

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** CSSTP-0007-00(692) Paulding/Cobb                      **OFFICE:** Engineering Services  
P.I. No.: 0007692  
SR 92 Widening SR120 to CR 473                      **DATE:** March 19, 2013

**FROM:** Lisa L. Myers, State Project Review Engineer *llm*

**TO:** Genetha Rice-Singleton, State Program Delivery Engineer  
Attn.: Jeremy Busby, P.E.

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

The VE Study for the above project was held January 28-31, 2013. Responses were received on March 18, 2013. Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. The Project Manager shall incorporate the VE alternatives recommended for implementation to the extent reasonable in the design of the project. Please note, if the implementation of a VE recommendation requires a Design Exception and/or Design Variance, the DE or DV must be requested separately.

ALT #	Description	Potential Savings/ LCC	Implement	Comments
R-1.0	Use 11' lane widths in lieu of 12' for all lanes on SR92.	\$678,000	No	R-1.1 was chosen to be implemented instead, due to the 5.0% 24-hour truck ratio and the 35,200 ADT volumes on this State Route. The additional one foot of width in the outside lanes will allow the trucks to maneuver more efficiently.
R-1.1	Use 11' wide inside lanes and 12' outside lanes on SR92.	\$339,000	Yes	This will be done.
R-2.0	Reduce median width from 20' to 16'.	\$205,594	No	GDOT's design policy manual (Section 6.8.2) requires a 20' raised median for arterials with design year ADT's greater than 24,000. There is no compelling operational benefit to reducing the median so adhering to the 20-ft median would eliminate the need to acquire a design variance.
R-3.0	Use 10' wide multi-use trail on west side of SR92 with 5' sidewalk on the east side.	\$638,485	Yes	This will be done.

R-3.1	Use 8' wide multi-use trails on both sides of SR92 in lieu of 10' multi-use trail. Reduce 5' grass strips in front and behind trails to 3' widths.	\$824,886	No	R-3.0 was chosen as the preferred alternative to be implemented.
R-3.2	Use asphalt in lieu of concrete for 10' wide multi-use trail.	\$300,800	Yes	This will be done.
R-5.0	Eliminate construction of the Antioch Road Spur and the associated roundabout with SR92.	\$1,320,415	Yes	This will be done.
R-5.1	Use 11' lane widths in lieu of 12' on Antioch Road Spur.	\$16,350	No	The relocation of Antioch Road has been eliminated by the implementation of VE Alternative R-5.0.
R-5.2	Eliminate paved shoulders on Antioch Road Spur.	\$32,800	No	The relocation of Antioch Road has been eliminated by the implementation of VE Alternative R-5.0.
R-5.3	Reduce the required R/W width from 120' to 80' on the Antioch Road Spur.	\$64,500	No	The relocation of Antioch Road has been eliminated by the implementation of VE Alternative R-5.0.
R-6.0	Reduce R/W widths to only include what is required for construction.	\$4,599,000	No	R-6.1 was chosen as the preferred alternative to be implemented.
R-6.1	Use a maximum 120' R/W corridor with easements as necessary beyond the R/W limits.	\$5,547,000	Yes	This will be done.
R-7.0	Use a signalized intersection at the Antioch Road Spur in lieu of the multi-lane roundabout.	\$199,000	No	The relocation of Antioch Road has been eliminated by the implementation of VE Alternative R-5.0.
R-8.0	Use a signalized intersection at Old Burnt Hickory Road in lieu of the multi-lane roundabout.	\$199,000	No	A feasibility study was performed at this intersection that confirmed a partial multi-lane roundabout as a feasible alternative. During off-peak hours, the roundabout reduces the likelihood of vehicles being required to stop during low volume conditions as required with signals. This provides both operational and environmental benefits. From 2006-2009, 9 crashes were reported for the existing two-way stop control. This includes 5 injury crashes that resulted in 14 injured persons. From a benefit/cost standpoint, the benefit associated with the reduction in severe/injury crashes outweighs the \$199,000 in construction cost savings by utilizing a signalized intersection.

