

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** STP-1267(8) Oconee  
P.I. No.: 142060  
S.R. 53 Widening and Reconstruction

**OFFICE:** Engineering Services

**DATE:** June 17, 2008

**FROM:** Brian K. Summers, PE, Project Review Engineer *REW*

**TO:** Brent Story, PE, State Road and Airport Design Engineer

**SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES**

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT #	Description	Potential Savings/LCC	Implement	Comments
1	Use 11' travel lanes to reduce Right of Way costs	\$4,336,554	No	The Design Year traffic is 33,400 and there are 8 % trucks.
2	Use 12' shoulders instead of 16' shoulders	\$4,062,200	No	There are numerous Utility facilities along the corridor that are in conflict and will need to be relocated. This includes Atlanta Gas, Bellsouth/AT&T, Oconee County Water and Sewer, Walton EMC and Georgia Power.
6	Reduce the number of 72" Bulb Tees for the bridge over Barber Creek	\$33,128	No	Based on information from the Design Consultant, the re-design costs would be approximately \$40,000 which would negate the savings.
7	Realign Durham Street to the south to connect with the Courthouse Complex	-\$1,195,101 (cost increase)	No	Would increase the project's cost and would result in additional Environmental impacts.

## Implementation of Value Engineering Study Alternatives

ALT #	Description	Potential Savings/LCC	Implement	Comments
9	Realign Durham Street to the Oconee County Sheriff Department's parcel, i.e., on the North side	\$1,789,671	No	This would impact the groundwater remediation system that is being implemented by EPD on the Ameripride property.
11	Eliminate Water Street access onto S.R. 53/Experiment Station Road	Design Suggestion	No	Based on discussions with the City of Watkinsville, the decision was made to leave this as a Right In-Right Out access.
14	Eliminate Traffic Signal at the Durham Street Intersection	\$100,048	No	According to the Design Consultant, this intersection meets Signal Warrants requiring a Traffic Signal.
16	Cul-de-Sac Harris Shoal Drive close to S.R. 53/Experiment Station Road and access Harris Shoal Park from VFW Drive	\$55,207	No	Based on discussions with the City of Watkinsville, the decision was made to keep this access open.
17	Eliminate U-Turn Lane at VFW Drive	\$46,766	No	Would result in additional 875' before vehicles would be able to make a U-Turn.
18	Replace the three 10' x 8' box culverts at Calls Creek with two 16' x 9' CONSPAN® type culverts	\$158,076	No	Based on a more detailed cost estimate which includes footing costs, the CONSPAN® type culverts are more expensive than the box culverts.
20	Reduce the width of the southern Watkinsville Bypass Ramps	\$136,729 (proposed) \$68,365 (actual)	Yes	This will be partially implemented. The 24' striped gore area separating the left turn lane and right turn lane will be changed to 12'.

## Implementation of Value Engineering Study Alternatives

ALT #	Description	Potential Savings/LCC	Implement	Comments
21	Reduce the width of the northern Watkinsville Bypass Ramps	\$68,333	No	The 12' of separation between the left turn and right turn lane will be maintained.
22	Eliminate U-Turn Lane on S.R. 53/Experiment Station Road at the Watkinsville Bypass Southbound Ramp	\$43,799	No	Would result in additional 2200' before vehicles would be able to make a U-Turn.
23	Tie in Old Government Road as a driveway from S.R. 53 and eliminate upgrading Government Station Road	\$723,613	No	This one no longer applies since VE Alternative No. 25 will be implemented.
24	Upgrade the existing Old Government Road only	\$585,271	No	This one no longer applies since VE Alternative No. 25 will be implemented.
25	Retain the new realigned Government Station Road entrance drive and eliminate upgrading of the Old Government Station Road	\$188,802	Yes	This should be done.
26	Eliminate the existing traffic light at McDonald's south of Hog Mountain Road	\$161,653	No	Eliminating this median opening will cause the vehicles who want to access the shopping center to continue NB to the next intersection to make a U-turn. This extra volume of traffic will cause that intersection to go from a LOS "D" to LOS "E".

ALT #	Description	Potential Savings/LCC	Implement	Comments
27	Use a restrictive/traffic induced signal at the Rankin Road/School and CR 264/Mars Hill Road Intersection	Design Suggestion	Yes	This should be done.
28	Eliminate the U-Turn Lane on CR 264/Mars Hill Road as it intersects with Cliff Dawson Road	\$43,799	Yes	This should be done.
29	Close the median opening at Windridge Office Park driveway on CR 264/Mars Hill Road and open a median at Windy Creek Road and provide an additional driveway to the office park from Windridge Drive	-\$31,915 (cost increase)	No	Would increase the project's cost and could result in undesirable Intersection Site Distance.
32	Close the median opening at Parcel 128 (south of Brookwood Drive) and allow U-Turns at the Crooked Creek/Pebblestone Drive intersection	\$87,089	No	Would increase the spacing between median openings to 2550' and could result in undesirable Intersection Sight Distance.
33	Replace the three 8' x 8' box culverts at Parker Branch with two 12' x 9' CONSPAN® type culverts	\$134,615	No	Based on a more detailed cost estimate which includes footing costs, the CONSPAN® type culverts are more expensive than the box culverts.

ALT #	Description	Potential Savings/LCC	Implement	Comments
35	Connect Hollow Creek Lane and Barber Creek Drive at a new intersection on CR 264/Mars Hill Road	-\$275,460 (cost increase)	No	Would increase the project's cost and there are no current plans to tie Hollow Creek Lane to S.R. 53.
36	Provide a raised median on S.R. 53/Experiment Station Road between VFW Drive and S.R. 15/Main Street	-\$660,079 (cost increase)	No	Would increase the project's cost and based on traffic projections would not normally warrant a raised median.
37	Use a pavement depth based on the traffic volume for the Durham Street Improvements and Realignment	Design Suggestion	Yes	This should be done.
38	Replace the two 6' x 6' box culverts at Lampkin Branch with a 12' x 7' CON/SPAN® type culvert	\$39,379	No	Based on a more detailed cost estimate which includes footing costs, the CONSPAN® type culverts are more expensive than the box culverts.
40	Replace the two 5' x 5' box culverts at an Unnamed Tributary located at Sta. 232+00 with a 12' x 7' CON/SPAN® type culvert	\$15,870	No	Based on a more detailed cost estimate which includes footing costs, the CONSPAN® type culverts are more expensive than the box culverts.
41	Replace the two 5' x 5' box culverts at an Unnamed Tributary located at Sta. 232+00 with a 10' x 5' box culvert	\$169	No	Based on a more detailed cost estimate the single 10' x 5' culvert is more expensive than the Double 5' x 5' box culvert.

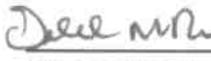
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ALT #	Description	Potential Savings/LCC	Implement	Comments
42	Replace the two 7' x 7' box culverts at an Unnamed Tributary located at Sta. 288+00 with two 12' x 8' CONSPAN® type culvert	\$19,947	No	Based on a more detailed cost estimate which includes footing costs, the CONSPAN® type culverts are more expensive than the box culverts.

A meeting was held on March 5, 2008 and Melvin Davis with Oconee County Board of Commissioners, Emil Beshara, and Dan Wilson with Oconee County Public Works, Brad Hale and M.J. Sheehan with Moreland Altobelli, Brent Story, and Brad McManus with Road Design, and Brian Summers, Ron Wishon and Lisa Myers of Engineering Services were in attendance.

Additional information was provided on April 4, 2008, May 21, 2008, and June 17, 2008.

The results above reflect the consensus of those in attendance and those who provided input.

Approved:  Date: 6/20/08  
Gerald M. Ross, P. E., Chief Engineer

BKS/REW

Attachments

c: Gus Shanine, FHWA  
Todd Long  
Paul Liles  
Bill Duvall  
Bill Ingalsbe  
Jason McCook  
Brad McManus  
James Magnus  
Randy Davis  
Johnny Emmett  
Ken Werho  
Nabil M. Raad  
Paul Alomia  
Lisa Myers



# Preconstruction Status Report By PI Number

Print Date: 06/17/2008

PROJ ID	COUNTY	DESCRIPTION	MGMT. ROW DATE	SCHED DATE	MGMT. LET DATE			
142060-	Oconee	SR 53 & CR 264/MARS HILL RD FM SR 15 TO SR 316 & OCONEE CONN	May-08	Jul-10	May-10			
STP00-1267-00(008)	FIELD DIST: 1							
TIP #: R-48	TWIN: 171574-	US:	Phase	Approved	Proposed	Cost	Fund	Status
MPO: Athens	EST DATE: 5/27/2008		PE	1999	1999	124,028.66	Q20	AUTHORIZED
MODEL YR:			ROW	2008	2008	14,325,450.00	L200	PRECST
PROJ MGR: McManus, Brad	PROJ LENGTH: 4.97		CST	LR	LR	67,591,731.76	L200	PRECST
PROG Reconstruction/Rehabili	TYPE Widening							
TYPE: tation	WORK:							
CONCEPT: ADD 4U(MED 20)	LET RESP: DOT							
				Congressional		10		

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACT/EST FINISH	PCT	DISTRICT COMMENTS
		Define Project Concept	3/31/2000	4/13/2000	100	Local ROW acquisition
		Concept Meeting	6/27/2000	6/27/2000	100	
		Concept Submittal and Review	7/25/2000	8/28/2000	100	
		Receive Preconstruction Concept Approval	9/11/2000	9/22/2000	100	
		<b>Management Concept Approval Complete</b>	<b>9/25/2000</b>	<b>10/12/2000</b>	<b>100</b>	
6/25/2008	7/1/2008	Value Engineering Study	12/1/2006		98	
		Public Information Open House Held	9/20/2000	9/20/2000	100	
6/19/2008	6/19/2008	Environmental Approval	11/1/2000	11/15/2007	100	
		Public Hearing Held	10/6/2003	10/6/2003	100	
6/20/2008	6/26/2008	Field Surveys/SDE	11/1/2002		100	
		<b>Preliminary Plans</b>	<b>10/12/2000</b>	<b>1/30/2007</b>	<b>100</b>	
		Preliminary Bridge Design	5/14/2003	5/18/2003	100	
6/20/2008	7/25/2008	Underground Storage Tanks			0	
6/20/2008	11/7/2008	404 Permit Obtainment			0	
		PFPR Inspection	1/30/2007	1/30/2007	100	
		R/W Plans Preparation	2/1/2006	8/25/2006	100	
6/20/2008	6/25/2008	<b>R/W Plans Final Approval</b>	<b>11/29/2007</b>		<b>97</b>	
		L & D Report Development and Approval	5/20/2007	5/27/2007	100	
6/26/2008	5/4/2010	R/W Acquisition			0	
11/14/2008	11/27/2008	Stake R/W			0	
		Soil Survey	4/26/2005	8/5/2005	100	
		Bridge Foundation Investigation	4/21/2005	6/17/2005	100	
7/4/2008	3/13/2009	<b>Final Design</b>			0	
8/4/2008	11/21/2008	Final Bridge Plans Preparation			0	
4/6/2009	4/7/2009	FFPR Inspection			0	
4/21/2009	5/4/2009	FFPR Response			0	

BIKE PROVISIONS INCLUDED?: Y MEASUREMENT SYSTEM: E CONSULTANT: L UT EST: \$ 0.00

PDD: [01R] PROJ LIMITS SR 316 TO US 441. COORD W/171574. 3/26/99.

