

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: STP-037-2(54) & BHF-37-2(55) Clayton
P. I. Nos.: 720815 & 720817
S.R. 42 Widening

OFFICE: Engineering Services

DATE: July 1, 2008

FROM: Brian Summers, P.E., Project Review Engineer *REW*

TO: Brent Story, P.E. 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 alternatives recommended for implementation to the extent reasonable in the design of the project.

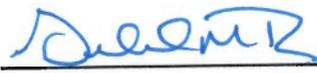
ALT No.	Description	Savings PW & LCC	Implement	Comments
Right of Way (A)				
A-1	Reduce shoulder width, retain sidewalks	\$1,448,000	Yes	This should be done.
A-2	Reduce lane width from 12' to 11'	\$1,273,000	No	This route has Design Year traffic of 24,600 AADT with 15% truck traffic.
A-2.1	Reduce the proposed inside lanes from 12' to 11'	\$636,300	No	This route has Design Year traffic of 24,600 AADT with 15% truck traffic.
A-3	Reduce the median width from 20' to 16'	\$975,000	Yes	This should be done.

ALT No.	Description	Savings PW & LCC	Implement	Comments
Right of Way (A) - continued				
A-4	Use 14' paved flush median	\$325,000	No	There are 18 proposed intersections, 15 proposed median openings and 74 driveways along this corridor. A raised median would provide better access control along this route.
A-5	Minimize intersection realignments at Rex Road retaining the same number of turn lanes	\$459,100	No	This would cause additional Right of Way impacts and damages in all four quadrants of this intersection.
A-6	Minimize intersection realignment at Forest Parkway retaining the same number of turn lanes	\$463,000	No	Would result in impacts to gas stations at the intersection. In addition, the existing horizontal alignment is substandard and needs to be corrected to meet a 45 mph Speed Design.
Concrete Structures (F)				
F-4	Use gravity retaining walls (non-reinforced concrete) for 75% of structures in lieu of Reinforced Concrete Walls	\$329,000	Yes	This should be done.
Concrete Work (G)				
G-1	Use 3" Asphalt and GAB Base for sidewalks	\$241,600	No	Future maintenance costs with Asphalt would tend to minimize the savings over a long time frame.
G1.1	Use asphalt sidewalk on one side of road only	\$1,116,000 (proposed) \$210,961 (actual)	Yes/partial	This will be done where feasible, except that Concrete Sidewalk will be used in lieu of Asphalt Sidewalk.
G-2	Eliminate the 4" median paving in wide areas and replace with seeding/top soil	\$251,100	Yes	This should be done.

ALT No.	Description	Savings PW & LCC	Implement	Comments
Other (H)				
H-1	Use a box culvert in lieu of a bridge at Stream No. 5	\$841,000	Yes	This should be done.

A meeting was held on June 17, 2008 to discuss the above recommendations. Brent Story, Jason McCook, and Fletcher Miller with Road Design, and Brian Summers, Ron Wishon and Lisa Myers with Engineering Services were in attendance.

Additional information was provided by the Project Manager on June 30, 2008.

Approved:  Date: 7/3/08
Gerald M. Ross, P. E., Chief Engineer

BKS/REW

Attachments

- c: Gus Shanine
- R. Wayne Fedora
- Todd Long
- Paul Liles
- Bill Ingalsbe
- Bill DuVall
- Brent Story
- Jason McCook
- Fletcher Miller
- Jacob Achorn
- Scott Maclean
- Jan Lystad
- Steven Bookholdt
- James Magnus
- Mickey McGee
- Loren Bartlett
- Grant Waldrop
- Funmi Adesesan
- Lisa Myers



Preconstruction Status Report By PI Number

Print Date: 06/16/2008

PROJ ID	COUNTY	DESCRIPTION	MGMT. ROW DATE	SCHED DATE	MGMT. LET DATE
720815-	Clayton	SR 42 FM LAKE HARBIN RD N TO ANVIL BLOCK RD	Mar-09	Sep-12	Mar-11

