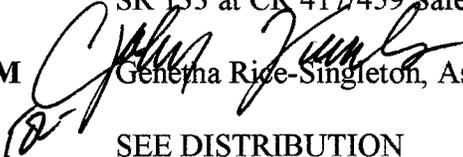


D.O.T. 66

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

**FILE** P. I. No. 0000522, Dougherty-Worth Counties **OFFICE** Preconstruction  
STP-0000-00(522)  
SR 133 at CR 417/459 Safety Improvements **DATE** October 16, 2006

**FROM**  Geneva Rice-Singleton, Assistant Director of Preconstruction

**TO** SEE DISTRIBUTION

**SUBJECT APPROVED PROJECT CONCEPT REPORT**

Attached for your files is the approval for subject project.

GRS/cj

Attachment

**DISTRIBUTION:**

Brian Summers  
Harvey Keepler  
Ken Thompson  
Jamie Simpson  
Michael Henry  
Keith Golden  
Joe Palladi (file copy)  
Paul Liles  
Babs Abubakari  
Joe Sheffield  
BOARD MEMBER

RECEIVED

SEP 25 2006

OFFICE OF PLANNING

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA  
*Office of Traffic Safety & Design*

PROJECT CONCEPT REPORT

Project Number: STP-0000-00(522)  
County: Dougherty/Worth  
P. I. Number: 0000522

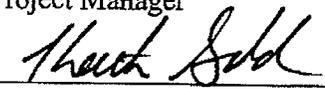
Federal Route Number: N/A  
State Route Number: 133

Recommendation for approval:

DATE 12 September 2006

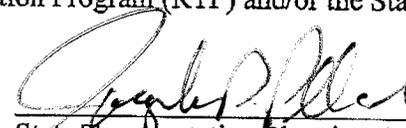
  
\_\_\_\_\_  
Project Manager

DATE 8/18/06

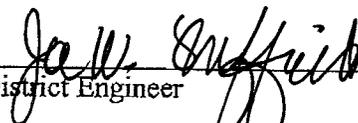
  
\_\_\_\_\_  
State Traffic Safety and Design Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Program (RTP) and/or the State Transportation Improvement Program (STIP).

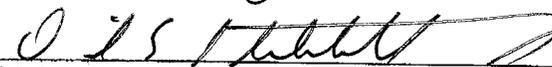
DATE 9/25/06

  
\_\_\_\_\_  
State Transportation Planning Administrator

DATE 10-2-06

  
\_\_\_\_\_  
District Engineer

DATE 10/13/06

  
\_\_\_\_\_  
Chief Engineer

**NOTICE OF LOCATION AND DESIGN APPROVAL**

**STP-0000-00(522) DOUGHERTY/WORTH COUNTY  
P. I. No. 0000522**

Notice is hereby given in compliance with Georgia Code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of the above project.

Date of Location and Design Approval: OCTOBER 16, 2006

This project consists of the intersection improvements at SR 133 (Moultrie Road) and County Line Road (CR 417 in Worth County and CR 459 in Dougherty County) including improved signage and striping, pavement widening, and access control. This project lies within both Dougherty and Worth counties and within GMD 1065.

Drawings of maps or plats of the proposed project as approved are on file and are available for inspection at the Georgia Department of Transportation.

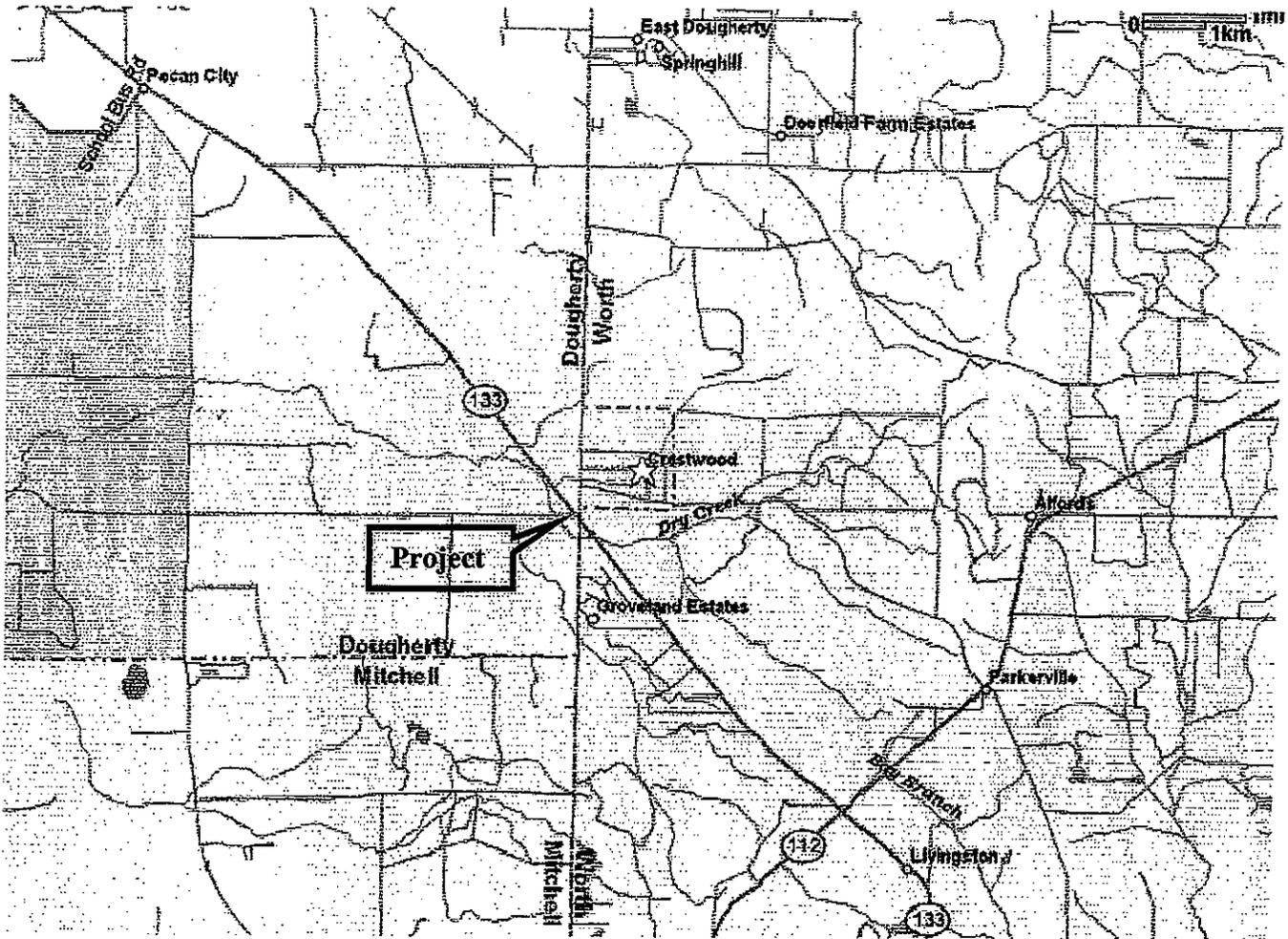
**Tony Cravey, Area Engineer  
Department Of Transportation  
Albany Area Office  
2060 Newton Rd  
Albany, GA 31701  
(229) 430-4198  
tony.cravey@dot.state.ga.us**

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

**Joe Sheffield, PE, District Engineer  
Department Of Transportation  
710 W. 2nd Street  
Tifton, GA 31794  
(229) 386-3280  
joe.sheffield@dot.state.ga.us**

Any written request of communication in reference to this project or notice SHOULD include the Project and P.I. Numbers as noted at the top of this notice.

Project Concept Report Page 2  
Project Number: STP-0000-00(522)  
P.I. Number: 0000522  
County: Dougherty/Worth



### LOCATION MAP

Project: STP-0000-00(522) Dougherty and Worth County, PI No: 0000522  
Description: SR 133 (Moultrie Rd) at County Line Road (CR 417) Intersection Improvements

Project Concept Report Page 3  
Project Number: STP-0000-00(522)  
P.I. Number: 0000522  
County: Dougherty/Worth

**Need and Purpose:** The intersection of SR 133 (Moultrie Road) and County Line Road (CR 417/459) is located in the rural suburbs of Albany. SR 133 provides connectivity between the cities of Albany and Moultrie and carries more than 6000 vehicles per day. SR 133 is a two lane undivided rural road that runs about ten miles southeast from the City of Albany before it intersects with County Line Road at a skew angle of approximately 42 degrees. County Line Road is also a two lane undivided rural road. To the west of County Line Road is a gas station with convenience mart and a liquor store. To the east is a hunting supply store. There is a nature conservancy on the southwest side of SR 133, about ¼ miles south of the intersection. Due to the rural nature of the area and unregulated parking, parked and entering/exiting vehicles from the adjacent businesses block view of the turning traffic at the intersection. Lack of access control causes multiple vehicles to enter and exit the businesses in the southeast and southwest quadrant of the intersection at the same time. This situation is worsened by the severe skew of the intersection and 15 percent truck traffic on SR 133. Also the skew of the intersection makes it almost impossible for large turning vehicles such as school buses and semi trailers to negotiate the southeast quadrant of the intersection without running into the oncoming traffic and/or blocking the whole trailing approach.

Currently the intersection operates as two-way stop controlled, with stop signs at County Line Road. The existing intersection level of service is 'C', which shows that congestion is not an issue at the intersection. Low volumes coupled with straight horizontal and vertical roadway geometry tempt 85 percent of the drivers to drive 62 mph in the 55 mile per hour zone. There is an overhead flashing beacon at the intersection with amber facing SR 133 and red facing County Line Road. This beacon creates confusion among the drivers to mistakenly consider the intersection as a four-way stop. Some drivers on the mainline (SR 133) tend to pull out in front of oncoming left turners, causing angle accidents. Accident summaries from 2000 to 2002 indicated 10 crashes at the intersection. In conclusion, high speeds, poor intersection geometry, unregulated access/parking control and inconsistent signage pose a challenge to the safety of the subject intersection.

**Description of the proposed project:** The proposed project STP-0000-00(522) is located at the intersection of Moultrie Road (SR 133) and County Line Road (CR 417/459) approximately ten miles southeast of the City of Albany. The proposed improvements to the intersection are temporary solutions to improve the safety and operation of the intersection with minimal cost and impacts until the intersection is improved as part of the proposed widening projects ((STP-0000-00(473) and STP-0000-00(475)). The proposed improvements to County Line Road include additional pavement at the intersection to allow left-turners off of SR 133 enough room to make the turn, painted islands to separate and channelize the right-turners onto SR 133, replacing the stop sign ahead warning signs, and adding approach rumble strips. The proposed improvements to SR 133 include the removal of the flashing beacon at the intersection and replacing the existing intersection ahead signs with a warning sign that better depicts the skew of the intersection including complete sign assemblies with flashing yellow lights above and below the warning sign. Construction on the north leg of County Line Road will involve extending or replacing at least one cross drain with headwalls. The improvements will also include measures to restrict the open frontage in front of existing businesses at this intersection along SR 133.

Project Concept Report Page 4  
Project Number: STP-0000-00(522)  
P.I. Number: 0000522  
County: Dougherty/Worth

This open frontage is causing motorists on SR 133 confusion because vehicles are entering and exiting the highway at any point from 250 feet before the intersection to 250 feet after the intersection. The length of the project is approximately 500' of improvements along each road for a total of 1000' of construction.

**Is the project located in a Non-attainment area:** No.

**PDP Classification:** Major \_\_\_\_\_ Minor X

**Federal Oversight:** Full Oversight ( ), Exempt(X), State Funded( ), or Other ( )

**Functional Classification:**

SR 133 – Rural Minor Arterial  
County Line Rd. – Rural Major Collector

**U. S. Route Number(s):** None

**State Route Number(s):** 133

**Traffic (AADT):**

SR 133	Current Year: (2006) <u>7,079</u>	Design Year: (2026) <u>16,059</u>
County Line Rd.	Current Year: (2006) <u>675</u>	Design Year: (2026) <u>1,715</u>

**Existing design features:**

- Typical Section: SR 133: two 12-foot lanes with rural shoulders  
County Line Road: two 12-foot lanes with rural shoulders
- Posted speed: SR 133: 55 mph County Line Road: 55mph
- Max. degree of curvature: SR 133: NA County Line Road: NA
- Maximum grade: SR 133: 2% County Line Road: 2%
- Width of right-of-way: SR 133: 100' County Line Road: 80'
- Major structures: None
- Major interchanges or intersections along the project: SR133 at County Line Road
- Existing length of roadway segment: SR 133: 500' County Line Road: 500'

**Proposed Design Features:**

- Proposed typical section(s): Match existing and add additional paving on County Line Road to facilitate turn movements
- Proposed Design Speed Mainline: 55 mph
- Proposed Maximum grade Mainline: 2 % Maximum grade allowable: NA %
- Proposed Maximum grade Side Street: 2 % Maximum grade allowable: NA %
- Proposed Maximum grade driveway: 11 %
- Proposed Maximum degree of curve: NA Maximum degree allowable: NA
- Right-of-Way Width: 120'
- Easements: Temporary ( ), Permanent (X), Utility ( ), Other ( ).
- Type of access control: Full ( ), Partial ( ), By Permit (X), Other ( ).

