ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. #0009218
CSSFT-0009-00(218)
GDOT District 6 - Cartersville
Paulding County
SR 61 @ CR277/Nebo Road/Mayfield Road

OFFICE Design Policy & Support

DATE August 7, 2012

FROM for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT **APPROVED CONCEPT REPORT**

Attached is the approved Concept Report for the above subject project.

Attachment

DISTRIBUTION:

Bobby Hilliard, Program Control Administrator
Genetha Rice-Singleton, State Program Delivery Engineer
Cindy VanDyke, State Transportation Planning Administrator
Angela Robinson, Financial Management Administrator
Glenn Bowman, State Environmental Administrator
Kathy Zahul, State Traffic Engineer
Georgene Geary, State Materials & Research Engineer
Lisa Myers, State Project Review Engineer
Jeff Baker, State Utilities Engineer
Ken Thompson, Statewide Location Bureau Chief
DeWayne Comer, District Engineer
Michael Haithcock, District Preconstruction Engineer
Kerry Bonner, District Utilities Engineer
Perry Black, Project Manager
BOARD MEMBER - 11th Congressional District

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
PROJECT CONCEPT REPORT

Project Type:	Reconstruction	P.I. Number:	0009218
GDOT District:	Six	County:	Paulding
Federal Route Number:	N/A	State Route Number:	61

Intersection at SR 61 and Mayfield/Nebo Road

Submitted for approval:

Gresham, Smith and Partners	3/12/12 DATE
Office Head (Program Delivery) Bobby Hallbrand	3-26-2012 DATE
GDOT Project Manager Perry Black	3/23/12 DATE

Recommendation for approval:

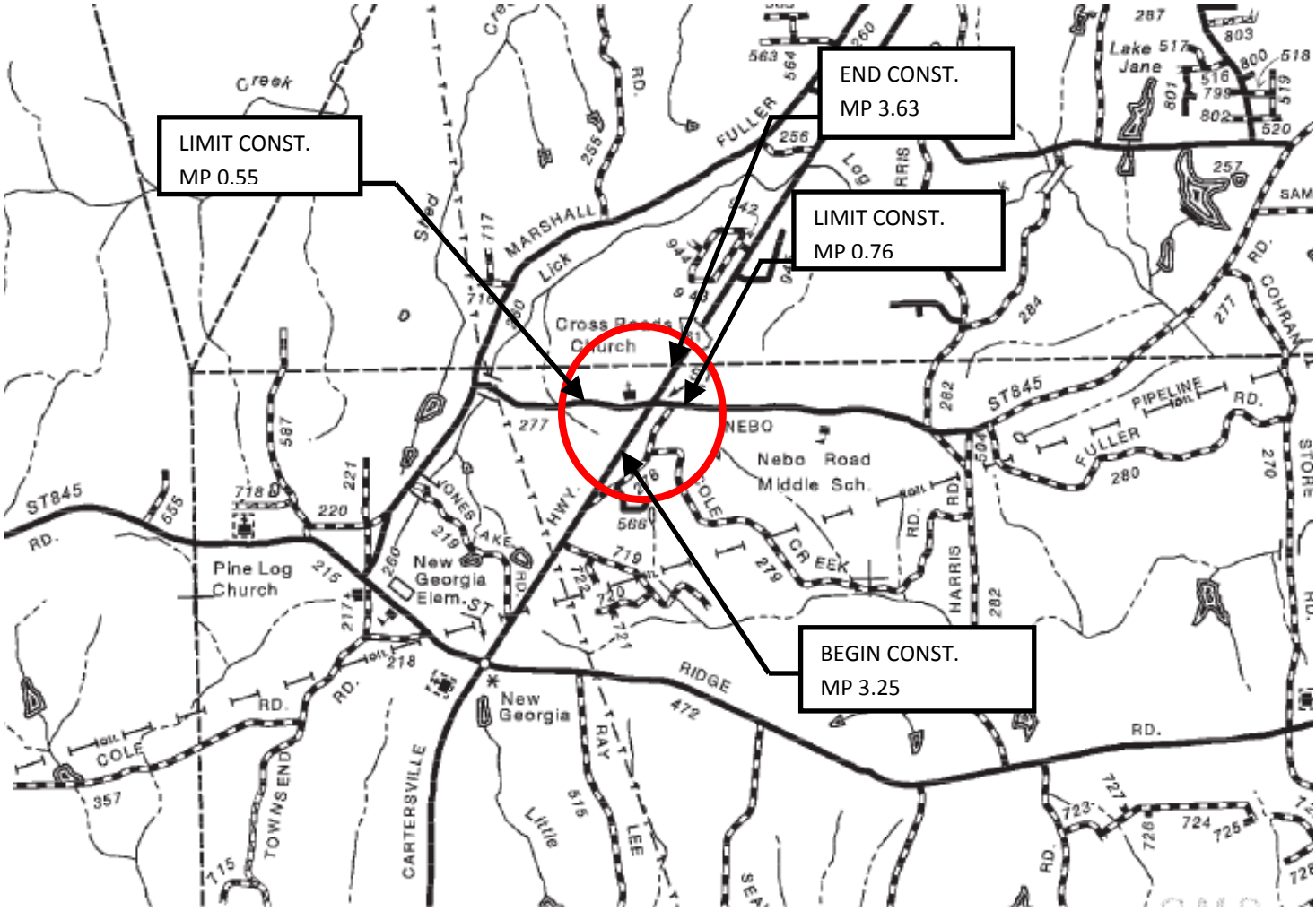
Program Control Administrator	DATE
State Environmental Administrator Glenn Bowman * /KLP	5-1-12 DATE
State Traffic Engineer	DATE
Project Review Engineer Lisa Myers * /KLP	5-1-12 DATE
State Utilities Engineer for Patrick Allen * /KLP	5-11-12 DATE
District Engineer DeWayne Comer * /KLP	5-1-12 DATE
State Transportation Financial Management Administrator	DATE

* Recommendations on file

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

State Transportation Planning Administrator Cynthia L Vanlue	5-3-12 DATE

Project Location Map



PLANNING & BACKGROUND DATA

Project Justification Statement:

The intersection project at State Route (SR) 61 (Villa Rica Hwy) and County Road 277, Mayfield/Nebo Road originated out of the Traffic Operations Office and is part of the Safety Program. It currently functions as a four-way stop controlled intersection. Until the Fall of 2011, the intersection functioned as a two-way stop controlled intersection along Mayfield/Nebo Road. Under those conditions, traffic data reported 59 crashes along SR 61 and Mayfield/Nebo Road from 2004 to 2008. Of these crashes, 55 occurred within MP 2.94 and 3.44 just south the intersection and 4 crashed occurred within MP 3.44 and 3.94 just north of the intersection. From 2004 to 2011, 43 crashes occurred at the intersection (See Table 3 in the Traffic Analysis Report). Of those 43 intersection crashes, 2 have been fatal and approximately 60% have been angle crashes. The intersection functions with a LOS D for the existing year (2011), E for the opening year (2015) and F for the design year (2035). The construction of a signalized intersection is anticipated to reduce crash frequency and severity as well as improve the LOS (see Table 5 in the Traffic Analysis Report). The intersection of Mayfield/Nebo Road will be improved to a 60° skew angle and that along with the vertical and horizontal alignment improvements will improve sight distance while approaching the intersection. Both signalizing the intersection and improving the vertical and horizontal layout is anticipated to reduce the frequency and severity of crashes at this intersection.

SR 61 is a two-lane roadway with rural shoulders and is classified as an Urban Minor Arterial Street running North-South. The current posted speed along SR 61 is 55 mph. Flashing Intersection Warning signs are currently used in advance of the intersection on State Route 61. The Flashing Intersection Warning signs previously warned of speed reduction approaching the intersection but now warn drivers to the upcoming four-way stop. Mayfield Road is a two-lane road with rural shoulders classified as an Urban Local Road and has a posted speed of 30 mph. Nebo Road is also a two-lane road with rural shoulders classified as an Urban Collector Street and has a posted speed of 45mph. The existing centerline of Mayfield/Nebo Road is at approximately 53° skew to SR 61. Currently, neither SR 61 nor Mayfield/Nebo Road meets the minimum vertical design standards according to the guidelines set in the AASHTO Green book for the posted speeds.

Land use in the area consists of moderate commercial use at the immediate intersection. Crossroad Christian Center is in the northwest corner and an abandoned Texaco gas station with an operating restaurant is in the southwest corner. The northeast and southeast corners contain mixed use commercial properties.

Description of the proposed project: The project is at the intersection of SR 61, Mayfield Rd and Nebo Rd and is located in Paulding County, Georgia, approximately 8 miles north of the city of Villa Rica, Georgia. This project consists of constructing a signalized intersection with dedicated right turn lanes along SR 61 and dedicated left turn lanes along SR 61 and Mayfield/Nebo Road. A signal warrant analysis of the intersection was conducted and Warrant 7 – Crash Experience was met in the opening year 2015. The project limits on SR 61 would extend approximately 1000 feet north (MP 3.63) and 1030 feet south (MP 3.25) of the intersection. The project limits on Mayfield Road would extend approximately 700 feet west (MP 0.55) and 425 feet east (MP 0.76) on Nebo Road from the intersection. The total project

length is approximately 2,030 feet (0.38 miles). The existing right-of-way (ROW) along SR 61 and Mayfield Road is 100 feet and the majority of construction would be within the existing ROW. The existing ROW along Nebo Road is 80 feet and majority of construction would take place inside existing ROW. Additional ROW will be required on SR 61, Mayfield Road and Nebo Road for the additional pavement width required for the turn lanes. Temporary easements will be required for construction staging along SR 61.

This project lies within Flood Zone "X" described as "Areas determined to be outside to 0.2% annual chance floodplain" per FIRM Map No. 13223C0210C, dated September 29, 2006. This project does not lie within 1 mile of a Biota Impaired Stream.

Federal Oversight: ☐ Full Oversight ☒ Exempt ☐ State Funded ☐ Other

MPO: ☐ N/A ☒ MPO - Atlanta Regional Commission (ARC)
MPO Project TIP # N/A

Regional Commission: ☐ N/A ☒ RC – Northwest Georgia RC
RC Project ID # N/A

Congressional District(s): 6

Projected Traffic AADT:

	Current Year 2011	Open Year 2015	Design Year 2035
SR 61	9,910	10,730	15,940
Mayfield/Nebo Road	2,120	2,290	3,400

Functional Classification (SR 61): Urban Minor Arterial Street
(Mayfield Road): Urban Local Road
(Nebo Road): Urban Collector Street

Is this project on a designated bike route? ☒ No ☐ YES

Is this project located on a pedestrian plan? ☒ No ☐ YES

Is this project located on or part of a transit network? ☒ No ☐ YES

CONTEXT SENSITIVE SOLUTIONS

Issues of Concern: Stream buffer impacts

Context Sensitive Solutions: Minimize the amount of temporary pavement used during staging to reduce impacts to the streams at the beginning and end of the project along SR 61.

DESIGN AND STRUCTURAL DATA

Design Features: SR 61

Feature	Existing	Standard*	Proposed
Typical Section			
- Number of Lanes	2	N/A	2
- Lane Width(s)	12 ft.	10 ft. min	12 ft.
- Median Width & Type	N/A	N/A	N/A
- Outside Shoulder Width & Type	2-4 ft. paved, 2-6 ft. grassed	6.5 ft. paved, 3.5 ft. grassed	6.5 ft. paved, 3.5 ft. grassed
- Outside Shoulder Slope	2:1 Max	2:1 Max	2:1 Max
- Inside Shoulder Width & Type	N/A	N/A	N/A
- Sidewalks	N/A	N/A	N/A
- Auxiliary Lanes	N/A	N/A	12 ft. RT Turn
- Bike Lanes	N/A	N/A	N/A
Posted Speed	55 mph [45 mph advisory plates]		55 mph
Design Speed	55 mph		55 mph
Min Horizontal Curve Radius	N/A	1060 ft. Min	N/A
Superelevation Rate	NC	6% Max	NC
Grade	4.2% Max	6% Max	5% Max
Access Control	By Permit	By Permit	By Permit
Right-of-Way Width	100 ft.		145 ft.
Maximum Grade – Crossroad			
Design Vehicle	WB-50	WB-50	WB-50

Design Features: Mayfield Road

Feature	Existing	Standard*	Proposed
Typical Section			
- Number of Lanes	2	N/A	2
- Lane Width(s)	11 ft.	10 ft. min	11 ft.
- Median Width & Type	N/A	N/A	N/A
- Outside Shoulder Width & Type	0-3 ft. paved, 5-8 ft. grassed	2 ft. paved 6 ft. grassed	2 ft. paved 6 ft. grassed
- Outside Shoulder Slope	2:1 Max	2:1 Max	2:1 Max
- Inside Shoulder Width & Type	N/A	N/A	N/A
- Sidewalks	N/A	N/A	N/A
- Auxiliary Lanes	N/A	N/A	N/A
- Bike Lanes	N/A	N/A	N/A
Posted Speed	30 mph		30 mph
Design Speed	30 mph		30 mph
Min Horizontal Curve Radius	389 ft.	231 ft. Min	389 ft.
Superelevation Rate	6% Max	6% Max	6% Max
Grade	5.6% Max	11% Max	6.5% Max
Access Control	Full	Full	By Permit
Right-of-Way Width	100 ft.	N/A	111 ft.
Maximum Grade – Crossroad			
Design Vehicle	SU	SU	SU

Design Features: Nebo Road

Feature	Existing	Standard*	Proposed
Typical Section			
- **Number of Lanes**	**2**	**N/A**	**2**
- **Lane Width(s)**	**11 ft.**	**10 ft. min**	**11 ft.**
- **Median Width & Type**	**N/A**		**N/A**
- **Outside Shoulder Width & Type**	**0-2 ft. paved, 6-8 ft. grassed**	**4 ft. paved 4 ft. grassed**	**4 ft. paved 4 ft. grassed**
- **Outside Shoulder Slope**	**2:1 Max**	**2:1 Max**	**2:1 Max**
- **Inside Shoulder Width & Type**	**N/A**	**N/A**	**N/A**
- **Sidewalks**	**N/A**	**N/A**	**N/A**
- **Auxiliary Lanes**	**N/A**	**N/A**	**N/A**
- **Bike Lanes**	**N/A**	**N/A**	**N/A**
Posted Speed	**45 mph**		**45 mph**
Design Speed	**45 mph**		**45 mph**
Min Horizontal Curve Radius	**5000 ft.**	**643 ft.**	**858 ft.**
Superelevation Rate	**NC**	**6% Max**	**6% Max**
Grade	**1.3%**	**9% Max**	**2% Max**
Access Control	**Full**	**Full**	**By Permit**
Right-of-Way Width	**80 ft.**	**N/A**	**110 ft.**
Maximum Grade – Crossroad			
Design Vehicle	**BUS-40**	**BUS-40**	**BUS-40**

*According to current GDOT design policy if applicable

Major Structures:

Structure	Existing	Proposed
Retaining walls	*N/A*	A gravity wall may be constructed at the northwest corner at intersection to reduce impacts to Crossroad Christian Center. The gravity wall would be approximately 6' in height.
Box Culvert	There are two existing box culverts along the project. There is a 4'x6' on the north end of SR 61 and a double 4'x6' on the south end of SR 61.	Both culverts are beyond the limits of the final alignment but may be impacted by the temporary staging pavement. Anticipated maximum extension of 5' may be required for both.

Major Interchanges/Intersections: SR 61 at Mayfield/Nebo Road

Utility Involvements: Telephone, Power, Water, Gas, Cable, Fiber Optic

Public Interest Determination Policy and Procedure recommended (Utilities)? ☐ YES ☒ NO

SUE Required: ☐ Yes ☒ No

Railroad Involvement: *N/A*

Right-of-Way:
Required Right-of-Way anticipated: ☒ YES ☐ NO ☐ Undetermined
Easements anticipated: ☒ Temporary ☐ Permanent ☐ Utility ☐ Other

Anticipated number of impacted parcels:	22
Anticipated number of displacements (Total):	1
Businesses:	1
Residences:	0
Other:	0

Location and Design approval: ☐ Not Required ☒ Required

Off-site Detours Anticipated: ☒ No ☐ Yes ☐ Undetermined

Transportation Management Plan Anticipated: ☐ YES ☒ NO

Design Exceptions to FHWA/AASHTO controlling criteria anticipated:

FHWA/AASHTO Controlling Criteria	YES	NO	Undetermined
1. Design Speed	☐	☒	☐
2. Lane Width	☐	☒	☐
3. Shoulder Width	☐	☒	☐
4. Bridge Width	☐	☒	☐
5. Horizontal Alignment	☐	☒	☐
6. Superelevation	☐	☒	☐
7. Vertical Alignment	☐	☒	☐
8. Grade	☐	☒	☐
9. Stopping Sight Distance	☐	☒	☐
10. Cross Slope	☐	☒	☐
11. Vertical Clearance	☐	☒	☐
12. Lateral Offset to Obstruction	☐	☒	☐
13. Bridge Structural Capacity	☐	☒	☐

Design Variances to GDOT standard criteria anticipated:

GDOT Standard Criteria	Reviewing Office	YES	NO	Undetermined
1. Access Control - *Median Opening Spacing*	DP&S	☐	☒	☐
2. Median Usage & Width	DP&S	☐	☒	☐
3. Intersection Skew Angle	DP&S	☒	☐	☐
4. Lateral Offset to Obstruction	DP&S	☐	☒	☐
5. Intersection Sight Distance	DP&S	☐	☒	☐
6. Bike & Pedestrian Accommodations	DP&S	☐	☒	☐
7. GDOT Drainage Manual	DP&S	☐	☒	☐
8. Georgia Standard Drawings	DP&S	☐	☒	☐
9. GDOT Bridge & Structural Manual	Bridge Design	☐	☒	☐
10. Roundabout Illumination - *(if applicable)*	DP&S	☐	☒	☐
11. Rumble Strips/Safety Edge	DP&S	☐	☒	☐

Improved intersection of Mayfield/Nebo Road and SR 61 is proposed at a 60° skew.

VE Study anticipated: ☒ No ☐ Yes ☐ Completed – Date:

ENVIRONMENTAL DATA

Anticipated Environmental Document:

GEPA: ☐ **NEPA:** ☒ Categorical Exclusion ☐ EA/FONSI ☐ EIS

Air Quality:

Is the project located in a PM 2.5 Non-attainment area? ☐ No ☒ Yes

Is the project located in an Ozone Non-attainment area? ☐ No ☒ Yes

This project is classified as a safety project and is exempt from conformity as stipulated in 40CFR93.126

Environmental Permits/Variances/Commitments/Coordination anticipated:

Permit/ Variance/ Commitment/ Coordination Anticipated	YES	NO	Remarks
1. U.S. Coast Guard Permit	☐	☒	
2. Forest Service/Corps Land	☐	☒	
3. CWA Section 404 Permit	☐	☒	
4. Tennessee Valley Authority Permit	☐	☒	
5. Buffer Variance	☐	☒	
6. Coastal Zone Management Coordination	☐	☒	
7. NPDES	☒	☐	NOI
8. FEMA	☐	☒	
9. Cemetery Permit	☐	☒	
10. Other Permits	☐	☒	
11. Other Commitments	☐	☒	
12. Other Coordination	☐	☒	

Is a PAR required? ☒ No ☐ Yes ☐ Completed – Date:

NEPA/GEPA: Preparation of the Categorical Exclusion is in progress, with special studies concurrences required for submittal. A Conceptual Stage Study is required for displacement. No Section 4(f) resources were identified.

Ecology: The Ecology Assessment in review at GDOT. No federally listed species or habitat were identified, but suitable habitat is present for the Georgia aster, a federal candidate species. No Georgia aster plants were identified during the seasonally appropriate field surveys (late September), so no significant adverse effect is anticipated.

History: Historical Resources Survey Report is currently in review. No resources are recommended as eligible for listing in the National Register of Historic Places. SHPO concurrence on the eligibility determinations is required.
Archeology: No sites were identified. The short form has been approved.

Air & Noise: This is a Type III project for noise, so no noise modeling is required. The PM2.5 Letter of Determination is currently in review at GDOT. An air assessment with a CO model will be submitted after the LOD concurrence.

Public Involvement: N/A

Major stakeholders: *GDOT & Traveling Public*

CONSTRUCTION

Issues potentially affecting constructability/construction schedule: High volume of church traffic on Wednesdays and Sundays.