STP#	TIP#	MPO	MODEL YR	PROJ MGR	PROG	TYPE	CONCEPT	FIELD DIST	TWIN	US	EST DATE	Phase	Approved	Proposed	Cost	Fund	Status
STP00-0037-02(054)	CL-012A	Atlanta TMA	2030	Miller, Fletcher	Reconstruction/Rehabilitation	ADD 4U(MED 20)		7	720817-	23	3/26/2008	PE	1992	1992	138,000.00	Q23	AUTHORIZED
												ROW	LR	LR	58,358,887.84	L240	PRECST
												CST	LR	LR	54,068,117.63	L240	PRECST

PROJ LENGTH	TYPE	WORK	LET RESP	Districts
3.20	Widening		DOT	Congressional 13

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACT/EST FINISH	PCT	DISTRICT COMMENTS
		Define Project Concept	6/15/2004	9/20/2005	100	CLAYTON COUNTY - UST, GOES W/720817.(5/26/05) CONCEPT DEV. CONTINUING. (6/7/06) CONCEPT APPVD. 3/23/06; MAPPING COMPLETE; PRELIM. DESIGN UNDERWAY.
		Concept Meeting	9/26/2005	9/26/2005	100	
		Concept Submittal and Review	3/8/2006	3/8/2006	100	
		Receive Preconstruction Concept Approval	3/15/2006	3/21/2006	100	
		Management Concept Approval Complete	3/21/2006	3/23/2006	100	
6/25/2008	7/1/2008	Value Engineering Study	10/10/2007		96	
		Public Information Open House Held	1/12/2006	1/12/2006	100	
6/20/2008	2/15/2010	Environmental Approval			0	
8/31/2009	8/31/2009	Public Hearing Held			0	
		Mapping	3/7/2005	9/7/2005	100	
6/20/2008	7/24/2008	Field Surveys/SDE			0	
6/20/2008	11/20/2008	Preliminary Plans	1/2/2006		85	
6/25/2008	6/24/2008	Underground Storage Tanks	12/15/2005		100	
6/20/2008	10/2/2008	404 Permit Obtainment			0	
3/9/2010	3/10/2010	PFPR Inspection			0	
4/15/2010	7/7/2010	R/W Plans Preparation			0	
9/2/2010	9/7/2010	R/W Plans Final Approval			0	
4/15/2010	4/19/2010	L & D Report Development and Approval			0	
9/8/2010	7/18/2012	R/W Acquisition			0	
1/31/2011	2/11/2011	Stake R/W			0	
4/15/2010	4/26/2010	Soil Survey			0	
4/20/2010	12/28/2010	Final Design			0	
1/19/2011	1/20/2011	FFPR Inspection			0	
2/3/2011	2/16/2011	FFPR Response			0	

BIKE PROVISIONS INCLUDED?: N MEASUREMENT SYSTEM: E CONSULTANT: N UT EST: \$ 1,220,000.00

PDD: GAP PROJ BETWEEN TWO ALREADY WIDENED. Reassigned to Road Design 5/6/03.
Bridge: BRIDGE REQUIRED - SEE 720817
Design: FM/JA: Prel. Plans underway. (12/10/07)
EIS: FONSI|Apvd9-30-97|OnSchRW|Updated 12-12-07|ADESESAN
LGPA: CLAYTON REF DO UTILITIES 10-3-02|RESCISSION LETTER SENT TO CLAYTON 6-18-07.
Programming: PR2 PE/4-13-92
Railroad: SOU
Traffic Op: CAH|SND CNSLTNT PLNS FR REVW|032001|+\$
UST: S2-UT;S3-HW;S4-UN;S5-UN;S6-UT;S7-UT;S8-UN;S9=P4(52)-C.2PR;S1
Utility: YPF:(-6) 08/07;SUE
EMG: 2122 (H85(94)-W/V88)

R/W INFORMATION:
 PREL PARCEL CT: 110 TOTAL PARCEL CT: ACQUIRED BY: DOT ACQ MGR:
 UNDER-REVIEW CT: RELEASED CT: OPT-PEND CT: DEEDS CT: COND-PEND CT: COND-FILED CT:
 RW CERT DT: ACQUIRED CT: RELOCATION CT:



