Mountain Street to Smith Edwards Road
Feasibility Study



APPENDIX

- Copy of Resolution by Winston-Salem Area MPO
- Kernersville Northern Loop Road Description (developed by W-S Area MPO)
- Traffic Projections
- Construction Cost Estimates (developed by NCDOT Design Services and Town of Kernersville)

**RESOLUTION
TO REQUEST A FEASIBILITY STUDY
FOR THE TOWN OF KERNERSVILLE=S NORTHERN LOOP ROAD (PHASE 1A)
FROM NORTH MAIN STREET (NC 150) TO EAST MOUNTAIN STREET**

A motion was made by TAC Member _____ and seconded by TAC Member _____ for the adoption of the following resolution, and upon being put to a vote was duly adopted.

WHEREAS, the Town of Kernersville=s proposed Northern Loop Road is included in the recently updated Thoroughfare Plan Map and Technical Report, and the 2025 Multi-Modal Long Range Transportation Plan; and

WHEREAS, the Town of Kernersville=s proposed Northern Loop Road (Phases 1A and 1B) was identified as the highest priority unfunded requested project in the 2001 Transportation Needs Report; and

WHEREAS, the completion of the entire Northern Loop Road will provide significant traffic congestion and safety benefits for the Town of Kernersville and the surrounding area; and

WHEREAS, the Town of Kernersville is committed to funding and constructing Phase 1B of the proposed Northern Loop Road, from Piney Grove Road to North Main Street (NC 150) in 2004 at a cost of \$3,500,000; and

WHEREAS, the North Carolina Department of Transportation (NCDOT) is planning to build an interchange at Business Interstate 40 (US 421) and Macy Grove Road (TIP Project U-2800) in Fiscal Year 2008 at a cost of \$9,652,000; and

WHEREAS, the Town of Kernersville has been unable to expand the scope of TIP Project U-2800 to include Phase 1A of the Northern Loop Road; and

WHEREAS, the Town of Kernersville is concerned that the objectives of the entire Northern Loop Road will not be met due to having a missing link@ between North Main Street (NC 150) and East Mountain Street; and

WHEREAS, the Town of Kernersville requests a Feasibility Study be completed on Section 1A of the Northern Loop Road so the project may be funded and included in the Fiscal Year 2004-2010 State Transportation Improvement Program (STIP).

NOW, THEREFORE, BE IT RESOLVED by the Winston-Salem/Forsyth County Transportation Advisory Committee that it supports the Town of Kernersville=s request for a Feasibility Study to be completed for the town=s Northern Loop Road (Phase 1A), from North Main Street (NC 150) to East Mountain Street.

Adopted on this the 19th day of September, 2002.

Larry T. Williams, Chairman
Transportation Advisory Committee

Greg Errett, Acting Secretary
Transportation Advisory Committee

KERNERSVILLE NORTHERN LOOP ROAD

PROJECT PRIORITY:
PROJECT DESCRIPTION:

1A - Phase I - Macy Grove Road/North Main Street Connector
Construct a two (2) lane road from North Main Street (NC 150) along existing Smith-Edwards Road (SR 2036) to East Mountain Street (SR 2045) and Macy Grove Road (SR 2601) with bicycle and sidewalk accommodations. Sufficient right-of-way would be purchased to build two (2) additional lanes in the future to create a four (4) lane divided road.

DISTANCE:

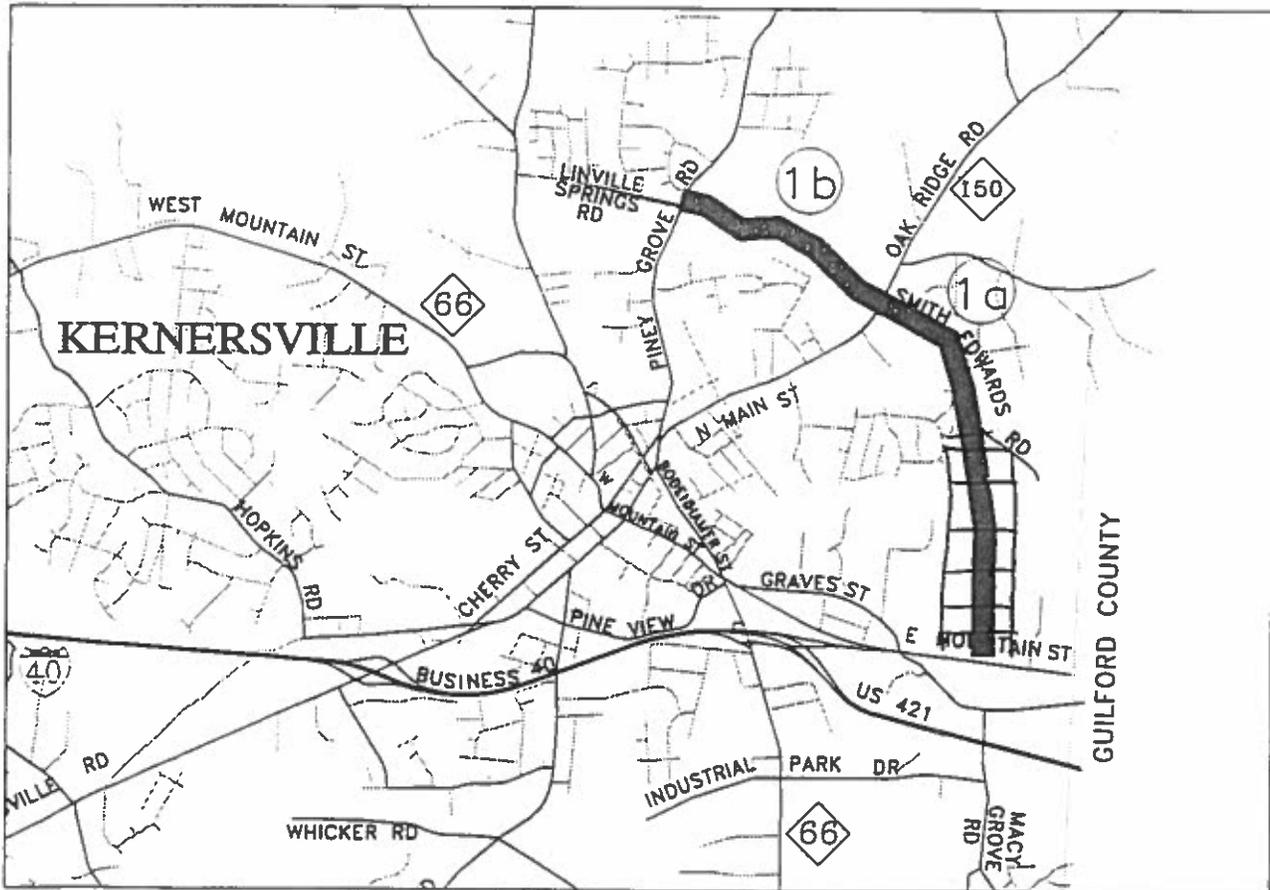
1.9 miles. Approximately 0.7 miles of the project is built on Smith-Edwards Road, and for two or four lanes minor improvements would be needed.

EST. PROJECT COST:
1998 ADT:

\$9,300,000
N/A

PROJECT JUSTIFICATION:

- One of Kernersville's most important transportation needs is to build its loop road network. This connector will provide a valuable link to move local and regional traffic away from a congested downtown Kernersville toward the future interchange at Business I-40 (US 421) (TIP Project U-2800). This project will improve travel patterns by providing a direct connection between residential areas north of Kernersville and employment/retail centers in Forsyth and Guilford Counties and the Piedmont Triad International Airport area, including the proposed FedEx site.
- The connector will assist in stimulating economic growth in around the planned Macy Grove Road/Business I-40 interchange. The Kernersville Land Use Plan recommends an employment center with industrial, office and commercial growth in the area near the interchange.