Project Concept Report Page 5  
 Project Number: STP-0000-00(522)  
 P.I. Number: 0000522  
 County: Dougherty/Worth

- Number of parcels: 4 Number of displacements: 0
  - Business: None
  - Residences: None
  - Mobile homes: None
  - Other: None
- Structures: None
- Bridges: None
- Retaining walls: None
- Major intersections and interchanges: SR133 at County Line Road
- Traffic control during construction: Traffic will be maintained on the existing roadway during construction.
- Design Exceptions to controlling criteria anticipated:

	UNDETERMINED	YES	NO
HORIZONTAL ALIGNMENT:	()	()	(X)
ROADWAY WIDTH:	()	()	(X)
SHOULDER WIDTH:	()	()	(X)
VERTICAL GRADES:	()	()	(X)
CROSS SLOPES:	()	()	(X)
STOPPING SIGHT DISTANCE:	()	()	(X)
SUPERELEVATION RATES:	()	()	(X)
HORIZONTAL CLEARANCE:	()	()	(X)
SPEED DESIGN:	()	()	(X)
VERTICAL CLEARANCE:	()	()	(X)
BRIDGE WIDTH:	()	()	(X)
BRIDGE STRUCTURAL CAPACITY:	()	()	(X)

A design exception will be necessary to address the skew angle of the intersection. While these interim improvements will benefit the safety and functionality of the intersection, it will not remedy the substandard intersection skew.

- Design Variances: None
- Environmental concerns: None
- Level of environmental analysis:
  - Are Time Savings Procedures appropriate? Yes (X), No (),
  - Categorical exclusion (X),
  - Environmental Assessment/Finding of No Significant Impact (FONSI) (), or
  - Environmental Impact Statement (EIS) ().
- Utility involvements: Mitchell EMC, Bellsouth, MCI, Mediacom

**Project responsibilities:**

- Design – GDOT
- Right-of-Way Acquisition – GDOT
- Relocation of Utilities – GDOT
- Letting to contract - GDOT
- Supervision of construction - GDOT

Project Concept Report Page 6  
Project Number: STP-0000-00(522)  
P.I. Number: 0000522  
County: Dougherty/Worth

- Providing material pits - Contractor
- Providing detours – None anticipated

**Coordination:**

- Initial Concept Meeting: None
- Concept Meeting: A Concept Team Meeting was held on July 24<sup>th</sup> at the District 4 office. Meeting minutes are attached to this document.
- PAR meetings: Not Required
- FEMA, USCG, and/or TVA: Not anticipated
- Public involvement: Not anticipated
- Local government comments: None to date
- Other projects in the area: This intersection is included in the re-alignment and widening of SR 133 from South of Albany City Line to SR 112. Projects STP-0000-00(473) ( P.I. No. 0000473) in Dougherty County and STP-0000-00(475) (P.I. No. 0000475) in Worth County will shift SR 133 to the north and widen the two lane undivided section to a four lane divided section with a 44-foot depressed median. The projects are in the concept phase and are not yet approved for right of way or construction.
- Railroads: None
- Other coordination to date: None

**Scheduling – Responsible Parties’ Estimate:**

- Time to complete the environmental process: 6 Months.
- Time to complete preliminary construction plans: 4 Months.
- Time to complete right-of-way plans: 1 Months.
- Time to complete the Section 404 Permit: 0 Months.
- Time to complete final construction plans: 2 Months.
- Time to complete to purchase right-of-way: 4 Months.
- List other major items that will affect the project schedule: None

**Other alternates considered:**

Alternative One

Realign County Line Road by introducing reverse curves on both County Line Road approaches to SR 133, bringing the intersection angle close to 90 degrees. This alternative improves the intersection angle and allows a continuous flow along County Line Road through the intersection. There would be significant RW and environmental impacts to the Northeast and southwest quadrants of the intersection including a minimum of 3 residential displacements.

Alternative Two

Splitting the County Line Road approaches onto SR 133. This will involve curving the southbound approach of County Line Road to line up with Nelms Road at SR 133 forming a four-leg intersection. The northbound approach of County Line Road will form a “T” with SR 133. This proposed alignment could cause impact to the nature conservancy, which contains

Project Concept Report Page 7  
Project Number: STP-0000-00(522)  
P.I. Number: 0000522  
County: Dougherty/Worth

Cooley's Meadowrue, an endangered plant species. This alternative will also have significant RW impacts including a minimum of 1 residential displacement. The splitting of the intersection does not allow for a continuous flow along County Line Road through the intersection and introduces left turns onto SR 133 for all traffic choosing to continue along County Line Road.

**Comments:**

Both alternates 1 and 2 have a potential conflict with the long range projects described under the section "Other Projects in the Area" (STP-0000-00(473) and STP-0000-00(475)). If either alternate is adopted, it should be coordinated with those long range projects.

**Attachments:**

1. Cost Estimate:
  - a. Construction including E&C,
  - b. Right-of-Way
  - c. Utility
2. Typical Section
3. Environmental Screening Memo
4. Concept Team Meeting Minutes
5. Concept Team Meeting Sign In Sheet
6. Traffic Engineering Study
7. Location and Design Notice
8. Conceptual Layout

## Estimate Report for file "SR133"

### Section Roadway

Item Number	Quantity	Units	Unit Price	Item Description	Cost
150-1000	1	LS	5000.00	TRAFFIC CONTROL -	5000.00
210-0100	1	LS	20000.00	GRADING COMPLETE -	20000.00
310-1101	1000	TN	16.07	GR AGGR BASE CRS, INCL MATL	16070.00
318-3000	10	TN	17.82	AGGR SURF CRS	178.20
402-1812	50	TN	46.92	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	2346.00
402-3110	150	TN	48.00	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	7200.00
402-3112	220	TN	55.85	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	12287.00
402-3121	530	TN	47.02	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	24920.60
413-1000	140	GL	1.23	BITUM TACK COAT	172.20
429-1000	8	EA	516.53	RUMBLE STRIPS	4132.24
441-0740	50	SY	28.51	CONCRETE MEDIAN, 4 IN	1425.50
441-5001	1200	LF	9.80	CONCRETE HEADER CURB, 4 IN, TP 1	11760.00
500-3800	10	CY	722.43	CLASS A CONCRETE, INCL REINF STEEL	7224.30
550-1180	100	LF	34.18	STORM DRAIN PIPE, 18 IN, H 1-10	3418.00
<b>Section Sub Total:</b>					<b>\$116,134.04</b>

### Section Signing and Marking

Item Number	Quantity	Units	Unit Price	Item Description	Cost
610-9998	1	Lump Sum	10000.00	REMOVE OVERHEAD BEACON	10000.00
636-1033	100	SF	21.25	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	2125.00
636-2070	250	LF	7.32	GALV STEEL POSTS, TP 7	1830.00
647-9999	2	EA	5000.00	LED FLASHING BEACON	10000.00
653-0120	6	EA	62.78	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	376.68
653-1501	2000	LF	0.29	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	580.00
653-1502	100	LF	0.29	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	29.00
653-1704	30	LF	3.67	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	110.10
653-6004	670	SY	2.59	THERMOPLASTIC TRAF STRIPING, WHITE	1735.30
654-1001	50	EA	3.58	RAISED PVMT MARKERS TP 1	179.00
654-1010	20	EA	34.17	RAISED PVMT MARKERS TP 10	683.40
<b>Section Sub Total:</b>					<b>\$27,648.48</b>

### Section Erosion Control

Item Number	Quantity	Units	Unit Price	Item Description	Cost
163-0240	2	TN	203.42	MULCH	406.84
163-0530	200	LF	2.99	CONSTRUCT AND REMOVE BALED STRAW EROSION CHECK	598.00
165-0010	600	LF	1.08	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	648.00
171-0010	600	LF	1.99	TEMPORARY SILT FENCE, TYPE A	1194.00
700-6910	1	AC	838.07	PERMANENT GRASSING	838.07
700-7000	1	TN	58.63	AGRICULTURAL LIME	58.63
700-7010	1	GL	18.78	LIQUID LIME	18.78
700-8000	1	TN	283.70	FERTILIZER MIXED GRADE	283.70
700-8100	1	LB	1.65	FERTILIZER NITROGEN CONTENT	1.65
<b>Section Sub Total:</b>					<b>\$4,047.67</b>

**Total Estimated Cost: \$147,830.19**

**Subtotal Construction Cost \$147,830.19**

E&C Rate 10.0 %      **\$14,783.02**

Inflation Rate 0.0 % @ 0.0 Years \$0.00

---

**Total Construction Cost \$162,613.21**

Right Of Way \$5,000.00

ReImb. Utilities \$0.00

---

**Grand Total Project Cost \$167,613.21**







July 31, 2006

Mr. Jeff Church  
Gresham, Smith, and Partners  
2325 Lakeview Parkway  
Suite 400  
Alpharetta, GA 30004-1976

Re: SR 133 at County Line Road, Dougherty/Worth Counties

Dear Mr. Church,

Edwards-Pitman Environmental, Inc. (EPEI) has completed an environmental screening of the SR 133 at County Line Road Intersection Project in Dougherty/Worth Counties, Georgia.

EPEI staff specialists Grant Hudson (history), Rick Bowers (ecology), and Dr. Lynn Pietak (archaeology) assisted with this environmental screening, which focused on the identification of visible constraints that may affect the development of the proposed project. The environmental screening includes identification of historical and archaeological resources, natural features, as well as parks and other sensitive land uses that could be viewed from the realigned roadway and could be impacted by the proposed project. In addition to field reconnaissance, available documentation from the Georgia Archaeological Site Files, the Georgia Department of Natural Resources (DNR) Natural Heritage Program, the US Fish and Wildlife (USFWS), and the US Geologic Survey (USGS) were reviewed to obtain additional information related to archaeological resources and threatened and endangered species.

General observations and comments that apply to the project corridor are presented below:

#### Land Use

The land uses along the project corridor include residential and commercial properties.

#### Threatened and Endangered Species

A review of the GADNR Natural Heritage Program species occurrence website and the USFWS protected species list for Dougherty and Worth Counties were reviewed for baseline information. For purposes of this letter, the phrase "federally protected" refers to flora and fauna listed by the USFWS for protection under the US Endangered Species Act; candidate species are included. No federally or state protected flora or fauna were observed within the project corridor during the windshield surveys. No suitable habitat was observed for the listed federally protected fauna in Dougherty and Worth Counties.

#### Waters of the US

The project area was surveyed for jurisdictional Waters of the US, including streams and wetlands, as required by the provisions of the Executive Order 11990 and subsequent federal regulations. During the field survey, one stream was identified flowing under SR 133 and CR 417 just outside of the project corridor. No wetlands were identified within the project area.

#### Archaeology

The Georgia Archaeological Site Files for this project was conducted. No archaeological sites were identified within one kilometer of the project area.

#### History

A review of existing information on previously identified historic properties revealed that no National Register listed properties, proposed National Register nominations, National Historic Landmarks, or



bridges determined eligible for inclusion in the National Register or in the updated Georgia Historic Bridge Survey (GHBS) were identified within the proposed project's area of potential effects (APE).

In addition, a historic resources field survey was conducted and one property 50 years of age or older was identified within the APE of the proposed project. The property is a convenience store located at 4028 SR 133/Moultrie Road on the southwest quadrant of the intersection with County Line Road. Based on the field survey, this property does not appear to be eligible for inclusion in the National Register. Based on this environmental screening, no properties listed in or considered eligible for listing in the National Register were identified within the APE of the proposed project and a Finding of No Historic Properties Affected would be anticipated.

If you have any questions or need additional information, please contact me at (770) 333-9484.

Sincerely,

*Susan Thomas*

Susan L. Thomas, AICP  
Environmental Planner  
Edwards-Pitman Environmental, Inc.

EPEI File No. GSP0100104.02-26

## MINUTES OF THE CONCEPT TEAM MEETING

The concept team meeting for Georgia DOT Project STP-0000-00(522), PI No. 0000522, Dougherty/Worth Counties was held at the District 4 Office in Tifton in the conference room on July 24<sup>th</sup>, 2006 at 1:00 PM.

The meeting attendees included Barzan Aran (GDOT TS&D), Courtney Johnson (GDOT, TS&D), Donnie Stanfill (Mitchell EMC), William Cooper (GDOT/D4 Utilities), Joe Cowan (GDOT/D4 Construction), Scott Carter (GDOT/D4 Maintenance), Brent Thomas (GDOT/D4 Preconstruction), Danny Gay (GDOT/D4 Traffic), Van Mason (GDOT/D4 Traffic), Wendell Pitts (Mediacom), Ruth Forrester (GDOT OEL), Keisha Jackson (GDOT OEL), Jeff Church (Gresham Smith and Partners), Nick Castronova (URS Corporation).

Barzan welcomed the attendees and briefly introduced the project as an element of the GDOT's safety improvement efforts. He then asked everyone to introduce themselves. He then turned the meeting over to Nick Castronova of the URS Corporation.