Early Completion Incentives recommended for consideration: ☒ No ☐ Yes

PROJECT RESPONSIBILITIES

Project Activities:

Project Activity	Party Responsible for Performing Task(s)
Concept Development	Consultant
Design	GDOT/Consultant
Right-of-Way Acquisition	GDOT
Utility Relocation	Utility Owners
Letting to Contract	GDOT
Construction Supervision	GDOT
Providing Material Pits	GDOT/ Contractor
Providing Detours	N/A
Environmental Studies, Documents, and Permits	GDOT/ Consultant
Environmental Mitigation	GDOT
Construction Inspection & Materials Testing	GDOT

Lighting required: ☒ No ☐ Yes

Initial Concept Meeting: N/A

Concept Meeting: A concept team meeting was held at the District 6 Office in Cartersville, GA (January 26, 2012). *See Attachments.*

Other projects in the area: N/A

Other coordination to date: Property owner meeting with Crossroad Christian Center (August 10, 2011). *See Attachments.*

Project Cost Estimate and Funding Responsibilities:

	Breakdown of PE	ROW	Utility	CST*	Environmental Mitigation	Total Cost
By Whom	GDOT	GDOT	GDOT	GDOT	N/A	
$ Amount	$330,000	$1,276,000	$56,330	1,958,498		$3,620,828
Date of Estimate	Click here to enter a date.	4/19/2012	9/27/2011	6/5/2012		

*CST Cost includes: Construction, Engineering and Inspection, and Liquid AC Cost Adjustment.

ALTERNATIVES DISCUSSION

Preferred Alternative: Reconstruct Mayfield/Nebo Road at 60° skew

Estimated Property Impacts:	**22**	**Estimated Total Cost:**	**$3,620,828**
Estimated ROW Cost:	**$1,276,000**	**Estimated CST Time:**	**18 months**

Rationale: This alternative reduces crash frequency and improves sight distance at the intersection of SR 61 and Mayfield/Nebo Road by adding horizontal and vertical improvements while improving the intersection to a 60° skew angle. The construction of a signalized intersection is anticipated to reduce crash frequency and severity while improving the intersection to a LOS A for both the opening and design year as shown in Table 1.

Table 1. Traffic Signal Anticipated Intersection Level of Service Level of Service

Synchro Analysis	LOS (AM/PM)	
	2015 Build	2035 Design
SR 61 @ Mayfield/Nebo Road	A/A	A/A

The vertical and horizontal alignment improvements will improve sight distance while approaching the intersection. Both signalizing the intersection and the improving the vertical and horizontal layout is anticipated to reduce the frequency and severity of crashes at this intersection. Reconstructing Mayfield/Nebo Road to a 60° skew angle improves the intersection to needing only a design variance while not requiring significant ROW impacts.

No-Build Alternative: No Build			
Estimated Property Impacts:	**0**	**Estimated Total Cost:**	**$0**
Estimated ROW Cost:	**$0**	**Estimated CST Time:**	**0**

Rationale: From 2004 to 2008, 59 crashes that have occurred along SR 61 and Mayfield/Nebo Road. From 2004 to 2011, 43 crashes occurred at the intersection (See Table 3 in the Traffic Analysis Report) with 2 of those crashes having been fatal.

For the existing and no-build conditions, the HCM determines LOS for the whole intersection by computing the control delay at the intersection. The results of the capacity analysis for the no-build existing and anticipated future conditions are summarized in Table 2.

Table 2. No-Build Existing and Anticipated Future Level of Service

Intersection	**Traffic Control**	**Level of Service (AM/PM)**		
		2011	**2015 No-Build**	**2035 No-Build**
SR 61 @ Mayfield/Nebo Road	Stop Control on Nebo Rd/Mayfield Rd	D/D	E/E	F/F

This alternative would not reduce crash frequency and severity at this intersection nor would it improve the LOS. Therefore this alternative was not considered a viable alternative for the project.

Alternative 1: Reconstruct Mayfield/Nebo Road at 90° skew			
Estimated Property Impacts:	**25**	**Estimated Total Cost:**	**$3,994,437**
Estimated ROW Cost:	**$1,535,000**	**Estimated CST Time:**	**18 months**

Rationale: The existing skew angle is below the recommended minimum angle of 60°. The angle can be improved to 60° with minimal impacts for adjacent parcels and produces better sight distance for drivers. Improving the intersection to a 90° would result in significant ROW impacts and therefore was not considered a viable alternative for the project.

Alternative 2: Roundabout			
Estimated Property Impacts:	**23**	**Estimated Total Cost:**	**$4,121,330**
Estimated ROW Cost:	**$1,635,000**	**Estimated CST Time:**	**18 months**

Rationale: A roundabout was considered for this intersection. The capacity analysis for a roundabout at the intersection was conducted using the SIDRA software package. The SIDRA software is based on methodology developed in Australia and also uses a gap-acceptance approach to model roundabout operations. The SIDRA software calculates capacity, delay and queue for each approach leg of a roundabout and also for the entire roundabout. SIDRA also reports LOS for each approach leg of the roundabout and also for the roundabout as a whole. The capacity analysis reveals that the current (2011) LOS of the intersection is a D/D for the AM and PM peak hours.

Construction of a roundabout at the intersection would provide an anticipated level of service of B/B for 2015 and 2035 for the AM and PM peak hours. The results of the capacity analysis for a proposed roundabout for the anticipated future are summarized in Table 3.

Table 3. Roundabout Anticipated Future Intersection Level of Service

SIDRA Analysis	**LOS (AM/PM)**	
	2015 Build	**2035 Design**
SR 61 @ Mayfield/Nebo Road	B/B	B/B

The significant grade differences at the intersection resulted in increased construction limits and impacts to properties. A roundabout at this location would be at the crest of a vertical curve on SR 61 and would be difficult for drivers approaching the intersection to see. The capacity analysis also results in a reduced LOS when compared to a traffic signal. Due to greater impacts, poor geometry conditions and less LOS than compared to a traffic signal, this alternative was not considered viable.

Attachments:

1. Detailed Cost Estimates:
    a. Construction including, Engineering and Inspection
    b. Liquid AC Adjustment
    c. Right of Way
    d. Utilities
2. Project Concept Layout
3. Project Concept Profiles
4. Typical sections
5. Traffic Diagrams
6. Network Schematic
7. Traffic Engineering Investigation
8. Signal Warrant Analysis
9. SIDRA Roundabout Analysis
10. Accident Analysis Summary
11. Minutes of Concept Team Meeting
12. Property Owner's Meeting Notes

APPROVALS

Concur: _____
Director of Engineering

Approve: _____ 8/3/2012
Chief Engineer Date

STATE HIGHWAY AGENCY

DATE : 6/5/2012

JOB DETAIL ESTIMATE

JOB NUMBER : 0009218 SPEC YEAR: 01

DESCRIPTION: SR 61 @ MAYFIELD/NEBO RD

ITEMS FOR JOB 0009218

	ITEM	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
5	150-1000	LS	TRAFFIC CONTROL - CSSFT-0009-00(218)	1	$500,000.00	$500,000.00
10	210-0100	LS	GRADING COMPLETE - CSSFT-0009-00(218)	1	$250,000.00	$250,000.00
15	310-1101	TN	GR AGGR BASE CRS, INCL MATL	8413	$18.47	$155,463.57
	402-1812	TN	RECYL AC LEVELING,INC BM&HL	100	$79.09	$7,909.11
20	402-3190	TN	RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	2383	$64.43	$153,541.98
25	402-3121	TN	RECYL AC 25MM SP,GP1/2,BM&HL	3153	$65.72	$207,231.59
29	402-3130	TN	RECYL AC 12.5MM SP,GP2,BM&HL	1787	$72.30	$129,212.48
30	413-1000	GL	BITUM TACK COAT	1014	$2.01	$2,045.27
35	441-0016	SY	DRIVEWAY CONCRETE, 6 IN TK	282	$35.13	$9,909.30
40	441-6222	LF	CONC CURB & GUTTER/ 8"X30"TP2	440	$23.28	$10,243.35
	500-3201	CY	CL B CONC, RET WALL	94	$494.06	$46,441.90
	500-3107	CY	CLA CONC, RET WALL	22	$393.60	$8,659.09
	511-1000	LB	BAR REINF STELL	567	$1.11	$630.81
45	641-1200	LF	GUARDRAIL, TP W	280	$19.73	$5,525.49
50	641-5012	EA	GUARDRAIL ANCHORAGE, TP 12	2	$1,788.48	$3,576.97
55	550-1240	LF	STM DR PIPE 24",H 1-10	420	$42.80	$17,978.99
60	550-4124	EA	FLARED END SECT 24 IN, SIDE DR	21	$561.72	$11,796.31
65	550-4224	EA	FLARED END SECT 24 IN, ST DR	4	$607.65	$2,430.60
70	550-2240	LF	SIDE DR PIPE 24",H 1-10	660	$20.68	$13,651.56
75	668-1100	EA	CATCH BASIN, GP 1	2	$2,217.83	$4,435.67
79	668-2100	EA	DROP INLET, GP 1	3	$2,257.57	$6,772.73
80	668-4311	LF	ST SEW MANHOLE,TP 1,A DEP,CL 1	1	$231.50	$231.51
85	163-0000	$	SEC 163 MISC EROS CONTROL ITEM	1	$75,000.00	$75,000.00
90	636-0000	$	SEC 636 HIGHWAY SIGNS	1	$8,000.00	$8,000.00
95	653-0000	$	SEC 653 THERMO TRAFFIC STRIPE	1	$12,000.00	$12,000.00
	647-1000	LS	TRAF SIGNAL INSTALLATION NO - CSSFT-0009-00(218)	1	$75,000.00	$75,000.00
ITEM TOTAL						$1,728,693.93
INFLATED ITEM TOTAL						$1,728,693.93

TOTALS FOR JOB 0009218

ESTIMATED COST:	$1,728,693.93
CONTINGENCY PERCENT(0.0):	$0.00
ESTIMATED TOTAL:	$1,728,693.93

Print Form

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE PROJECT No. CSSFT-0009-00(218) , Paulding County **OFFICE** Program Delivery

Intersection Improvement- SR 61 at Mayfield/Nebo Road **DATE** 06/14/2012

P.I. No. 0009218

FROM Bobby Hilliard, P.E., State Program Delivery Engineer

TO Ronald E. Wishon, Project Review Engineer

SUBJECT REVISIONS TO PROGRAMMED COSTS

MNGT LET DATE 7/15/2014

PROJECT MANAGER Perry Black

MNGT R/W DATE 7/15/2013

PROGRAMMED COST (TPro W/OUT INFLATION) **LAST ESTIMATE UPDATE**

CONSTRUCTION	$ 850,000.00	DATE	2/26/2010
RIGHT OF WAY	$ 500,000.00	DATE	8/25/2011
UTILITIES	$ 56,330.00	DATE	11/16/2011

REVISED COST ESTIMATES

CONSTRUCTION*	$	1,958,498
RIGHT OF WAY	$	1,276,000.00
UTILITIES**	$	56,330.00

* Costs contain 5 % Engineering and Inspection and 0 % Construction Contingencies.

** Costs contain 0 % contingency.

REASON FOR COST INCREASE

From the development of the concept report a more detailed cost estimate was developed.

CONTINGENCY SUMMARY

Construction Cost Estimate:	$ 1,728,694	(Base Estimate)	
Engineering and Inspection:	$ 86,435	(Base Estimate x 5 %)	
Construction Contingency:	$	(Base Estimate x 0 %)	
		(The Construction Contingency is based on the Project Improvement Type in TPro.)	
Total Fuel Adjustment	$	(From attached worksheet)	
Total Liquid AC Adjustment	$ 143,369	(From attached worksheet)	
Construction Total:	**$** 1,958,498		
Utility Cost Estimate:	$ 0		
Utility Contingency:	$ 0	0 %	
Utility Total:	**$** 0		

REIMBURSABLE UTILITY COST

Utility Owner	Reimbursable Cost

Attachments

c: Genetha Rice-Singleton, State Program Control Administrator

PROJ. NO.	CSSFT-0009-00(218)	CALL NO.
P.I. NO.	0009218	
DATE	10/4/2011	

INDEX (TYPE)	**DATE**	**INDEX**
REG. UNLEADED	Sep-11	$ 3.582
DIESEL		$ 3.873
LIQUID AC		$ 570.00

Link to Fuel and AC Index:
http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx

LIQUID AC ADJUSTMENTS

PA=[((APM-APL)/APL)]xTMTxAPL

Asphalt

Price Adjustment (PA)				**132986.7**	**$ 132,986.70**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$	912.00	
Monthly Asphalt Cement Price month project let (APL)			$	570.00	
Total Monthly Tonnage of asphalt cement (TMT)				388.85	

ASPHALT	**Tons**	**%AC**	**AC ton**
Leveling	100	5.0%	5
12.5 OGFC		5.0%	0
12.5 mm	1864	5.0%	93.2
9.5 mm SP		5.0%	0
25 mm SP	3328	5.0%	166.4
19 mm SP	2485	5.0%	124.25
	7777		**388.85**

BITUMINOUS TACK COAT

Price Adjustment (PA)				**$ 1,570.28**	**$ 1,570.28**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$	912.00	
Monthly Asphalt Cement Price month project let (APL)			$	570.00	
Total Monthly Tonnage of asphalt cement (TMT)				4.591462886	

Bitum Tack Gals	gals/ton	tons
1069	232.8234	4.59146289

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)				**8812.01941**	**$ 8,812.02**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$	912.00	
Monthly Asphalt Cement Price month project let (APL)			$	570.00	
Total Monthly Tonnage of asphalt cement (TMT)				25.76613863	

Bitum Tack	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.		0.20	0	232.8234	0
Double Surf.Trmt.	13634	0.44	5998.96	232.8234	25.76613863
Triple Surf. Trmt		0.71	0	232.8234	0
					25.76613863

TOTAL LIQUID AC ADJUSTMENT	**$ 143,369.00**

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 4/19/2012
Revised:

Project: CSSFT000900218
County: Paulding
PI: 0009218

Description: SR 61 @ NEBO Mayfield Rd
Project Termini: SR 61 @ NEBO Mayfield Rd

Existing ROW: Varies
Parcels: 22
Required ROW: Varies

Land and Improvements		$797,617.50
Proximity Damage	*$0.00*	
Consequential Damage	*$0.00*	
Cost to Cures	*$0.00*	
Trade Fixtures	*$0.00*	
Improvements	*$370,000.00*	
Valuation Services		$35,000.00
Legal Services		$164,850.00
Relocation		$59,000.00
Demolition		$25,000.00
Administrative		$194,000.00
TOTAL ESTIMATED COSTS		$1,275,467.50
TOTAL ESTIMATED COSTS (ROUNDED)		***$1,276,000.00***

Preparation Credits	Hours	Signature

Prepared By: Lashone Alexander CG#: 286999 04/19/2012 (DATE)
Approved By: Lashone Alexander CG#: 286999 04/19/2012 (DATE)

NOTE: No Market Appreciation is included in this Preliminary Cost Estimate

631260DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: CSSFT-0009-00(218); Paulding County
SR 61 @ Nebo/Mayfield Rd.
P.I. No. 0009218

OFFICE: Cartersville

FROM: Kerry D. Bonner, District Utilities Engineer

DATE: September 27, 2011

TO: Derrick Cameron, Office of Program Delivery
ATTN: Perry Black

SUBJECT: PRELIMINARY UTILITY COST ESTIMATE

We are furnishing you with a Preliminary Utility Cost estimate for each utility with facilities potentially located within the project limits.

FACILITY OWNER	NON REIMBURSABLE	REIMBURSABLE
AT&T – Georgia	$ 250,000.00	
Atlanta Gas Light Company	$ 149,000.00	
GreyStone Power		$ 56,330.00
Comcast	$ 20,000.00	
Paulding County Water*	$ 98,450.00	
Totals	$ 517,450.00	$ 56,330.00

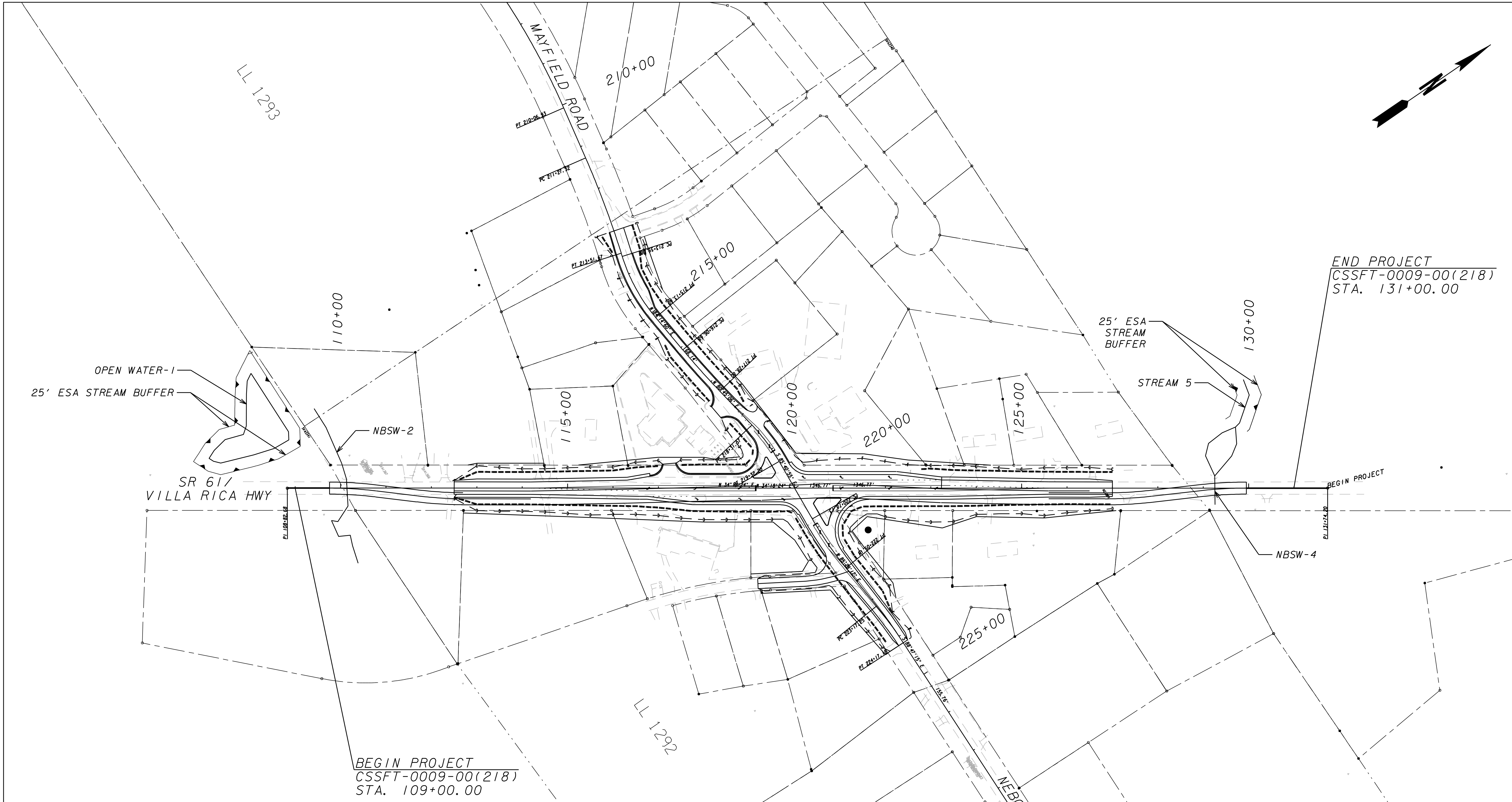
Total cost for the above project is $ 573,780.00.

*The reimbursable amount could increase to $ 154,780.00 if Paulding County Water was to apply for utility assistance for the relocation of their facilities.

If you have any questions, please contact Jennifer Deems at 770-387-3616.