Bridge: SCP 11/12/02 CONSUL-MA&A

Design: MBM:Oconee County/MAAI PFPR held R/W plans in review2-18-08

EIS: EA\FONSI Apvd11/15/07\NoChangeRV Apvd 6/09/08\NotOnSchdROW\Alimia6/09/08

LGPA: REV PMA SGN OCONEE DO PE[20% UTIL]DOT TO FUND ROW 11-24-99 SEE 141980-

Planning: PI# 141980 IS TO BE DELETED & INCLUDED W/ THIS PROJECT

Prog. Develop: INCLUDES 141980 BY DRAFT CONCEPT 8/2000

Programming: PR2/P=2-24-99\#1 12-05

Traffic Op: SEND PLANS 4 REV WHEN PFPR IS SCHD!PFPR sent 12/21/06 kw/nr

Utility: NEED 2ND SUBMISSION PLANS 08/08/03

EMG: RECST/REHAB (WIDENING); PE BY COUNTY

**R/W INFORMATION:**

PREL PARCEL CT: 15	TOTAL PARCEL CT:	ACQUIRED BY: LOC	ACQ MGR:
UNDER-REVIEW CT:	RELEASED CT:	OPT-PEND CT:	DEEDS CT:
RW CERT DT:	ACQUIRED CT:	RELOCATION CT:	COND-PEND CT:
			COND-FILED CT:

Recommendation: **NO**

PROJECT:	STP-1267(8), P.I. No. 142060						
	SR 53 / MARS HILL RD / OCONEE CONNECTOR						
	Oconee County, GDOT district 1						
	Final Design Stage						
	VE Implementation Alternative No. 2						
DESCRIPTION:	USE 12-FT. SHOULDERS INSTEAD OF 16-FT. SHOULDERS						
<u>ADVANTAGES:</u>				<u>DISADVANTAGES:</u>			
1) Reduces ROW acquisition by 4' on each side of the project.				1) Design exception required, unsafe, reduced clear zone, recoverable area and sight distance setback.			
2) Reduces earthwork quantities.				2) Project delayed 6 months due to re-design.			
				3) Project delay incurs associated costs.			
				4) Reduces grass strip width for utility relocation resulting in utilities being less accessible in sidewalk/street and easement to be acquired with right to place utilities, increasing cost.			
				5) Reducing shoulder width will cause sidewalk to be wrapped around driveway valley gutters.			
				6) Liability in not meeting Roadside Design Guide.			
<u>PROJECT INFORMATION:</u>							
SPEED DESIGN	45 MPH						
PEAK HR. TRUCK %	8						
ADT (2009)	18,800						
ADT (2029)	33,400						
# OF DRIVEWAYS	118						
<u>DISCUSSION:</u>							
<p>By reducing the shoulder widths from 16' to 12', several design factors are affected. The 16' shoulder would meet AASHTO clear zone criteria. (See Attached Table from the Roadside Design Guide.) A 12 ft. shoulder does not meet clear zone criteria.</p> <p>Utility relocations for this project are to be split with 80% of the relocation cost borne by GDOT. GDOT guidelines for 45 mph would require the utility poles be placed a minimum of 12 ft from the back of curb. If the right of way section was reduced with the 12 ft shoulder then the easements would have to be bought with the right to place utilities. This increases easement cost by half for the full portion of the easement through out the project.</p> <p>With the 12 ft. shoulder, utilities would have to be relocated under the sidewalk (see utility list). Maintenance would require closing down the travel lane in order to allow the backhoe work in this narrower area as well as the replacement of the sidewalk. Also with the 12ft shoulders, the sidewalk would need to be adjusted to the back of the valley gutter at 118 driveway locations.</p> <p>This project was originally developed with 12 ft. urban shoulders. GDOT directed that this (as well as other similar projects) be developed with 16 ft. urban shoulders, recognizing that curb and gutter was not a barrier to vehicles leaving the road in these circumstances and that clear zone should be recognized. There may be legal issues with changing this directive.</p> <p>While the right-of-way savings is escalated @ 0.65% from \$953,959 to \$1,574,033, the project right-of-way cost would be increased from \$6,662,997 to \$10,993,895 in this same time. The increase attributed to a 6 month delay would be 1/4th of this \$4,330,928.</p>							
<u>COST SUMMARY</u>							
ACTUAL SAVINGS				\$	(590,076)		

PROJECT STP-1267(8) , P.I. #142060

SHEET NO. \_\_\_\_\_ OF \_\_\_\_\_

SUBJECT VE Implementation Alternative No. 2 -

JOB NO. \_\_\_\_\_

Use of 12' shoulders instead of 16' shoulders

MADE BY \_\_\_\_\_ DATE \_\_\_\_\_

CHKD. BY \_\_\_\_\_ DATE 5-21-08

Total Project Length = 4.969 mi.

REF.  
PAGE  
①

Grading and EW	:	\$ 2,828,150
Major Structures	:	\$ 3,618,730

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\$ 6,446,880

Total Section Width =  $(16 + 4 + 24 + 10) \times 2 = 108'$ Per foot cost =  $\$6,446,880 / 108' = \$59,693$  per ft.

Total Width Saved = 8'

Total land area saved =  $8' \times 5280' \times 4.969 \text{ mi} = 209,891 \text{ SF}$ 

Total R/W cost = \$3,540,109

Total R/W area = 1,213,934 SF

R/W cost per S.F. =  $\$3,540,109 / 1,213,934 \text{ SF} = \$2.92/\text{SF}$ 

For 8' R/W reduction, savings would be:

$$209,891 \text{ SF} \times \$2.92/\text{SF} = \underline{\underline{\$612,882}}$$

Increased cost associated with buying easements with the right to place utilities would be half of the permanent esmt cost:

$$\frac{1}{2} (\$2,182,432) = \underline{\underline{\$1,091,216}}$$

## Re-design Cost and Delay

Project items included in re-design:

- ROW and ESMT limits
- ROW tables
- Sidewalks
- Utility relocations
- Cross Sections
- Drainage Profiles
- Typical Sections
- Erosion Control Plans
- Construction Limits

The approximate engineering cost associated with the items listed above would be \$350,000 and the project delay would be approximately 6 months.

## Utilities List

Gas	- Atlanta Gas Light
Telephone	- Bellsouth
Water/Sewer	- Oconee County
Cable TV	- Charter Communications
Electrical	- Walton EMC
	- Georgia Power Co.



FEBRUARY 2004

TABLE 3.1 (Cont'd)

[U.S. Customary Units]

DESIGN SPEED	DESIGN ADT	FORESLOPES			BACKSLOPES		
		1V:6H or flatter	1V:5H TO 1V:4H	1V:3H	1V:5H	1V:5H TO 1V:4H	1V:6H or flatter
40 mph or less	UNDER 750	7-10	7-10	**	7-10	7-10	7-10
	750-1500	10-12	12-14	**	10-12	10-12	10-12
	1500-6000	12-14	14-16	**	12-14	12-14	12-14
	OVER 6000	14-16	16-18	**	14-16	14-16	14-16
45-50 mph	UNDER 750	10-12	12-14	**	8-10	8-10	10-12
	750-1500	14-16	16-20	**	10-12	12-14	14-16
	1500-6000	16-18	20-26	**	12-14	14-16	16-18
	OVER 6000	20-22	24-28	**	14-16	18-20	20-22
55 mph	UNDER 750	12-14	14-18	**	8-10	10-12	10-12
	750-1500	16-18	20-24	**	10-12	14-16	16-18
	1500-6000	20-22	24-30	**	14-16	16-18	20-22
	OVER 6000	22-24	26-32*	**	16-18	20-22	22-24
60 mph	UNDER 750	16-18	20-24	**	10-12	12-14	14-16
	750-1500	20-24	26-32*	**	12-14	16-18	20-22
	1500-6000	26-30	32-40*	**	14-16	18-22	24-26
	OVER 6000	30-32*	36-44*	**	20-22	24-26	26-28
65-70 mph	UNDER 750	18-20	20-26	**	10-12	14-16	14-16
	750-1500	24-26	28-36*	**	12-16	15-20	20-22
	1500-6000	28-32*	34-42*	**	16-20	22-24	26-28
	OVER 6000	30-34*	38-46*	**	22-24	26-30	28-30

\* Where a site specific investigation indicates a high probability of continuing crashes, or such occurrences are indicated by crash history, the designer may provide clear-zone distances greater than the clear-zone shown in Table 3.1. Clear zones may be limited to 30 ft for practicality and to provide a consistent roadway template if previous experience with similar projects or designs indicates satisfactory performance.