The meeting proceeded as Nick explained the project in detail. He read through the concept report and used the layout to explain the necessity to improve the intersection based on accident analysis and substandard geometric design. Nick explained that this is an interim improvement to this intersection due to the upcoming widening and realignment of SR 133 as part of a GRIP project. These improvements will be forfeited with the proposed realignment that will be a part of the future project. This is the reason no drastic action was proposed including realignment of roads or displacement of businesses or residences. He described the proposed signage and striping upgrades, pavement widening, and flashing warning signs to be installed. He then asked the attendees for questions and comments about the concept.

### Questions and Comments:

Brent – Are we proposing to add right turn lanes?

The addition of right turn lanes were not added as a part of this project. Capacity at the intersection is within a desirable range and very few, if any, observed accidents were rear end collisions that would conclude that right turn bays might be necessary.

Van - What types of accidents have been occurring and will the improvements fix this intersection?

After looking up the accident records, many of these accidents were angle intersections due to high rate of speed and misjudgment of gaps, limited visibility because of parked vehicles, or confusion due to the overhead beacon and vehicles thinking that the intersection was a four-way stop condition.

Brent – Can we do something to control the frontage so it limits the number of access points on to SR133?

We can look at controlling access to these businesses to limit the multiple access points that occur now.

Van agreed with the idea of narrowing the driveways to limit access points.

Keisha – When preliminary plans begin OEL anticipates a Programmatic Categorical Exclusion and consultants cannot prepare these so GDOT will need to do environmental work on this project.

General discussion about the 85<sup>th</sup> percentile speed being 62 mph and accidents happening at great speed are more likely either produce worse accidents and can be fatal. This suburban area of Albany is in transition from more rural to more suburban and it is difficult to meet the needs of both.

Danny - Mentioned the possibility of adding curb and gutter to limit access and give this corridor a more suburban feel that cars will want to move slower. Because of the 55 mph speed limit in this area the curb and gutter would need to be offset. Will look into curb and gutter to control access.

Attendee – Would like to see raised islands or something to make the corridor more suburban feel to reduce speed.

Keisha – Inquired about the let date in order to get with FHWA and get their buy-in before submitting environmental document.

Van – Do existing stop signs have supplemental plaques?

No. The existing signs do not. They can be added to proposed signage.

Danny – Need to add rumble strips to County Line road in advance of stop signs to further enforce the stop sign.

All agreed this would be a benefit to the project.

Danny – How power would be provided to ground mounted signs (solar or drop)?

This has not yet been determined.

Joe – Would removal of overhead beacon could lose the identity of where the actual crossroad is.

The additional striping and channelization islands proposed would give more definition to this intersection.

Van – Where is the location of the flashing warning signs? The layout shows on SR133 and the text says County Line Road. He added that the overhead beacons have been effective in these situations.

The concept report location is not correct and will be fixed in the final version of the report. It is evident that the overhead beacon in this case has caused some confusion to motorists so it is the reports recommendation that it be replaced with ground mounted flashers on SR 133.

Keisha – Where will the people park to access the businesses if access is limited?

Brent – It is possible to control access to the parking areas while still providing adequate parking for the business.

Joe recommended that the costs be reviewed. Some seem low on the estimate like GAB and asphalt.

Van suggested looking at shifting SR133 to the north to allow enough room to construct the improvements to control access to the businesses to the south.

Danny commented that the pavement design does not conform to the new guidance. This will be fixed in the final version of the report.

Van also added that if it was possible to look at double indicating the stop signs on County Line Road.

Danny mentioned that the signal permit will need to be modified to remove the overhead beacon and add ground mounted signs.

Jeff summarized the conclusions at the end of the meeting. We will provide channelization with concrete islands if possible, add ground mounted warning signs along SR 133, add rumble strips to County Line Road, control access to businesses on the south side of SR 133, and try to double indicate stops along County Line Road.

With no more questions or comments the meeting ended.

# Concept Team Meeting Sign In Sheet

July 24, 2006

STP-0000-00(S22) Dougherty/Worth

## SR133 @ County Line Road Intersection Improvements

Name	Office	Phone	Email
Nick Castromo	URS Corporation	678-808-8821	nick.castromo@urscorp.com
Jeff Church	Gresham, Smith & Partners	770-754-0755	Jeff.Church@gspnet.com
Barzan Aram	<del>URS</del> TSD	404-635-8152	barzan.aram@dot.state.ga.us
Courtney Johnson	TSD	404-635-8128	
Donnie Stanfill	Mitchell EMC	229-336-5221	donnie.stanfill@midatlantic.com
William (Bill) Cooper	GA DOT Utilities	229-386-3298	William.Cooper@dot.ga.gov
JOE COWAN	GOOT CONST	229-386-3304	
SCOTT CARTER	GOOT Maint	229-386-3312	
BRENT THOMAS	GOOT Precinct	229-386-3300	brent.thomas@dot.ga.gov
DANNY P. GAY	GOOT TRAFFIC OPS	229-386-3435	
Van Mason	GOOT Traffic	229-386-3435	Van.Mason@dot.ga.gov
Wendell Pitts	Mediacom	229-888-0242 <sup>x278</sup>	wpitts@mediacom.com
Ruth Forrester	GOOT/OEL	404-699-6882	ruth...
Keisha Jackson	GOOT/OEL	404-699-6882	keisha.jackson...



# TABLE OF CONTENTS

Item	Page
I. Introduction .....	1
II. Inventory of Existing Conditions .....	3
Roadways .....	3
A. State Route 133 (Moultrie Road) .....	3
B. County Line Road .....	3
C. Nelms Road .....	5
D. Intersection of SR133 and County Line Road .....	5
Adjacent Land Use .....	5
Speed Study .....	6
III. Sight Distance Analysis .....	7
IV. Operational Capacity Analysis .....	8
Unsignalized Intersections .....	8
V. Existing and Future Traffic Volumes .....	9
Existing Traffic Data .....	9
Existing Operational Conditions .....	9
Future Traffic Operations .....	11
VI. Planned Transportation Improvements .....	14
VII. Crash History .....	15
VIII. Traffic Signal Warrant Analysis .....	16
IX. Alternatives .....	20
1. Realignment of County Line Road .....	20
2. Split County Line Road .....	20
3. Improvements to County Line Road .....	23
4. Access Control .....	25
5. Overhead Flashing Beacon .....	28
6. Improved Signage .....	28
X. Conclusions and Recommendations .....	29

## LIST OF TABLES

Table	Page
Table 1: Level of Service Criteria for Unsignalized Intersections .....	8
Table 2: Existing Intersection Operations .....	9
Table 3: Historical Growth .....	11
Table 4: Existing and Future AM Peak Hour Traffic Volumes .....	12
Table 5: Existing and Future PM Peak Hour Traffic Volumes .....	12
Table 6: Existing and Future Condition Intersection Operations .....	12
Table 7: Future Traffic Volumes at SR133 and County Line Road .....	16

## LIST OF FIGURES

Figure	Page
Figure 1: Location Overview Map .....	2
Figure 2: Existing Lane Configuration .....	4
Figure 3: View from Northbound County Line Road looking southeast along SR133 .....	7
Figure 4: Existing Volumes .....	10
Figure 5: Future Traffic Volumes .....	13
Figure 6: Realignment of County Line Road .....	21
Figure 7: Split County Line Road .....	22
Figure 8: School Bus Turning from southeast SR133 onto NB County Line Road .....	23
Figure 9: County Line Road Improvements .....	24
Figure 10: View from Northbound County Line Road looking northwest along SR133 .....	25
Figure 11: Access to and Configuration of Businesses at Intersection .....	26
Figure 12: Hunting Store Parking Lot Along SR133 Looking Northwest .....	27
Figure 13: Hunting Store Parking Lot Along SR133 Looking Southeast .....	27
Figure 14: Conceptual Intersection Approach Warning Sign .....	28

## APPENDIX

- Appendix I: Traffic Volume Worksheets
- Appendix II: Existing Intersection Analysis
- Appendix III: Future Intersection Analysis
- Appendix IV: Signal Warrant Analysis Worksheets

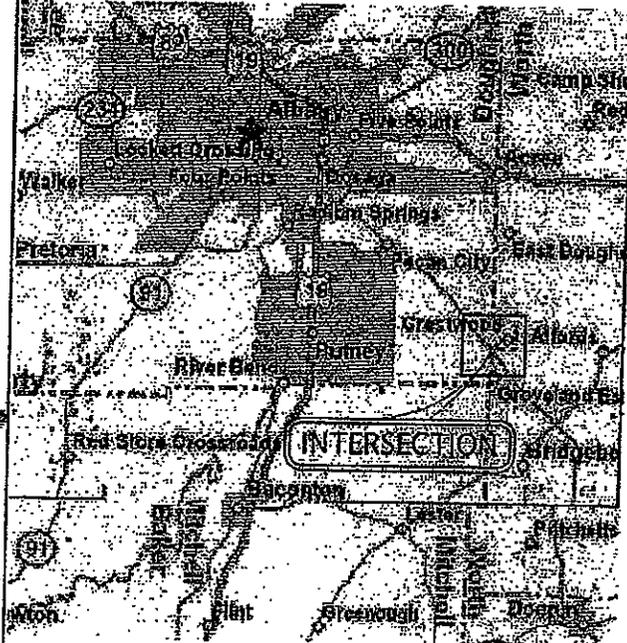
## **I. INTRODUCTION**

The purpose of this study is to document, analyze, and make recommendations that improve safety and traffic operations at the intersection of State Route 133 (SR133), also called Moultrie Road, and County Line Road illustrated in Figure 1. Included with this report are the results of a field observation, sight distance analysis, capacity analysis, crash history analysis, speed study, and traffic signal warrant analysis.

One assumption made for consistency throughout this study is that County Line Road is considered the north-south route, while SR133 is northwest and southeast.



City of Albany, Dougherty County, GA



LOCATION MAP

FIGURE 1  
URS Corporation

## II. INVENTORY OF EXISTING CONDITIONS

An inventory was performed of the roadways and adjacent land uses in the immediate vicinity of the intersection of SR133 and County Line Road. To gain a real sense of current traffic conditions field observations were conducted during from 3:30 to 6:00 pm on May 3, 2005 and then from 6:45 to 8:45 am on May 4, 2005. The following is a brief description of these facilities; the lane configurations at the intersections are subsequently shown on Figure 2.

### Roadways

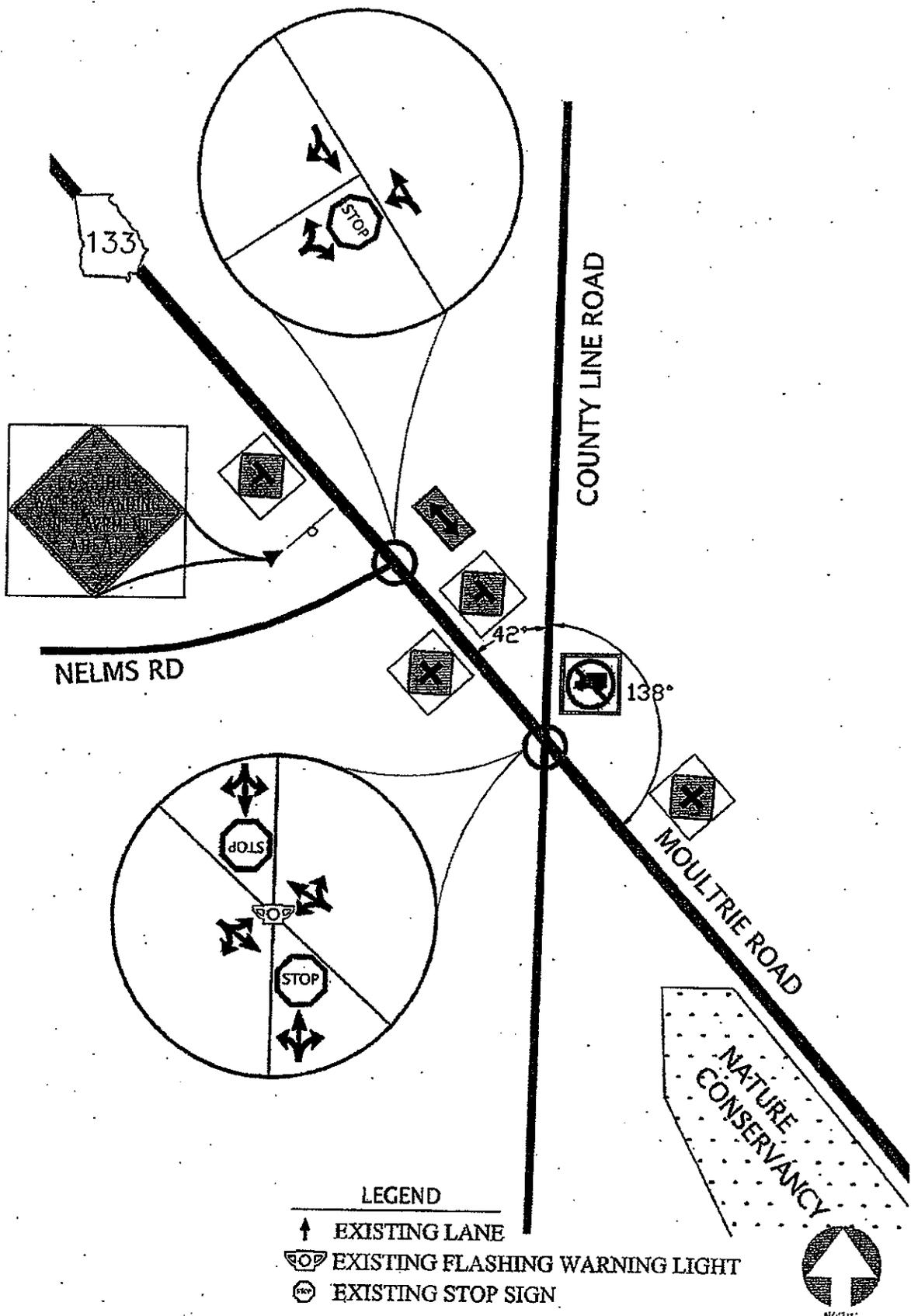
#### A. State Route 133 (Moultrie Road)

State Route 133 (SR133), also known as Moultrie Road, is a northwest-southeast thoroughfare providing connectivity between the Cities of Albany and Moultrie. According to the Dougherty County Regional Transportation Plan, the Road Classification is Major Principal Arterial Street. In the vicinity of the intersection with County Line Road, SR133 has one lane in each direction separated by a double yellow center line and is posted with a 55 miles per hour (mph) speed limit. In addition, there are no separate turn lanes, curb, gutter, or sidewalk. Traffic along SR133 is alerted to County Line Road with an overhead flashing yellow beacon at the intersection. According to the Road Characteristic (RC) database traffic along SR133 includes an estimated 15 percent truck traffic, including semi-trucks and log trucks.