Preconstruction Status Report By PI Number

Print Date: 06/16/2008

PROJ ID	COUNTY	DESCRIPTION	MGMT. ROW DATE	SCHED DATE	MGMT. LET DATE
720817-	Clayton	SR 42/MACON HWY @ UPTON CREEK	Mar-09	Sep-12	Mar-11

BHF00-0037-02(055)	FIELD DIST: 7	Phase	Approved	Proposed	Cost	Fund	Status
TIP #: CL-012B	TWIN: 720815-	PE	1992	1992	21,300.00	Q10	AUTHORIZED
MPO: Atlanta TMA	EST DATE: 3/23/2006	CST	LR	LR	637,000.00	LIC0	PRECST

MODEL YR: 2030	PROJ MGR: Miller, Fletcher	PROJ LENGTH: 0.20
PROG Reconstruction/Rehabili	TYPE Bridges	
TYPE: tation	WORK:	
CONCEPT: BR REMOVAL	LET RESP: DOT	Congressional 13

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACT/EST FINISH	PCT	DISTRICT COMMENTS
		Define Project Concept	6/15/2004	9/20/2005	100	GOES W/720815, NO UST'S. COUNTY SAYS SEND NEW LGPA . UTILITY CE - \$1,220,000. W/720815 (4-10-02) ADVERTISE FOR CONSULTANT IN FY 2003. FOLLOW/UP LGPA LTR SENT 4-25-02. (9/22/03) RE-ASSIGNED TO ROAD DESIGN. (3/10/04) NEED NEW CONCEPT. (6/7/06) CONCEPT APPVD. 3/23/06; MAPPING COMPLETE; PRELIM. DESIGN UNDERWAY.
		Concept Meeting	9/26/2005	9/26/2005	100	
		Concept Submittal and Review	3/8/2006	3/8/2006	100	
		Receive Preconstruction Concept Approval	3/15/2006	3/21/2006	100	
		Management Concept Approval Complete	3/21/2006	3/23/2006	100	
6/25/2008	7/1/2008	Value Engineering Study	10/10/2007		96	
		Public Information Open House Held	1/12/2006	1/12/2006	100	
6/20/2008	2/15/2010	Environmental Approval			0	
8/31/2009	8/31/2009	Public Hearing Held			0	
6/23/2008	7/25/2008	Field Surveys/SDE			0	
6/20/2008	12/25/2008	Preliminary Plans			0	
10/24/2008	12/25/2008	Preliminary Bridge Design			0	
6/20/2008	7/10/2008	404 Permit Obtainment			0	
3/9/2010	3/10/2010	PFPR Inspection			0	
4/15/2010	7/7/2010	R/W Plans Preparation			0	
9/2/2010	9/7/2010	R/W Plans Final Approval			0	
4/15/2010	4/19/2010	L & D Report Development and Approval			0	
9/8/2010	7/18/2012	R/W Acquisition			0	
1/31/2011	2/11/2011	Stake R/W			0	
4/15/2010	4/26/2010	Soil Survey			0	
4/15/2010	5/20/2010	Bridge Foundation Investigation			0	
4/20/2010	12/28/2010	Final Design			0	
6/18/2010	8/12/2010	Final Bridge Plans Preparation			0	
1/19/2011	1/20/2011	FFPR Inspection			0	
2/3/2011	2/16/2011	FFPR Response			0	

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

PDD: W/720815. 10/8/99. Reassigned to Road Design. 9/22/03.
Bridge: BRIDGE REQUIRED
Design: FM/JA: Need to request Bridge Hydraulic Study. (12/10/07)
EIS: FONSI|Apvd9-30-97|OnSchedRW|Updated 12-12-07| ADESESAN
LGPA: CLAYTON REF DO UTILITIES 10-3-02|RESCISSION LETTER SENT TO CLAYTON 3-8-05.
Programming: PR2/PE=5-15-92|#1 7-05
Traffic Op: CAH|BR REMOVAL PRJCT W/720815-/CLAYTON CO|032001|\$
Utility: YPF: With 720815 08/07;SUE
EMG: RECST/REHAB(BRIDGE REMOVAL); MAPPED WITH JOB 720815