\*\* Since recovery is less likely on the unshielded, uncurvable 1V:3H slopes, fixed objects should not be present in the vicinity of the toe of these slopes. Recovery of high-speed vehicles that encroach beyond the edge of the shoulder may be expected to occur beyond the toe of slope. Determination of the width of the recovery area at the toe of slope should take into consideration right-of-way availability, environmental concerns, economic factors, safety needs, and crash histories. Also, the distance between the edge of the through traveled lane and the beginning of the 1V:3H slope should influence the recovery area provided at the toe of slope. While the application may be limited by several factors, the foreslope parameters which may enter into determining a maximum desirable recovery area are illustrated in Figure 3.2.

Total ROW 1,213,003.02  
 Total Perm Esmt 1,294,700.00

Value of ROW \$ 3,540,108.71  
 Value of Perm Esmt \$ 2,182,432.29  
 Improvements \$ 550,000.00  
 Relocation \$ 05,000.00  
 Donations \$ 325,525.00  
 Total Cost \$ 0,002,966.00

Land Value (psf)  
 \$ 0.31  
 \$ 5.74  
 \$ 0.80  
 \$ 2.30  
 \$ 1.15  
 \$ 4.50

Land Value (obcs)  
 275,000.00  
 250,000.00  
 300,000.00  
 100,000.00  
 50,000.00  
 200,000.00

Property Description  
 \$ Wabbesville Commercial  
 \$ Light Commercial  
 \$ Medium Commercial  
 \$ Residential  
 \$ Apartment  
 \$ Downtown Wabbesville Residential

Donated ROW \$ 124,300.00  
 Donated Perm. Easement \$ 02,153.00  
 Total Donated Land \$ 106,650.00

**Standard SDOJ Cost Estimate**

Net Cost of Right-of-Way and Easements \$ 0,002,046.00  
 Scheduling Contingency 55% \$ 3,004,031.00  
 Admin./Court Costs 00% \$ 3,097,700.14  
 Inflation Factor 40% \$ 2,055,184.70  
 Total Cost \$ 16,000,965.60

**Recommended ROW Cost Estimate if Acquisition to be completed in next two years (2008-2009)**

Net Cost of Right-of-Way and Easements \$ 0,602,060.00  
 Scheduling Contingency, Admin./Court Costs, Inflation 65% \$ 4,330,029.40  
 Total Alternative Cost \$ 10,993,895.39

Recommendation: NO

<b>PROJECT:</b>		STP-1267(B), P.I. No. 142060	
		SR 53 / MARS HILL RD / OCONEE CONNECTOR	
		Oconee County, GDOT district 1	
		Final Design Stage	
		VE Implementation Alternative No. 1	
<b>DESCRIPTION:</b>	USE 11-FT. LANES TO REDUCE RIGHT-OF-WAY COSTS		
<b>ADVANTAGES:</b>		<b>DISADVANTAGES:</b>	
<p>1) Reduces right-of-way acquisition by 1' on each side of the project.</p> <p>2) Reduces pavement quantities.</p>		<p>1) Design variance required. The high % of trucks, 45mph design speed and high traffic volume makes the design less safe with 11' lanes.</p> <p>2) Project delayed 12 months due to re-design.</p> <p>3) Project delay incurs associated costs.</p> <p>4) Bike lanes would need to be increased from 4ft to 5 ft to avoid encroachment from trucks utilizing the 11ft lanes.</p> <p>5) Cost of re-design.</p>	
<b>PROJECT INFORMATION:</b>			
SPEED DESIGN		45 MPH	
PEAK HR. TRUCK %		8	
ADT (2009)		18,800	
ADT (2029)		33,400	
<b>DISCUSSION:</b>			
<p>Referencing the AASHTO Guide for the Development of Bicycle Facilities, the high percentage of truck traffic along with the reduced 11ft lanes at a 45 mph design speed warrants the bicycle lanes to be increased in width from 4' to 5'. The 4' ROW reduction outlined in the VE study would be reduced to only 2' in this case because a 1' increase in the bicycle lane width would have to be implemented.</p> <p>While the right-of-way savings is escalated @ 0.65% from \$238,485 to \$393,501 based on a 2 year acquisition, the project right-of-way cost would be increased from \$6,662,997 to \$10,993,895 in this same time. The increase attributed to a 1 year delay would be half of this \$4,330,928.</p>			
<b>COST SUMMARY</b>			
<b>ACTUAL SAVINGS</b>		\$ 412,650	

REF. PAGE

Total Project Length = 4.969 mi

Base + Paving	\$ 12,356,540
Median	\$ 261,250
	<u>\$ 12,617,790</u>

Cost per foot =  $\$12,617,790 / 76' = \$166,024$

Major Structures	\$ 3,618,730
Grading + EW	\$ 2,828,150
	<u>\$ 6,446,880</u>

Cost per foot =  $\$6,446,880 / 108' = \$59,693$

Total Cost per foot =  $\$166,024 + \$59,693 = \underline{\underline{\$225,717}}$

For 2' of pavement reduction, savings would be:

$\$225,717 \times 2' = \$451,434 \times 15\% \text{ escalation} = \underline{\underline{\$519,149}}$

Right-of-Way  
\$6.39/SF

Easement  
\$2.70/SF

Total land area saved:  $2' \times 5280' \times 4.969 \text{ mi} = 52,473 \text{ SF}$

Assume  $\frac{1}{2}$  Row +  $\frac{1}{2}$  Easement:  $\frac{52,473 \text{ SF}}{2} = 26,236 \text{ SF}$

For 2' ROW/Easement reduction, savings would be:

26,236 SF	$\times \$6.39$	=	\$167,648
26,236 SF	$\times \$2.70$	=	\$ 70,837

\$238,485

## Re-design Cost and Delay

REF.  
PAGE

- Project items included in re-design:
- Edges of pavement
  - Typical Sections
  - Cross Sections
  - Construction limits
  - Drainage Profiles
  - Driveway Profiles
  - Sidestreet Profiles
  - Right-of-way and Easement limits
  - Right-of-Way tables
  - Signing and Marking plans
  - Erosion Control plans
  - Dimensioning

There are several areas of the Smile project that would need to be re-designed if lanes were reduced from 12' wide to 11' wide. The engineering cost associated would be approximately \$500,000

and the project delay would be approximately 12 months.



# Conceptual Right-of-Way Cost Estimate

**Phil Copeland**  
Right-of-Way Administrator

**Date:** March 10, 2008  
**Project:** STP-1267181  
**Existing/Required R/W:** Varies from 60' to 120'/Varies  
**Project Termini:** S.R. 15 to S.R. 316  
**Project Description:** S.R. 53 / Mars Hill Rd / Oconee Connector Widening

**P.I. Number:** 0142060  
**No. Parcels:** 157

**Land:**

Watkinsville Commercial:	\$275,000 p/AC	
Light Commercial:	\$250,000	
Medium Commercial:	\$300,000	
Watkinsville Residential	\$200,000 p/AC	
Residential	\$100,000	
Agricultural	<u>\$50,000 p/AC</u>	
	<b>Total Land</b>	<b>\$3,540,108.71</b>

**Easements:**

Watkinsville Commercial:	\$137,500 p/AC	
Light Commercial:	\$125,000	
Medium Commercial:	\$150,000	
Watkinsville Residential:	\$100,000 p/AC	
Residential:	\$50,000	
Agricultural:	<u>\$25,000 p/AC</u>	
	<b>Total Easements</b>	<b>\$2,182,432.29</b>

\$ 5,722,541.00 \*

**Improvements:**

2 residential @ \$100,000 / parcel = \$200,000  
 1 commercial @ \$350,000 / parcel = \$350,000

\$ 550,000

**Relocation:**

2 residential @ \$20,000 / parcel = \$40,000  
 1 commercial @ \$25,000 / parcel = \$25,000

\$ 65,000

**Damages:**

Proximity – 5 Parcels = \$130,000  
 Consequential – 3 Parcels = \$195,426  
 Cost To Cure – 0 Parcel = \$ 0

\$ 325,426

<b>Net Cost of Right-of-Way</b>		\$ 6,662,997
Scheduling Contingency	55%	\$ 3,664,632
Adm./Court Cost.	60%	\$ 3,997,780
Inflation Factor	40%	<u>\$ 2,665,187</u>
		<b>\$16,990,566</b>

**Total Cost**

**\$16,990,566 \***

\* NOTES:

- 1) Land acquisition estimate is contingent on donation agreement from the City of Watkinsville. Per this agreement, the following has been assumed with this estimate:
  - Parcels to be donated: **4, 8, 26**
  - Required Right-of-Way to be donated: **0.18 acres**
  - Construction Easement to be donated: **0.28 acres**
  
- 2) Land acquisition estimate is contingent on donation agreement from Oconee County. Per this agreement, the following has been assumed with this estimate:
  - Parcels to be donated: **11**
  - Required Right-of-Way to be donated: **0.28 acres**
  - Construction Easement to be donated: **0.49 acres**
  
- 3) For budgeting purposes, Moreland Altobelli recommends escalating the net right-of-way estimate by 65% to cover all contingencies and extra costs in-lieu of the standard 155% outlined above. This estimate assumes the ROW acquisition will be completed in the next two years (2008-2009). The alternative total right-of-way cost would be as follows:

Net Cost of Right-of-Way		\$ 6,662,997
Scheduling Contingency, Adm./Court Costs, Inflation	65%	<u>\$ 4,330,928</u>

**Alternative Total Cost**

**\$10,993,895**

Prepared by:



Moreland Altobelli Associates, Inc.