Warning signs are posted on both approaches of SR133 alerting vehicles of the intersections with Nelms Road and County Line Road. These include standard MUTCD W2-2 "T" intersection before Nelms Road, and W2-1 "four leg intersection sign" before County Line Road. In addition these southeast bound vehicles approaching Nelms Road are warned of "POSSIBLE WATER STANDING ON PAVEMENT AHEAD."

#### B. County Line Road

County Line Road is a due north-south Major Collector according to the Dougherty County Comprehensive Transportation Plan linking SR300 to the north, SR112 which connects to the City of Camilla and finally changing names to Boundary Road before the intersection with Morey Hill Road/Ticknor Road where Worth, Colquitt, and Mitchell Counties come together. Traffic moves via one lane in each direction along the rural cross section, where the speed limit is posted 55 mph. Both approaches of County Line Road to SR133 are stop controlled with red overhead flashing warning lights. Also, each approach offers a single lane for left, through and right turn movements. It should be noted that the southbound approach to SR133 flares allowing space for a left or through and right turning vehicle to wait side by side. Signage on County Line Road was inconsistent with the north leg posted "no trucks" and the south leg lacking any posted speed limit.



EXISTING LANE CONFIGURATION

LEGEND

- ↑ EXISTING LANE
- ◻ (with flashing light symbol) EXISTING FLASHING WARNING LIGHT
- ◻ (with STOP) EXISTING STOP SIGN



FIGURE 2

URS Corporation

Despite the "no trucks" sign several semi-trucks were observed turning from northwest SR133 onto northbound County Line Road.

### **C. Nelms Road**

Nelms Road runs east to west in this portion of Dougherty County with one lane in each direction, a rural cross section, and a posted speed limit of 55 mph. According to the Dougherty County Comprehensive Transportation Plan, the Road Classification is Local Collector. Nelms Road forms a T-intersection approximately 570 feet north of the intersection of SR133 and County Line Road. At its intersection with SR133, eastbound Nelms Road has a single lane serving left, through, and right turning movements.

### **D. Intersection of SR133 and County Line Road**

The approximately 42-degree angle between SR133 and County Line Road, as previously illustrated in Figure 2, results in several unique operating characteristics. Specifically, vehicles traveling southeast on SR133 turning left onto northbound County Line Road must slow and turn sharply to make the maneuver. This movement is particularly challenging for school buses and increases in difficulty when a southbound vehicle from County Line Road is present waiting to enter SR133.

The opposite is true for vehicles heading northwest on SR133 turning right onto County Line Road. Virtually unlimited sight distance allows vehicles to maintain a high rate of speed as they angle onto northbound County Line Road. Despite signs prohibiting trucks from entering County Line Road several semi-trailers were observed making this maneuver.

### **Adjacent Land Use**

This intersection is located approximately 10 miles southeast of Albany, Georgia at the border of Dougherty and Worth Counties. Development is sparse in the vicinity of this intersection and is a mixture of undeveloped swampy forest, single family residential, agriculture, retail, and a nature preserve. Adjacent land uses to the west of County Line Road include a retail gas station/convenience mart and liquor store while to the east a hunting supply store. A church exists just north of Nelms Road on the eastside of SR133. Elsewhere residential pockets can be found to the north along County Line Road and south between County Line Road and SR133. Due to the limited development in the area and straight roads vehicle speeds tended to be high. Also a Marine Corps Logistics Base located approximately eight miles northwest towards Albany along SR133 generates some traffic passing through this intersection.

## **Speed Study**

A speed study was performed by the City of Albany's Traffic Engineering Department on Monday, May 16, 2005 from 9:45 to 10:45 am. Radar was used to measure the speed of vehicles southeast bound on SR133 approaching County Line Road. Documented speeds ranged from 38 to 76 mph with an 85<sup>th</sup> percentile speed of 61.8 mph. This confirms that vehicles are approaching the intersection at a high rate of speed.

### III. SIGHT DISTANCE ANALYSIS

A sight distance study was conducted at both intersections, using the procedures set forth in A Policy on the Geometric Design of Highways and Streets, Fourth Edition, published by the American Association of State Highway and Transportation Officials (AASHTO). Albany Code of Ordinances – 1985(10283), Article IV, Section 25-51. Requirements, Table I-B lists the minimum clear sight distance for streets in Dougherty County, as 710 feet on arterials with a design speed of 65 mph, no median and grades of 3 percent or less. A conservative design speed of 65 mph was used to ensure the majority of vehicles were accounted for based upon the results of the speed study.

As SR133 is a Major Principal Arterial with no curb, the ability to see a 3.5-foot tall object from a 3.5-foot height at 710 feet was tested at the intersections of County Line Road and Nelms Road, 15 feet back from the roadway shoulder. Sight distances looking northwest and southeast from all approaches were well above the required 710 feet.

Despite virtually unlimited sight distance measurements, as shown in Figure 3, the potential exists for vehicles parking in front of the hunter supply store, located on the southeast corner of SR133 and County Line Road, to block drivers view and reduce sight distance to under 300 feet.



**Figure 3: View from Northbound County Line Road looking southeast along SR133.  
Note unlimited sight distance and uncontrolled parking lot serving hunters supply store.**

## IV. OPERATIONAL CAPACITY ANALYSIS

Existing traffic operations at SR133 and County Line Road were analyzed in accordance with HCM methodology described below.

### Unsignalized Intersections

For unsignalized intersections at which the side street or minor street is controlled by a stop sign, the criteria for evaluating traffic operations are the Level of Service (LOS) for the turning movements at the intersection and the Level of Service for the overall intersection. LOS is based on the average controlled delay incurred at the intersection. Controlled delay for unsignalized intersections includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Several factors affect the controlled delay for unsignalized intersections, such as availability and distribution of gaps in the conflicting traffic stream, critical gaps, and follow-up time for a vehicle in the queue.

LOS is assigned a letter designation from A through F. LOS A indicates excellent operations with little delay to motorists, while LOS F exists when there are insufficient gaps of acceptable size to allow vehicles on the side street to cross safely, resulting in extremely long total delays and long queues. Table 1 presents LOS criteria for two-way stop-controlled and all-way stop-controlled (unsignalized) intersections.

Level of Service	Average Control Delay (sec/veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Source: 2000 Highway Capacity Manual

## V. EXISTING AND FUTURE TRAFFIC VOLUMES

### Existing Traffic Data

Turning movement counts were performed at the intersection of SR133 with County Line Road in conjunction with the SR133 improvement project P.I. No. 0000522. In addition to traffic counts, intersection configuration and traffic control device data were also obtained through field survey.

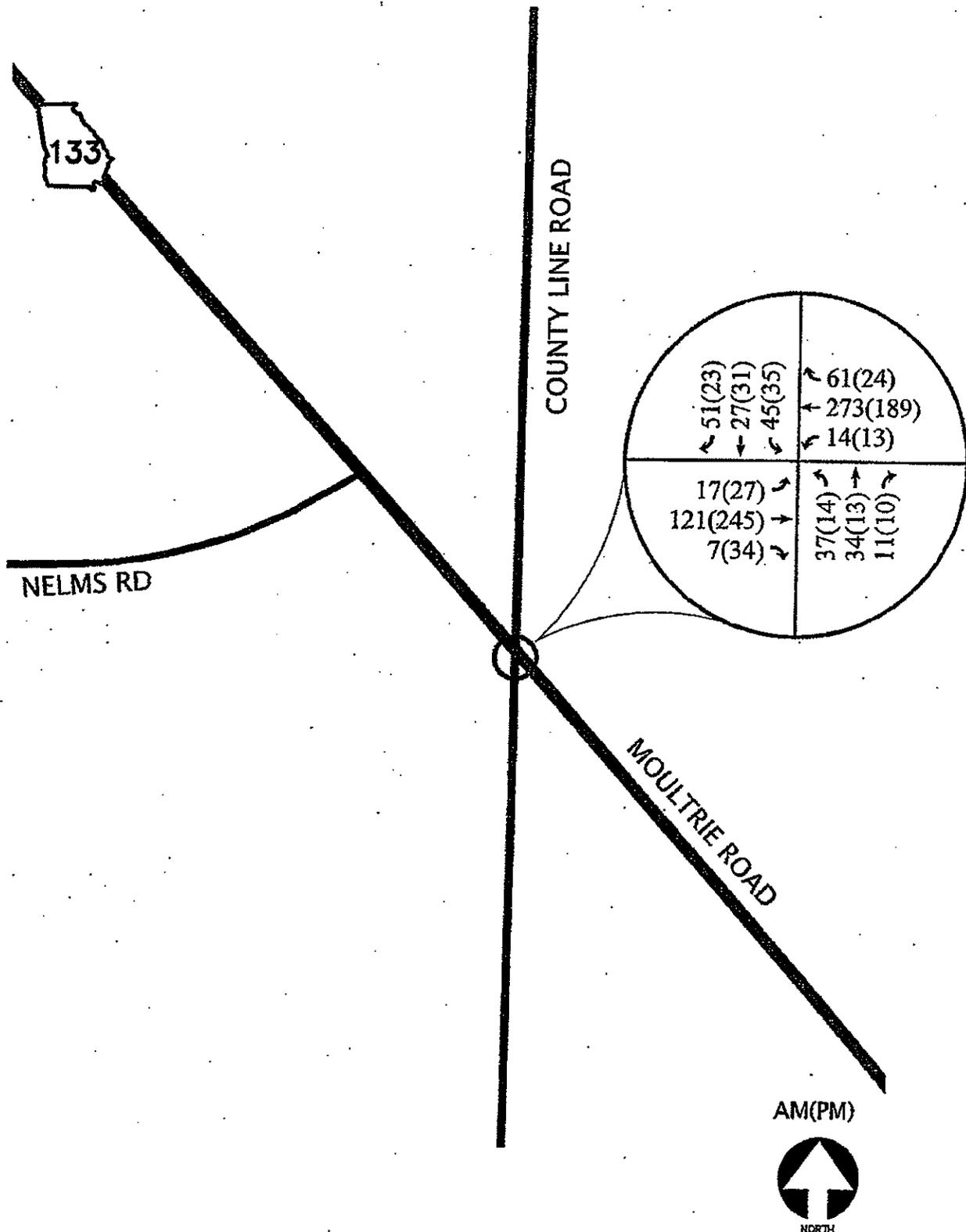
Turning movement counts were performed on Wednesday, November 11, 2004 during the morning peak period from 7 am to 9 am and during the evening peak period from 4 pm to 6 pm. The four consecutive 15-minute interval volumes that summed to produce the highest volume at each intersection were then determined. These volumes make up the peak-hour traffic volumes shown in Figure 4 used in the level of service analysis. In addition to the turning movement counts, 24-hour machine counts were performed on Tuesday, November 10, 2004 to collect directional traffic volume data on SR133 at County Line Road.

### Existing Operational Conditions

Using the existing turning movement counts collected at SR133 at County Line Road, the LOS for the morning and evening peak hours were calculated based upon HCM unsignalized methodology. The results of the analyses are presented in Table 2 and the analysis worksheets are in the Appendix.

Intersection	A.M. Peak Hour	P.M. Peak Hour
	LOS	LOS
SR133 at County Line Road	A	A
- northbound approach	C	B
- southbound approach	C	C

Based on the above analyses, the intersection is currently operating within desirable ranges of LOS during both the morning and evening peak hours.