R/W INFORMATION:
PREL PARCEL CT: 4 **TOTAL PARCEL CT:** **ACQUIRED BY:** DOT **ACQ MGR:**
UNDER-REVIEW CT: **RELEASED CT:** **OPT-PEND CT:** **DEEDS CT:** **COND-PEND CT:** **COND-FILED CT:**
RW CERT DT: **ACQUIRED CT:** **RELOCATION CT:**

Wishon, Ron

From: Miller, Fletcher
Sent: Monday, June 30, 2008 4:07 PM
To: Wishon, Ron
Cc: McCook, Jason; Myers, Lisa; Achorn, Jacob
Subject: STP00-0037-02(054) Clayton County P.I. No. 720815 - VE Study Cost Estimates

Ron,

For the subject VE Study, we have reviewed Recommendations A-6 and G-1.1. Here are our findings:

Recommendation A-6: Minimize intersection realignments at Forest Parkway - The original concept increases the 70 degree signalized intersection to 80 degrees while increasing the number of turn lanes. The proposed recommendation retains the number of turn lanes but eliminates the improvements to the intersection angle as in A-5.

Revised Response from Road Design: ~~WILL IMPLEMENT, CONDITIONALLY~~ **WILL NOT IMPLEMENT**

- The intersection of S.R. 42 at Forest Parkway/Ellenwood Road is a "right skewed" intersection with a high volume of traffic including a large percentage of trucks in a mostly industrialized area.
- There were 19 angle collision injuries at this intersection during 2004-2006.
- The VE Study recommended design would negatively impact both gas stations at the intersection and additional homes east of the intersection. The proposed design will save one of the gas stations at the intersection by widening towards a vacant lot.
- ~~The skew will be lessened while providing the fewest number of ROW impacts to the adjacent properties.~~ **Due to geometric constraints, no compromise can be made.**
- **The original intent of Road Design's design was to correct the poor alignment (S-curve at Forest Parkway). The correction of the skew of Ellenwood Road from 68.5 to 79.6 degrees was a positive by-product. One of the existing curves contained in the S-curve is 700' which is less than the 2001 AASHTO Green Book minimum curve length of 703' for 45 mph. The existing survey indicates there is no superelevation in the section of this curve, which would usually require 6%. In addition to the aforementioned 2004-2006 crash data, there were 4 crashes of various types in the area of the S-curve, one of which was a run off the road collision with a motor vehicle during daylight hours and dry conditions due to inability of the driver to negotiate the curve. Implementation of the VE Study recommendation proposes to end the side road in the middle of this curve.**

Recommendation G-1.1: Use asphalt sidewalks on one side of the corridor and delete the sidewalk on the other side entirely - This option also reduces right of way.

Revised Response from Road Design: ~~WILL IMPLEMENT, CONDITIONALLY~~

- Sidewalk should be added in both the residential and commercially developed areas. This is more prevalent on the west side and southern end of the project. ADA guidelines will govern the location of sidewalk.
- The deletion of sidewalk does not affect the urban shoulder width and thereby has no effect to reduce right of way. **Since the reduction of shoulder widths for the entire corridor is being implemented (Recommendation A-1), the ROW savings of \$558,888 should be eliminated from the VE Team's New Estimate.**
- **The conditional implementation of the recommendation, using concrete sidewalks in selected areas, would yield a Road Design New Estimate of \$481,445 which translates to a potential savings of \$210,961.**

Please let me know if you need additional information.

Fletcher C. Miller, P.E.
Design Group Manager
Office of Road Design
Georgia Department of Transportation
(404) 631-1652

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DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA



INTERDEPARTMENT CORRESPONDENCE

FILE STP00-0037-02(054) Clayton County
PI No. 720815
S.R. 42 fm Lake Harbin N to Anvil Block Rd

OFFICE Road Design

DATE May 28, 2008

FROM 
Brent A. Story, P.E., State Road and Airport Design Engineer

TO Brian Summers, P.E., Project Review Engineer
Attn: Lisa Myers, Design Review Engineer Manager/VE Coordinator

SUBJECT VE Study: Responses to Recommendations

These are the responses to the Value Engineering Alternatives recommended by the Value Engineering Team:

Recommendation Highlights

Recommendation A-1: Reduce the shoulder width, retain the sidewalks

This recommendation includes reducing the shoulder width from 16 feet to 12 feet on each side of the roadway. The edge of the curb to the sidewalk would be 2 feet in lieu of the 6 feet shown on the typical detail. There does not appear to be an abnormal amount of utilities to be placed in this area. There is a substantial savings in right of way.