Approved:

GDOT R/W

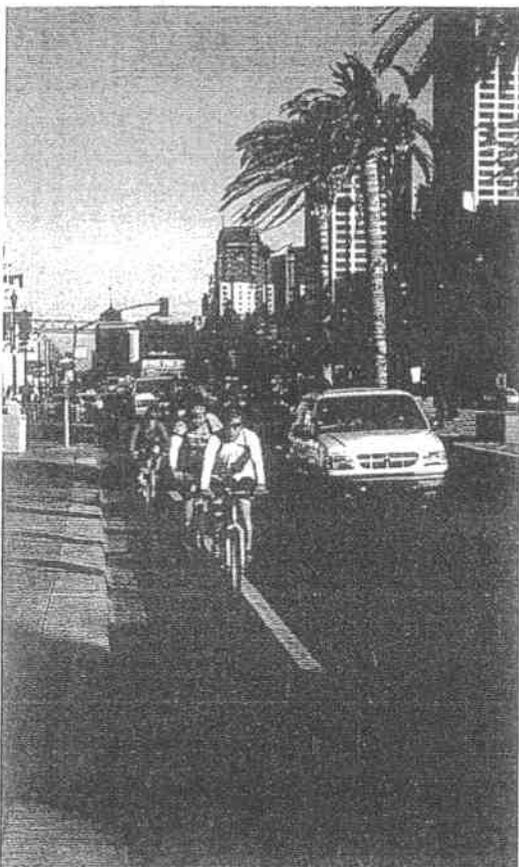


Figure 5. Bicycle Lane Markings

## Bike Lanes

Bike lanes can be incorporated into a roadway when it is desirable to delineate available road space for preferential use by bicyclists and motorists, and to provide for more predictable movements by each. Bike lane markings, as exemplified in Figure 5, can increase a bicyclist's confidence in motorists not straying into their path of travel. Likewise, passing motorists are less likely to swerve to the left out of their lane to avoid bicyclists on their right. Also see Chapter 2, Other Design Criteria, for additional information which applies to bike lanes. Drainage grates, railroad crossings, traffic control devices, etc., need to be evaluated and upgraded if necessary for bicycle use.

Bike lanes should be one-way facilities and carry bike traffic in the same direction as adjacent motor vehicle traffic. Two-way bike lanes on one side of the roadway are not recommended when they result in bicycles riding against the flow of motor vehicle traffic. Wrong-way riding is a major cause of bicycle crashes and violates the rules of the road as stated in the *UVC*<sup>3</sup>. Bicycle-specific wrong-way signing may be used to discourage wrong-way travel. However, there may be special situations where a two-way bike lane for a short distance can eliminate the need for a bicyclist to make a double crossing of a busy street or travel on a sidewalk. This should only be considered after careful evaluation of the relative risks and should be well documented in the project file.

On one-way streets, bike lanes should generally be placed on the right side of the street. Bike lanes on the left side are unfamiliar and unexpected for most motorists. This should only be considered when a bike lane on the left will substantially decrease the number of conflicts, such as those caused by heavy bus traffic or unusually heavy turning movements to the right, or if there are a significant number of left-turning bicyclists. Thus, left-side bike lanes should only be considered after careful evaluation. Similarly, two-way bike lanes on the left side of a one-way street could be considered with a suitable separation from the motor vehicle traffic after a complete engineering study of other alternatives and relative risks.

## Bike Lane Widths

To examine the width requirements for bike lanes, Figure 6 shows four typical locations for such facilities in relation to the roadway. For roadways with no curb and gutter, the minimum width of a bike lane should be 1.2 m (4 feet). If parking is permitted, as in Figure 6(1), the bike lane should be placed between the parking area and the travel lane and have a minimum width of 1.5 m (5 feet). Where parking is permitted but a parking stripe or stalls are not utilized, the shared area should be a minimum of 3.3 m (11 feet) without a curb face and 3.6 m (12 feet) adjacent to a curb face as shown in Figure 6(2). If the parking volume or turnover is high, an additional 0.3 to 0.6 m (1 to 2 feet) of width is desirable.



Bike lanes should never be placed between the parking lane and curb lane. Bike lanes between the curb and parking lane can create obstacles for bicyclists from opening car doors and poor visibility at intersections and driveways and they prohibit bicyclists from making left turns.

Figure 6(3) depicts a bike lane along the outer portion of an urban curbed street where parking is prohibited.

The recommended width of a bike lane is 1.5 m (5 feet) from the face of a curb or guardrail to the bike lane stripe. This 1.5-m (5-foot) width should be sufficient in cases where a 0.3-0.6 m (1-2 foot) wide concrete gutter pan exists, given that a minimum of 0.9 m (3 feet) of rideable surface is provided, and the longitudinal joint between the gutter pan and pavement surface is smooth. The width of the gutter pan should not be included in the measurement of the rideable or usable surface, with the possible exception of those communities that use an extra wide, smoothly paved gutter pan that is 1.2 m (4 feet) wide as a bike lane. If the joint is not smooth, 1.2 m (4 feet) of rideable surface should be provided.

Since bicyclists usually tend to ride a distance of 0.8-1.0 m (32-40 inches) from a curb face, it is very important that the pavement surface in this zone be smooth and free of structures. Drain inlets and utility covers that extend into this area may cause bicyclists to swerve, and have the effect of reducing the usable width of the lane. Where these structures exist, the bike lane width may need to be adjusted accordingly.

Figure 6(4) depicts a bike lane on a roadway in an outlying area without curbs and gutters. This location is in an undeveloped area where infrequent parking is handled off the pavement. Bike lanes should be located within the limits of the paved shoulder at the outside edge. Bike lanes may have a minimum width of 1.2 m (4 feet), where the area beyond the paved shoulder can provide additional maneuvering width. A width of 1.5 m (5 feet) or greater is preferable and additional widths are desirable where substantial truck traffic is present, or where motor vehicle speeds exceed 80 km/h (50 mph).

A bike lane should be delineated from the motor vehicle travel lanes with a 150-mm (6-inch) solid white line. Some jurisdictions have used a 200-mm (8-inch) line for added distinction. An additional 100-mm (4-inch) solid white line can be placed between the parking lane and the bike lane (see Figure 7). This second line will encourage parking closer to the curb, providing added separation from motor vehicles, and where parking is light it can discourage motorists from using the bike lane as a through travel lane.

Bike lanes should be provided with adequate drainage to prevent ponding, washouts, debris accumulation and other potentially hazardous situations for bicyclists. The drainage grates should be bicycle-safe. When an immediate replacement of an incompatible grate is not possible, a temporary correction of welding thin metal straps across the grates perpendicular to the drainage slots at 100-mm (4-inch) center-to-center spacing should be considered.



Recommendation: **NO**

<b>PROJECT:</b>		STP-1267(8), P.L. No. 142080					
		SR 53 / MARS HILL RD / OCONEE CONNECTOR					
		Oconee County, GDOT district 1					
		Final Design Stage					
		VE Implementation Alternative No. 9					
<b>DESCRIPTION:</b>		REALIGN DURHAM ST TO THE OCONEE COUNTY SHERIFF DEPT. PARCEL, I.E. ON THE NORTH SIDE					
<u>ADVANTAGES:</u>		<u>DISADVANTAGES:</u>					
1) Provides a more direct access from the jail to the courthouse.		1) Existing design of Durham St does not impact groundwater remediation system proposed for the Ameripride property. 2) The residential building that would have to be acquired for this alternative has a significantly higher value than the two commercial buildings being acquired in the current design, increasing right-of-way costs. 3) The signal placement for this alternative would make it more difficult for vehicles from the library and post office to access it than the current design. 4) Design costs and project delay would be incurred.					
<u>PROJECT INFORMATION:</u>							
SPEED DESIGN		45 MPH					
PEAK HR. TRUCK %		8					
ADT (2009)		18,800					
ADT (2029)		33,400					
<u>DISCUSSION:</u>							
<p>The realignment of Durham Street proposed in alternative no. 9 would require the acquisition of a residential building with a value of \$133,000, whereas the current design requires the acquisition of two commercial buildings with a combined value of \$51,200.</p> <p>Also the proposed alignment in alternative no. 9 would impact the groundwater remediation system that is being implemented by the EPD. This is a 20-year cleanup process, and a location design of extraction wells and pumps has been approved. Realigning Durham Street would cause a re-design of this system and cause a delay in the project.</p>							
<u>COST SUMMARY</u>							
<b>ACTUAL SAVINGS</b>		\$ (228,951)					



Map Help
Oconee County Parcel Maps
Oconee Home Search Page

**Map Help**

- Zoom Out
- Zoom In
- Panby Hand
- Zoom to Book
- Zoom to County
- Get Info
- Measure
- Area Tool
- Zoom To Parcel
- Center On Parcel
- Print Page

0 350 780 1170 1560 ft

**Show:**

Your maps are loading

[qpublic.net](http://qpublic.net)

Map Size: Small

Scale:

3810

**PARCEL INFORMATION TABLE**

Selected Parcel: W 04 001 (Click for Complete Card)

Class Code (NOTE: Not Zoning Info): I4

Taxing District: WATKINSVILLE

Acres: 2.42

**OWNERSHIP INFORMATION**

Name: ELDER COURTNEY M., SR. & COURTNEY M., JR.