STREET AND HIGHWAY INVENTORY

FACILITY	SECTION	CITY CO.	Width (ft)	R-O-W (ft)	Lanes (#)	Other Attributes	1998 ADT	2025 VOLUMES	Capacity	Recommended Section	T-Plan Class
SILAS CREEK PARKWAY (NC 67)	LOCKLAND AVENUE - MILLER STREET	WS	48	100	4	↑	30000	35300	30100	ADQ+SW	MAJOR
SILAS CREEK PARKWAY (NC 67)	SALISBURY RIDGE ROAD - LOCKLAND AVENUE	WS	56	100	5	↑	--	42100	46000	ADQ+SW	MAJOR
SILAS CREEK PARKWAY (NC 67)	PETERS CREEK PARKWAY (NC 150) - SALISBURY RIDGE ROAD	WS	72	100	6	↑	--	32300	48400	ADQ+SW	MAJOR
SILAS CREEK PARKWAY	BUCHANAN STREET - PETERS CREEK PARKWAY (NC 150)	WS	72	100	6	↑	23000	40800	48400	ADQ+SW	MAJOR
SILAS CREEK PARKWAY	KONNOAK VIEW DRIVE - BUCHANAN STREET	WS	72	100	6	↑	20000	52000	32200	ADQ+SW	MAJOR
SILAS CREEK PARKWAY	S. MAIN STREET - KONNOAK VIEW DRIVE	WS	48	300	4	↑	14000	55800	32200	ADQ+SW	MINOR
SIXTH STREET (WEST)	N. BROAD STREET - N. MARSHALL STREET	WS	44	64	4	↑	--	6800	11400	ADQ*	MINOR
SIXTH STREET (WEST)	N. MARSHALL STREET - N. CHERRY STREET	WS	OW 28	40	2	↑	--	7800	12700	ADQ*	MAJOR
SIXTH STREET (WEST)	N. CHERRY STREET - TRADE STREET	WS	OW 38	40	2	↑	--	3200	12700	ADQ*	MINOR
SIXTH STREET (WEST)	TRADE STREET - N. LIBERTY STREET	WS	OW 24	40	2	↑	--	4100	12700	ADQ*	MAJOR
SIXTH STREET (WEST)	N. LIBERTY STREET - N. MAIN STREET	WS	OW 24	40	2	↑	--	3500	12700	ADQ*	MAJOR
SIXTH STREET (WEST)	N. MAIN STREET - PATTERSON AVENUE	WS	26	40	2	↑	--	4000	12700	ADQ*	MAJOR
SIXTH STREET (WEST)	PATTERSON AVENUE - CHURCH STREET	WS	26	40	2	↑	--	2600	12700	ADQ*	MAJOR
SKET CLUB ROAD (SR 1820)	N. MAIN STREET - TANGLEBROOK DRIVE	HP	20-33	60	2	↑	--	12400	16100	F-B	MAJOR
SKYLARK ROAD (SR 1447)	TRANSOU ROAD - VIENNA-DOZIER ROAD	FC	20	60	2	↑	1100	2000	11100	I-B	MINOR
SMITH EDWARDS ROAD (SR 2036)	OAK RIDGE ROAD (NC 150) - END	FC	19-20	60	--	↑	700	(14400)	22200	D-B	(MAJOR)
SMITH EDWARDS ROAD (SR 2036)	END - EAST MOUNTAIN STREET	KV/FC	--	--	--	↑	--	(14400)	22200	D-B	(MAJOR)
SOMERSET DRIVE (SR 1122) NEW ALIG	S. STRATFORD ROAD (US 158) - JONESTOWN ROAD	FC	18-28	60	2	↑	1900	7900	11100	F-B	MINOR
SOUTHERN BELTWAY	S. STRATFORD ROAD (US 158) - US 52	FC	--	--	--	↑	--	(23400)	63600	A	(FRWAY)
SOUTHERN BELTWAY	US 52 - US 311	FC	--	--	--	↑	--	(41100)	63600	A	(FRWAY)
SPAINHOUR MILL ROAD (SR 1604)	DORAL DRIVE - BUTNER ROAD	TO	22	60	2	↑	3500	4400	11100	F-B	MINOR
SPAINHOUR MILL ROAD (SR 1604)	BUTNER ROAD - DONNAHA ROAD	FC	22	60	2	↑	--	3800	11100	I-B	MINOR
SPAINHOUR MILL ROAD (SR 1604) EXT	DORAL DRIVE - US 52	TO/IKI	--	--	2	↑	--	(7100)	11100	F-B	(MINOR)