Potential savings is \$1,448,000

Response from Road Design: WILL IMPLEMENT

- The typical section will be revised to reduce the shoulder width from 16 feet to 12 feet on each side of the roadway.

Recommendation A-2: Reduce lane width from 12 to 11 feet on all four travel lanes

This recommendation includes reducing the pavement by 1 foot per each lane which seems appropriate for a 45 mile per hour design speed, urban section with gutter.

Potential savings is \$1,273,000

Response from Road Design: DO NOT IMPLEMENT

- This recommendation should not be implemented due to the high percentage of truck traffic (15%) and high traffic volumes (15,000/24,600 AADT Current/Design Year 2005/2032,

3/23/06 Approved Concept Report) on the corridor. In similar projects with lower truck traffic, this recommendation was not implemented.

- Because there are no bicycle lanes proposed for the project, any bike traffic would have difficulty “sharing” the lane with trucks traveling in the outside lane.

Recommendation A-2.1: Reduce the inside lane to 11 feet, retain the outside lane at 12 feet in width

The percentage of truck usage along this route is 15%. This may be a more palatable suggestion than A-2 if the GDOT feels 15% trucks would cause problems on this type of roadway.

Proposed savings is \$636,300

Response from Road Design: DO NOT IMPLEMENT

- This recommendation should not be implemented due to the high percentage of truck traffic (15%) and high traffic volumes (15,000/24,600 AADT Current/Design Year 2005/2032) on a corridor that is highly commercial/industrial.

Recommendation A-3: Reduce the concrete median width from 20 to 16 feet

At left turns the proposed median would be a 2 foot raised median without gutters offset 1 foot from the edge of the travel way.

Proposed savings is \$975,200

Response from Road Design: WILL IMPLEMENT

- In cases where any superelevation exists and thereby drainage structures are required at the median curb and gutter, GA Standard 1033D could not be used because the standard width of the structure is 4 feet. GA Standard 1019A or 1019B could be used, however, to eliminate the gutter width would substantially reduce the inlet capacity and gutter spread, especially if combined with a reduced turn lane width. Fortunately this project has no intersections that fall under this category.
- Additionally, due to width requirements, no sign structures may be placed in the median at left turn lanes with the implementation of this recommendation.

Recommendation A-4: Use a 14 foot flush mount median in lieu of 20 foot raised median

This concept is to replace the raised median with another travel lane that will be used for left turn lanes. With a 2013 design ADT of 17,300 it will be several years before the > 24,000 number will be reached. (That is the number when a raised median should be built.)

Potential savings is \$325,000

Response from Road Design: DO NOT IMPLEMENT

- Potential savings for this recommendation are outweighed by safety and the future costs of the installation of a raised median.
- Due to the number of proposed intersections (18), median openings (15) and driveways (74), a raised median would provide for better access control and limit conflict points along the corridor.

Recommendation A-5: Minimize intersection realignments at Rex Road

The original design revises the two roads to attain a 70 degree intersection with the main line at this signalized intersection. The proposed concept retains the existing 60 degree intersection to minimize right of way impacts, but provides the same number of turn lanes as the existing design. 60 degrees or greater complies with AASHTO requirements.

Potential savings is \$459,100

Response from Road Design: DO NOT IMPLEMENT

- The intersection of S.R. 42 at Rex Road is a “right skewed” intersection.
- There were 6 angle collision injuries at this intersection during 2004-2006.
- The VE Study recommended design would cause ROW impacts and damages to all four parcels at the intersection. The proposed design will have little or no impact to the commercial property (gas station) at the intersection.

Recommendation A-6: Minimize intersection realignments at Forest Parkway

The original concept increases the 70 degree signalized intersection to 80 degrees while increasing the number of turn lanes. The proposed recommendation retains the number of turn lanes but eliminates the improvements to the intersection angle as in A-5.