Mailing Address: P.O. BOX 809 WATKINSVILLE, GA 30677

Situs/Physical Address: 1131 EXPERIMENT STATION RD

**VALUES**

Land Value: \$126,000.00

Improvement Value: \$23,595.00

Accessory Value: \$0.00

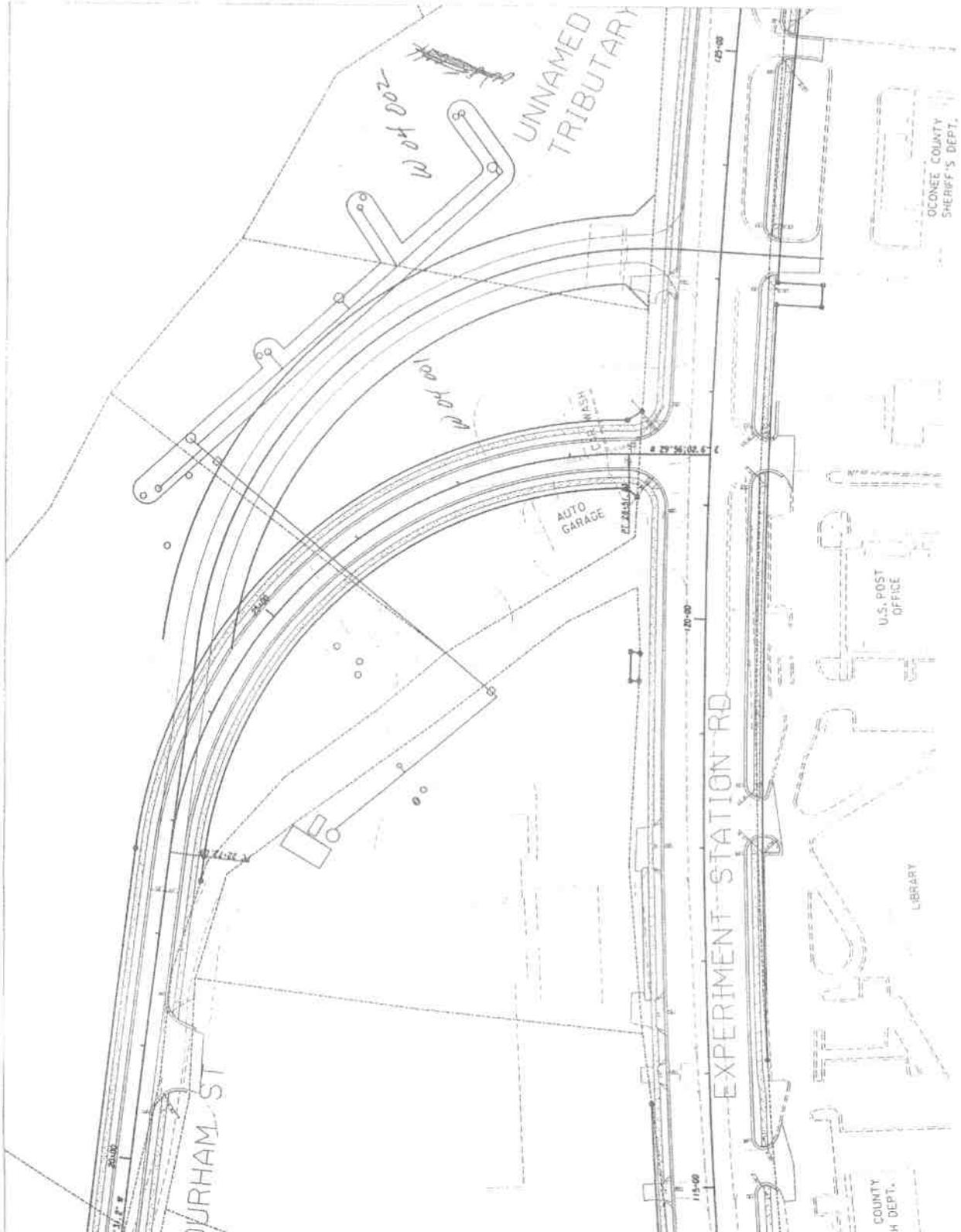
Total Value: \$149,595.00

**LAST 2 SALES**

Date	Price	Reason	Qual

The Oconee County Tax Assessor's Office makes every effort to produce the most accurate information possible. No warranties, expressed or implied, are





Recommendation: **NO**

PROJECT:	STP-1267(8), P.I. No. 142060					
	SR 53 / MARS HILL RD / OCONEE CONNECTOR					
	Oconee County, GDOT district 1					
	Final Design Stage					
	VE Implementation Alternative No. 26					
DESCRIPTION:	ELIMINATE PROPOSED TRAFFIC SIGNAL AT MCDONALD'S/PUBLIX SHOPPING CENTER					
<u>ADVANTAGES:</u>				<u>DISADVANTAGES:</u>		
1) Reduces construction cost.				1) Removing the signal results in increased left/U-turn movements and lower LOS for the S.R.53/Hog Mtn. Rd intersection and delays through traffic. 2) Proposed signal meets traffic signal warrants. 3) The businesses within the two shopping centers are front-oriented and mostly face S.R.53/Exp. Station Rd. The resulting decrease in access will make right-of-way acquisition costs increase.		
<u>PROJECT INFORMATION:</u>						
SPEED DESIGN	45 MPH					
PEAK HR. TRUCK %	8					
ADT (2009)	18,800					
ADT (2029)	33,400					
<u>DISCUSSION:</u>						
<p>By closing the median at the Publix Shopping center entrance and eliminating the proposed signal, NB vehicles who want to access the shopping center must continue NB to the S.R.53/Hog Mtn. Rd. intersection and make a U-turn. This extra volume of traffic causes that intersection to go from a LOS D to a LOS E.</p> <p>Also by forcing NB vehicles to make a U-turn to access the shopping center, shops within the center may anticipate a decline in business sales and will not be in favor of the project, causing right-of-way acquisition to be delayed and costly. This right-of-way acquisition cost is anticipated to exceed any cost savings.</p>						
<u>COST SUMMARY</u>						
ORIGINAL DESIGN			\$ 153,348			
ALTERNATIVE			\$ 16,663			
ACTUAL SAVINGS			\$ 136,685			



HCS2000: Signalized Intersections Release 4.1d

Analyst: MA Inter.: Hog Mtn @ Mars Hill Road  
 Agency: GDOT Area Type: All other areas  
 Date: 1/27/03 Jurisd: Watkinsville/Oconee County  
 Period: PM Peak Hour Year : 2029 Build Condition  
 Project ID: STP-1267(8); SR 53/Mars Hill Rd w/o Butlers Crossing signal  
 E/W St: SR 53/Hog Mountain Road N/S St: SR 53/Mars Hill Road

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	1	1	1	1	1	2	2	1	2	2	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	354	339	330	260	540	190	552	655	180	218	850	195
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			30			15			15			15

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		P			NB Left	P		
Thru			P		Thru		P	
Right			P		Right		P	
Peds					Peds			
WB Left		P	P		SB Left	P		
Thru			P		Thru		P	
Right			P		Right		P	
Peds					Peds			
NB Right	P				EB Right	P		
SB Right	P				WB Right	P		
Green	8.0	27.0			10.0	25.0		
Yellow	4.0	4.0			4.0	4.0		
All Red	1.0	1.0			1.0	1.0		

Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS
Eastbound								
L	311	3502	1.20	0.09	157.5	F		
T	570	1900	0.63	0.30	32.3	C	72.5	E
R	754	1615	0.42	0.47	17.6	B		
Westbound								
L	350	1805	0.78	0.44	40.2	D		
T	570	1900	1.00	0.30	68.3	E	51.3	D
R	754	1615	0.24	0.47	15.2	B		
Northbound								
L	389	3502	1.49	0.11	275.3	F		
T	1003	3610	0.69	0.28	32.8	C	128.6	F
R	682	1615	0.26	0.42	17.7	B		
Southbound								
L	389	3502	0.59	0.11	44.4	D		
T	1003	3610	0.89	0.28	43.1	D	39.8	D
R	682	1615	0.28	0.42	18.0	B		

Intersection Delay = 75.9 (sec/veh) Intersection LOS = E

HCS2000: Signalized Intersections Release 4.1d

Analyst: MA Inter.: Hog Mtn @ Mars Hill Road  
 Agency: GDOT Area Type: All other areas  
 Date: 1/27/03 Jurisd: Watkinsville/Oconee County  
 Period: PM Peak Hour Year : 2029 Build Condition  
 Project ID: STP-1267(8); SR 53/Mars Hill Road/Oconee Connector  
 E/W St: SR 53/Hog Mountain Road N/S St: SR 53/Mars Hill Road

SIGNALIZED INTERSECTION SUMMARY

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	2	1	1	1	1	1	2	2	1	2	2	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
Volume	280	330	330	260	540	190	395	655	180	190	850	195
Lane Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
RTOR Vol			30			15			15			15

Duration 0.25 Area Type: All other areas

Signal Operations

Phase Combination	1	2	3	4	5	6	7	8
EB Left		P			NB Left	P		
Thru			P		Thru		P	
Right			P		Right		P	
Peds					Peds			
WB Left		P	P		SB Left	P		
Thru			P		Thru		P	
Right			P		Right		P	
Peds					Peds			
NB Right		P			EB Right	P		
SB Right		P			WB Right	P		
Green		8.0	27.0			10.0	25.0	
Yellow		4.0	4.0			4.0	4.0	
All Red		1.0	1.0			1.0	1.0	