KDB/jd

C: Jeff Baker, P. E., State Utilities Engineer;
File/Estimating Book



STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

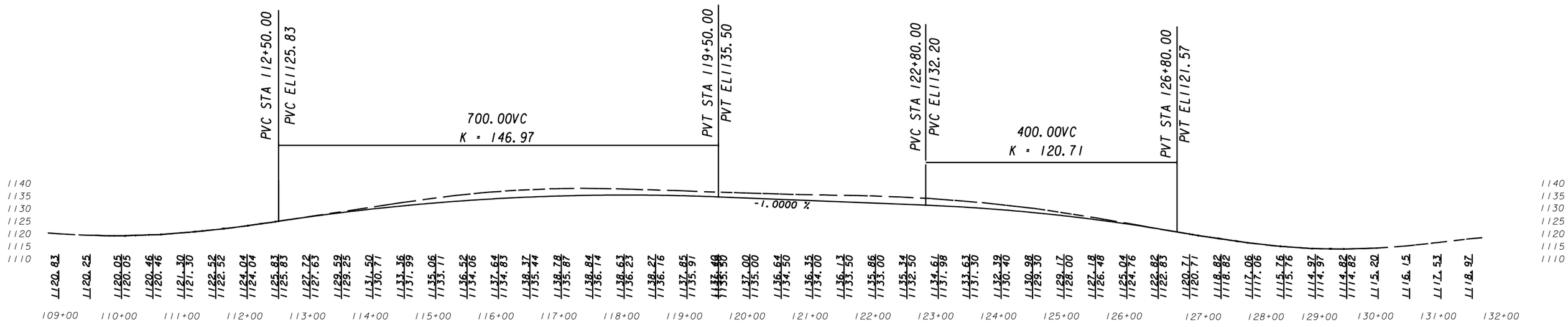
CONCEPT LAYOUT
INTERSECTION IMPROVEMENT: SR 61
AT MAYFIELD/NEBO ROAD

PAULDING COUNTY

GRESHAM SMITH AND PARTNERS

DATE: APR 23, 2012
SCALE: 1" = 200'

LEGEND
PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
DRIVEWAY EASEMENT
TEMPORARY CONSTRUCTION EASEMENT
PERMANENT DRAINAGE EASEMENT
CONSTRUCTION LIMITS
25' ESA STREAM BUFFER
POTENTIAL DISPLACEMENT



STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

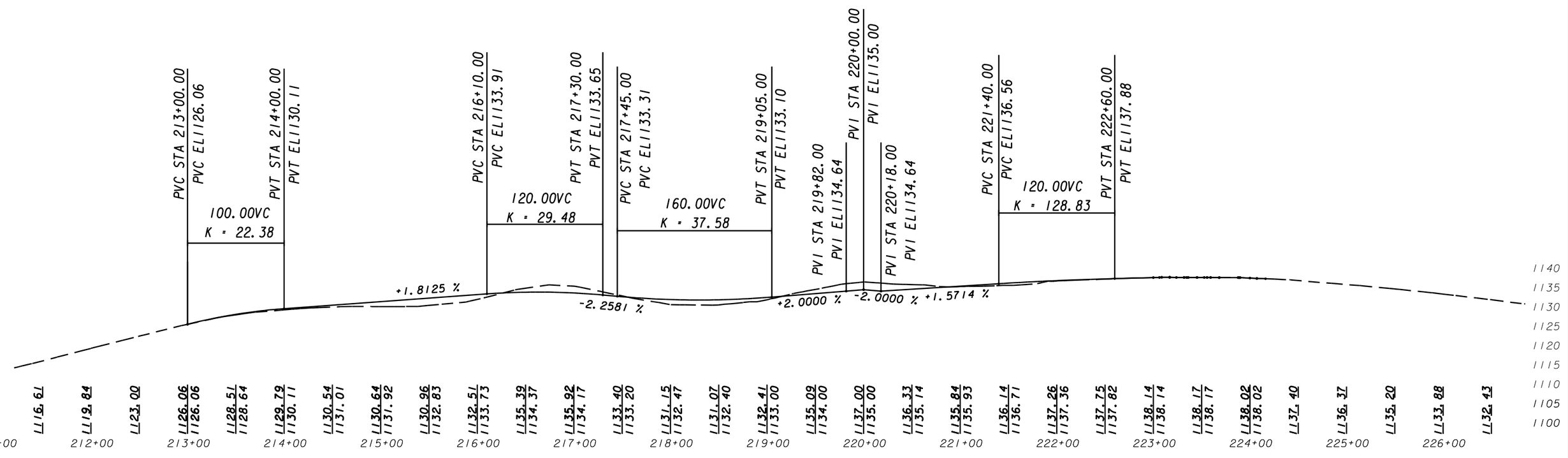
CONCEPT PROFILE

SR 61

PAULDING COUNTY

DATE: APR 23, 2012

GRESHAM SMITH AND PARTNERS



STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION

CONCEPT PROFILE

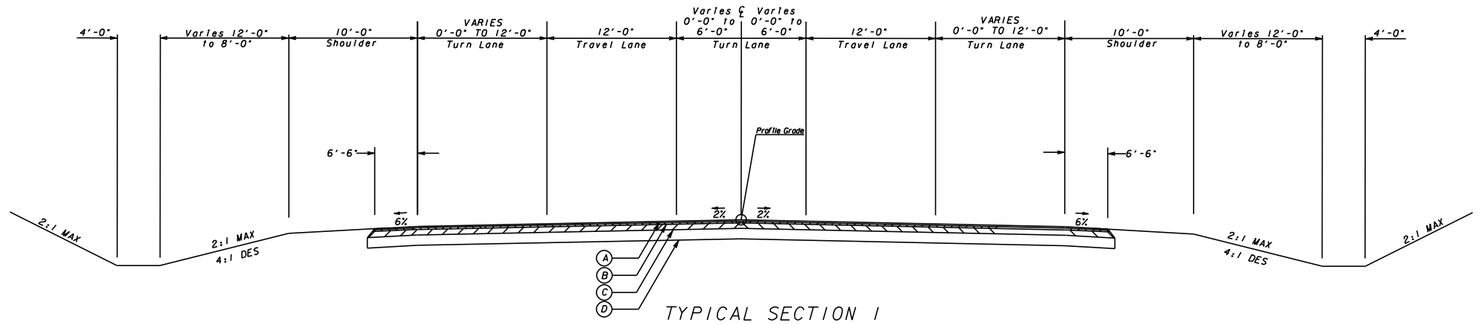
MAYFIELD/NEBO ROAD

PAULDING COUNTY

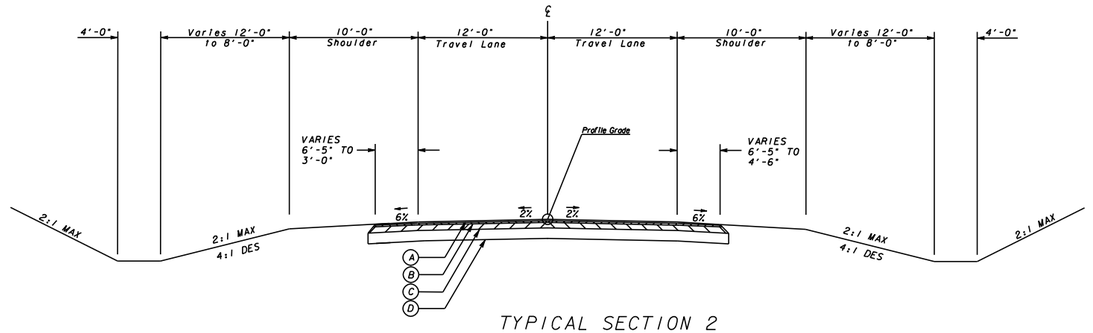
DATE: APR 23, 2012

GRESHAM SMITH AND PARTNERS

			COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
			PAULDING	CSSFT-0009-00(218)		



TYPICAL SECTION 1
APPLIES TO SR 61/ VILLA RICA HWY



TYPICAL SECTION 2
APPLIES TO SR 61/ VILLA RICA HWY

REQUIRED PAVEMENT

(A) RECYCLED ASPHALTIC CONCRETE 12.5 mm, SUPERPAVE, GP 2 ONLY, INCL. BITUM MAT'L & H. LIME (165 LB/SQ. YD.)
(B) RECYCLED ASPHALTIC CONCRETE 19 mm, SUPERPAVE, GP 1 OR 2, INCL. BITUM MAT'L & H. LIME (220 LB/SQ. YD.)
(C) RECYCLED ASPHALTIC CONCRETE 25 mm, SUPERPAVE, GP 1 OR 2, INCL. BITUM MAT'L & H. LIME (440 LB/SQ. YD.)
(D) GRADED AGGREGATE BASE, 10 IN
(E) CONCRETE CURB & GUTTER - 8 IN X 30 IN, GA STD. 9032B, TYPE 2
(F) ASPHALTIC CONCRETE LEVELING, AS REQUIRED

GRESHAM SMITH AND PARTNERS

NOT TO SCALE

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PROGRAM DELIVERY

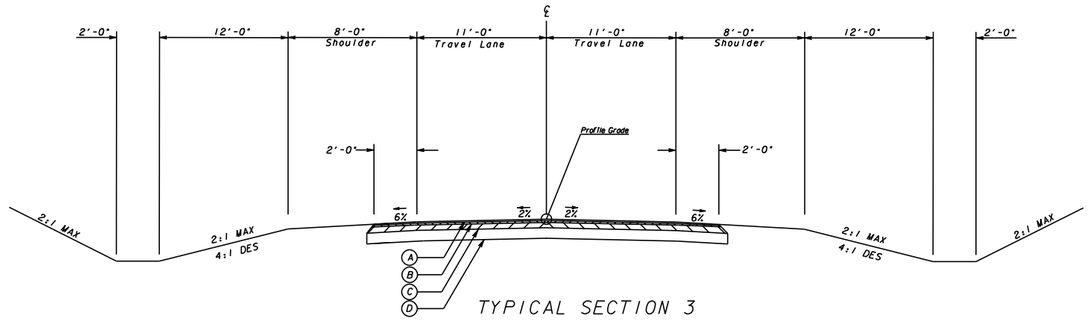
TYPICAL SECTIONS

CSSFT-0009-00(218)
PAULDING COUNTY

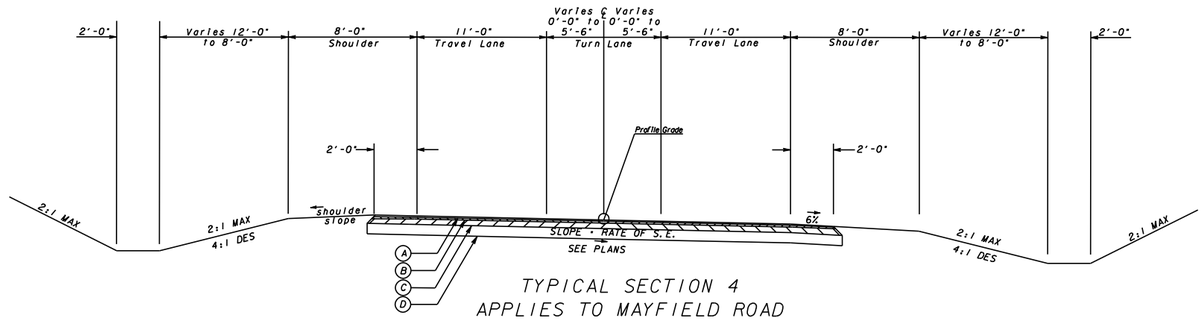
DRAWING No. 5-01

GPLM

COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
PAULDING	CSSFT-0009-00(218)		



TYPICAL SECTION 3
APPLIES TO MAYFIELD ROAD
TANGENT SECTION



TYPICAL SECTION 4
APPLIES TO MAYFIELD ROAD
SUPERELEVATED SECTION

REQUIRED PAVEMENT

(A) RECYCLED ASPHALTIC CONCRETE 12.5 mm, SUPERPAVE, GP 2 ONLY, INCL. BITUM MAT'L & H. LIME (165 LB/SQ. YD.)
(B) RECYCLED ASPHALTIC CONCRETE 19 mm, SUPERPAVE, GP 1 OR 2, INCL. BITUM MAT'L & H. LIME (220 LB/SQ. YD.)
(C) RECYCLED ASPHALTIC CONCRETE 25 mm, SUPERPAVE, GP 1 OR 2, INCL. BITUM MAT'L & H. LIME (440 LB/SQ. YD.)
(D) GRADED AGGREGATE BASE, 10 IN
(E) CONCRETE CURB & GUTTER - 8 IN X 30 IN, GA STD. 9032B, TYPE 2
(F) ASPHALTIC CONCRETE LEVELING, AS REQUIRED

GPLN

GRESHAM SMITH AND PARTNERS

REVISION DATES		

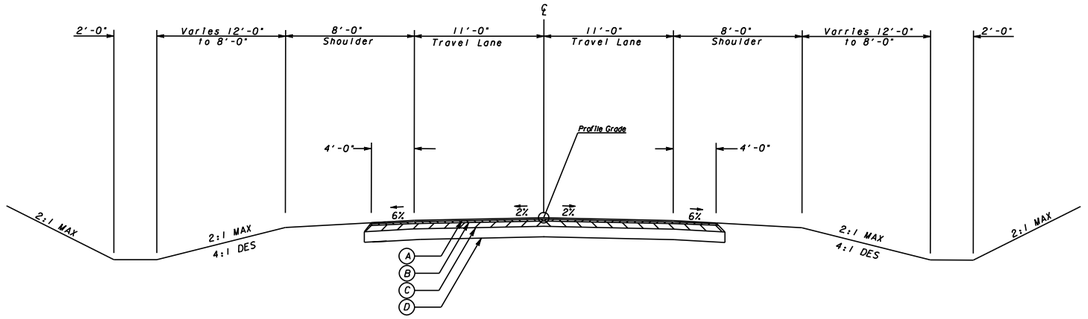
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PROGRAM DELIVERY

TYPICAL SECTIONS

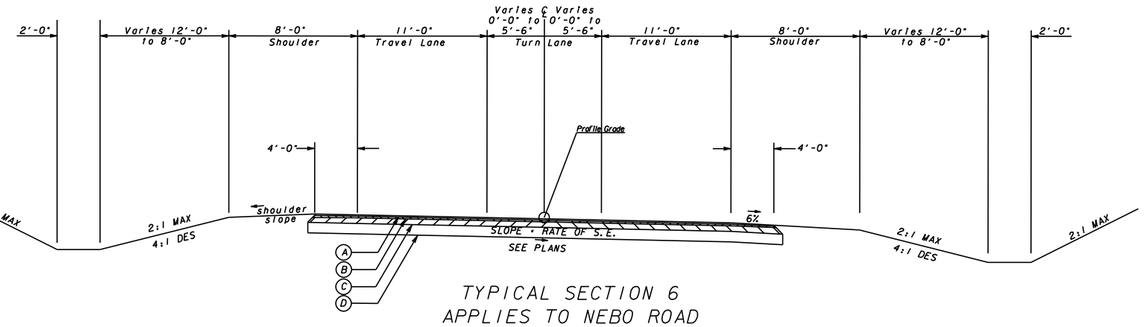
CSSFT-0009-00(218)
PAULDING COUNTY

DRAWING No. 5-02

COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
PAULDING	CSSFT-0009-00(218)		



TYPICAL SECTION 5
APPLIES TO NEBO ROAD
TANGENT SECTION



TYPICAL SECTION 6
APPLIES TO NEBO ROAD
SUPERELEVATED SECTION

REQUIRED PAVEMENT

(A) RECYCLED ASPHALTIC CONCRETE 12.5 mm, SUPERPAVE, GP 2 ONLY, INCL. BITUM MAT'L & H. LIME (165 LB/SQ. YD.)
(B) RECYCLED ASPHALTIC CONCRETE 19 mm, SUPERPAVE, GP 1 OR 2, INCL. BITUM MAT'L & H. LIME (220 LB/SQ. YD.)
(C) RECYCLED ASPHALTIC CONCRETE 25 mm, SUPERPAVE, GP 1 OR 2, INCL. BITUM MAT'L & H. LIME (440 LB/SQ. YD.)
(D) GRADED AGGREGATE BASE, 10 IN
(E) CONCRETE CURB & GUTTER - 8 IN X 30 IN, GA STD. 9032B, TYPE 2
(F) ASPHALTIC CONCRETE LEVELING, AS REQUIRED

GRESHAM SMITH AND PARTNERS

NOT TO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PROGRAM DELIVERY

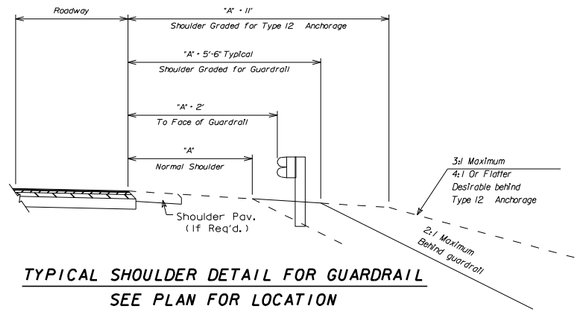
TYPICAL SECTIONS

CSSFT-0009-00(218)
PAULDING COUNTY

DRAWING No. 5-03

GPLN

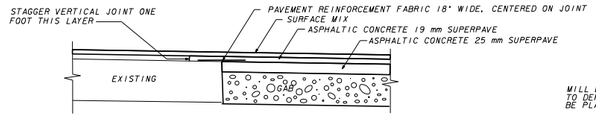
COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
PAULDING	CSSFT-0009-00(218)		



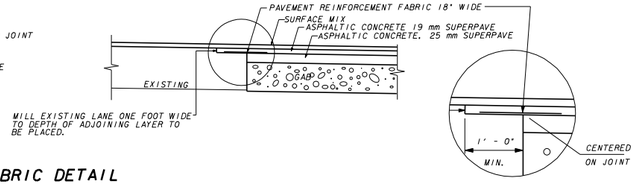
TYPICAL SHOULDER DETAIL FOR GUARDRAIL
SEE PLAN FOR LOCATION

DRIVEWAY RECONSTRUCTION MATERIALS

TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH TWO INCHES OR MORE OF ASPHALTIC CONCRETE



TYPICAL SECTION DETAIL TO BE USED WHEN EXISTING PAVEMENT IS TO BE RESURFACED WITH LESS THAN TWO INCHES OF ASPHALTIC CONCRETE



PAVEMENT FABRIC DETAIL

ALL DRIVES THAT ARE TO BE RECONSTRUCTED SHALL BE REPLACED IN KIND i.e. ASPHALT FOR ASPHALT, CONCRETE FOR CONCRETE, AND ASPHALT FOR EARTH. WHERE REQUIRED, DRIVES SHALL BE CONSTRUCTED AS FOLLOWS, UNLESS OTHERWISE NOTED ON THE DRIVEWAY SUMMARY:

ASPHALT DRIVES ----- RESIDENTIAL: 165 LBS./SQ. YD. ASPH. CONC., 12.5 mm SUPERPAVE
8" GRADED AGGREGATE BASE

CONCRETE DRIVES ---- RESIDENTIAL: 6" DRIVEWAY CONCRETE

GPLN

GRESHAM SMITH AND PARTNERS

NOT TO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PROGRAM DELIVERY

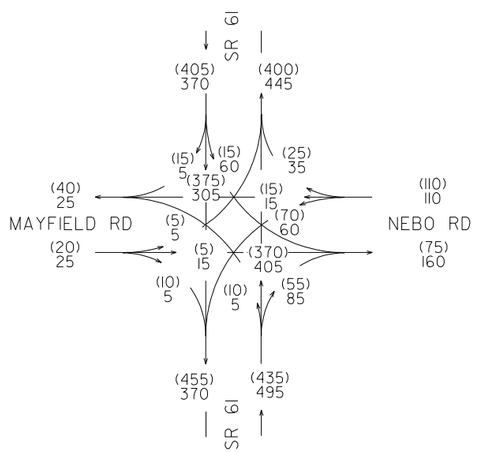
TYPICAL SECTIONS

CSSFT-0009-00(218)
PAULDING COUNTY

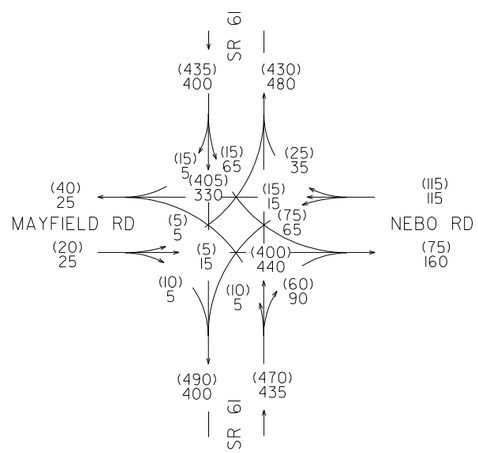
DRAWING No. 5-04

8/15/2011 campbef	4:57:03 PM	PRF TBL	0:\2634014\1\0009218TR01.dgn	COUNTY	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
				PAULDING	CSSFT-0009-00(218)		

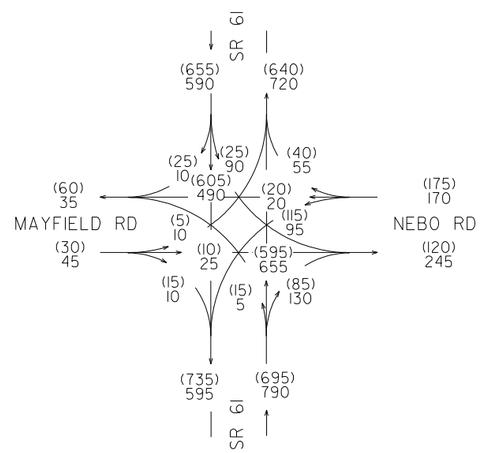
2011 "EXISTING YEAR"