EXISTING WEEKDAY PEAK HOUR VOLUMES

AM(PM)



NORTH

FIGURE 4

URS Corporation

## Future Traffic Operations

Future conditions are those operations that would exist in the future without additional improvements. The project is proposed for completion within a three-year time frame. Therefore, future traffic conditions are studied for 2008. To project future traffic volumes, a review of historical growth in the area was performed. Georgia DOT maintains count stations at several locations in the vicinity of the site. From these the four adjacent traffic count (TC) locations include 0152, 0154, 0172, and 0174. Table 3 presents daily volumes recorded at these TC's between 1997 and 2003.

Roadway	Location	1997	1998	1999	2000	2001	2002	2003	Growth per Year
SR133	Between Spring Flats Rd and Gravel Hill Rd (TC 0154)	8,075	7,328	7,564	8,100	8,364	6,993	8,240	0.3%
SR133	Between County Line Rd and Gibson Rd (TC 0152)	5,506	5,670	7,188	6,020	5,363	5,283	5,740	0.7%
SR133	Between Ashburn Hwy and Groveland Dr (TC 0174)	4,952	4,905	5,070	6,434	5,196	5,291	5,730	2.5%
SR133	At Bridgeboro Anderson City Rd (TC 0172)	5,062	4,140	4,279	4,764	4,693	4,589	4,310	-2.6%

Growth per year was calculated based upon the following equation and example for TC 0152:

$$G = \left( \left( \frac{x}{y} \right)^{\frac{1}{(F-I)}} - 1 \right) * 100 = \left( \left( \frac{5740}{5506} \right)^{\frac{1}{(2003-1997)}} - 1 \right) * 100 = 0.7\%$$

Where:

- G=Growth per Year
- X=AADT 2003
- Y= AADT 1997
- F=Final Year
- I=Initial Year

As shown in Table 3, traffic growth in the area has fluctuated since 1997, with some years showing positive growth followed by years of negative growth. Growth over the past six years along SR133 north of Bridgeboro Anderson City Road has been positive, at the ranging from 0.3% to 2.5% per year on an average basis. At TC0172 located at Bridgeboro Anderson City Road growth was -2.6%. Therefore, in order to project a more conservative condition for this study, an annual growth rate of 3% per year was applied for the three-year period to represent future conditions in 2008.

Growth factor was calculated based upon the following equation:

$$\text{Growth Factor} = (1 + i)^N = (1 + 0.03)^3 = 1.093$$

Where  $i$  = annual growth rate and  $N$  = number of years

Table 4 and 5 document the existing and future traffic volumes during the respective morning and evening peak periods. Future traffic volumes were obtained by multiplying existing traffic volumes by the growth factor.

Condition	Northbound			Southbound			Southeast Bound			Northwest Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Volumes	37	34	11	45	27	51	17	121	7	14	273	61
Future Traffic Volumes	40	37	12	49	30	56	19	132	8	15	298	67

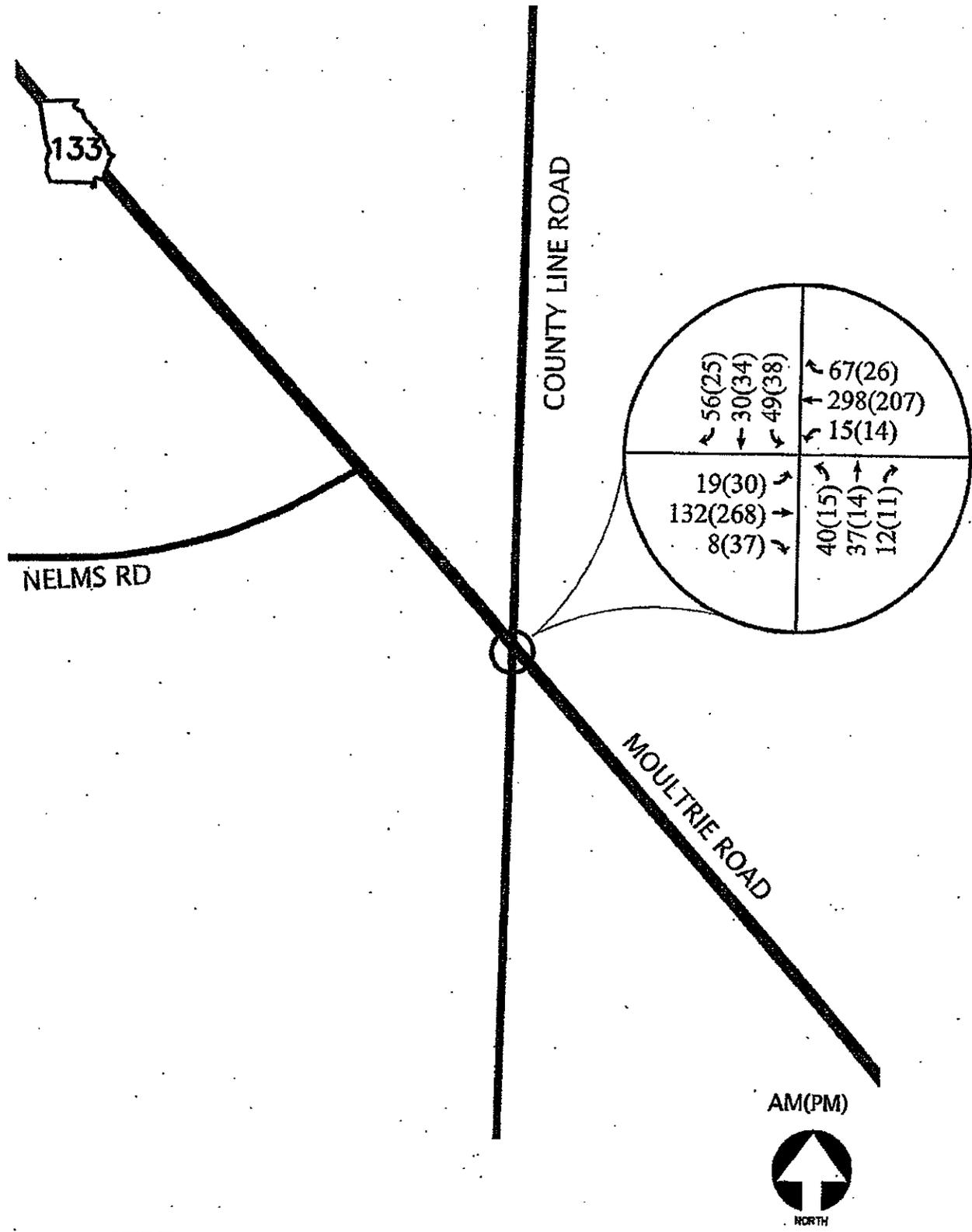
Condition	Northbound			Southbound			Southeast Bound			Northwest Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Volumes	14	13	10	35	31	23	27	245	34	13	189	24
Future Traffic Volumes	15	14	11	38	34	25	30	268	37	14	207	26

Future condition traffic volume projections for 2008 at SR133 and County Line Road are shown in Figure 5.

These volumes were used to analyze traffic operations in the future year with traffic generated by projected growth. Results of this analysis compared to existing conditions are presented in Table 6.

Intersection	Existing Condition		Future Condition	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
	LOS	LOS	LOS	LOS
SR133 at County Line Road	A	A	A	A
- northbound approach	C	B	C	C
- southbound approach	C	C	C	C

With the addition of future growth, delay at northbound County Line Road is projected to change from LOS B to LOS C but still remain within the desirable range.



FUTURE WEEKDAY PEAK HOUR VOLUMES

AM(PM)



NORTH

FIGURE 5

URS Corporation

## **VI. PLANNED TRANSPORTATION IMPROVEMENTS**

The transportation plans of Dougherty County, Worth County, the City of Albany, and the Georgia Department of Transportation were reviewed to identify transportation improvement projects within the vicinity of the proposed development. The following projects were identified:

- A preliminary study conducted by Long Engineering, Inc. in February 2005 identified the need for separate right-turning lanes from WB SR133 onto northbound County Line Road and from southbound County Line Road onto WB SR133.
- SR 133 will be widened to four lanes median divided under the Governor's Road Improvement Program (GRIP). In Worth County under Project STP-0000-00(475), P.I. No. 0000475, the limits of the work are from County Line Road to SR 112. In Dougherty County under Project STP-0000-00(473), P.I. No. 0000473, the limits of the work are from south of Albany to northwest of County Line Road. Per the Preconstruction Status Report for both projects, Engineering has been Authorized but funding for Right-of-Way and Construction are in Long Range.

## VII. CRASH HISTORY

Accident reports and collision diagrams were obtained from GDOT, DMVS, and the City of Albany. Data available from 2000 through 2002 indicated 10 crashes at the intersection. Overall the majority of crashes were angle collisions that occurred during dry, daylight conditions. In addition, 0% of these crashes occurred between September and January, the one exception involved a DUI which occurred in April. Of these, 60% occurred between the hours of 10:30 am through 12:45 pm and the same number of incidents resulted in a "failure to yield" citation.

One crash cited "vision obscured" as a contributing factor where the driver stated his "vision was obscured to northbound traffic on GA 133 by a parked tractor trailer on the west side of the roadway in Worth County."

A review of this data does not point to any single contributing factor that can be attributed to these crashes. Field observation points to several factors that combine to create a potentially hazardous situation and identified areas where improvements may be possible. These factors include vehicles passing through SR133 at a high rate of speed, multiple access points where vehicles enter/exit the SR133 approaches at the County Line Road intersection, and uncontrolled parking at Moree's store and the Hunting Supply store creating the potential for sight distances to be obstructed.

## VIII. TRAFFIC SIGNAL WARRANT ANALYSIS

The purpose of this section of the study is to determine if signalization is warranted at the intersection of SR133 and County Line Road.

In order to determine if signalization is warranted at this intersection, the eight signal warrants described in Section 4C of the 2003 edition of the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD) were evaluated for the existing and projected future volumes.

**Table 7: Future Traffic Volumes at SR133 and County Line Road**

Time	County Line Road		SR133	
	Northbound	Southbound	Northeast Bound	Southwest Bound
7:00 a.m. – 8:00 a.m.	80	23	182	305
8:00 a.m. – 9:00 a.m.	41	16	162	197
9:00 a.m. – 10:00 a.m.	27	21	172	222
10:00 a.m. – 11:00 a.m.	22	14	164	213
11:00 a.m. – 12:00 Noon	22	24	215	192
12:00 Noon – 1:00 p.m.	24	20	162	178
1:00 p.m. – 2:00 p.m.	23	30	173	160
2:00 p.m. – 3:00 p.m.	23	28	226	256
3:00 p.m. – 4:00 p.m.	18	42	301	230
4:00 p.m. – 5:00 p.m.	35	47	370	241
5:00 p.m. – 6:00 p.m.	46	72	353	313
6:00 p.m. – 7:00 p.m.	53	72	312	363

As recommended in Section 4C.01 of the MUTCD, a judgment was made as to whether any of the right-turn traffic should be subtracted from the minor street traffic count. The northwest and southeast approach lanes only offer single lane for left, through, and right turn movements. Therefore, it is expected that the right-turn volumes would be impacted by left turning and through vehicles. Therefore, none of the right-turn volumes were reduced from the approaches to analyze the most accurate condition.

This analysis was performed using a main street approach speed of 55 mph with intersection geometry of single-lane main street and single-lane side street. The worksheets for the analyses are included in the Appendix.

From the signal warrant evaluation, it was found that none of the warrants were satisfied for a traffic conditions at the intersection of SR133 at County Line Road. A more complete description of each warrant evaluated is as follows:

Section 4C.02: Warrant 1, Eight-Hour Vehicular Volume

This warrant is applied where there is a large volume of intersecting traffic or where the traffic on the main street is so heavy that traffic on a minor intersecting street suffers excessive delay or conflict entering or crossing the major street. The required traffic volumes must be present for at least 8 hours of an average weekday. The minimum volumes vary according to the number of lanes on the intersecting streets, the speed of traffic on the main street, and the community size. Two standards are evaluated that compares specific percentages of the proposed volumes. Each standard has two conditions: A and B. The required traffic volumes for both conditions A and B are shown in Table 4C-1 in the MUTCD. Warrant 1 is satisfied if either Standard 1 or 2 is satisfied.

<u>Standard 1</u>	SR133 at County Line Road
Number of hours required traffic is present for Condition A:	0
or	
Number of hours required traffic is present for Condition B:	3
OR	
<u>Standard 2</u>	
Number of hours required traffic is present for Condition A:	0
and	
Number of hours required traffic is present for Condition B:	2
<b>Warrant 1 is:</b>	<b>Not Satisfied</b>

Section 4C.03: Warrant 2, Four-Hour Vehicular Volume

This warrant is similar to warrant 1, except that the required traffic volumes must be present for at least four hours of an average weekday. The traffic volumes required are based on curves (Figure 4C-1 and 4C-2) shown in the MUTCD.

Number of hours required traffic present:	SR133 at County Line Road
<b>Warrant 2 is:</b>	<b>Not Satisfied</b>

Section 4C.04: Warrant 3, Peak Hour

The Peak Hour signal warrant is applied where traffic conditions are heavy during a minimum of one hour for an average day, causing undue delay during this time period to



Many traffic signals are installed on the premise of reducing accidents; however, it must be recognized that signals may actually increase some types of accidents. The result is often contrary to the intended goal. Four conditions must be met before a signal is installed solely to reduce accidents:

- a) Less restrictive solutions have been tried and enforced with unsatisfactory results;
- b) There have been five or more accidents of types preventable by traffic signals in the last 12 months; and
- c) Warrant 1 is met to not less than 80% of their respective requirements or the volume of pedestrian traffic is not less than 80% of the requirements specified in the pedestrian volume warrant.