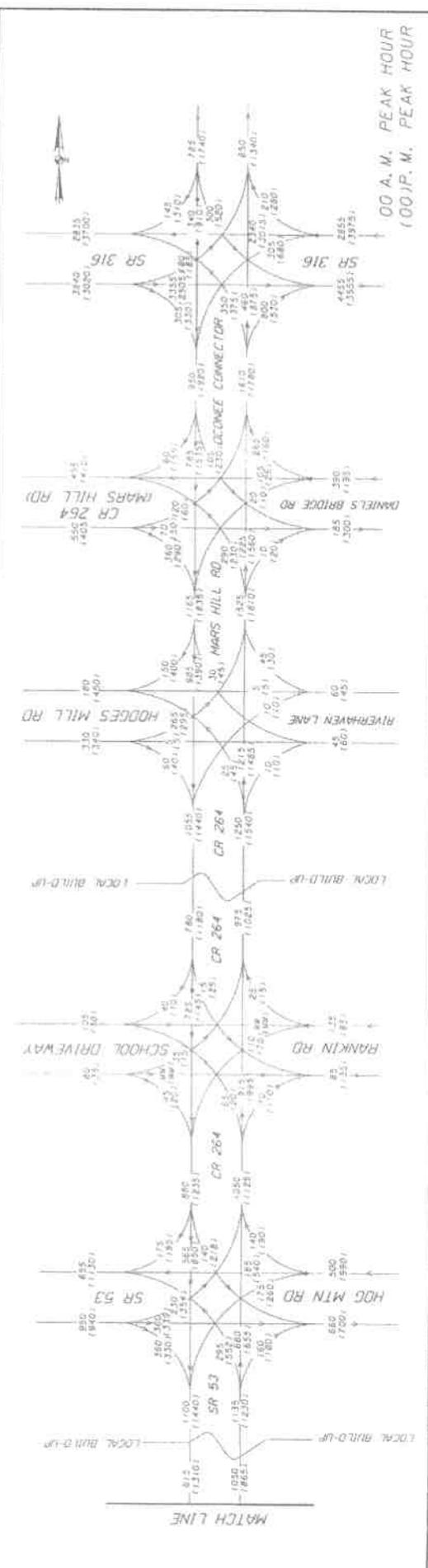
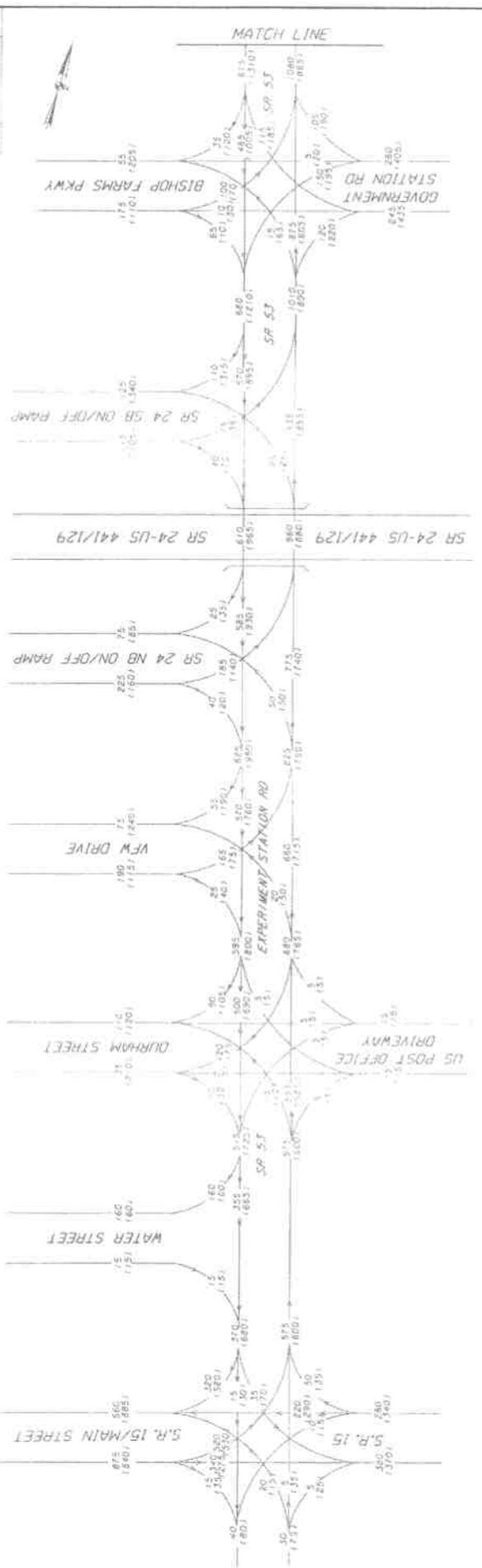
Cycle Length: 90.0 secs

Intersection Performance Summary

Appr/ Lane Grp	Lane Group Capacity	Adj Sat Flow Rate (s)	Ratios		Lane Group		Approach	
			v/c	g/C	Delay	LOS	Delay	LOS
Eastbound								
L	311	3502	0.95	0.09	80.3	F		
T	570	1900	0.61	0.30	31.8	C	42.0	D
R	754	1615	0.42	0.47	17.6	B		
Westbound								
L	358	1805	0.77	0.44	38.3	D		
T	570	1900	1.00	0.30	68.3	E	50.8	D
R	754	1615	0.24	0.47	15.2	B		
Northbound								
L	389	3502	1.07	0.11	105.3	F		
T	1003	3610	0.69	0.28	32.8	C	54.4	D
R	682	1615	0.26	0.42	17.7	B		
Southbound								
L	389	3502	0.51	0.11	42.5	D		
T	1003	3610	0.89	0.28	43.1	D	39.3	D
R	682	1615	0.28	0.42	18.0	B		

Intersection Delay = 46.7 (sec/veh) Intersection LOS = D

DATE	BY	REVISION



00 A.M. PEAK HOUR  
100 P.M. PEAK HOUR

REV 10 10/05

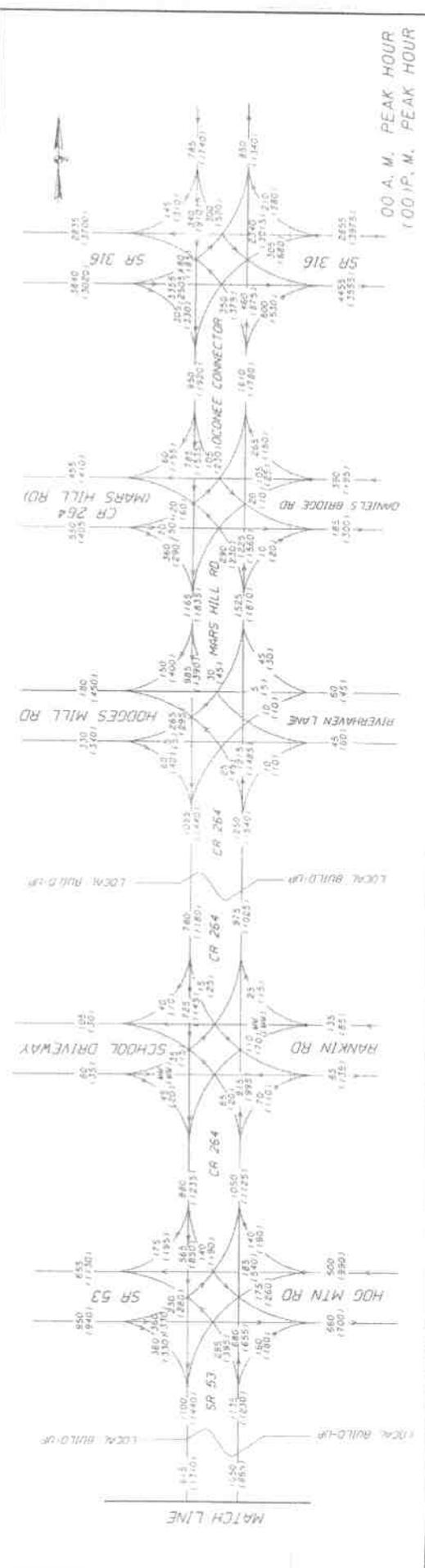
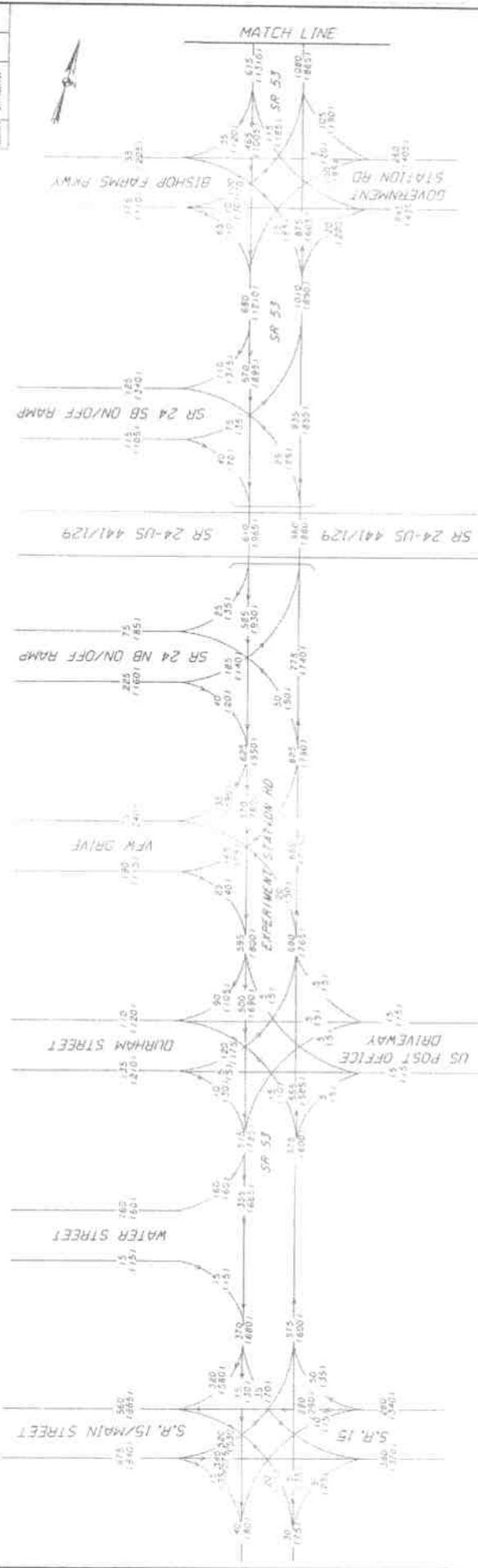
MA

Department of Transportation  
State of Georgia

S. R. 53/MARS HILL RD/OCONEE CONNECTOR  
YEAR 2029 (BUILD) PEAK HOUR TRAFFIC  
TRAFFIC DIAGRAM (w/o Shop Ctr. signal)

10-01

DATE	PROJECT NUMBER	SCALE
10/1/2024	24-001-001	1" = 100'



00 A. M. PEAK HOUR  
100 P. M. PEAK HOUR

S. R. 53/MAYS HILL RD/OOCONE CONNECTOR  
 YEAR 2029 (BUILD) PEAK HOUR TRAFFIC  
 TRAFFIC DIAGRAM

Department of Transportation  
 State of Georgia

MA

REVISIONS:

NO.	DATE	DESCRIPTION
1	10/1/2024	ISSUED FOR BIDDING

Alternative 18						
Culvert Size	Length	Conc./LF	\$/LF	Rebar/LF	\$/LF	Total
	200					
Triple 10x8		3.68	\$ 616.13	510.00	\$ 0.99	\$ 554,451.68
Wingwalls and Parapets		40.31		2,555.00	(total)	\$ 27,365.65
						\$ 581,817.33

Conspan	Length	\$/LF	FTG/LF	\$/LF	Slab/LF	\$/LF	Total
	200						
Double 16x9		\$ 2,540.00					\$ 508,000.00
Footings (5' Long x 2' deep)			1.11	\$ 713.33			\$ 158,517.78
Slabs (1' deep)					1.19	\$ 713.33	\$ 169,085.63
							\$ 835,603.41

Alternative 33						
Culvert Size	Length	Conc./LF	\$/LF	Rebar/LF	\$/LF	Total
	195					
Triple 8x8		2.90	\$ 616.13	333.58	\$ 0.99	\$ 413,383.82
Wingwalls and Parapets		33.47		2,792.00	(total)	\$ 23,385.95
						\$ 436,769.77

Conspan	Length	\$/LF	FTG/LF	\$/LF	Slab/LF	\$/LF	Total
	195						
Double 12x9		\$ 2,102.56					\$ 409,999.20
Footings (5' Long x 2' deep)			1.11	\$ 713.33			\$ 154,554.83
Slabs (1' deep)					0.89	\$ 713.33	\$ 123,643.87
							\$ 688,197.90

Alternative 38						
Culvert Size	Length	Conc./LF	\$/LF	Rebar/LF	\$/LF	Total
	160					
Double 6 x 6		1.33	\$ 616.13	143.69	\$ 0.99	\$ 154,168.70
Wingwalls and Parapets		15.73		470.00	(total)	\$ 10,157.02
						\$ 164,325.73

Conspan	Length	\$/LF	FTG/LF	\$/LF	Slab/LF	\$/LF	Total
	160						
Single 12 x 7		\$ 962.50					\$ 154,000.00
Footings (5' Long x 2' deep)			0.74	\$ 713.33			\$ 84,542.81
Slabs (1' deep)					0.44	\$ 713.33	\$ 50,725.69
							\$ 289,268.50

Alternative 40						
Culvert Size	Length	Conc./LF	\$/LF	Rebar/LF	\$/LF	Total
	135					
Double 5 x 5		0.98	\$ 616.13	127.24	\$ 0.99	\$ 98,769.16
Wingwalls and Parapets		12.66		362.00	(total)	\$ 8,158.59
						\$ 106,927.74

Conspan	Length	\$/LF	FTG/LF	\$/LF	Slab/LF	\$/LF	Total
	135						
Single 12 x 6		\$ 962.50					\$ 129,937.50
Footings (5' Long x 2' deep)			0.74	\$ 713.33			\$ 71,333.00
Slabs (1' deep)					0.44	\$ 713.33	\$ 42,799.80
							\$ 244,070.30

Alternative 41						
Culvert Size	Length	Conc./LF	\$/LF	Rebar/LF	\$/LF	Total
	135					
Double 5 x 5		0.98	\$ 616.13	127.24	\$ 0.99	\$ 98,769.16
Wingwalls and Parapets		12.66		362.00	(total)	\$ 8,158.59
						\$ 106,927.74

Conspan	Length	\$/LF	FTG/LF	\$/LF	Slab/LF	\$/LF	Total
	135						
Single 10x5		\$ 962.50					\$ 129,937.50
Footings (5' Long x 2' deep)			0.74	\$ 713.33			\$ 71,333.00



**Sam Deeb**

---

**From:** Poole, Steve [PooleS@contechbridge.com]  
**Sent:** Monday, March 31, 2008 3:47 PM  
**To:** sdeeb@maai.net  
**Subject:** [MA SPAM filter] Budget Costs  
**Importance:** Low

Sam – I've been on the road today between meetings and site visits. Below is the best I could do for now:

CON/SPAN Materials Estimate:

- Double 16 x 9 x 200
  - \$448,000 Arches, headwalls, and wingwalls delivered to site, exclusive of taxes
  - \$ 60,000 Estimate for installation – crane and crew for 4 days @ \$15,000/day
  
- Double 12 x 9 x 195
  - \$350,000 Arches, headwalls, and wingwalls delivered to site, exclusive of taxes
  - \$ 60,000 Estimate for installation – crane and crew for 4 days @ \$15,000/day
  
- Single 12 x 7 x 160
  - \$124,000 Arches, headwalls, and wingwalls delivered to site, exclusive of taxes
  - \$ 30,000 Estimate for installation – crane and crew for 2 days @ \$15,000/days

The other sites you gave me can be prorated based on the single 12 x 7 above...they would have a similar price/foot cost. Please note excavation, backfill, and foundation cost have not been included in the costs above. Also, these costs are based on today's costs. If the project is two years out, you may want to add 5 to 7% per year inflation.

Steve  
678-662-9331

**Steven T. Poole, P.E.**  
**Region Manager**  
**CONTECH Bridge Solutions Inc.**

6075 Atlantic Boulevard  
Suite A-1  
Norcross, GA 30071  
Phone: 678-662-9331  
Fax: 770-409-0133  
[www.contechbridge.com](http://www.contechbridge.com)

[PooleS@contechbridge.com](mailto:PooleS@contechbridge.com)

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Road Designs Response to Value Engineering Study on Project  
STP-1267(8) Mars Hill Rd  
PI No. 142060

**Alternative 1**

Description: Use 11-ft. lanes to reduce right-of-way costs

Cost savings: \$4,336,554

Response: The disadvantageous to this alternative is that this road will be the connection between Watkinsville and SR 316 and the south western Athens area. The truck percentage is at 8% and there will be 33,400 vehicles per day. This alternative places trucks closer to passenger vehicles and possible cyclist which in turn would increase the accident rate. Also the traffic may outpace projections.

**The recommendation of the Road Design Office is:** Not to implement this suggestion

**Alternative 2**

Description: Use 12-ft. shoulders instead of 16-ft. shoulders

Cost savings: \$4,062,200

Response: The 16' shoulder helps bring the facility closer to the clear-zone requirements of the Roadside Design Guide (20'). A 6' grass strip is preferred between the back of curb and sidewalk for maintenance issues. There also exists several residential driveways that the sidewalk would have to wrap around if the shoulder is reduced to 12'. Also, parts of the project will have heavy commercial use in the future. Utilities such as telephone, water, cable, and power use this shoulder for the location of their facilities.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

**Alternative 6**

Description: Reduce the number of 72-inch bulb tees for the bridge over Barber Creek

Cost savings: \$33,128

Response: By eliminating 3 bulb tees, the cost is offset by an increase in deck concrete and rebar quantities which would offset the savings. Moreover, staging and sidewalk loadings would not allow for an 8'-0" spacing. Another option would be to use BT 65 and maintain spacing as is, which would also produce a better hydraulic opening by an additional 7". In addition to these considerations it would cost around \$40,000 to redesign the bridge.

**The recommendation of the Road Design and Bridge Design Office is:** Not to implement this recommendation.

### **Alternative 7**

Description: Realign Durham Street to the south to connect with the Courthouse Complex

Cost savings: \$(1,195,101)

Response: This recommendation is beyond the scope of work of the project and will cost the Department \$1.2 million. Although the main use for the Durham Street design is to facilitate movement of people between the courthouse and the Oconee County Jail site, there will be others using this roadway who will not need to go to the courthouse, producing a large amount of unwanted traffic in the courthouse complex parking area. Also this will introduce new environmental issues to the project possibly delaying the letting date.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

### **Alternative 9**

Description: Realign Durham Street to Oconee County Sheriff Department's parcel, i.e. on the north side

Cost savings: \$1,789,671

Response: The section of Durham Street that connects to S.R.53/Experiment Station Rd sits upon land that has been contaminated with waste runoff by American Linen Supply in the recent past. Durham Street has been so designed to be on fill dirt over the Super Fund site. Realigning Durham Street would cover existing monitoring wells and interfere with the cleanup process.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

### **Alternative 11**

Description: Eliminate Water Street access onto SR 53/Experiment Station Rd

Cost savings: N/A

Response: An administrative decision has been made to keep access open as a right in right out access. District 1 Engineer has made promises to the City of Watkinsville. Minutes from a March 16<sup>th</sup> 2004 meeting between Watkinsville, Todd Long and Gerald Ross indicated that the city did believe that Oconee County promised to leave Water street access. Todd mentioned that it would have to be a right in right out access.

**The recommendation of the Road Design Office is:** Not to implement this recommendation

#### **Alternative 14**

Description: Eliminate signal at the Durham Street intersection

Cost savings: \$100,048

Response: A signal for this intersection is warranted mainly for the 175 DHV left turn movements from Durham Street to S.R. 53. Also, removing the signal would force vehicles to cross all 5 lanes of traffic on S.R. 53 from the post office/jail driveway to Durham Street. Removing the signal would make this intersection dangerous to maneuver.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

#### **Alternative 16**

Description: Cul-de-sac Harris Shoals Drive close to SR 53/Experiment Station Rd and access Harris Shoals Park from VFW Drive

Cost savings: \$55,207

Response: In a meeting between the City and GDOT on January 18<sup>th</sup> 2008 an understanding was made that the park road would tie into VFW drive in a similar location as shown in the plans but as a driveway only. In the minutes of a previous meeting between the city, Todd Long, and Gerald Ross the city believes Oconee County promised to keep that access open.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

#### **Alternative 17**

Description: Eliminate "U" turn lane at VFW Drive

Cost savings: \$46,766

Response: There is one driveway on the east side of S.R. 53/Experiment Station Rd accessing the U.S.D.A. Southern Piedmont Research Station parcel that the u-turn would benefit. The previous u-turn for east-bound traffic is over 2000' away. It would be a safer u-turn movement at the proposed u-turn eyebrow than from the left-turn lane of S.R. 53 at Durham Street. Also those that made a wrong turn coming from 441 will be able to make a u-turn at this intersection instead of at Durham Street which is less safe.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

### **Alternative 18**

Description: Replace the three 10-ft. x 8-ft. box culverts at Calls Creek with two 16-ft. x 9-ft. CON/SPAN type culverts

Cost savings: \$158,076

Response: Per GDOT any CON/SPAN structure over a creek not on rock should have a bottom slab and footings on piles or footings extended down to rock. The extra cost for a CON/SPAN foundation along with the extended design hours for the CON/SPAN culvert itself does not make this alternative cost effective. I have spoken with Mr. Cashin in the Bridge Design Office and he agrees with what MAAI has written above. In addition we will require a soil boring and redesign expecting to total \$70,000. This reduces the cost savings.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

### **Alternative 20**

Description: Reduce the width of the southern Watkinsville Bypass ramps

Cost savings: \$136,729

Response: The striped area in the plans is 24 feet wide separating the left turn lane from the right turn lane. Design year traffic has 185 DHV turning left and 45 DHV turning right. 100' of storage is adequate for the right turn movement and no separation is necessary between the left and right turning movements from the ramp to the mainline. The required clear-zone in this case is 12' therefore we should retain 12' of separation between the opposing lanes.