2015 "OPENING YEAR"



2035 "DESIGN YEAR"



N

2011 EXISTING YEAR, 2015 AND 2035 PEAK HR TRAFFIC

LEGEND

AM DHV = 000
PM DHV = (000)

T= 11%
S.U. = 9%, COMB. = 2%

GRESHAM SMITH AND PARTNERS

NOT TO SCALE

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PROGRAM DELIVERY

TRAFFIC DIAGRAM

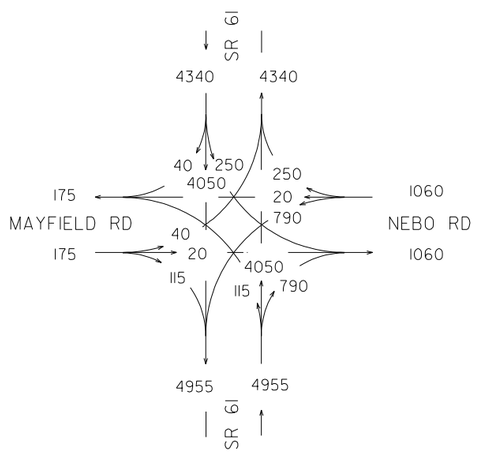
CSSFT-0009-00(218)
PAULDING COUNTY

DRAWING No. 10-01

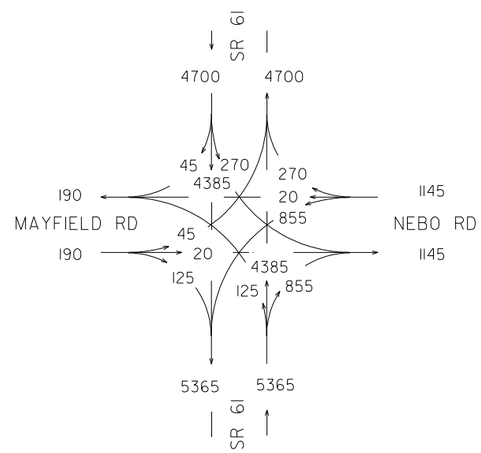
GPLN

N

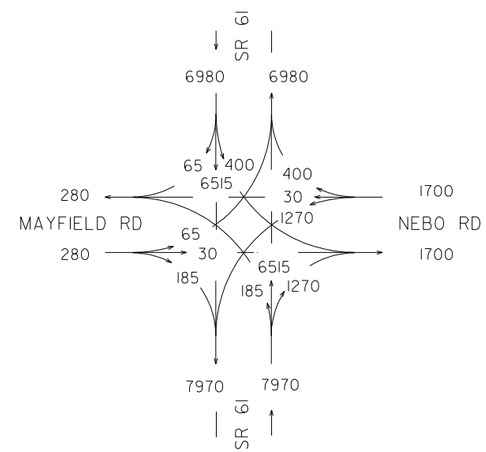
2011 "EXISTING YEAR"



2015 "OPENING YEAR"



2035 "DESIGN YEAR"



2011 EXISTING YEAR, 2015 AND 2035 AADT VOLUMES

LEGEND

AADT = 000

24 HR. T= 13%
S.U. = 10%, COMB. = 3%

GRESHAM SMITH AND PARTNERS

NOT TO SCALE

REVISION DATES

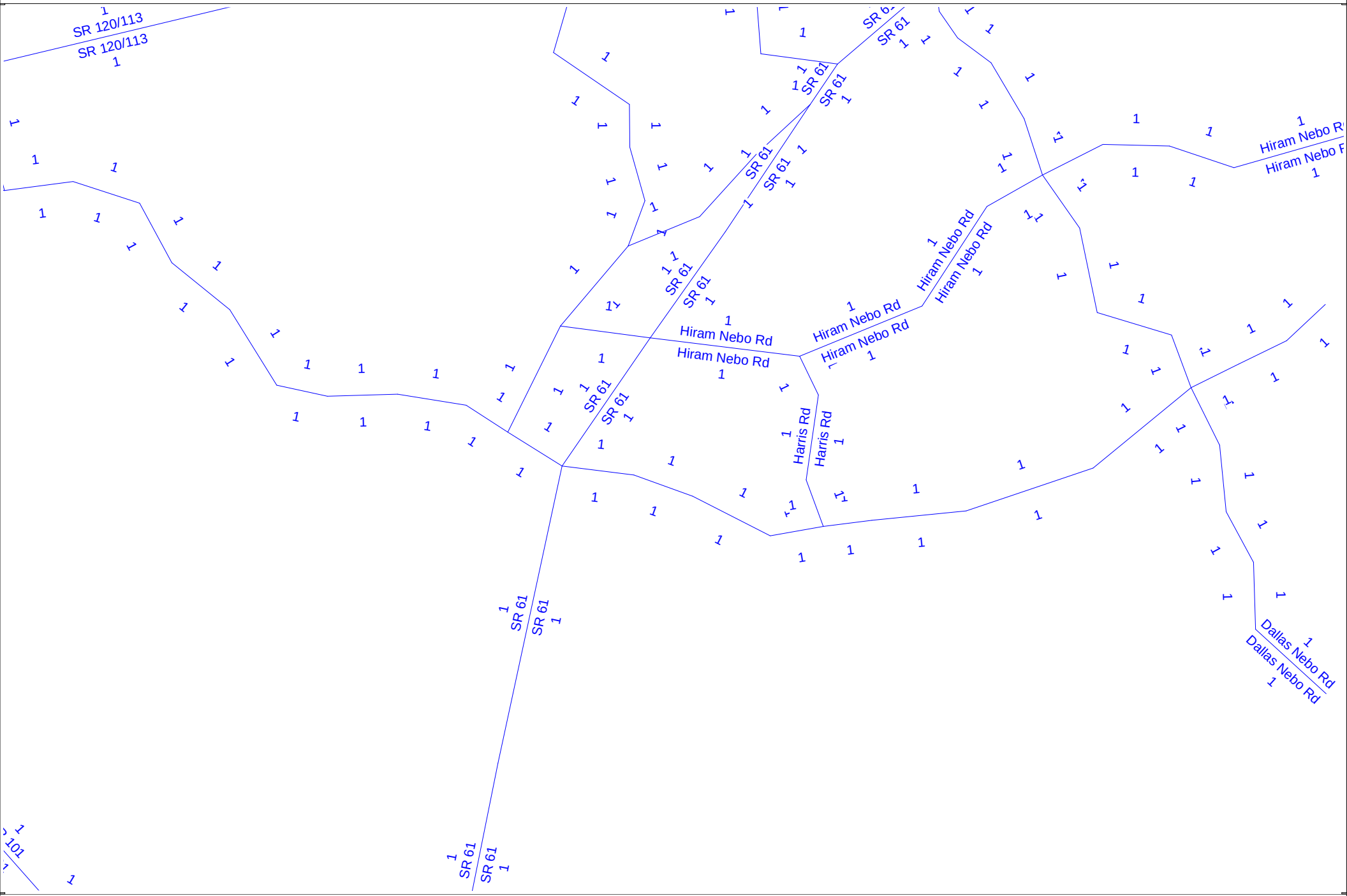
STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PROGRAM DELIVERY

TRAFFIC DIAGRAM

CSSFT-0009-00(218)
PAULDING COUNTY

DRAWING No. 10-02

ARC- PLAN 2040 NETWORK SCHEMATIC
Paulding County, SR 61- PI# 0009218



DEPARTMENT OF TRANSPORTATION

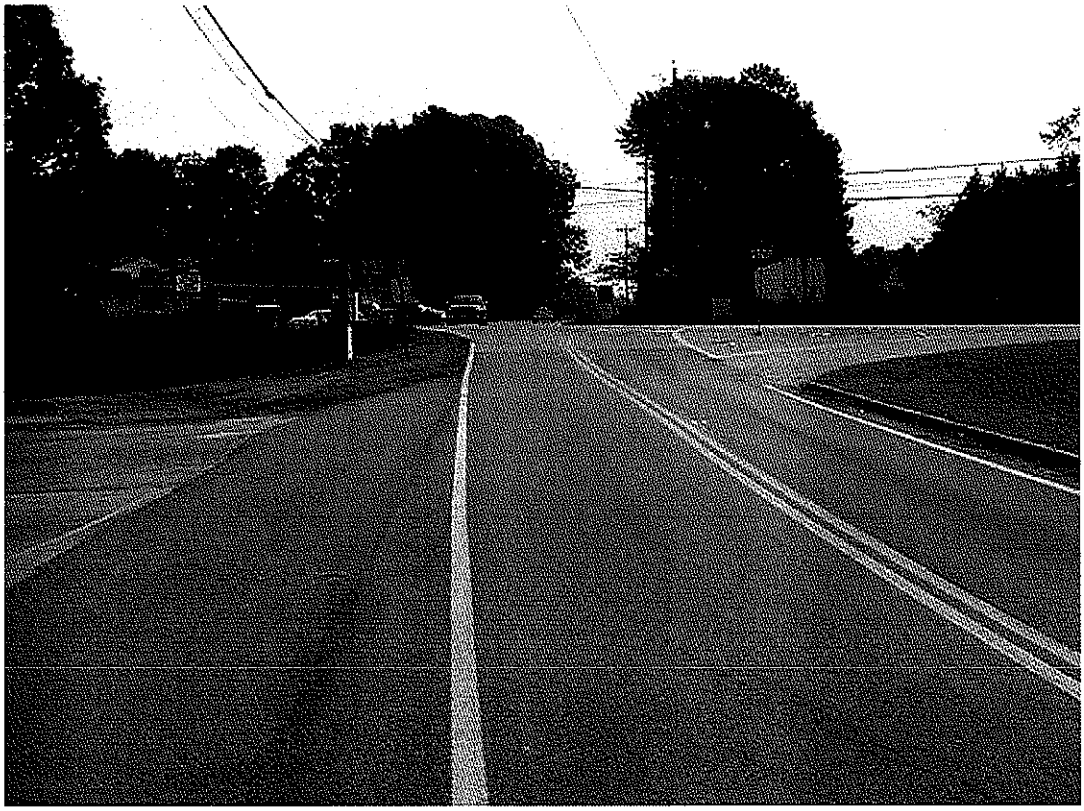
STATE OF GEORGIA

TRAFFIC ENGINEERING INVESTIGATION

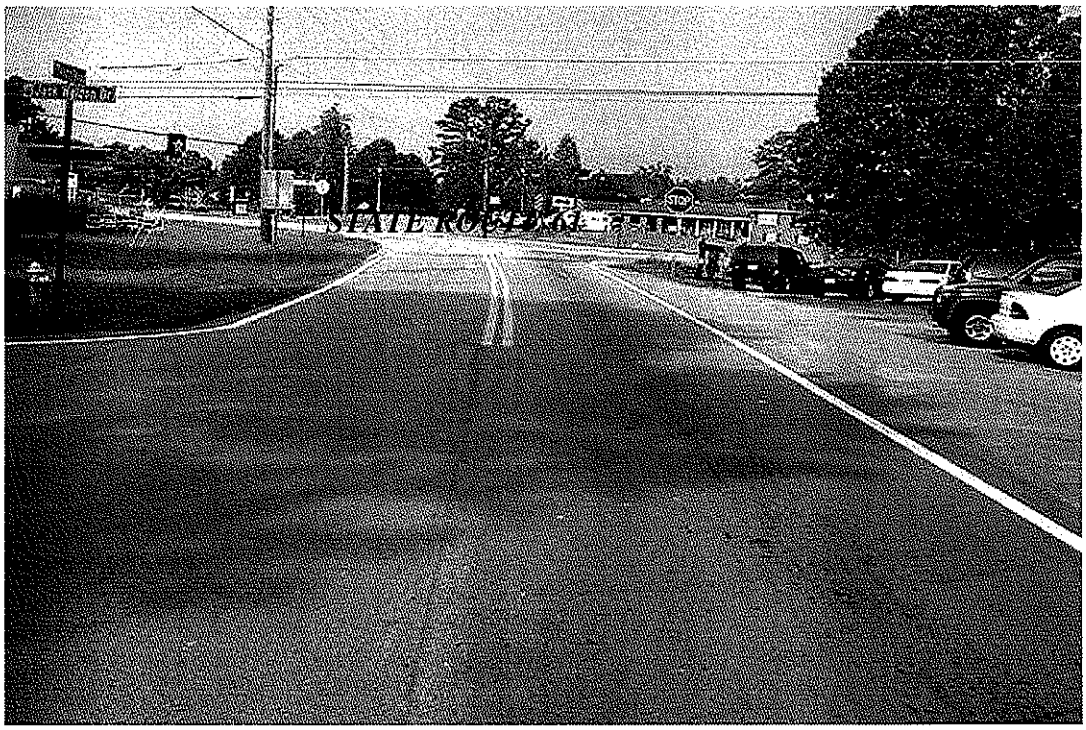
CARTERSVILLE, GEORGIA

DISTRICT SIX

COUNTY:	Paulding
CITY:	N/A
PRIMARY ROUTE:	State Route 61
SECONDARY ROUTE:	Nebo and Mayfield Road
MILE POST:	3.44
PREPARED BY:	Stanley McCarley District Traffic Operations Engineer



EAST BOUND MAYFIELD ROAD



WEST BOUND NEBO ROAD

SOUTH BOUND STATE ROUTE 61

NORTH BOUND STATE ROUTE 61

REQUESTED BY:
This investigation was requested by Paulding County.

REASON FOR INVESTIGATION:
To make a determination of the need to install advance flashing beacons to enhance the existing advance warning signs on State Route 61 at County Road 277.

GENERAL DESCRIPTION:
The subject intersection is located on State Route 61 at its intersection with County Road 277 Nebo/Mayfield Road in Paulding County. Paulding County is bordered by Bartow County to the North, Douglas/ Carroll Counties to the South, Cobb County to the East and Polk/Haralson Counties to the West.

TOPOGRAPHY:
State Route 61 is a North-South Rural/Urban Minor Arterial that spans from State Route 166 in Carroll County to Georgia/Tennessee state line in Murray County.

The segment of roadway in which the traffic engineering study was performed is in the Seventh Congressional District of the State of Georgia.

(See attached location map, Attachment A)

GEOMETRICS:
On State Route 61 in the area where the study was performed there are two-twelve foot lanes with two foot paved shoulders and two to six foot grass shoulders. Nebo and Mayfield Roads intersect State Route 61 at a skew angle and on the crest of a vertical curve. Sight distance on State Route 61 at the Nebo Road approach measured 530 feet northbound and 537 feet southbound. Sight distance on State Route 61 at the Mayfield Road approach measured 482 feet northbound and 477 feet southbound. The speed limited on State Route 61 is posted at 55 miles per hour, Nebo Road is posted at 45 miles per hour, and Mayfield Road is posted at 35 miles per hour.

EXISTING TRAFFIC CONTROL:
Existing pavement markings for State Route 61 consists of solid double yellow lines with white edge lines and raised pavement markers. Intersection warning sign with 45 mph speed advisory plates are located on State Route 61 approaching the intersection.
Nebo and Mayfield Roads have stop bars and stop signs with an advance stop ahead sign. Pavement markings for Nebo and Mayfield Roads consist of solid double yellow lines with white edge lines.

PEDESTRIAN MOVEMENTS:
Two (2) pedestrian movements were observed during the time of the study.

VEHICULAR VOLUMES:
The current AADT for State Route 61 is 9,390 vehicles per day.

ADJACENT SIGNALS:
A four-way stop with flashing beacons is located approximately one mile south of studied intersection at County Road 215/472 – Mulberry Rock Road / Ridge Road, at approximate Mile Post 2.14.

ACCIDENT HISTORY:
A review of the Department's Accident Data Information System website records for 2002-2005 is shown below.

(See attached accident analysis reports, Attachment B)

Accident Type	2003	2004	2005
Angle Intersecting	3	2	0
Rear End	4	5	3
Sideswipe	0	0	1
Left Turn	2	1	1
Other	1	1	2

These accidents are from mile point 3.10 to mile point 3.78 on State Route 61.

PRIOR STUDIES:
An Engineering Traffic Investigation study for State Route 61 at Mayfield/Nebo Road was done in 2003 and it concluded the intersection did not warrant a signal. Also, Paulding County performed counts in October 2004; again the intersection did not warrant a signal. Another Engineering Traffic Investigation was done in October 2006 and the intersection did not meet signal warrants.

FUTURE PROJECTS:
State Route 61 at County Road 277 will be widened from two to four lanes with one of two projects. The two projects have the intersection of State Route 61 at County Road 277 as their logical termini. Project CSSTP-0007-00 (864), PI# 0007864, will begin at the Douglas County Line and continue north to County Road 277. Project CSSTP-0007-00 (865), PI# 0007865, will begin at County Road 277 and continue north to County Road 467/ Dallas Nebo Road. The two projects are in the long range construction work program.

SPEED STUDY:
The posted speed limit on State Route 61 is 55 miles per hour and is enforceable by radar surveillance under permit to the Paulding County Sheriff's Department and the Department of Public Safety.

PARKING:
Parking is located just off Nebo Road in close proximity to State Route 61.

WARRANT ANALYSIS:
Referring to the 2003 Edition of the Manual of Uniform Traffic Control Devices, Chapter 4K, Section 4K.03, Warning Beacon: The typical applications of Warning Beacons; Support B states - As supplement emphasis to regulatory or warning signs and Support D states – On approaches to intersections where additional warning is required, or where special conditions exist. This chapter of the Manual of Uniform Traffic Control Devices sets the criteria for the use of warning beacons.

CONCLUSIONS:

Due to the number of accidents on this section of roadway and the sight distance, it is concluded Traffic Safety and Design should look at the possibility of adding a safety project to enhance this intersection and bring this section of roadway up to current State Route standards. Also, it is concluded to install advance warning beacons in both directions as a short term solution and in accordance with the 2003 Edition of the Manual of Uniform Traffic Control Devices, Chapter 4K, Section 4K.03, Support Item B and D.

RECOMMENDATIONS:

It is recommended that Traffic Safety and Design look at adding a safety project to the construction work program. The safety project should update the vertical alignment to current state route standard and construct left and right turn lanes from State Route 61 to County Road 277. Also, if possible add auxiliary lanes from County Road 277 to State Route 61. It is also recommended to issue a permit to Paulding County for operating advance flashing beacons on State Route 61 at County Road 277 (Mayfield/Nebo Roads) for the purpose of warning the traveling motorist of vehicles entering and exiting the highway.

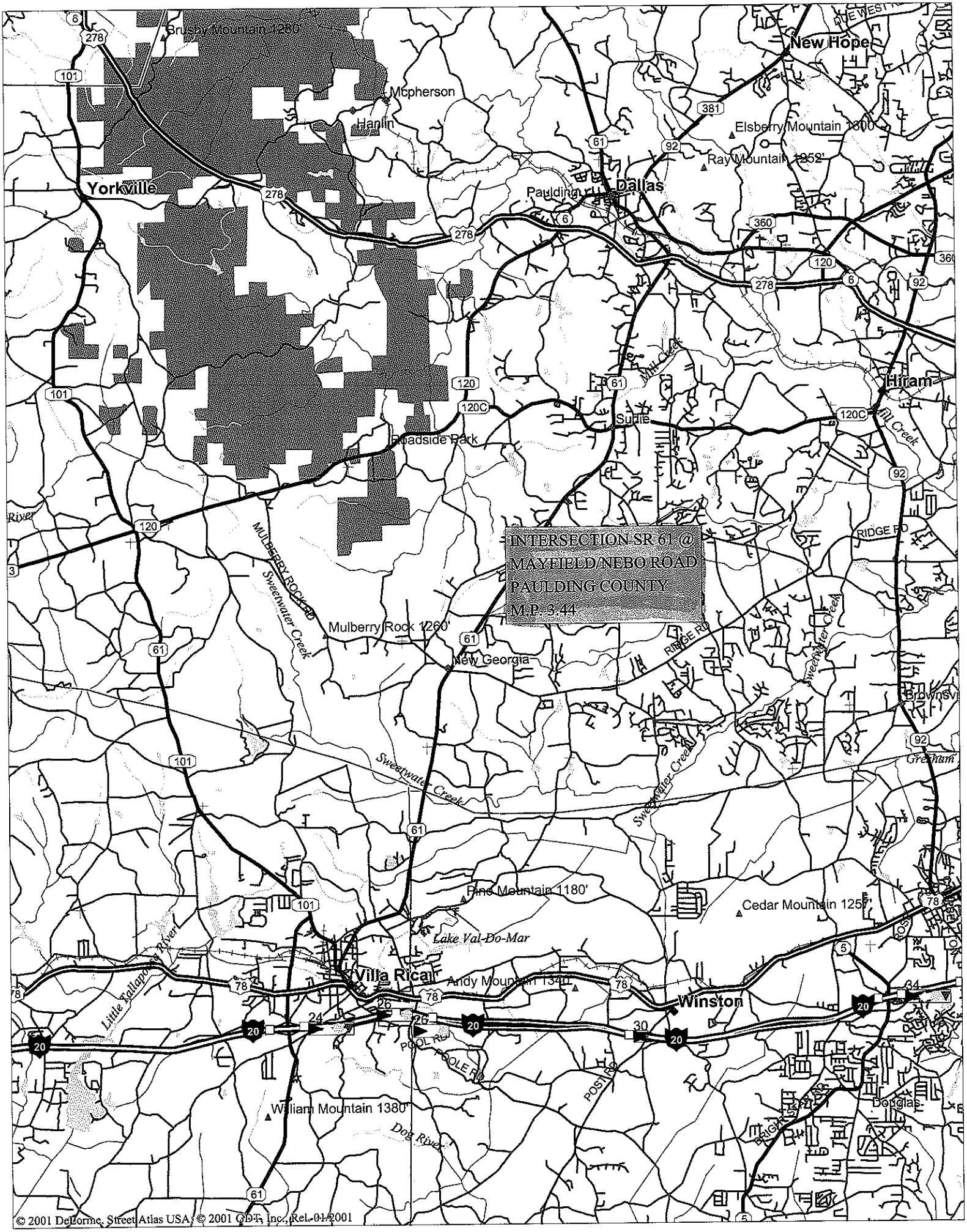
The Department of Transportation will erect and be responsible for the maintenance of the flashing beacons.