A signal installed solely under this warrant should be traffic actuated.

SR133 at County Line Road

**Warrant 7 is:**

**Not Satisfied**

**Section 4C.09: Warrant 8, Roadway Network**

Warrant 8 is applied where there is a need to encourage a shift in travel patterns to organize traffic flow on a roadway network. This warrant is satisfied if one or both of the following criteria are met:

- a) the intersection has a total or immediately projected volume of at least 1,000 vehicles during the peak hour and has a projected 5-year volume that will meet Warrant 1, 2, or 3 during an average weekday; or
- b) the intersection has a total existing or immediately projected volume or at least 1,000 vehicles per hour for each of any 5 hours of a Saturday or Sunday.

SR133 at County Line Road

**Warrant 8 is:**

**Not Applicable**

## **IX. ALTERNATIVES**

Several alternatives were identified as potential improvements to the intersection. These include realigning both approaches of County Line Road; joining southbound County Line Road with Nelms Road and "T" northbound County Line Road into SR133; adding a channelizing median and eyebrow to the southbound approach of County Line Road; add access control for Hunters Supply Store parking lot; increase access control in front of Moore's store/gas station; replace overhead flashing beacon, and add signage. Each of these alternatives was evaluated based upon several criteria including safety improvement, construction cost, right of way (ROW) cost, environmental impact, operational improvement, and utility relocation cost. The following sections explore the advantages and challenges for each alternative.

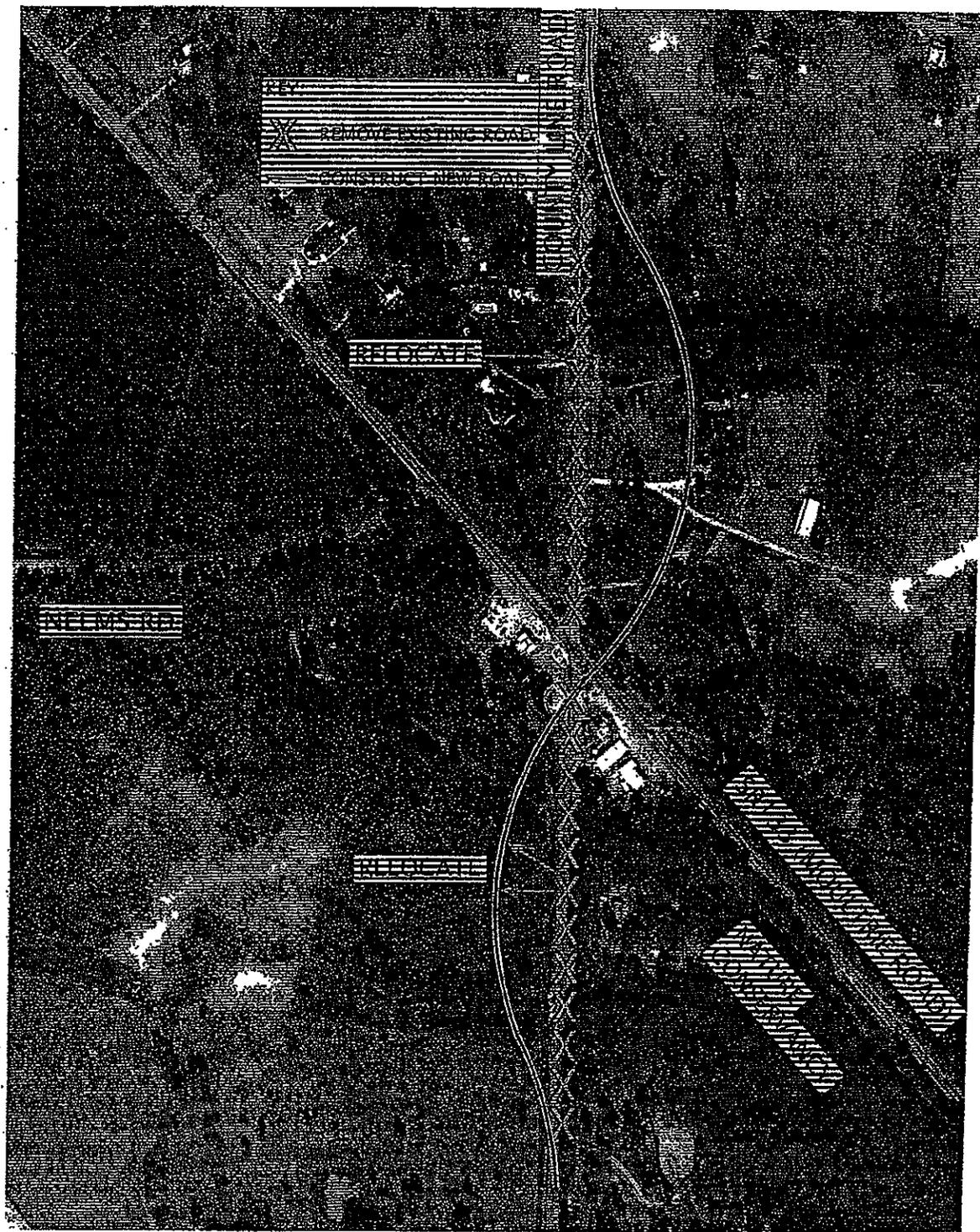
### **1. Realignment of County Line Road**

One alternative to consider involves realigning County Line Road by introducing a curve into both County Line Road approaches to SR133, as conceptually illustrated in Figure 6. This alternative would require the highest ROW, construction, and environmental costs of any alternative. At least one business, two single-family homes, and above ground electrical utilities would require relocation to implement this alternative. Significant improvement in the angle could be achieved through this construction; however, achieving a 90-degree junction is not anticipated. Despite the significant costs, this construction would reduce future conflicts as the area grows because increases in density by additional businesses will increase future ROW costs.

### **2. Split County Line Road**

A second major construction possibility for improving the alignment of intersections in the vicinity involves splitting County Line Road, as portrayed in Figure 7. This would require curving the southbound approach of County Line Road to form a four-way intersection with Nelms Road and curving the northbound approach to form a "T" with SR133. At least two residences and possibly one business would require relocation to build this alternative. An additional challenge involves the proximity of the nature conservancy, which contains Cooley's Meadowrue, an endangered plant species. Financially, ROW, construction, environmental impacts, and above ground electrical utilities costs should be less than Alternative 1. Compared to Alternative 1, this promises to increase the distance between the intersections and result in closer to 90-degree intersections.

Operationally, splitting County Line Road would affect a significant percentage of vehicles passing north south through the intersection. Breaking this route would require northbound drivers to turn left onto SR133, travel a short distance before turning right and continuing on County Line Road. The potential for future median breaks should be investigated due to the short distance between these two intersections.



**REALIGNMENT OF COUNTY LINE ROAD**



**FIGURE 6**

URS Corporation



SPLIT COUNTY LINE RD



North

FIGURE 7  
URS Corporation

### 3. Improvements to County Line Road

Currently, the southbound approach of County Line Road flares at the intersection with SR133. This creates space for two vehicles to wait at the approach and can result in sight distance challenges. Also, during a field observation a school bus turning from SR133 southeast onto northbound County Line Road was slowed due to a southbound County Line Road vehicle waiting to turn left onto SR133. A photo of this turning maneuver is provided in Figure 8. After initiating the turn the school bus was unable to complete the maneuver, despite driving into the grassy shoulder, until the vehicle backed up. During these few moments, the rear of the school bus extended into the intersection blocking vehicles northwest bound on SR133, creating a hazardous situation.

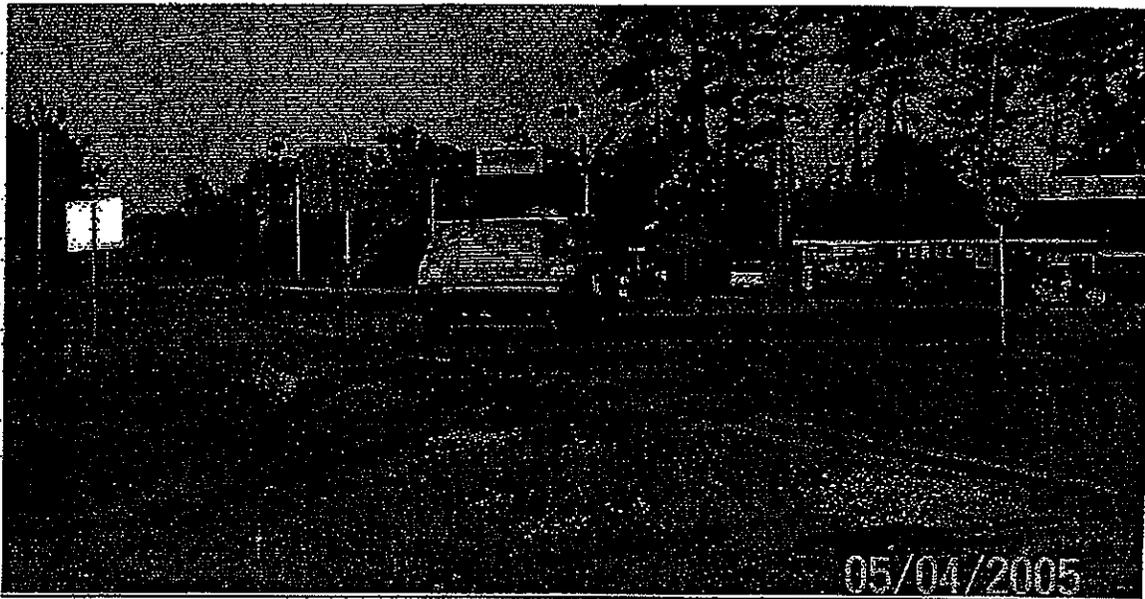
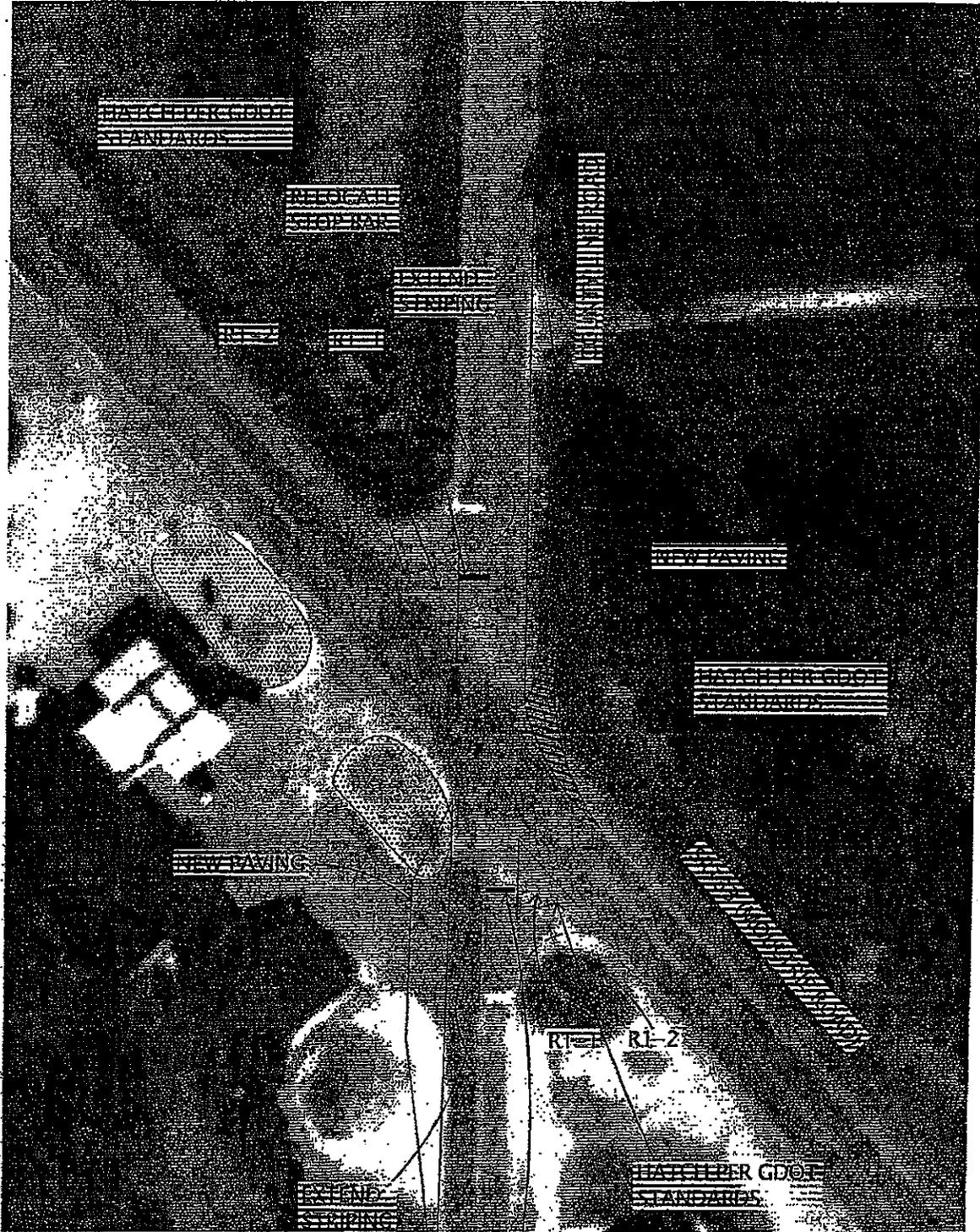


Figure 8: School Bus Turning from southeast SR133 onto NB County Line Road

To prevent this in the future, several minor improvements should be considered. These include the addition of a striped channelizing median on southbound County Line Road, and the construction of an eyebrow, both illustrated conceptually in Figure 9. The striped channelizing median would encourage vehicles to maintain a single file progression serving two functions; first preventing vehicles from blocking sight distance and discouraging them from waiting near the centerline to turn left. In order to further assist vehicles turning left onto County Line Road the construction of an eyebrow should be considered. Construction on the north leg involves relocating a headwall, extending several drainage pipes, and possibly additional paving on the eastside to shift southbound traffic further from the "center." This combination would assist vehicles turning left from SR133 onto County Line Road. These improvements have lower construction, ROW, environmental impact, and utilities costs than the full realignment alternatives.