R-9.0	Relocate roundabout at Due West Road (south) to the south to allow greater separation between roundabouts and minimize construction over Colonial Pipeline facilities located at approximate Station 706+00.	\$2,500,000	No	Roundabouts can maintain their operational performance even with closer spacing. This benefit is documented in NCHRP Report 672. Moving the Due West approach far enough to the south to realize a significant reduction would seriously impact the residences between Due West Road and SR92. Such impacts may require additional displacements to modular homes which impacting them may invite environmental justice concerns potentially adding to the required efforts to acquire more environmental permits.
R-9.1	Relocate intersection at Due West Road (south) to the south and change to a signalized intersection in lieu of a multi-lane roundabout to allow greater separation between intersections and minimize construction over Colonial Pipeline facilities.	\$2,674,000	No	Roundabouts can maintain their operational performance even with closer spacing. A feasibility study identified that the roundabout is the preferred alternative from an operations perspective based on lower delays and vehicle queue lengths than the signalized alternative. During off-peak hours, the roundabout reduces the likelihood of vehicles being required to stop during low volume conditions as required with signals. This provides both operational and environmental benefits. From 2006-2009, 44 total crashes were reported for the existing two-way stop control. This included 16 injury crashes that resulted in 23 injured persons. The crashes included 34 angle and 4 head-on collisions which are all correctable with implementation of a roundabout. From a benefit/cost standpoint, the benefit associated with the reduction in severe/injury crashes outweighs the \$199,000 in construction cost savings by utilizing a signalized intersection.
R-11.0	Reduce cut for new vertical alignment from Station 568+00 to Station 576+00 to meet 45 mph design speed.	\$49,592	Yes	This will be done.
R-13.0	Follow existing horizontal alignment from Station 720+00 to Station 740+00.	\$314,380	Yes	This will be done.
R-16.0	Relocate or eliminate pond locations where causing displacements.	\$555,000	Yes	This will be done.

R-18.0	Utilize grassing at roundabouts and eliminate landscaping.	\$174,920	No	Utilizing vertical landscape materials within the central island of the roundabout is important for providing drivers with visual cues of the approaching intersection. The vertical landscape elements create a "terminal vista" that helps drivers to recognize the roundabout and begin to slow down as they approach the intersection. This is further discussed in the landscaping chapter of NCHRP Report 672. A variety of different plant material options could be selected. These include slower growing varieties that require less frequent trimming and maintenance.
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The Office of Engineering Services concurs with the Project Manager's responses.

Approved:

  
Russell McMurry, PE, Chief Engineer

Date:

3/25/13

LLM/RLR/MJS  
Attachments

c:

- Joe Carpenter/Paul Liles
- Genetha Rice-Singleton/Albert Shelby/Jeremy Busby
- Frank Scott
- Marc Mastronardi
- Patrick Bowers/Bill Dungan
- Ken Werho
- Robert Reid Jr. /Matt Sanders

DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA

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INTERDEPARTMENT CORRESPONDENCE

FILE CSSTP-0007-00(692) OFFICE Program Delivery  
P.I. No. 0007692  
SR92 from SR120 to CR473/Cedarcrest Road DATE March 15, 2013

FROM Genetha Rice-Singleton, State Program Delivery Engineer *Albert Shelby for*

TO Lisa Myers, State Project Review Engineer

SUBJECT Value Engineering Study Request

The Office of Program Delivery submits the attached responses to the Value Engineering Report dated January 31, 2013 for the subject project. URS Corporation is the Engineer of Record

If there are any questions please contact the project manager, Jeremy Busby, at 404-631-1154.

*AVS*  
GRS:AVS:JTB

Attachments



**FILE:** CSSTP-0007-00(692)  
PI No.: 0007692  
SR 92 from SR 120 to CR 473/ Cedarcrest Road  
Cobb/Paulding Counties

**OFFICE:** Program Delivery

**DATE:** March 7, 2013

**FROM:** Sean Pharr, P.E.  
Project Manager

**TO:** Jeremy Busby, P.E.  
Project Manager  
Office of Program Delivery  
Georgia Department of Transportation

**SUBJECT: Value Engineering Study-Responses**

Reference is made to the recommendations that were contained in the Value Engineering Study Report dated January 31, 2013 for the above referenced project. Our responses and recommendations are as follows:

1. **Value Engineering Alternative No. R-1.0:** Use 11' Lane Widths in lieu of 12' for All Lanes on SR 92.

No, we will not implement the recommendation.

- Due to the 5.0% 24-hour truck ratio and the 35,200 ADT on this State Route we feel that providing the additional one foot of width in, at least, the outside lanes for trucks to maneuver offsets the cost savings of the narrower lane.

2. **Value Engineering Alternative No. R-1.1:** Use 11'-Wide Inside Lane and 12'-Wide Outside Lane on SR 92.