PREPARED BY: Stanley McCarley **DATE** 12-6-06
Stanley McCarley
District Traffic Operations Engineer

RECOMMENDED BY: Harry A. Maddox **DATE** 12-11-06
Harry A. Maddox
District Traffic Engineer

APPROVED BY: _____ **DATE** _____
Keith Golden
State Traffic Safety and Design Engineer

APPROVED BY: _____ **DATE** _____
Steve Henry
Director of Operations


INTERSECTION SR 61 @
MAYFIELD/NEBO ROAD
PAULDING COUNTY
M.P. 3.44
Brushy Mountain 1280'
New Hope
Mcpherson
Hanlin
Elsberry Mountain 1300'
Ray Mountain 1252'
Yorkville
Dallas
Paulding Fair
Hiram
Sudie
Roadside Park
Mulberry Rock 1260'
New Georgia
Sweetwater Creek
Pine Mountain 1180'
Cedar Mountain 1257'
Lake Val-Do-Mar
Villa Rica
Andy Mountain 1340'
Winston
William Mountain 1380'
Douglas
Little Tallapoosa River
Dog River
POOL RD
POOLE RD
POST RD
RIDGE RD
MULBERRY ROCK RD
Hill Creek
Brownsv
Gresham
© 2001 DeLorme, Street Atlas USA, © 2001 GDT, Inc., Rel. 01/2001

TIME	NO. ACC
0600 - 1000	2
1000 - 1600	4
1600 - 1900	1
1900 - 2400	3
2400 - 0600	0
TOTAL	**10**

ACCIDENT SEVERITY	NO. ACC
FATAL	1
NON FATAL	6
PROP. DAM.	19
TOTAL	**26**

WEATHER	NO. ACC
CLEAR	6
CLOUDY	2
RAIN	1
FOG	1
SNOW	0
TOTAL	**10**

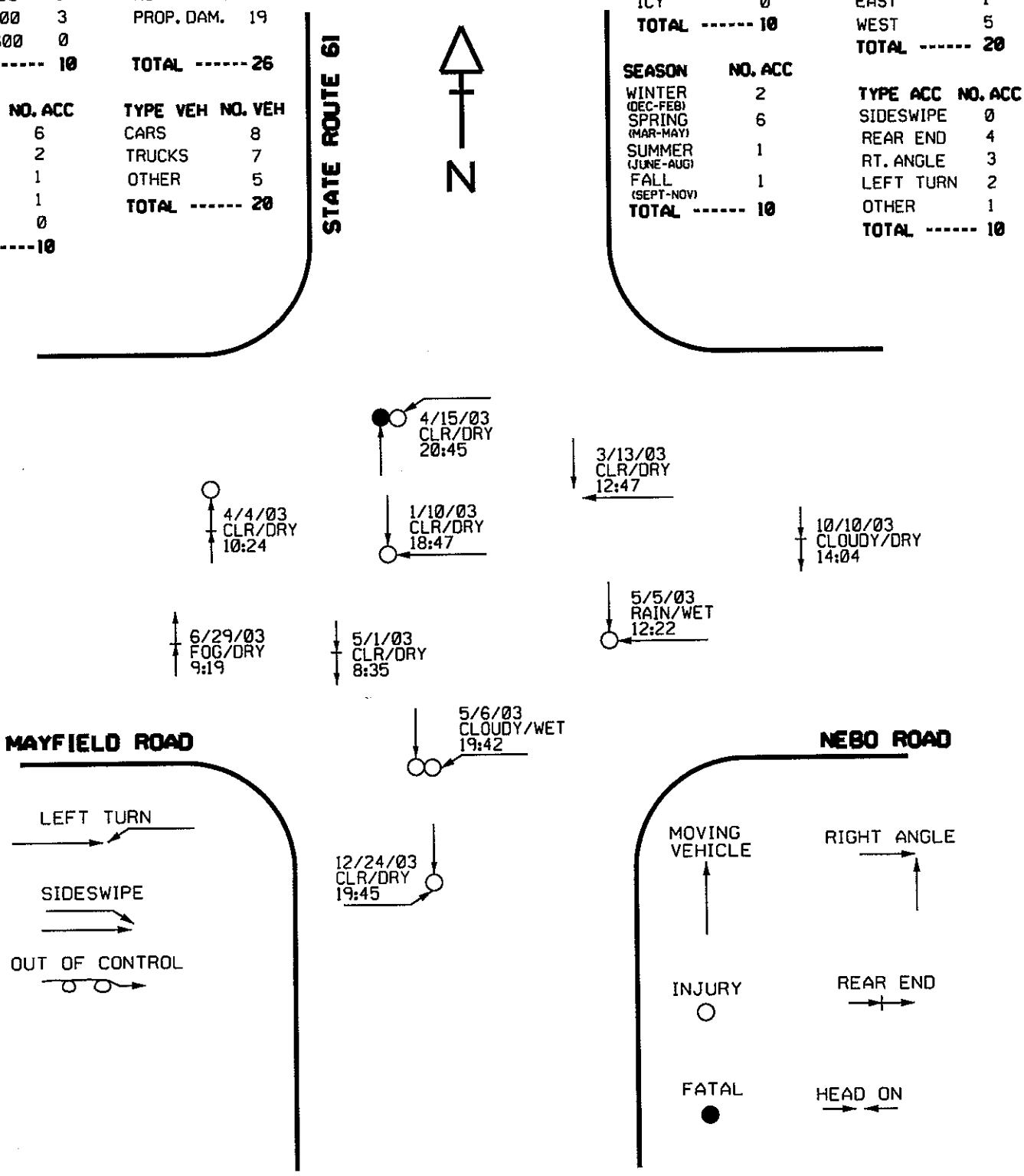
TYPE VEH	NO. VEH
CARS	8
TRUCKS	7
OTHER	5
TOTAL	**20**

ROAD	NO. ACC
DRY	8
WET	2
ICY	0
TOTAL	**10**

SEASON	NO. ACC
WINTER (DEC-FEB)	2
SPRING (MAR-MAY)	6
SUMMER (JUNE-AUG)	1
FALL (SEPT-NOV)	1
TOTAL	**10**

APPROACH DIRECTION	NO. ACC
NORTH	5
SOUTH	9
EAST	1
WEST	5
TOTAL	**20**

TYPE ACC	NO. ACC
SIDESWIPE	0
REAR END	4
RT. ANGLE	3
LEFT TURN	2
OTHER	1
TOTAL	**10**



LOCATION: STATE ROUTE 61 @ NEBO/MAYFIELD ROAD

COUNTY: PAULDING

FROM: 1/10/03 TO: 12/24/03

DATE: 9/14/06

TIME	NO. ACC
0600 - 1000	1
1000 - 1600	2
1600 - 1900	1
1900 - 2400	5
2400 - 0600	0
TOTAL --------	9

ACCIDENT SEVERITY	NO. ACC
FATAL	2
NON FATAL	3
PROP. DAM.	18
TOTAL ------	23

WEATHER	NO. ACC
CLEAR	7
CLOUDY	1
RAIN	1
FOG	0
SNOW	0
TOTAL ------	9

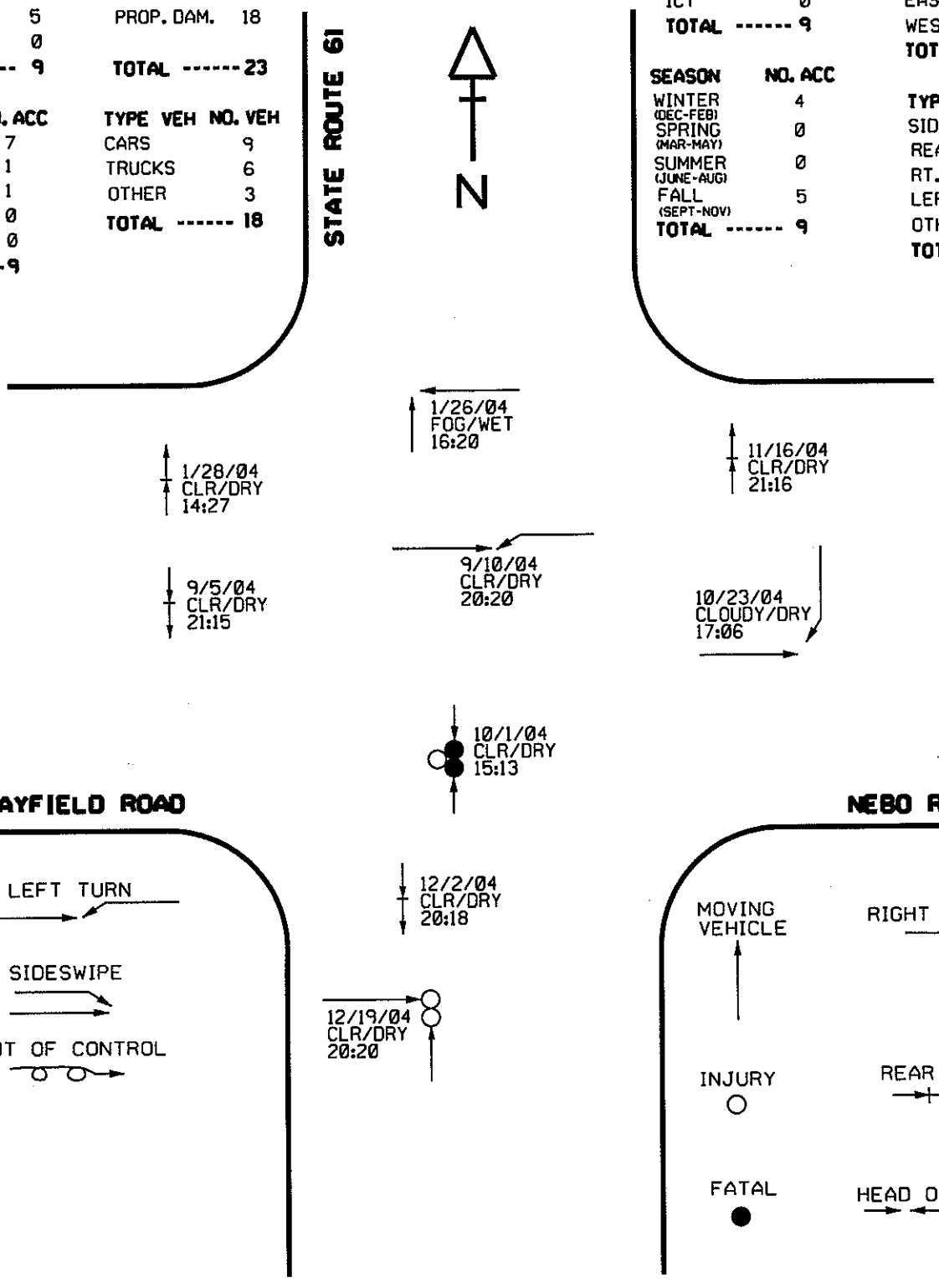
TYPE VEH	NO. VEH
CARS	9
TRUCKS	6
OTHER	3
TOTAL ------	18

ROAD	NO. ACC
DRY	8
WET	1
ICY	0
TOTAL ------	9

SEASON	NO. ACC
WINTER (DEC-FEB)	4
SPRING (MAR-MAY)	0
SUMMER (JUNE-AUG)	0
FALL (SEPT-NOV)	5
TOTAL ------	9

APPROACH DIRECTION	NO. ACC
NORTH	8
SOUTH	5
EAST	2
WEST	3
TOTAL ------	18

TYPE ACC	NO. ACC
SIDESWIPE	0
REAR END	5
RT. ANGLE	2
LEFT TURN	1
OTHER	1
TOTAL ------	9



LOCATION: STATE ROUTE 61 @ NEBO/MAYFIELD ROAD **COUNTY: PAULDING**

FROM: 1/08/04 **TO: 12/19/04** **DATE: 9/14/06**

...\COLLISION SR61 Nebo Paulding.d 11/13/2006 2:06:05 PM

TIME	NO. ACC
0600 - 1000	2
1000 - 1600	3
1600 - 1900	1
1900 - 2400	0
2400 - 0600	1
TOTAL	7

ACCIDENT SEVERITY	NO. ACC
FATAL	0
NON FATAL	8
PROP. DAM.	16
TOTAL	24

WEATHER	NO. ACC
CLEAR	3
CLOUDY	3
RAIN	1
FOG	0
SNOW	0
TOTAL	7

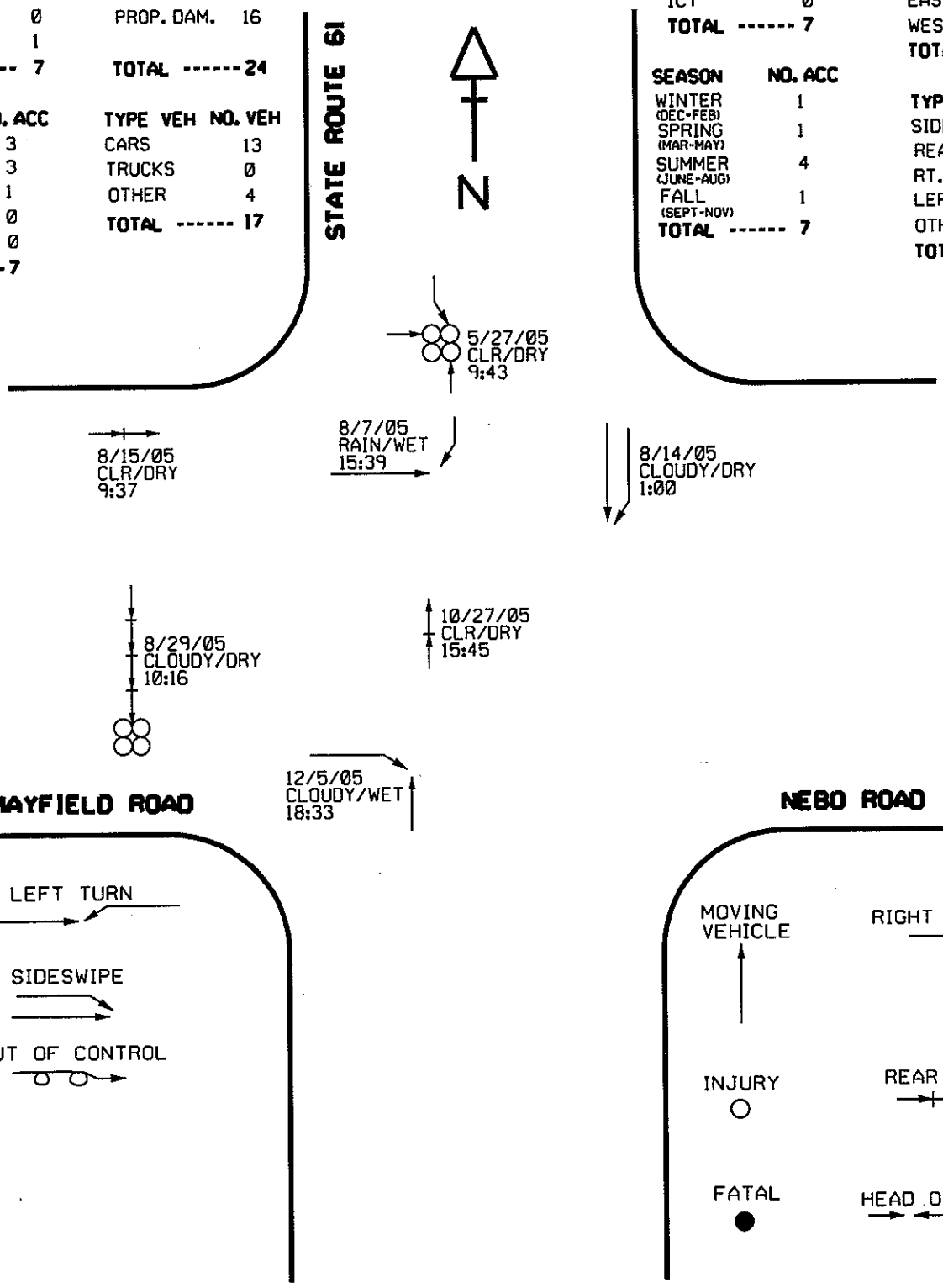
TYPE VEH	NO. VEH
CARS	13
TRUCKS	0
OTHER	4
TOTAL	17