#### 4. Access Control

Today the businesses located on the west side of SR133 include Moree's a convenience store/gasoline station, liquor store, and Bowie Box Hunting Products where hunting supplies, ammo, licenses, clothing, and deer processing are sold. Currently, Moree's parking lot includes two driveways with access to SR133, these are defined by semispherical raised pavement markers and posted with no parking signs. However, vehicles continue to park in the driveways blocking sight distance for vehicles approaching SR133 from northbound County Line Road, as shown in Figure 10. The configuration and current access controls are illustrated in Figure 11.

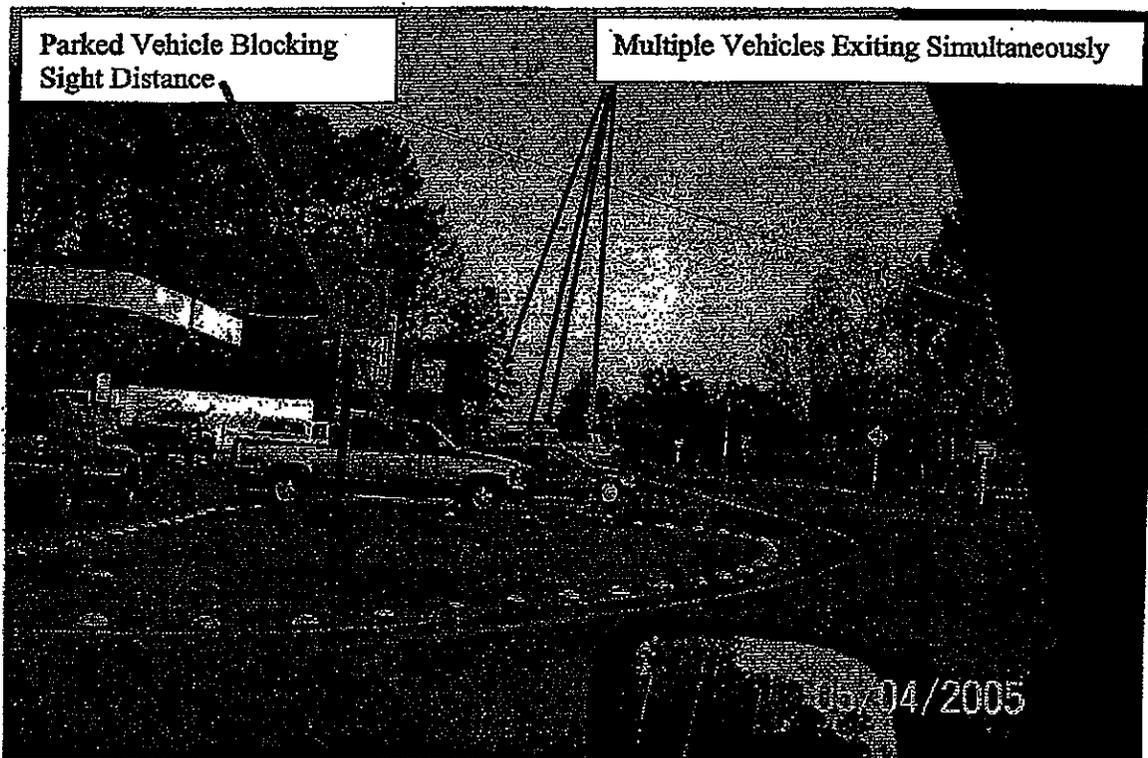


Figure 10: View from Northbound County Line Road looking northwest along SR133.

On the opposite side of County Line Road the businesses currently have uncontrolled access along approximately 250 feet of SR133 frontage. This results in unrestricted parking, which invariably blocks the sight distance of vehicles on northbound County Line Road. This parking lot is illustrated in Figures 12 and 13. To prevent future crashes, improved access control measures and a circulation plan should be implemented that balances the public's safety while accommodating the needs of the existing businesses. This plan might include adding curb and gutter along the state ROW to create driveways.





**Figure 12: Hunting Store Parking Lot Along SR133 Looking Northwest**



**Figure 13: Hunting Store Parking Lot Along SR133 Looking Southeast**

## 5. Overhead Flashing Beacon

An investigation should be conducted to determine the original intent of the overhead-flashing beacon. To reduce the potential for drivers to mistake the intersection as a four way stop, consideration should be given to removing the overhead-flashing beacon and replacing it with flashing amber lights on the intersection warning signs along SR133's approaches to County Line Road. This would retain the original intention of the overhead flashing warning lights while simultaneously reducing the potential for motorists approaching SR133 to mistake the intersection as a four way stop and pulling out in front of oncoming traffic.

## 6. Improved Signage

The final minor consideration for improvement around this intersection is to update the signage to provide advanced warning and uniform information. Currently, standard intersection warning signs, MUTCD W2-1, make vehicles approaching County Line Road aware of the intersection. However, due to the skewed angle of approach a custom sign illustrating this offset angle should be considered. A conceptual representation of this sign is illustrated in Figure 14.

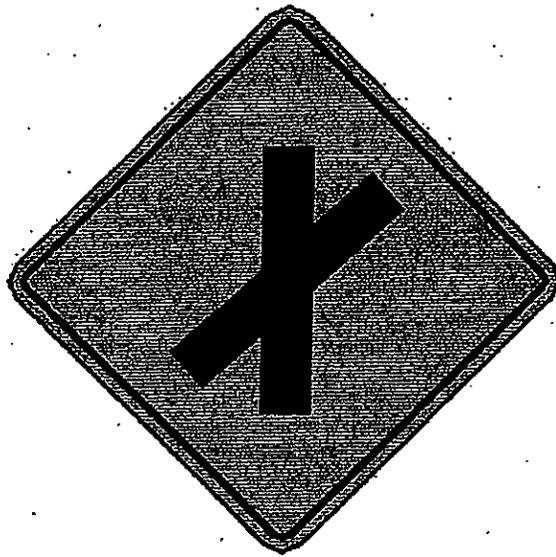


Figure 14: Conceptual Intersection Approach Warning Sign

Other standard MUTCD warning signs that should be considered include turning traffic ahead, and W3-4 "be prepared to stop."

In addition to this warning sign, a "No Trucks" MUTCD R5-2 is posted on the northbound leg of County Line Road. However, no signs are posted along SR133 to provide advanced warning prior to making the turn from SR133. The reasons for this sign should be investigated and additional advance notification signs installed along SR133.

## X. CONCLUSIONS AND RECOMMENDATIONS

This study documents the conditions around SR133 at County Line Road, forecasts future traffic volumes, and identifies several major and minor alternatives to improve the safety and operations of this intersection. Upon initial inspection the primary challenge at this intersection seems to be the skewed angle. However, in addition to challenges presented by the geometry, field observation revealed several additional sources of potential conflict, including access control of businesses along SR133.

Despite high construction and ROW costs, consideration should be given to including the realignment with another of the previously mentioned SR 133 improvement projects, P.I. 0000473 in Dougherty County or P.I. 0000475 in Worth County. Incorporating the high capital realignment within the SR 133 widening would minimize duplication of efforts, throw away, and length of construction time.

A combination of minor improvements should be implemented immediately to prevent future crashes. These measures include adding a striped median and eyebrow to County Line Road (depending on the amount of right-of-way, some property acquisition may be involved), improving access control along SR133, updating the flashing warning lights, and installing custom warning signs illustrating the offset angle of County Line Road to vehicles on SR133. Implementation costs of these alternatives are relatively low and the losses when SR133 is widened and improved would be minimal compared to the interim safety and operational benefits they offer.

## Appendix

**Appendix I: Traffic Volume Worksheets**

County Line Road  
15280227

UKS Corporation  
May 2005

SRL133 (Moultrie Rd) at County Line Road

AM Peak Hour

Condition	Northbound			Southbound			Southeast Bound			Northwest Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Volumes	37	34	11	45	27	51	17	121	7	14	273	61
Annual Growth Factor	3	3	3	3	3	3	3	3	3	3	3	3
Number of Years to Grow Traffic	3	3	3	3	3	3	3	3	3	3	3	3
Future Traffic Volumes	40	37	12	49	30	56	19	132	8	15	298	67
	Tot			Tot			Tot			Tot		
	82			123			145			348		

PM Peak Hour

Condition	Northbound			Southbound			Southeast Bound			Northwest Bound		
	L	T	R	L	T	R	L	T	R	L	T	R
Existing Volumes	14	13	10	35	31	23	27	245	34	13	189	24
Annual Growth Factor	3	3	3	3	3	3	3	3	3	3	3	3
Number of Years to Grow Traffic	3	3	3	3	3	3	3	3	3	3	3	3
Future Traffic Volumes	15	14	11	38	34	25	30	268	37	14	207	26
	Tot			Tot			Tot			Tot		
	37			89			306			226		

**Appendix II: Existing Intersection Analysis**

2: SR133 & County Line Road  
 HCM Unsignalized Intersection Capacity Analysis

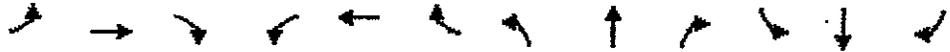
Existing AM  
 Baseline



Approach	EB	WB	SB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Lane Configurations	↕		↕		↕		↕		↕		↕	
Signal Control	Stop											
Grade	0%		0%		0%		0%		0%		0%	
Volume (veh/h)	17	14	27	24	27	27	32	31	45	27	27	27
Peak Hour Factor	0.88	0.88	0.88	0.87	0.87	0.87	0.79	0.79	0.79	0.67	0.67	0.67
Pedestrians	None											
Walking Speed (ft/s)	None											
Right turn flare (veh)	None											
Median storage (veh)	None											
vC, unblocked vol	384		145		657	596	141	597	565	349		
p0 queue free %	98		99		85	89	98	82	90	89		
Volume Left	19	16	47	67								
cSH	1175	1437	378	473								
Queue Length (ft)	1	1	28	45								
Lane LOS	A	A	C	C								
Approach LOS	A		C		C		C		C		C	
Average Delay			6.3									
Intersection Capacity Utilization	32%		100%		100%		100%		100%		100%	

2: SR133 & County Line Road  
 HCM Unsignalized Intersection Capacity Analysis

Existing PM  
 Baseline



Movement	EB	WB	NB	SB	EB	WB	NB	SB
Lane Configurations	↕		↕		↕		↕	
Signal Control	Free		Free		Free		Free	
Grade	0%		0%		0%		0%	
Volume (veh/h)	29	16	18	39	26	30	13	26
Peak Hour Factor	0.94	0.94	0.94	0.81	0.81	0.81	0.77	0.77
Peak Hour Volume (veh)	29	16	18	39	26	30	13	26
Pedestrians								
Walking Speed (ft/s)								
Right turn flare (veh)								
Median storage veh								
pX, platoon unblocked								
vC1, stage 1 conf vol	263		297		660		635	
vCu, unblocked vol	263		297		660		635	
iC, 2 stage (s)	98		99		94		96	
p0 queue free %	98		99		94		96	
Directional Volume								
Volume Left	29	16	18	39	26	30	13	26
Volume Right	0	0	0	0	0	0	0	0
cSH	1301	1265	414	429	1301	1265	414	429
Queue Length (ft)	2	1	10	22	2	1	10	22
Approach Delay (s)	A	A	B	C	A	A	B	C
Approach LOS	A		B		C		C	
Intersection Summary								
Average Delay	3.7		3.7		3.7		3.7	
Intersection Capacity Utilization	0.27		0.27		0.27		0.27	