SPICEWOOD DRIVE (SR 1434)	YADKINVILLE ROAD - OLIVET CHURCH ROAD	FC	18	60	2	↑	1200	1400	11100	F-B	MINOR
SPRAGUE STREET (EAST)	S. MAIN STREET - US 52 (NC 8)	WS	40	60	2	↑	7700	10700	12700	ADQ	MINOR
SPRAGUE STREET (EAST)	US 52 (NC 8) - OLD LEXINGTON ROAD	WS	40	60	2	↑	11000	15300	12700	ADQ	MINOR
SPRAGUE STREET (EAST)	OLD LEXINGTON ROAD - THOMASVILLE ROAD	WS	40	60	2	↑	6800	9500	12700	ADQ	MINOR
SPRAGUE STREET (EAST)	THOMASVILLE ROAD - E. CLEMMONSVILLE ROAD	WS	40	60	2	↑	4300	5900	12700	ADQ	MINOR
SPRAGUE STREET (EAST)	E. CLEMMONSVILLE ROAD - WILLARD ROAD	WS	40	60	2	↑	7200	10000	16100	ADQ+SW	MINOR
SPRAGUE STREET (EAST)	WILLARD ROAD - CLINE STREET	WS	40	60	2	↑	--	12300	12700	ADQ+SW	MINOR
SPRAGUE STREET (EAST)	CLINE STREET - COLE ROAD	WS	40	60	2	↑	4800	6700	16100	F-B	MINOR
SPRAGUE STREET (EAST)	COLE ROAD - WAUGHTOWN STREET	WS	20	60	2	↑	--	6600	16100	F-B	MINOR
SQUIRE DAVIS ROAD (SR 2613)	PAYNE ROAD - GUILFORD COUNTY LINE	FC	19	60	2	↑	--	3200	11100	F-B	MAJOR
STADIUM DRIVE	E. SALEM AVENUE - US 52 (NC 8)	WS	34-40	60-80	3	↑	7300	12500	15600	ADQ+SW	MINOR
STADIUM DRIVE	US 52 (NC 8) - VARGRAVE STREET	WS	64	80	5	↑	--	27300	29700	ADQ+SW	MINOR
STADIUM DRIVE	VARGRAVE STREET - MARTIN LUTHER KING, JR. DRIVE	WS	64	80	5	↑	--	17100	29700	ADQ+SW	MINOR
STADIUM DRIVE (SR 1107)	LEWISVILLE-CLEMMONS ROAD - CLEMMONS ROAD (US 158)	CL	18-35	60	2	↑	--	16300	16100	F-B	MINOR
STANLEYVILLE DRIVE (SR 1920)	UNIVERSITY PARKWAY - OLD HOLLOW ROAD (NC 66)	WS	20	60	2-3	↑	6600	9800	11100	F-B	MINOR
STANLEYVILLE DRIVE (SR 1920)	OLD HOLLOW ROAD (NC 66) - GERMANTON ROAD (NC 8)	WS/FC	19	60	2	↑	5700	7100	16100	I-B	MINOR
STRATFORD ROAD (NORTH) (SR 3101)	ROBINHOOD ROAD - REYNOLDA ROAD	WS	30	60	2	↑	11000	28000	30100	ADQ+SW+TSM	MINOR
STRATFORD ROAD (NORTH) (SR 3101)	BUENA VISTA ROAD - ROBINHOOD ROAD	WS	30	60	2	↑	12000	16700	30100	ADQ+SW+TSM	MINOR
STRATFORD ROAD (NORTH) (SR 3101)	COUNTRY CLUB ROAD - BUENA VISTA ROAD	WS	70	60	2	↑	15000	21200	30100	ADQ+SW+TSM	MINOR
STRATFORD ROAD (SOUTH) (US 158)	BUSINESS INTERSTATE 40 (US 421) - COUNTRY CLUB ROAD	WS	67	80	5	↑	21000	30000	26900	D-B	MAJOR
STRATFORD ROAD (SOUTH) (US 158)	OAKWOOD DRIVE - BUSINESS INTERSTATE 40 (US 421)	WS	67	80	5	↑	22000	31500	26900	D-B	MAJOR
STRATFORD ROAD (SOUTH) (US 158)	KNOLLWOOD STREET - OAKWOOD DRIVE	WS	44	50	4-5	↑	22000	31500	26900	D-B	MAJOR
STRATFORD ROAD (SOUTH) (US 158)	BETHESDA ROAD - KNOLLWOOD STREET	WS	44	50	4	↑	--	34000	26900	D-B	MAJOR