ROAD	NO. ACC
DRY	5
WET	2
ICY	0
TOTAL	7

SEASON	NO. ACC
WINTER (DEC-FEB)	1
SPRING (MAR-MAY)	1
SUMMER (JUNE-AUG)	4
FALL (SEPT-NOV)	1
TOTAL	7

APPROACH DIRECTION	NO. ACC
NORTH	4
SOUTH	8
EAST	1
WEST	4
TOTAL	17

TYPE ACC	NO. ACC
SIDESWIPE	1
REAR END	3
RT. ANGLE	0
LEFT TURN	1
OTHER	2
TOTAL	7



LOCATION: STATE ROUTE 61 @ NEBO/MAYFIELD ROAD **COUNTY: PAULDING**

FROM: 5/27/05 **TO: 12/5/05** **DATE: 9/14/06**

...\COLLISION SR61 Nebo Paulding.d 11/13/2006 2:06:10 PM

ACC_ID	CONTRIBUTING FACTOR	DATE	DIRECTION	INTERSECTING ROUTE NUMBER	LOCATION IMPACT	MANEUVER	MANNER COLLISION	MILELOG	#FATAL	#INJURY	#VEHICLES	ROUTE NUMBER	SPEED LIMIT	SURFACE	TIME	VEHICLE CONDITION	VEHICLE DAMAGE	VEHICLE #	VEHICLE TYPE	VISION OBSCURED	WEATHER
'30210170	Failed to Yield	4/15/2003	West	'027700	On Roadway	Turning Left	Angle	3.19	1	1	2	'006100	55	Dry	8:45 PM	No Known Defects	Extensive	1	Pickup Truck	Not Obsured	Clear
30210170	No Contributing Factors	4/15/2003	North	'027700	On Roadway	Straight	Angle	3.19	1	1	2	'006100	55	Dry	8:45 PM	No Known Defects	Extensive	2	Utility Passenger Vehicle	Not Obsured	Clear
'30820658	Failed to Yield	1/10/2003	West	'027700	On Roadway	Straight	Angle	3.19	0	1	2	'006100	55	Dry	6:47 PM	No Known Defects	Moderate	1	Passenger Car	Not Obsured	Clear
'30620658	No Contributing Factors	1/10/2003	South	'027700	On Roadway	Straight	Angle	3.19	0	1	2	'006100	55	Dry	6:47 PM	No Known Defects	Moderate	2	Pickup Truck	Not Obsured	Clear
'30680053	Failed to Yield	3/13/2003	West	'027700	On Roadway	Straight	Angle	3.19	0	0	2	'006100	55	Dry	12:47 PM	No Known Defects	Slight	1	Passenger Car	Not Obsured	Clear
'30680053	No Contributing Factors	3/13/2003	South	'027700	On Roadway	Straight	Angle	3.19	0	0	2	'006100	55	Dry	12:47 PM	No Known Defects	Slight	2	Passenger Car	Not Obsured	Clear
'30700875	Following too Close	4/4/2003	North	'027700	On Roadway	Straight	Rear End	3.19	0	1	2	'006100	55	Dry	10:24 AM	No Known Defects	Slight	1	Vehicle With Trailer	Not Obsured	Clear
'30700875	No Contributing Factors	4/4/2003	North	'027700	On Roadway	Straight	Rear End	3.19	0	1	2	'006100	55	Dry	10:24 AM	No Known Defects	Moderate	2	Pickup Truck	Not Obsured	Clear
'31100204	Following too Close	5/1/2003	South	'	On Roadway	Straight	Rear End	3.29	0	0	2	'006100	55	Dry	8:35 AM	No Known Defects	Slight	1	Van	Not Obsured	Clear
'31100204	No Contributing Factors	5/1/2003	South	'	On Roadway	Turning Left	Rear End	3.29	0	0	2	'006100	55	Dry	8:35 AM	No Known Defects	Slight	2	Pickup Truck	Not Obsured	Clear
'31100248	Failed to Yield	5/5/2003	West	'027700	On Shoulder	Straight	Not A Collision With A Motor Vehicle	3.19	0	1	2	'006100	55	Wet	12:22 PM	No Known Defects	None	1	Passenger Car	Not Obsured	Rain
'31100248	No Contributing Factors	5/5/2003	South	'027700	On Shoulder	Straight	Not A Collision With A Motor Vehicle	3.19	0	1	2	'006100	55	Wet	12:22 PM	No Known Defects	Slight	2	Van	Not Obsured	Rain
'31100276	Failed to Yield	5/6/2003	West	'027700	On Roadway	Turning Left	Angle	3.19	0	2	2	'006100	55	Wet	7:42 PM	No Known Defects	Moderate	1	Passenger Car	Not Obsured	Cloudy
'31100276	No Contributing Factors	5/6/2003	South	'027700	On Roadway	Straight	Angle	3.19	0	2	2	'006100	55	Wet	7:42 PM	No Known Defects	Moderate	2	Pickup Truck	Not Obsured	Cloudy
'31140792	Following too Close	6/29/2003	North	'	On Roadway	Straight	Rear End	3.62	0	0	2	'006100	55	Dry	9:19 AM	No Known Defects	Moderate	1	Pickup Truck	Not Obsured	Fog
'31140792	No Contributing Factors	6/29/2003	North	'	On Roadway	Stopped	Rear End	3.62	0	0	2	'006100	55	Dry	9:19 AM	No Known Defects	Moderate	2	Pickup Truck	Not Obsured	Fog
'32420302	No Contributing Factors	10/10/2003	South	'	On Roadway	Stopped	Rear End	3.21	0	0	2	'006100	55	Dry	2:04 PM	No Known Defects	Slight	2	Utility Passenger Vehicle	Not Obsured	Cloudy
'32420302	Following too Close	10/10/2003	South	'	On Roadway	Straight	Rear End	3.21	0	0	2	'006100	55	Dry	2:04 PM	No Known Defects	Moderate	1	Passenger Car	Not Obsured	Cloudy
'34270433	No Contributing Factors	12/24/2003	South	'	On Roadway	Straight	Angle	3.14	0	0	2	'006100	55	Dry	7:45 PM	No Known Defects	Moderate	2	Passenger Car	Not Obsured	Clear
'34270433	Failed to Yield	12/24/2003	East	'	On Roadway	Turning Left	Angle	3.14	0	0	2	'006100	55	Dry	7:45 PM	No Known Defects	Moderate	1	Passenger Car	Not Obsured	Clear

ACC_ID	CONTRIBUTING FACTOR	DATE	DIRECTION	INTERSECTING ROUTE NUMBER	LOCATION IMPACT	MANEUVER	MANNER COLLISION	MILELOG	#FATAL	#INJURY	#VEHICLES	ROUTE NUMBER	SPEED LIMIT	SURFACE	TIME	VEHICLE CONDITION	VEHICLE DAMAGE	VEHICLE #	VEHICLE TYPE	VISION OBSCURED	WEATHER
'41040439	Object or Animal	1/8/2004	North		On Roadway	Straight	Not A Collision With A Motor Vehicle	3.62	0	0	1	'006100	55	Dry	1:04 AM	No Known Defects	Slight	1	Passenger Car	Not Obsured	Clear
'41040615	Other	1/26/2004	North	'027700	On Roadway	Straight	Angle	3.19	0	0	2	'006100	55	Wet	8:20 PM	No Known Defects	Moderate	1	Passenger Car	Not Obsured	Fog
'41040615	No Contributing Factors	1/26/2004	West	'027700	On Roadway	Stopped	Angle	3.19	0	0	2	'005100	55	Wet	8:20 PM	No Known Defects	Extensive	2	Van	Not Obsured	Fog
'41040624	Following too Close	1/28/2004	North		On Roadway	Straight	Rear End	3.59	0	0	2	'006100	55	Dry	2:27 PM	No Known Defects	Slight	1	Passenger Car	Not Obsured	Clear
'41040624	No Contributing Factors	1/28/2004	North		On Roadway	Turning Right	Rear End	3.59	0	0	2	'006100	55	Dry	2:27 PM	No Known Defects	Slight	2	Passenger Car	Not Obsured	Clear
'41570332	Object or Animal	3/3/2004	South	'027700	On Roadway	Straight	Not A Collision With A Motor Vehicle	3.19	0	0	1	'006100	55	Dry	5:40 PM	No Known Defects	Slight	1	Single Unit Truck	Not Obsured	Clear
'41570333	Object or Animal	3/3/2004	South	'027700	On Roadway	Straight	Not A Collision With A Motor Vehicle	3.19	0	0	1	'006100	55	Dry	7:40 AM	No Known Defects	Slight	1	Single Unit Truck	Not Obsured	Clear
'43540052	No Contributing Factors	9/5/2004	South		On Roadway	Stopped	Rear End	3.2	0	0	2	'006100	55	Dry	9:15 PM	No Known Defects	Slight	1	Pickup Truck	Not Obsured	Clear
'43540052	Following too Close	9/5/2004	South		On Roadway	Straight	Rear End	3.2	0	0	2	'006100	55	Dry	9:15 PM	No Known Defects	Slight	2	Passenger Car	Not Obsured	Clear
'43540104	No Contributing Factors	9/10/2004	East	'027700	On Roadway	Straight	Angle	3.19	0	0	2	'006100	55	Dry	8:20 PM	No Known Defects	Moderate	1	Pickup Truck	Not Obsured	Clear
'43540104	Improper Turn	9/10/2004	West	'027700	On Roadway	Turning Left	Angle	3.19	0	0	2	'006100	55	Dry	8:20 PM	No Known Defects	Moderate	2	Pickup Truck	Not Obsured	Clear
'44060020	Failed to Yield	10/23/2004	East	'027700	On Roadway	Straight	Angle	3.19	0	0	2	'006100	55	Dry	5:06 PM	No Known Defects	Extensive	1	Passenger Car	Not Obsured	Cloudy
'44060020	No Contributing Factors	10/23/2004	North	'027700	On Roadway	Turning Right	Angle	3.19	0	0	2	'006100	55	Dry	5:06 PM	No Known Defects	Moderate	2	Passenger Car	Not Obsured	Cloudy
'44090052	Wrong Side of Road	10/1/2004	South	'027700	On Roadway	Straight	Head On	3.19	2	1	2	'006100	55	Dry	3:13 PM	No Known Defects	Extensive	1	Passenger Car	Not Obsured	Clear
'44090052	No Contributing Factors	10/1/2004	North	'027700	On Roadway	Straight	Head On	3.19	2	1	2	'006100	55	Dry	3:13 PM	No Known Defects	Extensive	2	Pickup Truck	Not Obsured	Clear
'44280459	Failed to Yield	11/16/2004	North	'027700	On Roadway	Turning Left	Angle	3.19	0	0	2	'006100	55	Dry	9:16 PM	No Known Defects	Moderate	1	Pickup Truck	Not Obsured	Clear
'44280459	Exceeding Speed Limit	11/16/2004	North	'027700	On Roadway	Straight	Angle	3.19	0	0	2	'006100	55	Dry	9:16 PM	No Known Defects	Moderate	2	Van	Not Obsured	Clear
'44460066	Following too Close	12/2/2004	South	'027700	On Roadway	Straight	Rear End	3.19	0	0	2	'006100	55	Dry	8:16 AM	No Known Defects	Moderate	1	Passenger Car	Not Obsured	Clear
'44460066	No Contributing Factors	12/2/2004	South	'027700	On Roadway	Stopped	Rear End	3.19	0	0	2	'006100	55	Dry	8:16 AM	No Known Defects	Slight	2	Passenger Car	Not Obsured	Clear
'44980145	Other	12/19/2004	North	'027700	On Roadway	Straight	Angle	3.19	0	2	2	'006100	55	Dry	8:20 PM	No Known Defects	Extensive	1	Utility Passenger Vehicle	Not Obsured	Clear
'44980145	No Contributing Factors	12/19/2004	West	'027700	On Roadway	Stopped	Angle	3.19	0	2	2	'006100	55	Dry	8:20 PM	No Known Defects	Extensive	2	Pickup Truck	Not Obsured	Clear

ACC_ID	CONTRIBUTING FACTOR	DATE	DIRECTION	INTERSECTING ROUTE NUMBER	LOCATION IMPACT	MANEUVER	MANNER COLLISION	MILELOG	#FATAL	#INJURY	#VEHICLES	ROUTE NUMBER	SPEED LIMIT	SURFACE	TIME	VEHICLE CONDITION	VEHICLE DAMAGE	VEHICLE #	VEHICLE TYPE	VISION OBSCURED	WEATHER
'52080666	Failed to Yield	5/27/2005	South	'027700	On Roadway	Turning Left	Angle	3.19	0	4	3	'006100	55	Dry	9:43 AM	No Known Defects	Extensive	1	Van	Not Obsured	Clear
'52080666	No Contributing Factors	5/27/2005	North	'027700	On Roadway	Straight	Angle	3.19	0	4	3	'006100	55	Dry	9:43 AM	No Known Defects	Extensive	2	Passenger Car	Not Obsured	Clear
'52080666	No Contributing Factors	5/27/2005	West	'027700	On Roadway	Stopped	Angle	3.19	0	4	3	'006100	55	Dry	9:43 AM	No Known Defects	Slight	3	Passenger Car	Not Obsured	Clear
'53490358	Failed to Yield	8/7/2005	South	'027700	On Roadway	Turning Right	Angle	3.19	0	0	2	'006100	55	Wet	3:39 PM	No Known Defects	Extensive	1	Passenger Car	Not Obsured	Rain
'53490358	No Contributing Factors	8/7/2005	West	'027700	On Roadway	Straight	Angle	3.19	0	0	2	'006100	55	Wet	3:39 PM	No Known Defects	Extensive	2	Passenger Car	Not Obsured	Rain
'53490438	Disregard Police Officer	8/14/2005	South	'	On Roadway	Straight	Sideswipe - Same Direction	3.39	0	0	2	'006100	55	Dry	1:00 AM	No Known Defects	Slight	1	Passenger Car	Not Obsured	Cloudy
'53490438	No Contributing Factors	8/14/2005	South	'	On Roadway	Straight	Sideswipe - Same Direction	3.39	0	0	2	'006100	55	Dry	1:00 AM	No Known Defects	Slight	2	Passenger Car	Not Obsured	Cloudy
'53490447	Following too Close	8/15/2005	West	'027700	On Roadway	Straight	Rear End	3.19	0	0	2	'006100	55	Dry	9:37 AM	No Known Defects	Slight	1	Passenger Car	Not Obsured	Clear
'53490447	No Contributing Factors	8/15/2005	West	'027700	On Roadway	Stopped	Rear End	3.19	0	0	2	'006100	55	Dry	9:37 AM	No Known Defects	Slight	2	Passenger Car	Not Obsured	Clear
'53490582	Following too Close	8/29/2005	South	'	On Roadway	Straight	Rear End	3.63	0	4	4	'006100	55	Dry	10:16 AM	No Known Defects	Extensive	1	Passenger Car	Not Obsured	Cloudy
'53490582	No Contributing Factors	8/29/2005	South	'	On Roadway	Stopped	Rear End	3.63	0	4	4	'006100	55	Dry	10:16 AM	No Known Defects	Extensive	2	Passenger Car	Not Obsured	Cloudy
'53490582	No Contributing Factors	8/29/2005	South	'	On Roadway	Stopped	Rear End	3.63	0	4	4	'006100	55	Dry	10:16 AM	No Known Defects	Moderate	3	Van	Not Obsured	Cloudy
'53490582	No Contributing Factors	8/29/2005	South	'	On Roadway	Stopped	Rear End	3.63	0	4	4	'006100	55	Dry	10:16 AM	No Known Defects	Slight	4	Passenger Car	Not Obsured	Cloudy
'54070358	Improper Turn	10/27/2005	North	'	On Roadway	Turning Right	Rear End	3.77	0	0	2	'006100	55	Dry	3:45 PM	No Known Defects	None	1	Vehicle With Trailer	Not Obsured	Clear
'54070358	No Contributing Factors	10/27/2005	North	'	On Roadway	Straight	Rear End	3.77	0	0	2	'006100	55	Dry	3:45 PM	No Known Defects	Moderate	2	Other	Not Obsured	Clear
'54560448	Failed to Yield	12/5/2005	East	'027700	On Roadway	Turning Right	Angle	3.19	0	0	2	'006100	55	Wet	6:33 PM	No Known Defects	Moderate	1	Passenger Car	Not Obsured	Cloudy
'54560448	No Contributing Factors	12/5/2005	North	'027700	On Roadway	Straight	Angle	3.19	0	0	2	'006100	55	Wet	6:33 PM	No Known Defects	Extensive	2	Passenger Car	Not Obsured	Cloudy

RC * Web* INFO

Requested Information for Paulding County

Route Type 1 Route Number 006100

Route Type	Route Number	Begin Measure	End Measure	Description	Speed Limited	Func. Class	ROW	Prev AADT	AADT	Intersect Road 1	Intersect Road 2
1	006100	0	0.22	BEG DOUGLAS 097	55	6	150-E	9780	9950		
1	006100	0.22	0.34		55	6	150-E	9780	9950		
1	006100	0.34	0.35		55	6	80-E	9780	9950		
1	006100	0.35	0.81	CRT 026200 R	55	6	80-E	9780	9950	SWEETWATER BEND	
1	006100	0.81	0.82		55	6	100-E	9780	9950		
1	006100	0.82	0.86	CRT 051500 R	55	6	100-E	9780	9950	BELMONT RD	
1	006100	0.86	0.89	CRT 021800 L	55	6	80-E	9780	9950	TOWNSEND RD	
1	006100	0.89	0.98		55	16	80-E	9780	9950		
1	006100	0.98	1		55	16	80-E	9780	9950		
1	006100	1	1.38	MP 001	55	16	80-E	9780	9950		
1	006100	1.38	1.96	ACCLOC L	55	16	80-E	9780	9950		
1	006100	1.96	2		55	16	80-E	9780	9950		
1	006100	2	2.11	MP 002	55	16	80-E	9780	9950		
1	006100	2.11	2.12		55	16	80-E	9310	9390		
1	006100	2.12	2.17	CRX 021500LCR0472L	55	16	80-E	9310	9390	MULBERRY ROCK RD	RIDGE RD
1	006100	2.17	2.28		55	16	80-E	9310	9390		
1	006100	2.28	2.56	CRT 021900 L	55	16	80-E	9310	9390	TACK COLE RD	
1	006100	2.56	2.6		55	16	80-E	9310	9390		
1	006100	2.6	2.61		55	16	80-E	9310	9390		
1	006100	2.61	2.76	CRT 071900 R	55	16	80-E	9310	9390	CEDAR CREEK DR	
1	006100	2.76	2.77		55	16	80-E	9310	9390		
1	006100	2.77	2.93	CRY 027800 R	55	16	80-E	9310	9390	COLE CREEK RD	
1	006100	2.93	3		55	16	80-E	9310	9390		
1	006100	3	3.12	MP 003	55	16	80-E	9310	9390		
1	006100	3.12	3.19		55	16	80-E	9310	9390		
1	006100	3.19	3.69	CRY 027900 L	55	16	80-E	9310	9390	MACEDONIA RD	
1	006100	3.69	3.72		55	16	80-E	9310	9390		
1	006100	3.72	3.73		55	16	80-E	9310	9390		
1	006100	3.73	3.78	CRT 094500 R	55	16	80-E	9310	9390	ARBOR WAY	
1	006100	3.78	3.82		55	16	80-E	9310	9390		
1	006100	3.82	3.83		55	16	80-E	9310	9390		
1	006100	3.83	3.86	CRT 094200 L	55	16	80-E	9310	9390	BALDWIN DR	
1	006100	3.86	3.92		55	16	80-E	9310	9390		
1	006100	3.92	4		55	16	80-E	9310	9390		
1	006100	4	4.26	MP 004	55	16	80-E	9310	9390		
1	006100	4.26	4.27	CRY 025600 L	55	16	80-E	9310	9390	MCGUIRE RD	
1	006100	4.27	4.31		55	16	80-E	9310	9390		
1	006100	4.31	4.32		55	16	80-E	9310	9390		
1	006100	4.32	4.34	ACCLOC R	55	16	80-E	9310	9390	CARROLL LEGGETT PARK	
1	006100	4.34	4.41		55	16	80-E	9310	9390		
1	006100	4.41	4.47		55	16	80-E	9310	9390		
1	006100	4.47	4.95	CRX 025700	55	16	80-E	9310	9390	PINE SHADOWS DR	RUFF HARRIS DR
1	006100	4.95	5		55	16	80-E	9310	9390		
1	006100	5	5.13	MP 005	55	16	80-E	9310	9390		
1	006100	5.13	5.14	CRT 028200 R	55	16	80-E	9310	9390	JANE HARRIS RD	
1	006100	5.14	5.52	CRY 026000 L	55	16	80-E	9310	9390	MARSHALL FULLER RD	
1	006100	5.52	5.61	CRX 025100	55	16	80-E	9310	9390	LINSEY LAKE RD	PAUL AIKEN RD
1	006100	5.61	5.67		55	16	80-E	9310	9390		
1	006100	5.67	5.72		55	16	80-E	9310	9390		
1	006100	5.72	5.76		55	16	80-E	9310	9390		

RC * Web* INFO

Requested Information for Paulding County

Route Type 2 Route Number 027700

Route Type	Route Number	Begin Measure	End Measure	Description	Speed Limited	Func. Class	ROW	Prev AADT	AADT	Intersect Road 1	Intersect Road 2
2	027700	0	0.03	CR 026000 BEG AT	30	9	60-E	2780	2360	MARSHALL FULLER RD	
2	027700	0.03	0.52		30	19	60-E	2780	2360		
2	027700	0.52	0.55	CRT 164300 L	30	19	60-E	2780	2360	OAK LEAF DRIVE	
2	027700	0.55	0.58		30	19	60-E	2780	2360		
2	027700	0.58	0.59		30	19	60-E	2780	2360		
2	027700	0.59	0.66		30	17	60-E	2780	2360		
2	027700	0.66	0.70	CRX 006100	45	17	60-E	2780	2360	FIELD TRCA HWY	
2	027700	0.70	1.19	CRY 027800 R	45	17	60-E	2780	2360	JACK WELDON DR	
2	027700	1.19	1.26		45	17	60-E	2780	2360		
2	027700	1.26	1.3	ACCLOC R MID SCH	45	17	60-E	2780	2360	SOUTH PAULDING MID SCH	
2	027700	1.3	1.66	CRT 145700 R	45	17	60-E	2780	2360	STONE CREEK DRIVE	
2	027700	1.66	1.78	CRX 028200	45	17	60-E	2780	2360	HARRIS FARM RD	CLYDE COLE RD
2	027700	1.78	1.85	CRY 050400 R	45	17	60-E	2780	2360	HITCHCOCK RD	
2	027700	1.85	1.94	CRT 028000 R	45	17	60-E	2780	2360	FATE FULLER RD	
2	027700	1.94	2.24	CRT 145800 L	45	17	60-E	2780	2360	FIELDING GROVE DRIVE	
2	027700	2.24	2.27	CRT 146000 L	45	17	60-E	2780	2360	PRINCETON DRIVE	
2	027700	2.27	2.63		45	17	60-E	2780	2360		
2	027700	2.63	2.89	BRS50270	45	17	60-E	2780	2360	LICKLOG CREEK	
2	027700	2.89	3.1	CRT 027000 R	45	17	60-E	2780	2360	BOB HUNTON RD	
2	027700	3.1	3.38	CRT 027500 R	45	17	60-E	2780	2360	SAM ALEXANDER RD	
2	027700	3.38	3.48	CRY 025700 L	45	17	60-E	2780	2360	PINE SHADOWS DR	
2	027700	3.48	3.57	ACCLOC L	45	17	60-E	2780	2360	NEBO ELEM SCHOOL	
2	027700	3.57	3.58	CRY 027600 R	45	17	60-E	2780	2360	CLARICE RD	
2	027700	3.58	3.92		45	17	60-E	2780	2360		
2	027700	3.92	3.92	CR 046700 END AT	45	17	60-E	2780	2360	DALLAS NEBO RD	

GRESHAM
SMITH AND
PARTNERS

MEMORANDUM

TO: File

FROM: Jay Bockisch, P.E., PTOE — Gresham, Smith and Partners

DATE: January 25, 2012

SUBJECT: SIGNAL WARRANT ALANYSIS
PROJECT: CSSFT-0009-00(218)
SR 61 AT NEBO ROAD, P.I. NO. 0009218
PAULDING COUNTY, GA
GS&P Project No. 26340.14

GS&P conducted a signal warrant analysis for the SR 61 at Nebo Road intersection based on Year 2015 (Opening Year) and Year 2035 (Design Year) traffic volumes. GS&P also reviewed crash data provided by GDOT at this intersection as part of the signal warrant analysis. Table 1 shows a summary of the crash data by crash type at the SR 61 at Nebo Road intersection from 2004 through 2008 (the latest year full data is available from GDOT).