### **Appendix III: Future Intersection Analysis**

2: SR133 & County Line Road  
 HCM Unsignalized Intersection Capacity Analysis

Future AM  
 Baseline



	EB	WB	SB	NB
Lane Configurations	↕	↕	↕	↕
Sign Control	Stop	Stop	Stop	Stop
Grade	0%	0%	0%	0%
Volume (veh/h)	19	14	5	0
Peak Hour Factor	0.88	0.88	0.88	0.87
Pedestrians				
Walking Speed (ft/s)				
Right turn flare (veh)				
Median storage (veh)				
vC1, stage 1 conf vol.				
vCu, unblocked vol.	420	159	719	652
IC, 2 stage (s)				
p0 queue free %	98	99	81	88
Volume Left	22	17	51	73
Volume Right	0	7	15	34
cSH	1140	1420	341	438
Queue Length (ft)	1	1	35	59
Lane LOS	A	A	C	C
Approach LOS	A	A	C	C
Average Delay	7.3			
Intersection Capacity Utilization	39.6%			
Level of Service	A			

2: SR133 & County Line Road  
 HCM Unsignalized Intersection Capacity Analysis

Future PM  
 Baseline



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SEB	SRT	
Lane Configurations	↕			↕			↕			↕		
Sign Control	Pre			Pre			Pre			Pre		
Grade	0%			0%			0%			0%		
Volume (veh/h)	36	37	35	20	20	20	17	19	38	31	29	
Peak Hour Factor	0.94	0.94	0.94	0.81	0.81	0.81	0.77	0.77	0.77	0.89	0.89	
Pedestrians												
Walking Speed (ft/s)												
Right turn flare (veh)												
Median storage (veh)												
vCi, stage 1 conf vol												
vCu, unblocked vol	288			324			722	691	305	698	694	
IC, 2 stage (s)												
p0 queue free %	97			99			93	95	98	87	89	
Capacity (veh/h)	1274	1235	978	394			99	95	98	95	96	
Volume Left	32	17	19	43								
cSH	1274	1235	978	394								
Queue Length (ft)	2	1	12	28								
Lane LOS	A	A	C	C								
Approach LOS	A			C			C			C		
Average Delay	4.0											
Intersection Capacity Utilization	69.2%											

**Appendix IV: Signal Warrant Analysis Worksheets**

**SIGNAL WARRANT ANALYSIS REPORT**

SR 133 @ County Line Road

County: COUNTY  
 State: STATE  
 Major Street: SR 133  
 Minor Street: County Line Road  
 Speed on Major Street: 55 mph  
 Approach Lanes: 1 on Major Street  
 1 on Minor Street

Project No.: 15280227  
 Report Date: 5/11/2005  
 Counts Date: 11/10/2004  
 Analyst: scy

**COUNTS DATA**

TABLE 1A  
24Hr VEHICULAR VOLUME COUNTS

	County Line Road Northbound				County Line Road Southbound			
	Total Tube Count	Right Turn	% Right Turn	With 0% RT Turn Reduction	Total Tube Count	Right Turn	% Right Turn	With 0% RT Turn Reduction
12:00 AM	3	0	0	3	7	9	123	7
1:00 AM	0	0	0	0	2	2	123	2
2:00 AM	2	0	13	2	2	2	123	2
3:00 AM	3	0	13	3	0	0	0	0
4:00 AM	7	1	13	7	0	0	0	0
5:00 AM	8	1	13	8	1	1	123	1
6:00 AM	51	7	13	51	15	18	123	15
7:00 AM	80	11	14	80	23	51	222	23
8:00 AM	41	8	20	41	16	17	106	16
9:00 AM	27	3	10	27	21	11	53	21
10:00 AM	22	2	10	22	14	7	53	14
11:00 AM	22	0	0	22	24	0	0	24
12:00 PM	24	0	0	24	20	0	0	20
1:00 PM	23	4	16	23	30	6	20	30
2:00 PM	23	4	16	23	28	6	20	28
3:00 PM	18	3	16	18	42	8	20	42
4:00 PM	35	11	31	35	57	23	40	57
5:00 PM	46	6	13	46	72	17	24	72
6:00 PM	53	7	13	53	72	88	123	72
7:00 PM	26	3	13	26	37	45	123	37
8:00 PM	26	3	13	26	37	45	123	37
9:00 PM	9	1	13	9	32	39	123	32
10:00 PM	4	1	13	4	10	12	123	10
11:00 PM	3	0	13	3	3	4	123	3
<b>Total</b>				556				565

TABLE 1B  
24Hr VEHICULAR VOLUME COUNTS

	SR 133 Eastbound				SR 133 Westbound			
	Total Tube Count	Right Turn	% Right Turn	With 0% RT Turn Reduction	Total Tube Count	Right Turn	% Right Turn	With 0% RT Turn Reduction
12:00 AM	51	3	7	51	29	4	14	29
1:00 AM	12	1	7	12	13	2	14	13
2:00 AM	34	2	7	34	24	3	14	24
3:00 AM	34	2	7	34	16	2	14	16
4:00 AM	32	2	7	32	55	8	14	55
5:00 AM	51	3	7	51	97	13	14	97
6:00 AM	150	10	7	150	250	35	14	250
7:00 AM	182	7	4	182	305	61	20	305
8:00 AM	162	4	2	162	197	10	5	197
9:00 AM	172	2	1	172	222	6	3	222
10:00 AM	184	2	1	164	213	5	3	213
11:00 AM	215	0	0	215	192	0	0	192
12:00 PM	162	0	0	162	178	0	0	178
1:00 PM	173	7	4	173	160	6	4	160
2:00 PM	226	10	4	226	256	10	4	256
3:00 PM	301	13	4	301	230	9	4	230
4:00 PM	370	32	9	370	241	19	8	241
5:00 PM	353	34	10	353	313	24	8	313
6:00 PM	312	21	7	312	363	50	14	363
7:00 PM	199	13	7	199	220	30	14	220
8:00 PM	151	10	7	151	91	13	14	91
9:00 PM	156	11	7	156	72	10	14	72
10:00 PM	77	5	7	77	42	6	14	42
11:00 PM	70	5	7	70	37	5	14	37
<b>Total</b>				<b>3809</b>				<b>3816</b>

**WARRANT ANALYSIS RESULTS:**

**WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME**

**WARRANT 1\* NOT SATISFIED**

STANDARD 1 NOT SATISFIED	CONDITION A	0	HOURS
	CONDITION B	3	HOURS
STANDARD 2 NOT SATISFIED	CONDITION A	0	HOURS
	CONDITION B	2	HOURS

**TABLE 2  
24Hr VEHICULAR TRAFFIC EVALUATION**

HOUR OF DAY	MAJOR ST TOTAL OF BOTH APPROACHES	MINOR ST HIGH VOLUME APPROACH	WARRANT 1			
			STANDARD 1		STANDARD 2	
			CONDITION A	CONDITION B	CONDITION A	CONDITION B
12:00 AM	80	7				
1:00 AM	25	2				
2:00 AM	58	2				
3:00 AM	50	3				
4:00 AM	87	7				
5:00 AM	148	8				
6:00 AM	400	51	MAJOR		MAJOR	
7:00 AM	487	80	MAJOR	MINOR	MAJOR	MINOR
8:00 AM	359	41	MAJOR			
9:00 AM	394	27	MAJOR			
10:00 AM	377	22	MAJOR			
11:00 AM	407	24	MAJOR		MAJOR	
12:00 PM	340	24				
1:00 PM	333	30				
2:00 PM	482	28	MAJOR		MAJOR	
3:00 PM	531	42	MAJOR	MAJOR	MAJOR	
4:00 PM	611	57	MAJOR	BOTH	MAJOR	MAJOR
5:00 PM	666	72	MAJOR	BOTH	MAJOR	BOTH
6:00 PM	675	72	MAJOR	BOTH	MAJOR	BOTH
7:00 PM	419	37	MAJOR		MAJOR	
8:00 PM	242	37				
9:00 PM	228	32				
10:00 PM	119	10				
11:00 PM	107	3				
<b>TOTAL</b>	<b>7625</b>	<b>718</b>				

CRITERIA**	MAJOR ST MINOR ST	WITH 70% REDUCTION		STANDARD	
		350	525	400	600
NO. OF HOURS MET		0	3	0	2

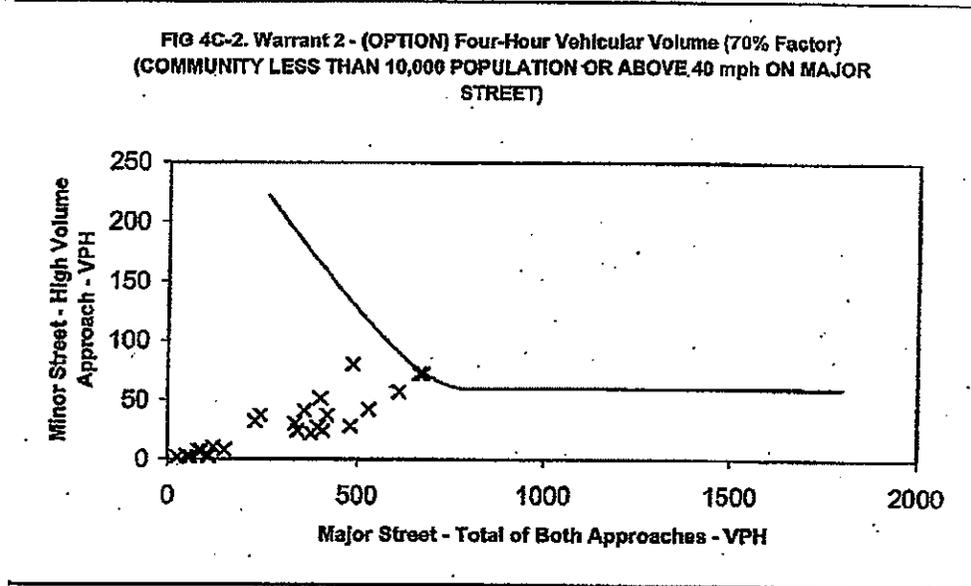
\*Note: Standard 1 is SATISFIED if either CONDITION A or B is satisfied for any eight hours. STANDARD 2 is SATISFIED if CONDITION A and B are satisfied. WARRANT 1 is SATISFIED if either STANDARD 1 or STANDARD 2 is satisfied.

\*\*Note: Criteria for minimum volumes for WARRANT 1 are based on the figures from TABLE 4C-1, Page 4C-5 in section C of the MUTCD 2000 edition.

**WARRANT 2, FOUR-HOUR VEHICULAR VOLUME**

WARRANT 2\* NOT SATISFIED

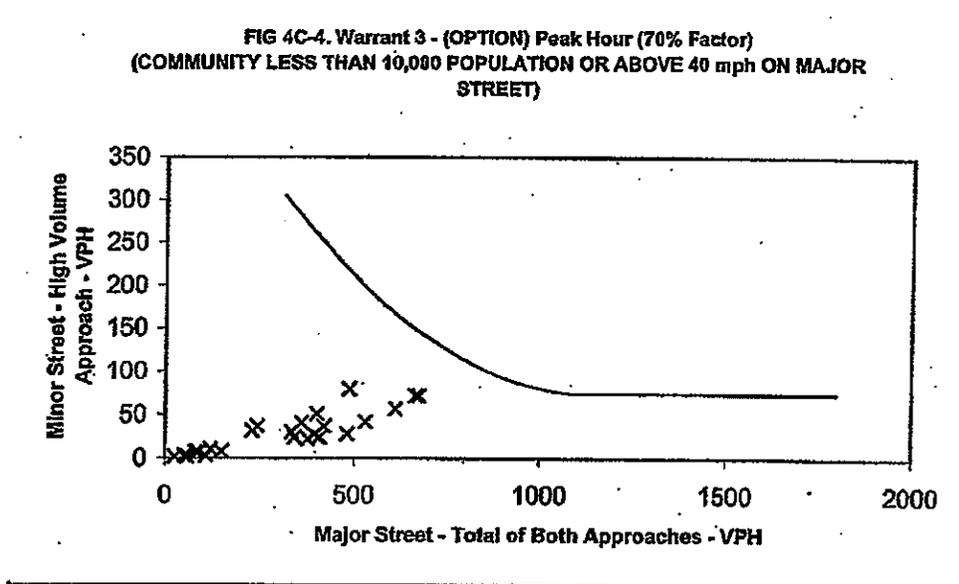
0 HOURS



**WARRANT 3, PEAK HOUR**

WARRANT 3\* NOT SATISFIED

0 HOURS



\*Note: Curves for minimum volumes are based on the curves from FIGURES 4C-1 & 4C-2, Page 4C-7 for WARRANT 2, and FIGURES 4C-3 & 4C-4, Page 4C-9 in section C of the MUTCD 2000 edition for WARRANT 3.

WARRANT 4, PEDESTRIAN VOLUME

WARRANT 4 NOT SATISFIED

WARRANT 5, SCHOOL CROSSING

WARRANT 5 NOT APPLICABLE

WARRANT 6, COORDINATED SIGNAL SYSTEM

WARRANT 6 NOT SATISFIED

WARRANT 7, CRASH EXPERIENCE

WARRANT 7 NOT SATISFIED

5 CRASHES

WARRANT 8, ROADWAY NETWORK

WARRANT 8 NOT APPLICABLE