Yes, we will implement the recommendation.

3. **Value Engineering Alternative No. R-2.0:** Reduce Median Width from 20' to 16' Along SR 92.

No, we will not implement the recommendation.

- Although the AASHTO Green Book allows for a 16' median for an arterial, that value closely approaches the minimum allowable width of 15'. Where the conditions and right-of-way lend themselves to providing a wider median, as is the case with this project, it would be desirable to do so.

URS Corporation  
400 Northpark Town Center  
1000 Abernathy Road, NE  
Suite 900  
Atlanta, GA 30328  
Ph: 678-808-8800  
Fax: 678-808-8400  
www.urscorp.com

- GDOT's Design Policy Manual, Section 6.8.2 requires a 20-ft raised median for arterials with Design Year ADTs greater than 24,000. The manual also states that a 24-ft raised median is preferred where the wider median results in minimal additional impacts. Other than the slight cost savings associated with the 16-ft option, there is no compelling constraint, nor operational benefit, that would suggest a need to reduce the median width to 16 feet.
- Adhering to the 20-ft median policy would eliminate the need to acquire a design variance.

**4. Value Engineering Alternative No. R-3.0: Use 10' Wide Multi-use Trail on West Side Only and Include 5' Wide Sidewalk on East Side**

Yes, we will implement the recommendation.

**5. Value Engineering Alternative No. R-3.1: Use 8-foot Multi-use Trails on Both Sides of SR 92 in lieu of 10-foot Multi-use Trails.**

No, we will not implement the recommendation.

- AASHTO's Guide for the Development of Bicycle Facilities, 2012, states in Section 5.2.1 that, "The minimum paved width for a two-directional shared use path is 10 ft." However, it continues, "In very rare circumstances, a reduced width of 8 ft (2.4 m) may be used where the following conditions prevail:

"Bicycle traffic is expected to be low, even on peak days or during peak hours."

[Since this is a new facility, there is no historical data upon which to predict the future bicycle traffic. However, since the proposed facility includes, and is partly intended to connect, local neighborhoods and an elementary school, a greater than low volume of bicycle traffic is expected.]

"Pedestrian use of the facility is not expected to be more than occasional."

[Since this is a new facility, there is no historical data upon which to predict the future pedestrian traffic. However, since the proposed facility includes, and is partly intended to connect, local neighborhoods and an elementary school, a greater than occasional usage by pedestrians is expected.]

**6. Value Engineering Alternative No. R-3.2: Use Asphalt in lieu of Concrete for 10' Wide Multi-use Trail.**

Yes, we will implement the recommendation.



7. **Value Engineering Alternative No. R-5.0:** Eliminate Construction of the Antioch Road Spur and the Associated Roundabout with SR 92 and the Antioch Road Spur.

Yes, we will implement the recommendation.

8. **Value Engineering Alternative No. R-5.1:** Use 11' Lane Widths in lieu of 12' on Antioch Road Spur.

No, we will not implement the recommendation.

- The relocation of Antioch Road Spur has been eliminated per VE Comment R-5.0

9. **Value Engineering Alternative No. R-5.2:** Eliminate Paved Shoulders on Antioch Road Spur.

No, we will not implement the recommendation.

- The relocation of Antioch Road Spur has been eliminated per VE Comment R-5.0

10. **Value Engineering Alternative No. R-5.3:** Reduce the Required Right of Way Width from 120' to 80' on the new Antioch Road Spur.

No, we will not implement the recommendation.

- The relocation of Antioch Road Spur has been eliminated per VE Comment R-5.0

11. **Value Engineering Alternative No. R-6.0:** Reduce Right-of-Way Widths on SR 92 to Only that Required for Construction. .

No, we will not implement the recommendation.

- Alternative No. R-6.1 is the preferred alternative (see Item 12, below).

12. **Value Engineering Alternative No. R-6.1:** Use a Maximum 120' Right of Way Corridor Along SR 92 with Easements as Necessary Beyond the Right of Way Limits.

Yes, we will implement the recommendation.

13. **Value Engineering Alternative No. R-7.0:** Use Signalized Intersection at Antioch Road Spur in lieu of a Multi-lane Roundabout.

No, we will not implement the recommendation.

- The relocation of Antioch Road Spur has been eliminated per VE Comment R-5.0

14. **Value Engineering Alternative No. R-8.0:** Use Signalized Intersection at Old Burnt Hickory Road in lieu of a Multi-lane Roundabout.