Table1. Crash Data at the SR 61 at Nebo Road Intersection

	Manner of Collision					
Year	Angle	Head On	Rear End	Sideswipe	Other	Total
2004	4	1	1	0	2	8
2005	3	0	1	0	0	4
2006	7	1	1	0	0	9
2007	0	0	0	0	0	0
2008	5	0	1	0	1	7
Total	19	2	4	0	3	28

In order to accommodate projected traffic volumes and provide adequate intersection levels of service at the North Peachtree Road/Peeler Road intersection, a traffic signal is proposed at the intersection.

In order to determine if this intersection is a candidate for signalization, a signal warrant analysis was performed at the intersection. The standard signal warrants are contained

in the *Manual of Uniform Traffic Control Devices* (MUTCD). The following four MUTCD warrants are relevant to this analysis:

- Warrant 1 – Eight-Hour Vehicular Volume: This warrant is intended to be applied under one of three conditions. The first condition (Warrant 1A) is based on minimum vehicular volume in which a large volume of intersecting traffic is the principal reason to consider signalization. The second condition (Warrant 1B) is based on interruption of continuous traffic in which the traffic on the major street is so heavy that the intersecting street traffic suffers excessive delays or conflicts. The third condition (Warrant 1C) is the combination of the first two conditions.

- Warrant 2 – Four-Hour Vehicular Volume: This warrant is intended to be applied where cross traffic to the major street is the primary consideration for installing a traffic signal.

- Warrant 3 – Peak Hour: This warrant is intended for use at a location where traffic conditions are such that in the peak hour(s) of an average day, the minor street approach suffers significant delay when entering or crossing the major street.

- Warrant 7 – Crash Experience: This warrant is intended for use at a location where crash history indicates that there are five or more reported crashes of types susceptible to correction by a traffic control signal in a 12 month period of time. This warrant reduces the volumes for Warrant 1A and 1B to 80 percent of the volume required in Warrant 1.

GS&P evaluated these four warrants for the Year 2015 (Opening Year) and Year 2035 (Design Year) to determine if any of the signal warrants are met. Since the speed limit along SR 61 exceeds 40 miles per hour the reduced volume warrant thresholds were used to determine if signal is warranted. In addition, Warrant 7 was evaluated since there were 5 or more crashes of types susceptible to correction (typically angle accidents are correctable by a traffic signal) in the years 2006 and 2008.

As shown in Table 2, Warrant 7 is met in 2015 (Opening Year). In the Year 2035 (Design Year) both Warrants 1 and 7 are met. An additional analysis was undertaken to determine when Warrant 1 is projected to be met. It is projected that Warrant 1 will be met in the Year 2018. The signal warrant worksheets are attached to this memorandum.

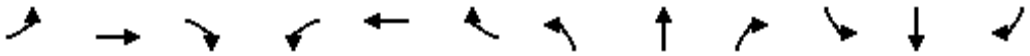
Table 1. Results of the Signal Warrant at the SR 61 at Nebo Road Intersection

Year	Eight Hour (Warrant 1)			Peak Hour (Warrant 2)	Four Hour (Warrant 3)	Crash (Warrant 7)	
	Condition A	Condition B	Condition C			Condition A	Condition B
Year 2015	No (0)	No (5)	No (0)	No (0)	No (0)	No (0)	Yes (11)
Year 2035	No (2)	Yes (12)	No (6)	No (0)	No (0)	No (6)	Yes (13)

Note: Yes/No tells if the warrant is met and the values tell the number of hours the warrant is met.

JB

Attached:
Signal Warrant Worksheets



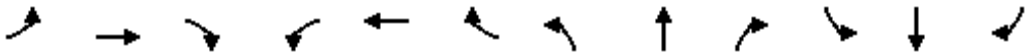
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	2	6	11	113	19	39	11	592	84	23	602	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.90		1.00	0.90		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1444	1372		1517	1436		1641	1727	1468	1530	1601	
Flt Permitted	0.71	1.00		0.74	1.00		0.33	1.00	1.00	0.35	1.00	
Satd. Flow (perm)	1084	1372		1188	1436		566	1727	1468	560	1601	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	2	7	13	130	22	45	13	680	97	26	692	26
RTOR Reduction (vph)	0	11	0	0	38	0	0	0	23	0	1	0
Lane Group Flow (vph)	2	9	0	130	29	0	13	680	74	26	717	0
Heavy Vehicles (%)	25%	25%	25%	19%	19%	19%	10%	10%	10%	18%	18%	18%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	11.5	11.5		11.5	11.5		54.1	54.1	54.1	54.1	54.1	
Effective Green, g (s)	11.5	11.5		11.5	11.5		54.1	54.1	54.1	54.1	54.1	
Actuated g/C Ratio	0.16	0.16		0.16	0.16		0.74	0.74	0.74	0.74	0.74	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	169	214		186	224		416	1269	1079	412	1177	
v/s Ratio Prot		0.01			0.02			0.39			c0.45	
v/s Ratio Perm	0.00			c0.11			0.02		0.05	0.05		
v/c Ratio	0.01	0.04		0.70	0.13		0.03	0.54	0.07	0.06	0.61	
Uniform Delay, d1	26.2	26.4		29.4	26.7		2.6	4.3	2.7	2.7	4.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.1		10.9	0.3		0.1	1.6	0.1	0.3	2.4	
Delay (s)	26.3	26.5		40.3	27.0		2.8	5.9	2.8	3.0	7.0	
Level of Service	C	C		D	C		A	A	A	A	A	
Approach Delay (s)		26.4			35.8			5.5			6.9	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	73.6	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: SR 61 & Mayfield Rd/Nebo Rd

8/24/2011



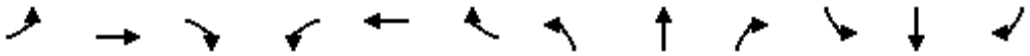
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	6	11	113	19	39	11	592	84	23	602	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	2	7	13	130	22	45	13	680	97	26	692	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1523	1560	705	1516	1525	729	718			777		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1523	1560	705	1516	1525	729	718			777		
tC, single (s)	7.3	6.8	6.5	7.3	6.7	6.4	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.7	4.2	3.5	2.3			2.4		
p0 queue free %	96	93	97	0	79	89	99			97		
cM capacity (veh/h)	61	95	400	79	103	396	847			772		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	22	197	790	745
Volume Left	2	130	13	26
Volume Right	13	45	97	26
cSH	154	100	847	772
Volume to Capacity	0.14	1.97	0.01	0.03
Queue Length 95th (ft)	12	414	1	3
Control Delay (s)	32.2	542.8	0.4	0.9
Lane LOS	D	F	A	A
Approach Delay (s)	32.2	542.8	0.4	0.9
Approach LOS	D	F		

Intersection Summary			
Average Delay	61.8		
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: SR 61 & Mayfield Rd/Nebo Rd

8/24/2011



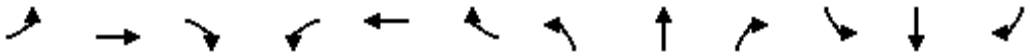
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	23	6	92	19	51	3	651	130	90	486	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1467	1496		1703	1596		1612	1696	1442	1543	1621	
Flt Permitted	0.71	1.00		0.74	1.00		0.43	1.00	1.00	0.34	1.00	
Satd. Flow (perm)	1091	1496		1319	1596		733	1696	1442	555	1621	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	26	7	102	21	57	3	723	144	100	540	7
RTOR Reduction (vph)	0	6	0	0	50	0	0	0	31	0	0	0
Lane Group Flow (vph)	9	27	0	102	28	0	3	723	113	100	547	0
Heavy Vehicles (%)	23%	23%	23%	6%	6%	6%	12%	12%	12%	17%	17%	17%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	10.3	10.3		10.3	10.3		66.0	66.0	66.0	66.0	66.0	
Effective Green, g (s)	10.3	10.3		10.3	10.3		66.0	66.0	66.0	66.0	66.0	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78	0.78	0.78	0.78	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	133	183		161	195		574	1328	1129	435	1269	
v/s Ratio Prot		0.02			0.02			c0.43			0.34	
v/s Ratio Perm	0.01			c0.08			0.00		0.08	0.18		
v/c Ratio	0.07	0.15		0.63	0.14		0.01	0.54	0.10	0.23	0.43	
Uniform Delay, d1	32.8	33.1		35.2	33.1		2.0	3.5	2.2	2.4	3.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.4		7.9	0.3		0.0	1.6	0.2	1.2	1.1	
Delay (s)	33.0	33.4		43.1	33.4		2.0	5.1	2.3	3.7	4.1	
Level of Service	C	C		D	C		A	A	A	A	A	
Approach Delay (s)		33.3			38.9			4.6			4.0	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	8.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	84.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: SR 61 & Mayfield Rd/Nebo Rd

8/24/2011



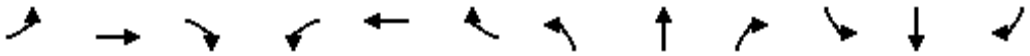
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	23	6	92	19	51	3	651	130	90	486	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	26	7	102	21	57	3	723	144	100	540	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1556	1618	543	1558	1549	796	547			868		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1556	1618	543	1558	1549	796	547			868		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	83	68	99	0	78	85	100			86		
cM capacity (veh/h)	52	79	501	59	96	381	974			716		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	41	180	871	647
Volume Left	9	102	3	100
Volume Right	7	57	144	7
cSH	81	86	974	716
Volume to Capacity	0.51	2.09	0.00	0.14
Queue Length 95th (ft)	54	399	0	12
Control Delay (s)	88.2	607.4	0.1	3.6
Lane LOS	F	F	A	A
Approach Delay (s)	88.2	607.4	0.1	3.6
Approach LOS	F	F		

Intersection Summary			
Average Delay	66.3		
Intersection Capacity Utilization	99.1%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
1: SR 61 & Mayfield Rd/Nebo Rd

8/24/2011



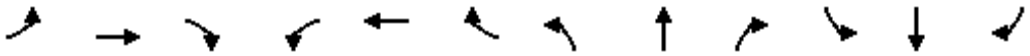
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	1	4	8	76	13	26	8	398	56	15	405	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.90		1.00	0.90		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1444	1373		1517	1437		1641	1727	1468	1530	1602	
Flt Permitted	0.73	1.00		0.75	1.00		0.47	1.00	1.00	0.48	1.00	
Satd. Flow (perm)	1106	1373		1195	1437		808	1727	1468	778	1602	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	1	5	9	87	15	30	9	457	64	17	466	17
RTOR Reduction (vph)	0	8	0	0	26	0	0	0	14	0	1	0
Lane Group Flow (vph)	1	6	0	87	19	0	9	457	50	17	482	0
Heavy Vehicles (%)	25%	25%	25%	19%	19%	19%	10%	10%	10%	18%	18%	18%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	9.7	9.7		9.7	9.7		61.7	61.7	61.7	61.7	61.7	
Effective Green, g (s)	9.7	9.7		9.7	9.7		61.7	61.7	61.7	61.7	61.7	
Actuated g/C Ratio	0.12	0.12		0.12	0.12		0.78	0.78	0.78	0.78	0.78	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	135	168		146	176		628	1342	1141	605	1245	
v/s Ratio Prot		0.00			0.01			0.26			c0.30	
v/s Ratio Perm	0.00			c0.07			0.01		0.03	0.02		
v/c Ratio	0.01	0.04		0.60	0.11		0.01	0.34	0.04	0.03	0.39	
Uniform Delay, d1	30.6	30.7		33.0	31.0		2.0	2.7	2.0	2.0	2.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.1		6.4	0.3		0.0	0.7	0.1	0.1	0.9	
Delay (s)	30.6	30.8		39.4	31.3		2.0	3.4	2.1	2.1	3.7	
Level of Service	C	C		D	C		A	A	A	A	A	
Approach Delay (s)		30.8			36.6			3.2			3.7	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	7.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	79.4	Sum of lost time (s)	8.0
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: SR 61 & Mayfield Rd/Nebo Rd

8/24/2011



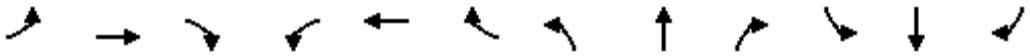
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	4	8	76	13	26	8	398	56	15	405	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	5	9	87	15	30	9	457	64	17	466	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1024	1049	474	1019	1025	490	483			522		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1024	1049	474	1019	1025	490	483			522		
tC, single (s)	7.3	6.8	6.5	7.3	6.7	6.4	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.7	4.2	3.5	2.3			2.4		
p0 queue free %	99	98	98	54	93	95	99			98		
cM capacity (veh/h)	170	202	546	190	214	546	1040			968		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	15	132	531	500
Volume Left	1	87	9	17
Volume Right	9	30	64	17
cSH	322	226	1040	968
Volume to Capacity	0.05	0.59	0.01	0.02
Queue Length 95th (ft)	4	83	1	1
Control Delay (s)	16.7	41.3	0.3	0.5
Lane LOS	C	E	A	A
Approach Delay (s)	16.7	41.3	0.3	0.5
Approach LOS	C	E		

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	50.2%	ICU Level of Service	A	
Analysis Period (min)	15			

HCM Signalized Intersection Capacity Analysis
1: SR 61 & Mayfield Rd/Nebo Rd

8/24/2011



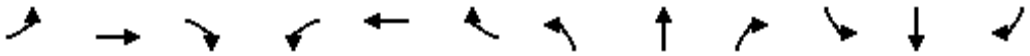
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	5	15	4	62	13	35	2	438	88	61	327	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.97		1.00	0.89		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1467	1501		1703	1595		1612	1696	1442	1543	1621	
Flt Permitted	0.72	1.00		0.74	1.00		0.54	1.00	1.00	0.47	1.00	
Satd. Flow (perm)	1116	1501		1333	1595		918	1696	1442	764	1621	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	6	17	4	69	14	39	2	487	98	68	363	4
RTOR Reduction (vph)	0	4	0	0	35	0	0	0	20	0	0	0
Lane Group Flow (vph)	6	17	0	69	18	0	2	487	78	68	367	0
Heavy Vehicles (%)	23%	23%	23%	6%	6%	6%	12%	12%	12%	17%	17%	17%
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		
Actuated Green, G (s)	8.3	8.3		8.3	8.3		64.4	64.4	64.4	64.4	64.4	
Effective Green, g (s)	8.3	8.3		8.3	8.3		64.4	64.4	64.4	64.4	64.4	
Actuated g/C Ratio	0.10	0.10		0.10	0.10		0.80	0.80	0.80	0.80	0.80	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	115	154		137	164		733	1353	1151	610	1294	
v/s Ratio Prot		0.01			0.01			c0.29			0.23	
v/s Ratio Perm	0.01			c0.05			0.00		0.05	0.09		
v/c Ratio	0.05	0.11		0.50	0.11		0.00	0.36	0.07	0.11	0.28	
Uniform Delay, d1	32.7	32.9		34.3	32.8		1.6	2.3	1.7	1.8	2.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.2	0.3		2.9	0.3		0.0	0.7	0.1	0.4	0.5	
Delay (s)	32.8	33.2		37.1	33.1		1.7	3.1	1.9	2.2	2.7	
Level of Service	C	C		D	C		A	A	A	A	A	
Approach Delay (s)		33.1			35.4			2.9			2.6	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	8.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
1: SR 61 & Mayfield Rd/Nebo Rd

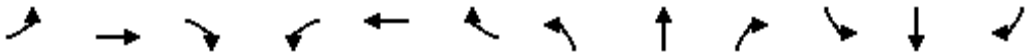
8/24/2011



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	15	4	62	13	35	2	438	88	61	327	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	17	4	69	14	39	2	487	98	68	363	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1048	1090	366	1049	1043	536	368			584		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1048	1090	366	1049	1043	536	368			584		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	96	91	99	61	93	93	100			93		
cM capacity (veh/h)	156	182	635	176	208	537	1138			920		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	27	122	587	436
Volume Left	6	69	2	68
Volume Right	4	39	98	4
cSH	199	229	1138	920
Volume to Capacity	0.13	0.53	0.00	0.07
Queue Length 95th (ft)	11	71	0	6
Control Delay (s)	25.9	37.4	0.1	2.2
Lane LOS	D	E	A	A
Approach Delay (s)	25.9	37.4	0.1	2.2
Approach LOS	D	E		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	4	7	70	12	24	7	368	52	14	374	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	1	5	8	80	14	28	8	423	60	16	430	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	946	969	438	941	947	453	446			483		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	946	969	438	941	947	453	446			483		
tC, single (s)	7.3	6.8	6.5	7.3	6.7	6.4	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.7	4.2	3.5	2.3			2.4		
p0 queue free %	99	98	99	63	94	95	99			98		
cM capacity (veh/h)	196	226	573	216	239	573	1073			1002		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	14	122	491	462
Volume Left	1	80	8	16
Volume Right	8	28	60	16
cSH	343	255	1073	1002
Volume to Capacity	0.04	0.48	0.01	0.02
Queue Length 95th (ft)	3	60	1	1
Control Delay (s)	15.9	31.4	0.2	0.5
Lane LOS	C	D	A	A
Approach Delay (s)	15.9	31.4	0.2	0.5
Approach LOS	C	D		

Intersection Summary				
Average Delay	4.0			
Intersection Capacity Utilization	47.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	14	4	57	12	32	2	405	81	56	302	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	16	4	63	13	36	2	450	90	62	336	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	968	1007	338	969	964	495	340			540		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	968	1007	338	969	964	495	340			540		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	97	92	99	69	94	94	100			93		
cM capacity (veh/h)	182	207	659	203	235	567	1165			957		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	26	112	542	402
Volume Left	6	63	2	62
Volume Right	4	36	90	4
cSH	227	260	1165	957
Volume to Capacity	0.11	0.43	0.00	0.07
Queue Length 95th (ft)	9	51	0	5
Control Delay (s)	22.8	28.9	0.1	2.0
Lane LOS	C	D	A	A
Approach Delay (s)	22.8	28.9	0.1	2.0
Approach LOS	C	D		

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	68.0%	ICU Level of Service	C	
Analysis Period (min)	15			

LANE SUMMARY

Site: SR 61 @ Nebo AM

New Site
Roundabout

Lane Use and Performance

	Demand Flows L veh/h	T veh/h	R veh/h	Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Lane Length ft	SL Type	Cap. Adj. %	Prob. Block. %
South: SR 61																
Lane 1	2	487	98	587	11.0	1114	0.527	100	11.4	LOS B	5.3	143.3	1600	–	0.0	0.0
Approach	2	487	98	587	11.0		0.527		11.4	LOS B	5.3	143.3				
East: Nebo Road																
Lane 1	69	14	39	122	6.0	673	0.181	100	13.7	LOS B	1.3	33.2	1600	–	0.0	0.0
Approach	69	14	39	122	6.0		0.181		13.7	LOS B	1.3	33.2				
North: SR 61																
Lane 1	68	363	4	436	16.0	1061	0.411	100	12.3	LOS B	3.8	107.0	1600	–	0.0	0.0
Approach	68	363	4	436	16.0		0.411		12.3	LOS B	3.8	107.0				
West: Mayfield Road																
Lane 1	6	17	4	27	23.0	537	0.050	100	12.4	LOS B	0.3	9.0	1600	–	0.0	0.0
Approach	6	17	4	27	23.0		0.050		12.4	LOS B	0.3	9.0				
Intersection				1171	12.6		0.527		12.0	LOS B	5.3	143.3				

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all lanes. LOS Method: Delay (HCM).
Level of Service (Worst Lane): LOS B. LOS Method for individual lanes: Delay (HCM).
Approach LOS values are based on the worst delay for any lane.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