Other Attributes - db- bicycle route ↑ pedestrian facility ▣ transit route

**PUBLIC WORKS DEPARTMENT
CONSTRUCTION COST ESTIMATE**

Smith Edwards Road Connector
Sta 181+00 To Sta 251.32
Two 24' Divided Roadways
110-Feet ROW



Right-of-way Acquisition

PROJ: **Macy Grove Extension** Date: **01/27/03**

<u>Item</u>	<u>Description</u>	<u>Unit</u>	<u>Quantity</u>	<u>Unit Price</u>	<u>\$Amount</u>
<u>1.00</u>	Right-of-Way				
1.01	ROW	SF	120,000	1 25 \$	150,000.00
1.02	ROW	SF	45,000	1 00 \$	45,000.00
1.03	ROW	SF	100,000	0 75 \$	75,000.00
1.04	ROW	SF	175,000	0 50 \$	87,500.00
1.05	ROW	SF	825,000	0 30 \$	247,500.00
1.06	Relocation (Residential)	LS	1	220,000 00 \$	220,000.00
1.07	Easements	SF	480,500	0 10 \$	48,050.00
1.08	Reconstruct Comm Storage Bldg	LS	1	110,000 \$	110,000.00
Total					\$ 983,050.00

Notes: Estimate Based on Functional Drawing

Prepared by:


Construction Services Supervisor

Checked by:

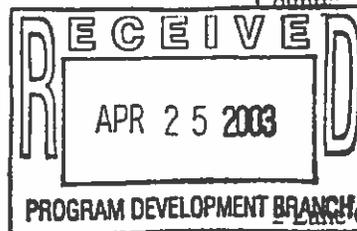

Public Works Director

North Carolina Department of Transportation
Preliminary Estimate

TIP No. FS-0209 B

County: FORSYTH

Route Macv Grove Road Extension



Location From SR 1005 (Mountain Street)
To NC 150 (Main Street) in Kernersville

Typical Section Construct 2 Lane C & G Sect. Part On
New Location Part On Existing

C & G Section
CONSTRUCTION COST

\$5,400,000

Prepared By: Bill Davenport 04-24-03
Requested By: Derrick Lewis PE Feas Std Unit 04-07-03

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing & Grubbing	25.00	ACR	\$ 6,000.00	\$ 150,000.00
			Uncl Excavation (Some Rock)	125,000	CY	\$ 5.50	\$ 687,500.00
			Undercut Excavation	4,000	CY	\$ 7.00	\$ 28,000.00
			Borrow Excavation	500	CY	\$ 10.00	\$ 5,000.00
			Remove Existing Asph Pavement	2,400	SY	\$ 3.00	\$ 7,200.00
			Filter Fabric For Drainage	5,000	SY	\$ 2.50	\$ 12,500.00
			Foundation Condition Material	630	TON	\$ 22.00	\$ 13,860.00
			15" RC Pipe Culverts, Class III	2,400	LF	\$ 20.00	\$ 48,000.00
			18" RC Pipe Culverts, Class III	1,950	LF	\$ 25.00	\$ 48,750.00
			24" RC Pipe Culverts, Class III	1,000	LF	\$ 30.00	\$ 30,000.00
			36" RC Pipe Culverts, Class III	250	LF	\$ 55.00	\$ 13,750.00
			42" RC Pipe Culverts, Class III	180	LF	\$ 90.00	\$ 16,200.00
			72" CM Pipe	190	LF	\$ 200.00	\$ 38,000.00
			Headwall For 72" CM Pipe	1	LS	\$ 5,500.00	\$ 5,500.00
			Fine Grading	26,000	SY	\$ 1.50	\$ 39,000.00
			Aggregate Base Course	16,960	TON	\$ 12.00	\$ 203,520.00
			Incidental Stone # 57	500	TON	\$ 25.00	\$ 12,500.00
			Asph Binder for Plant Mix PG64-22	665	TON	\$ 210.00	\$ 139,650.00
			AC Base Course Type B25.0B	2,900	TON	\$ 42.00	\$ 121,800.00
			AC Intermediate Course Type 119.0B	6,400	TON	\$ 42.00	\$ 268,800.00
			AC Surface Course Type S12.5B	3,750	TON	\$ 42.00	\$ 157,500.00
			Masonry Drainage Stru. With Grates	90	EA	\$ 1,400.00	\$ 126,000.00
			Concrete Retaining Wall	1	LS	\$ 35,000.00	\$ 35,000.00
			2'-6" Concrete Curb and Gutter	18,100	LF	\$ 12.00	\$ 217,200.00
			4" Concrete Sidewalk	4,400	SY	\$ 24.00	\$ 105,600.00
			6" Concrete Driveway	200	SY	\$ 42.00	\$ 8,400.00