Potential savings is \$463,000

Response from Road Design: WILL IMPLEMENT, CONDITIONALLY

- The intersection of S.R. 42 at Forest Parkway/Ellenwood Road is a “right skewed” intersection with a high volume of traffic including a large percentage of trucks in a mostly industrialized area.
- There were 19 angle collision injuries at this intersection during 2004-2006.
- The VE Study recommended design would negatively impact both gas stations at the intersection and additional homes east of the intersection. The proposed design will save one of the gas stations at the intersection by widening towards a vacant lot.
- The skew will be lessened while providing the fewest number of ROW impacts to the adjacent properties.

Recommendation F-4: Use gravity retaining walls for 75% of the walls

The original design estimates that all the walls will be reinforced concrete although the exact location of the walls is unknown at this time. The estimate indicated over 2600 CY of Class A concrete (reinforced) for these walls. The idea is to use non-reinforced walls since the proposed heights will be below 10 feet in all potential areas allowing the use of gravity walls.

Potential savings is \$329,000

Response from Road Design: WILL IMPLEMENT

- Gravity retaining walls and side barriers walls will be used in areas permitted where justified to save right of way costs.

Recommendation G-1: Use 3 inch thick 5 feet wide asphalt sidewalks on a 6 inch GAB in lieu of concrete walks

This replacement of material for sidewalks is widely used in other parts of the country at a substantial savings in material cost and in speed of construction.

Potential savings is \$241,600

Response from Road Design: DO NOT IMPLEMENT

- The use of asphalt versus concrete raises issues with safety in regard to visibility. For the same reason concrete driveways are used to “break up” the appearance between the roadway and help to define the driveway to the driver’s eye, the use of concrete sidewalk helps to distinguish the boundary of the roadway. This is even more important in conjunction with the implementation of Recommendation A-1, which reduces the grassed area between the sidewalk and the back of curb from 6 feet to 2 feet.
- With rising oil prices, the cost differential between asphalt and concrete is or will be negligible.

Recommendation G-1.1: Use asphalt sidewalks on one side of the corridor and delete the sidewalk on the other side entirely

This option also reduces right of way.

Potential savings is \$1,116,000

Response from Road Design: WILL IMPLEMENT, CONDITIONALLY

- Sidewalk should be added in both the residential and commercially developed areas. This is more prevalent on the west side and southern end of the project. ADA guidelines will govern the location of sidewalk.
- The deletion of sidewalk does not affect the urban shoulder width and thereby has no effect to reduce right of way.

Recommendation G-2: Eliminate the 4 inch concrete median paving in the areas outside the left turn lanes

This concept replaces the paved median surfacing with topsoil and seeding for the wide areas of the median. Maintenance costs were included for the mowing of this area and the cost savings represent a net life cycle savings.

Proposed savings is \$251,100

Response from Road Design: WILL IMPLEMENT

- The 4-inch concrete median paving in the areas outside the left turn lanes will be eliminated and replaced with grassing or sod.

Recommendation H-1: Use a culvert instead of a bridge at Stream #5

The original concept allowed for 150 feet long x 86.5 feet wide bridge at this stream crossing dependant on the outcome of a hydraulic study. This suggestion is to use double 10 ft x 12 ft x 112 ft box culverts since they are more economical.

Proposed savings is \$841,000

Response from Road Design: WILL IMPLEMENT

- It is unlikely that a bridge will be required at Stream #5, however dependant on the hydraulic study, there is potential for implementation reversal for this recommendation.

BAS:JLM:FCM

Cc: Todd Long
Brent Story/Jason McCook/Fletcher Miller/Jacob Achorn – Road Design
Paul Liles/Bill Ingalsbe/Ron Grimes/Susan Beck/Shawn Williams – Bridge Design
Funmi Adesesan – OEL
James Magnus – GO Construction
Bryant Poole/Mickey McGee/Ernay Robinson/Loren Bartlett – District 7 Construction
Ken Werho/Grant Waldrop/Charity Belford – Traffic Safety and Design
General Files