LANE SUMMARY

New Site
Roundabout

Lane Use and Performance

	Demand Flows L veh/h	T veh/h	R veh/h	Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Lane Length ft	SL Type	Cap. Adj. %	Prob. Block. %
South: SR 61																
Lane 1	9	442	62	513	10.0	1333	0.385	100	10.4	LOS B	3.5	93.8	1600	–	0.0	0.0
Approach	9	442	62	513	10.0		0.385		10.4	LOS B	3.5	93.8				
East: Nebo Road																
Lane 1	84	14	29	128	18.0	630	0.203	100	15.1	LOS B	1.3	37.5	1600	–	0.0	0.0
Approach	84	14	29	128	18.0		0.203		15.1	LOS B	1.3	37.5				
North: SR 61																
Lane 1	17	450	17	483	18.0	986	0.490	100	12.2	LOS B	4.8	136.3	1600	–	0.0	0.0
Approach	17	450	17	483	18.0		0.490		12.2	LOS B	4.8	136.3				
West: Mayfield Road																
Lane 1	1	4	9	14	25.0	475	0.030	100	12.9	LOS B	0.2	5.7	1600	–	0.0	0.0
Approach	1	4	9	14	25.0		0.030		12.9	LOS B	0.2	5.7				
Intersection				1139	14.5		0.490		11.7	LOS B	4.8	136.3				

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all lanes. LOS Method: Delay (HCM).
Level of Service (Worst Lane): LOS B. LOS Method for individual lanes: Delay (HCM).
Approach LOS values are based on the worst delay for any lane.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

LANE SUMMARY

Site: SR 61 @ Nebo AM

New Site
Roundabout

Lane Use and Performance

	Demand Flows L veh/h	T veh/h	R veh/h	Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Lane Length ft	SL Type	Cap. Adj. %	Prob. Block. %
South: SR 61																
Lane 1	3	723	144	871	11.0	1047	0.832	100	15.4	LOS B	16.4	446.9	1600	–	0.0	0.0
Approach	3	723	144	871	11.0		0.832		15.4	LOS B	16.4	446.9				
East: Nebo Road																
Lane 1	102	21	57	180	6.0	428	0.421	100	18.6	LOS B	3.7	98.2	1600	–	0.0	0.0
Approach	102	21	57	180	6.0		0.421		18.6	LOS B	3.7	98.2				
North: SR 61																
Lane 1	100	540	7	647	16.0	1000	0.647	100	13.3	LOS B	8.1	227.4	1600	–	0.0	0.0
Approach	100	540	7	647	16.0		0.647		13.3	LOS B	8.1	227.4				
West: Mayfield Road																
Lane 1	9	26	7	41	23.0	365	0.112	100	16.4	LOS B	0.8	22.7	1600	–	0.0	0.0
Approach	9	26	7	41	23.0		0.112		16.4	LOS B	0.8	22.7				
Intersection				1739	12.6		0.832		15.0	LOS B	16.4	446.9				

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all lanes. LOS Method: Delay (HCM).
Level of Service (Worst Lane): LOS B. LOS Method for individual lanes: Delay (HCM).
Approach LOS values are based on the worst delay for any lane.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

LANE SUMMARY

New Site
Roundabout

Lane Use and Performance

	Demand Flows L veh/h	T veh/h	R veh/h	Total veh/h	HV %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Lane Length ft	SL Type	Cap. Adj. %	Prob. Block. %
South: SR 61																
Lane 1	12	658	93	763	10.0	1304	0.585	100	10.7	LOS B	7.5	201.3	1600	–	0.0	0.0
Approach	12	658	93	763	10.0		0.585		10.7	LOS B	7.5	201.3				
East: Nebo Road																
Lane 1	126	21	43	190	18.0	483	0.393	100	19.5	LOS B	3.0	86.4	1600	–	0.0	0.0
Approach	126	21	43	190	18.0		0.393		19.5	LOS B	3.0	86.4				
North: SR 61																
Lane 1	26	669	26	720	18.0	914	0.788	100	16.6	LOS B	13.8	395.2	1600	–	0.0	0.0
Approach	26	669	26	720	18.0		0.788		16.6	LOS B	13.8	395.2				
West: Mayfield Road																
Lane 1	2	7	12	21	25.0	277	0.076	100	18.3	LOS B	0.5	16.1	1600	–	0.0	0.0
Approach	2	7	12	21	25.0		0.076		18.3	LOS B	0.5	16.1				
Intersection				1694	14.5		0.788		14.3	LOS B	13.8	395.2				

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all lanes. LOS Method: Delay (HCM).
Level of Service (Worst Lane): LOS B. LOS Method for individual lanes: Delay (HCM).
Approach LOS values are based on the worst delay for any lane.
Roundabout LOS Method: Same as Signalised Intersections.
Roundabout Capacity Model: SIDRA Standard.

SIDRA INTERSECTION

Accident Analysis Summary

Crash data at the intersection the SR 61 at Mayfield/Nebo Road and along the intersecting roadways was obtained for the period between January 1, 2004 and December 31, 2008. The traffic crash history summarized by severity is shown in Tables 1, 2 and 3 for the intersection and intersecting roads.

Table 1. Summary of Traffic Crash History along SR 61

MP 2.69 to MP 3.69

Year	Accidents		
	Total	Injury	Fatal
2004	14	3	1
2005	9	4	0
2006	11	5	1
2007	5	3	0
2008	16	5	1
Total	55	20	3

Table 2. Summary of Traffic Crash History along Mayfield Rd/Nebo Rd

MP 0.16 to MP 1.16

Year	Accidents		
	Total	Injury	Fatal
2004	3	2	0
2005	0	0	0
2006	0	0	0
2007	1	0	0
2008	0	0	0
Total	4	2	0

As shown in Tables 1 and 2, there were 55 accidents along SR 61 within 0.5 miles of the intersection and 4 crashes along Mayfield Road/Nebo Road within 0.5 miles of the intersection between 2004 and 2008. As shown in Table 3, there were 43 total crashes at the intersection between 2004 and 2011. The majority of the crashes recorded were angle type, which accounted for approximately 60% of the total number of crashes. Approximately 30% of the crashes that occurred at the SR 61 and Mayfield/Nebo Road intersection were injury crashes. There were also two fatal crashes recorded at this intersection.

Table 3. Summary of Traffic Crash History at the SR 61 and Mayfield/Nebo Road Intersection

Year	Manner of Collision					Total	Type of Accident		
	Angle	Head On	Rear End	Sideswipe	Other		PDO*	Injury	Fatal
2004	4	1	1	0	2	8	6	1	1
2005	3	0	1	0	0	4	3	1	0
2006	7	1	1	0	0	9	3	5	1
2007	0	0	0	0	0	0	0	0	0
2008	5	0	1	0	1	7	5	2	0
2009	5	0	2	0	1	8	6	2	0
2010	0	0	2	0	0	2	2	0	0
2011	2	0	3	0	0	5	3	2	0
Total	26	2	11	0	4	43	28	13	2

*PDO= Property Damage Only

During the analysis A.M. and P.M. peak hour turning movement counts and 24-hour approach counts were obtained at the SR 61 and Mayfield/Nebo Road intersection by All Traffic Data, Inc. on April 26, 2011. These "short-term" traffic counts were adjusted using day of the week, month of the year and axle adjustment factors to develop annual average daily traffic (AADT) volumes. The directional distribution for SR 61 is 50%-50% for the peak hour. The Department's traffic count stations on SR 61 reported 7% daily truck traffic (TC 136). Based on the actual peak hour turning movement counts from the one day data, the peak hour truck traffic at the SR 61 and Mayfield/Nebo Road intersection is estimated to be 1.10%.

The operational analysis was completed assuming that the opening year for this project is 2015 and that the design year is 2035. The 2015 Opening Year and the 2035 Design Year AADT were calculated by applying an annual growth rate to the existing AADT. The growth rate used in the traffic growth projections was calculated (2.20%) based on the historical AADT volumes at two traffic count locations (TC 136 and TC 276) which were located in the vicinity of the SR 61 and

Mayfield/Nebo Road intersection. The existing and anticipated AADT near the SR 61 and Mayfield/Nebo Road intersection are presented in Table 4.

Table 4. Existing and Anticipated AADT

Roadway Segment	2011 "Existing Year" AADT	2015 "Opening Year" AADT	2035 "Design Year" AADT
SR 61 North of Mayfield/Nebo Road	8,680	9,400	13,960
SR 61 South of Mayfield/Nebo Road	9,910	10,730	15,940
Mayfield Road East of SR 61	2,120	2,290	3,400
Nebo Road West of SR 61	350	380	560

A capacity analysis was conducted at the SR 61 and Mayfield/Nebo Road intersection to determine the operational characteristics based on the existing and anticipated future conditions. The capacity analysis was performed using the methodologies outlined in the 2010 Highway Capacity Manual (HCM) and the Synchro 8.0 software program.

The capacity analysis for a traffic signal at the intersection for 2015 and 2035 was conducted using Syncho. Construction of a traffic signal at the intersection would provide an anticipated level of service of A/A for 2015 and 2035 for the AM and PM peak hours. The results of the capacity analysis for the proposed traffic signal for the anticipated future are summarized in Table 5.

Table 5. Traffic Signal Anticipated Intersection Level of Service (AM/ PM Peak)

Synchro Analysis	LOS by Approaches	
	2015 Build	2035 Design
North	A/A	A/A
East	C/C	C/C
South	A/A	A/A
West	D/D	D/D
Intersection	A/A	A/A

GRESHAM
SMITH AND
PARTNERS

February 20, 2012

Concept Team Meeting Notes

Intersection at SR 61 and Mayfield/Nebo Road
CSSFT-0009-00(218) Paulding County
GS&P Project No. 26340.14

MEETING DATE: January 26, 2012

ATTENDEES:
Perry Black – GDOT/OPD
Stanley McCarley– GDOT, District 6 Utilities
David Ray – GDOT, District 6 Design
Greg Hood – GDOT
Carla Benton-Hooks – GDOT/Environmental Services
Erica Parish – Paulding County DOT
George F. Jones – Paulding County DOT
Joseph Johnson – Paulding County Water Services
Kellee Newman – AGL
John Pierno – Comcast
Ferdinand Henderson – AT&T
Michael Craton – Greystone Power
Sarah Worachek – GS&P
Brian O'Connor – GS&P
Jody Braswell – GS&P

DISCUSSION: Intersection at SR 61 and Mayfield/Nebo Road

1. Perry Black with GDOT briefly described the proposed project. The project consists of intersection improvements at SR 61 and Mayfield/Nebo Road. The proposed project will add left turn lanes for all legs of the intersection, right turn lanes on SR 61 and a traffic signal. The proposed project will include horizontal and vertical improvements on SR 61 and Mayfield/Nebo Road. The intersection of Mayfield/Nebo Road will be improved to a 60 degree skew angle. The current conditions consist of a newly constructed 4-way stop at the intersection with flashing beacons along SR 61 and the intersection of Mayfield and Nebo Road is at less that a 60 degree skew angle.

2. Gresham, Smith and Partners (GS&P) described the existing and proposed features of the project location. GS&P presented two displays, one with the final pavement limits and one with the temporary pavement limits for stage construction. GS&P then reviewed each item in the concept report including the Need and Purpose, Background, Crash Data, and Project Description for comment.

3. GS&P requested direction on whether to design the intersection for a stop sign with an anticipated signal since a signal is not yet warranted. It was advised to continue design for a traffic signal.

a. *In a follow up discussion clarifying the signal warrant analysis, a traffic signal is warranted in the opening year.*

4. The draft concept reports crash data through year 2008. GDOT stated that they have more up-to-date crash data that they will provide for the final concept report.

5. The draft concept report states public involvement is not anticipated for this project. GDOT OES stated that if there is a displaced parcel then the NEPA process requires public involvement. GS&P to verify if public involvement is needed.

    a. *A follow up discussion with the environmental subconsultant revealed that a conceptual stage study has been developed and approved by GDOT. A meeting with the displaced property owner is being scheduled and no additional public involvement will be required.*

6. GDOT OES recommended adding more operational information to the need and purpose. GS&P said in the past they've been advised to keep need and purposes of safety projects focused more heavily on the safety aspect. GDOT mentioned that the new concept format doesn't contain a need and purpose.

7. GDOT OES recommended comparing the traffic numbers in the concept report to the state averages in order to give a comparison. It was brought up that not all traffic numbers are comparable however it was suggested that the severity of the crash would be comparable. GS&P will look into adding this data into the concept report.

8. Michael Craton (Greystone Power) requested that the location of the signal and signal poles be known for utility pole relocations. The signal strain pole locations will be provided to all utility companies as part of the second utility submission for proposed relocations.

9. It was questioned who would maintain the proposed signal. The county will maintain the signal.

10. GDOT OES suggested to write out the acronym for PDO (Property Damage Only) in the concept report. GS&P will spell out the acronym.

11. It was pointed out that the data in Table 4 for Existing and Anticipated AADT were switched for Mayfield Road and Nebo Road. GS&P will verify the correct data for each road.

12. GDOT suggested changing the proposed design vehicle from WB-50 to WB-67 since it is a state route. GS&P will verify the proposed design vehicle.

13. GDOT will update the scheduling portion of the concept report to reflect current status.

14. It was recommended to add a stipulation in the plans/special provisions during staging for church traffic on Wednesdays and Sundays.

15. GDOT, D6 suggested not including a paved shoulder for the county road.

This represents our understanding of the items discussed at the meeting. If you have any questions or comments concerning any of the information contained herein, please contact me.

Prepared by: Sarah Worachek

Copy: Participants

GEORGIA DEPARTMENT OF TRANSPORTATION
MEETING / CONFERENCE RECORD OF ATTENDEES

PURPOSE: P.I.# 0009218 CSSFT-0009-00(218) SR 61 @ Mayfield/Nebo Rd.
Concept Team Meeting-Intersection Improvement

LOCATION: District 6 Office 500 Joe Frank Harris Pkwy Cartersville Georgia 30120

DATE: 1/26/2012 **TIME:** 10:00 A.M.

MODERATOR: Perry Black

	NAME	ORGANIZATION	PHONE NO.	GDOT suffix: @dot.ga.gov E-MAIL ADDRESS
1	PERRY BLACK	OPD	(404)631-1224	PeBlack
2	Stanley McCarley	DG Utilities	770-387-3751	SMccarley @
3	DAVID RAY	D6 DESIGN	770.387.3622	dray@dot...
4	Erica Parish	PCDOT	(678)224-4057	eparish@paulding.gov
5	Joseph Johnson	PCWS	(678) 224-4083	JJohnson@Paulding.Gov
6	Kellee Newman	AGL	(404)584.4536	knewman@aglresearch.com
7	Carla Benton-Hooks	GDOT OES	404.631.1415	cbenton-Hooks@dot.ga.gov
8	Sarah Worachek	GS&P	678.518.3930	Sarah_worachek@gspnet.com
9	Brian O'Connor	GS&P	678.518.3659	brian_oconnor@gspnet.com
10	Jody Braswell	GS&P	678-518-3655	jody-braswell@gspnet.com
11	George F Jones	PCDOT	770-443-7567	GFJones@Paulding.gov
12	John Pierno	Comcast	770-351-8041	john_pierno@Cable.Comcast.com
13	FERDINAND HENDERSON	AT&T	7)514-1480	fh3047@ATT.COM
14	GREG HOOD	GDOT	7)387-3654	GHood@DOT.GA.GOV
15	MICHAEL CRATON	GREYSTONE POWER	770-370-2415	michael.craton@GreystonePower.com
16				
17				
18				
19				
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August 18, 2011

MEMORANDUM

TO: **Meeting Attendees (see attached list)**
Perry Black, GDOT Program Delivery
Derrick Cameron, GDOT Program Delivery
Jonathan Cox, GDOT Environmental Services
Pam Digsby, GDOT Right-of-Way

FROM: **Brian O'Connor, P.E., Gresham, Smith and Partners**
Jill Brown, Edwards-Pitman Environmental

SUBJECT: **CSSFT-0009-00(218), Paulding County, P.I. No. 0009218**
SR 61 at CR 277/Nebo Road/Mayfield Road Intersection Improvements

A meeting was held on August 10, 2011 at the Crossroads Christian Center located at 22 Mayfield Road, Dallas, Georgia 30157. The purpose of the meeting was to discuss how the proposed intersection improvement project would impact the Crossroads Christian Center property.

Project Overview:

The proposed project would consist of the addition of turn lanes and a traffic signal at the intersection of SR 61 with CR 277/Nebo Road/Mayfield Road in Paulding County, Georgia. The proposed project would also lower the hill on SR 61 at the intersection to improve sight distances.

Crossroads Christian Center:

The Crossroads Christian Center is located in the northwest quadrant of the intersection. Wayne Landmon is the Senior Pastor. The Crossroads Christian Center consists of two church sanctuary buildings and the Crossroads Christian Academy building. The Crossroads Christian Center congregation consists of approximately 150 people, with half of the membership living in the nearby community and the other half traveling from the greater Atlanta area. The Crossroads Christian Center congregation uses the sanctuary in the newer, larger building located between the pastor's house and the Crossroads Christian Academy. Sunday mornings, Sunday evenings, and Wednesday evenings are the standard gathering times for their congregation. On occasion, there are funerals conducted during the week, generally between 11:00 am and 4:00 pm.

The Creative Light Ministries is indefinitely using the older, smaller building located closer to SR 61. Brother Walker is the leader of this congregation. Sunday afternoons and Tuesday evenings are the standard gathering times for their congregation.

The Crossroads Christian Academy is located at the northern end of the property. Brenda Landmon is the administrator for the school. There are generally around 20 students enrolled in the academy each year.

The Crossroads Christian Center is a safe harbor location in case of emergency evacuations for South Paulding Middle School. The parking lot is also used by school buses, emergency vehicles, and tractor-trailers as a location with sufficient space for larger vehicles to turn around.

Anticipated Project Impacts on the Crossroads Christian Center Property:

The proposed project is not anticipated to impact any of the buildings associated with the church. Two or three of the large trees along SR 61 would be impacted. Reverend and Mrs. Landmon were not opposed to the loss of those trees. A newspaper collection bin located within the required right-of-way would need to be moved elsewhere on the parcel. The brick church sign would also be impacted. The florist sign may require a slight relocation, though the design would need to be further developed before this would be determined.

The proposed project is not anticipated to acquire enough right-of-way to reduce the total acreage for the parcels affiliated with the Crossroads Christian Center to less than 5.0 acres, which was a concern for meeting zoning requirements. Approximately 0.2 acre of right-of-way would be required from the parcels for the addition of the right-turn lane on SR 61 southbound to Mayfield Road westbound and the partial realignment of Mayfield Road to improve the intersection skew and offset. The majority of the right-of-way acquisition would be from the grassed slope adjacent to the parking area; however, eight to ten parking spaces by the driveway on Mayfield Road would be impacted. The existing parking area by the recycling bin and under the trees may require reconfiguration, but no reduction in the number of available spaces is anticipated. The existing driveway is approximately 100 feet wide and is striped to include an entrance lane and an exit lane, with parking spaces in between these lanes. The edge of the driveway closest to SR 61 would be shifted approximately 45 feet west, away from SR 61. The proposed driveway would be either 24 feet or 36 feet in width, depending upon the right-of-way negotiation process. The additional parking area created by the change in the driveway would provide multiple parking spaces to partially restore the spaces lost from the right-of-way acquisition. The grade on Mayfield Road would be leveled out by 2 to 4 feet near the driveways to the church and the pastor's house to improve sight distances, and the brick mailbox by the driveway would be impacted.

Reverend and Mrs. Landmon expressed concerns about the stormwater drainage onto the church property. They indicated that water flows from SR 61 onto the vacant gas station parking lot, and then from the gas station parking lot across Mayfield Road onto the church property. Runoff from within the GDOT right-of-way would be addressed as part of this project. The existing stormwater runoff from adjacent parcels may be beyond what GDOT would be able to address, though the existing drainage will be examined to determine if any improvements can be made.

Action Items:

- Following the Concept Team Meeting, a layout will be provided to the Crossroads Christian Center.
- The construction contract is to include notes prohibiting construction activities on Tuesday evenings after 5:00 pm, Wednesday evenings after 5:00 pm, and Sundays to minimize interference with church activities.

MEETING ATTENDEES

Name	Organization	Phone	Email
Wayne Landmon, Senior Pastor	Crossroads Christian Center	(770) 445-2205	landmon@att.net
Brenda Landmon	Crossroads Christian Center	(770) 445-5741 (cell)	landmon@att.net
Brian O'Connor, P.E.	Gresham, Smith and Partners	(678) 518-3659	brian_oconnor@gspnet.com
Jill Brown	Edwards-Pitman Environmental	(770) 333-9484	jbrown@edwards-pitman.com