North Carolina Department of Transportation
Preliminary Estimate

TIP No. FS-0209 B

County: FORSYTH

Route Macv Grove Road Extension

Location From SR 1005 (Mountain Street)
To NC 150 (Main Street) in Kernersville

Typical Section Construct 4 Lane C & G Sect. Part On
New Location Part On Existing

4 Lane C & G Section
CONSTRUCTION COST

\$7,900,000

Prepared By: Bill Davenport 04-24-03
Requested By: Derrick Lewis PE Feas Std Unit 04-07-03

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Clearing & Grubbing	32.00	ACR	\$ 6,000.00	\$ 192,000.00
			Uncl Excavation (Some Rock)	165,000	CY	\$ 5.50	\$ 907,500.00
			Undercut Excavation	5,000	CY	\$ 7.00	\$ 35,000.00
			Borrow Excavation	2,000	CY	\$ 10.00	\$ 20,000.00
			Remove Existing Asph Pavement	2,400	SY	\$ 3.00	\$ 7,200.00
			Filter Fabric For Drainage	7,500	SY	\$ 2.50	\$ 18,750.00
			Foundation Condition Material	990	TON	\$ 22.00	\$ 21,780.00
			15" RC Pipe Culverts, Class III	3,650	LF	\$ 20.00	\$ 73,000.00
			18" RC Pipe Culverts, Class III	2,900	LF	\$ 25.00	\$ 72,500.00
			24" RC Pipe Culverts, Class III	1,800	LF	\$ 30.00	\$ 54,000.00
			36" RC Pipe Culverts, Class III	500	LF	\$ 55.00	\$ 27,500.00
			42" RC Pipe Culverts, Class III	250	LF	\$ 90.00	\$ 22,500.00
			72" CM Pipe	220	LF	\$ 200.00	\$ 44,000.00
			Headwall For 72" CM Pipe	1	LS	\$ 5,500.00	\$ 5,500.00
			Fine Grading	42,000	SY	\$ 1.50	\$ 63,000.00
			Aggregate Base Course	29,740	TON	\$ 12.00	\$ 356,880.00
			Incidental Stone # 57	500	TON	\$ 25.00	\$ 12,500.00
			Asph Binder for Plant Mix PG64-22	1,255	TON	\$ 185.00	\$ 232,175.00
			AC Base Course Type B25.0B	4,200	TON	\$ 42.00	\$ 176,400.00
			AC Intermediate Course Type 119.0B	13,200	TON	\$ 42.00	\$ 554,400.00
			AC Surface Course Type S12.5B	7,000	TON	\$ 42.00	\$ 294,000.00
			Masonry Drainage Stru. With Grates	134	EA	\$ 1,400.00	\$ 187,600.00
			1'-6" Concrete Curb and Gutter	15,000	LF	\$ 9.00	\$ 135,000.00
			2'-6" Concrete Curb and Gutter	17,300	LF	\$ 12.00	\$ 207,600.00
			4" Concrete Sidewalk	4,400	SY	\$ 24.00	\$ 105,600.00
			6" Concrete Driveway	200	SY	\$ 42.00	\$ 8,400.00

**North Carolina Department of Transportation
Preliminary Estimate**

Prepared By: Bill Davenport 04-24-03
 Requested By: Derrick Lewis PE Feas Std Unit 04-07-03

Line Item	Des	Sec No.	Description	Quantity	Unit	Price	Amount
			Steel Beam Guardrail	8.000	LF	\$ 12.00	\$ 96,000.00
			Guardrail Anchor Units	18	EA	\$ 1,150.00	\$ 20,700.00
			Plain Rip Rap, Class B	1,000	TON	\$ 30.00	\$ 30,000.00
			Erosion Control	32	ACR	\$ 7,500.00	\$ 240,000.00
			Traffic Control	1	LS	\$ 35,000.00	\$ 35,000.00
			Thermo and Markers	1.50	MI	\$ 24,000.00	\$ 36,000.00
			Proposed RCBC 1@ 9' X 10' 260 LF	1.00	LS	\$ 208,000.00	\$ 208,000.00
			Misc & Mobilization Stru (15%)	1	LS	\$ 32,200.00	\$ 32,200.00
			Misc & Mobilization Rdy (55%)	1	2315	\$ 2,363.00	\$ 2,363.00

Project Length : 1.50 MI

Contract Cost..... \$ 6,895,000.00
 E. & C. (15%)..... \$ 1,005,000.00

 Construction Cost..... \$ 7,900,000.00