**The recommendation of the Road Design Office is:** To partially implement this recommendation

### **Alternative 21**

Description: Reduce the width of the northern Watkinsville Bypass ramps

Cost savings: \$68,333

Response: The striped area in the plans is 12 feet wide separating the left turn lane from the right turn lane. Design year traffic has 75 DHV turning left and 40 DHV turning right. 100' of storage is adequate for the right turn movement and no separation is necessary between the left and right turning movements from the ramp to the mainline. The required clear-zone in this case is 14' therefore 14' of separation between the opposing lanes is needed in this case.

**The recommendation of the Road Design Office is:** Not to implement this recommendation

**Alternative 22**

Description: Eliminate “U” turn lane on SR 53/Experiment Station Rd at Watkinsville Bypass southbound ramp

Cost savings: \$43,799

Response: If this u-turn is eliminated then vehicles will be forced to travel an additional 2200 feet for the next available u-turn. Arial photos indicate that vehicles may already be attempting to make a u-turn at this location.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

**Alternative 23**

Description: Tie-in the Old Government Station Rd as a driveway from SR 53 and eliminate upgrading Government Station Rd

Cost savings: \$723,613

Response: Please see Alternative 25. We have chosen that alternative in this situation.

**The recommendation of the Road Design Office is:** Not To implement this recommendation

**Alternative 24**

Description: Upgrade the existing Old Government Station Road only

Cost savings: \$585,271

Response: By implementing this recommendation either Bishop Farms Parkway or Government Station Road would loose access to one direction of travel. Please defer to Alternate 23 for our recommendation

**The recommendation of the Road Design Office is:** Not to implement this recommendation (see Alternate 25)

### **Alternative 25**

Description: Retain the new realigned Government Station Rd entrance drive and eliminate upgrading of the

Old Government Station Rd

Cost savings: \$188,802

Response: Road Design agrees with the principal of the recommendation. Government Station has a projected traffic volume of 840 DHV. This is roadway that becomes Daniels Bridge Road and transitions into Epps Bridge Road. It would be the best design to align Government Station Road and Bishop Farms Parkway to a common intersection. And tie the existing Government Station Road in as a driveway to service the USDA facility there. The best solution for this would be to move Bishop Farms Parkway 540 feet to the east. This would realign 1800 feet of Bishop Farms Parkway with very little of Government Station Road being aligned.

**The recommendation of the Road Design Office is:** To implement this recommendation

### **Alternative 26**

Description: Eliminate the existing traffic light at McDonald's south of Hog Mountain Rd

Cost savings: \$161,653

Response: Eliminating this traffic light and median opening would force vehicles to make a u turn at SR 53 which would cause the level of service to drop from D to an E.

**The recommendation of the Road Design Office is:** Not to implement this suggestion

### **Alternative 27**

Description: Use a restrictive/traffic induced signal at the Rankin Road/School and CR 264/Mars Hill Rd intersection

Cost savings: N/A

Response: This signal should not be a full time signal during all hours of the day. The design team will be directed to place loops in the road so that the signal may be actuated at certain times of the day.

**The recommendation of the Road Design Office is:** To implement this suggestion

### **Alternative 28**

Description: Eliminate “U” turn lane on CR 264/Mars Hill Rd as it intersects with Cliff Dawson Rd

Cost savings: \$43,799

Response: The extra u-turn pavement servicing the USDA property can be eliminated without impacting the travelling public. We propose to keep the extra pavement adjacent to Cliff Dawson Rd, however since the property between Cliff Dawson and Hill Creek Court is likely to be developed.

**The recommendation of the Road Design Office is:** To implement this recommendation as stated above.

### **Alternative 29**

Description: Close the median opening at Windridge Office Park driveway on CR 264/Mars Hill Rd and open a Median at Windy Creek Road and provide an additional driveway to the office park from Windridge Drive

Cost savings: \$(31,915)

Response: MAAI has written: A median opening is desirable at one of these two locations. The choice to design the median opening at the office park driveway instead of at Windy Creek Rd was based on sight distance safety. The intersection of Mars Hill Rd and Windy Creek Rd is near a high point on the Mars Hill Rd profile, making left-turn and u-turn movements from Windy Creek Rd less safe than from the office park driveway. Drivers who wish to turn south onto Mars Hill Rd may use the Wind Ridge Drive intersection and median opening to turn left. Road Design agrees with MAAI's assesment.

**The recommendation of the Road Design Office is:** Not to implement this recommendation

### **Alternative 32**

Description: Close the median opening at parcel 128 (south of Brookwood Drive) and allow “U” turns at the Crooked Creek Drive/Pebblestone Drive intersection

Cost savings: \$87,089

Response: Oconee county opposes closing this median opening because it would have adverse effects on the future developments along this corridor. By closing this opening, drivers would have to travel 2550’ between median openings which is not desirable.

**The recommendation of the Road Design Office is:** Not to implement this recommendation

### **Alternative 33**

Description: Replace the three 8-ft. x 8-ft. box culverts at Parker Branch with two 12-ft. x 9-ft. CON/SPAN

type culverts

Cost savings: \$134,615

Response: Per GDOT any CON/SPAN structure over a creek not on rock should have a bottom slab and footings on piles or footings extended down to rock. The extra cost for a CON/SPAN foundation along with the extended design hours for the CON/SPAN culvert itself does not make this alternative cost effective. I have spoken with Mr. Cashin in the Bridge Design Office and he agrees with what MAAI has written above.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

### **Alternative 35**

Description: Connect Hollow Creek Lane and Barber Creek Drive at a new intersection on CR 264/Mars Hill Rd

Cost savings: \$(275,460)

Response: The results of this would be another access (conflict) point just south of Epps Bridge Road (a very heavily travelled road). Doing this would also alter the residential feel of the road to those that live on the road and also cost the Department an extra \$275,000.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

### **Alternative 36**

Description: Provide a raised median on SR 53/Experiment Station Rd between VFW Drive and SR 15/Main St

Cost savings: \$(660,079)

Response: The traffic for this portion of the project is around 14,000 vehicles per day and is under the normal warrants for a raised median. Also additional right of way costs and time delays would take place in addition to the \$660,000 listed by the VE team.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

### Alternative 37

Description: Use a pavement depth based on traffic volume for the Durham Street improvements/realignment

Cost savings: N/A

Response: MAAI will be directed to perform a pavement design for this Street.

**The recommendation of the Road Design Office is:** To implement this suggestion

### Alternative 38

Description: Replace the two 6-ft. x 6-ft. box culverts at Lampkin Branch with a 12-ft. x 7-ft. CON/SPAN type culvert

Cost savings: \$39,379

Response: Per GDOT any CON/SPAN structure over a creek not on rock should have a bottom slab and footings on piles or footings extended down to rock. The extra cost for a CON/SPAN foundation along with the extended design hours for the CON/SPAN culvert itself does not make this alternative cost effective. I have spoken with Mr. Cashin in the Bridge Design Office and he agrees with what MAAI has written above.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

### Alternative 40

Description: Replace the two 5-ft. x 5-ft. box culverts at the unnamed tributary located at station 232+00 with

a 12-ft. x 6-ft. CON/SPAN type culvert

Cost savings: \$15,870

Response: Per GDOT any CON/SPAN structure over a creek not on rock should have a bottom slab and footings on piles or footings extended down to rock. The extra cost for a CON/SPAN foundation along with the extended design hours for the CON/SPAN culvert itself does not make this alternative cost effective. I have spoken with Mr. Cashin in the Bridge Design Office and he agrees with what MAAI has written above.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

**Alternative 41**

Description: Replace the two 5-ft. x 5-ft. box culverts at the unnamed tributary located at station 232+00 with

A 10-ft. x 5-ft. box culvert

Cost savings: \$169

Response: Referencing the GDOT Special Design Box Culvert details, there is no special design for the 10-ft. x 5-ft. box culvert alternative, it can only be designed using the standard design, whereas the proposed double 5-ft. x 5-ft. box culvert was designed using the special design detail. The quantities for concrete and steel for the single 10-ft. x 5-ft. culvert are greater than for the double 5-ft. x 5-ft. design, therefore there is no cost savings associated with this alternative.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

**Alternative 42**

Description: Replace the two 7-ft. x 7-ft. box culverts at the unnamed tributary located at station 288+00 with

Two 12-ft. x 8-ft. CON/SPAN type culverts

Cost savings: \$19,947

Response: Per GDOT any CON/SPAN structure over a creek not on rock should have a bottom slab and footings on piles or footings extended down to rock. The extra cost for a CON/SPAN foundation along with the extended design hours for the CON/SPAN culvert itself does not make this alternative cost effective. I have spoken with Mr. Cashin in the Bridge Design Office and he agrees with what MAAI has written above.

**The recommendation of the Road Design Office is:** Not to implement this recommendation.