No, we will not implement the recommendation.

- Based upon the GDOT Design Policy Manual, "GDOT considers roundabouts as the preferred safety and operational alternative for a wide range of roadway intersections."
- Following the GDOT Design Policy Manual, a feasibility study was performed that confirmed a partial multilane roundabout as a feasible alternative.

- The feasibility study identified that the roundabout and signal alternatives provide generally comparable performance with some movements operating better under signal control and others operating better under roundabout control during the peak hours. However, during the off-peak hours, the roundabout reduces the likelihood of vehicles being required to stop during low volume conditions as may be required at signals. This provides both operational and environmental (emissions and fuel consumption) benefits.
- Based upon NCHRP Report 572, a roundabout results in 48% fewer total crashes and 78% fewer severe (injury and fatal) crashes. From 2006 to 2009, 9 crashes were reported for the existing two-way stop control. This included 5 injury crashes that resulted in 14 injured persons. When considered from a benefit/cost standpoint, the benefit associated the reduction in severe/injury crashes outweighs the identified \$199,000 in construction cost savings by utilizing a signalized intersection. According to FHWA sources, GDOT has provided the following costs for use on prior projects: \$333,500 for an injury crash and \$5.8 million per fatal crash.

**15. Value Engineering Alternative No. R-9.0: Relocate Roundabout at Due West Road (South) to the South to Allow Greater Separation Between Roundabouts and Minimize Construction over Colonial Pipeline Facilities.**

No, we will not implement the recommendation.

- Roundabouts can maintain their operational performance even with closer spacings than typically is possible with signalized intersections. This benefit is documented in NCHRP Report 672 and there are many examples around the U.S. of closely spaced roundabouts in operation. Although shifting of the roundabout to the south may reduce some, but not all, work over the Colonial Pipeline facility, moving the Due West approach far enough to the south to realize a significant reduction would seriously impact the residences between existing Due West Road and SR 92. Such impacts would be rather extensive; in fact, additional displacements may be required. Inasmuch as these residences are in fact modular homes, impacting them may invite environmental justice concerns, potentially adding to the required efforts to acquire environmental permits for the project.

**16. Value Engineering Alternative No. R-9.1: Relocate Intersection at Due West Road (South) to the South and Change to a Signalized Intersection to Allow Greater Separation Between Intersections and Minimize Construction over Colonial Pipeline Facilities.**

No, we will not implement the recommendation.

- See discussion for Value Engineering Alternative No. R-9.0, under Item 15, above regarding intersection separation.
- Based upon the GDOT Design Policy Manual, "GDOT considers roundabouts as the preferred safety and operational alternative for a wide range of roadway intersections." Following the GDOT Design Policy Manual, a feasibility study was performed that confirmed a partial multilane roundabout as a feasible alternative for Due West (South).
- The feasibility study identified that the roundabout is the preferred alternative from an operations perspective based upon lower delays and vehicle queue lengths than the signalized alternative. During the off-peak hours, the roundabout also reduces the likelihood of vehicles being required to stop during low volume conditions as may be required at signals. This provides both operational and environmental (emissions and fuel consumption) benefits.
- Based upon NCHRP Report 572, a roundabout results in 48% fewer total crashes and 78% fewer severe (injury and fatal) crashes. From 2006 to 2009, 44 total crashes were reported

for the existing two-way stop control. This included 16 injury crashes that resulted in 23 injured persons. The crashes included 34 angle and 4 head-on collisions which are all correctable with implementation of a roundabout. These crash types would still be possible under signalized control. When considered from a benefit/cost standpoint, the benefit associated the reduction in severe/injury crashes outweighs the identified \$199,000 in construction cost savings by utilizing a signalized intersection. According to FHWA sources, GDOT has provided the following costs for use on prior projects: \$333,500 for an injury crash and \$5.8 million per fatal crash.

**17. Value Engineering Alternative No. R-11.0: Reduce Cut for New Vertical Alignment from Sta 568+00 to Sta 576+00 to Meet 45 MPH Design Speed .**

Yes, we will implement the recommendation.

**18. Value Engineering Alternative No. R-13.0: Follow Existing Horizontal Alignment from Sta 720+00 to Sta 740+00.**

Yes, we will implement the recommendation.

**19. Value Engineering Alternative No. R-16.0: Relocate or Eliminate Pond Locations Where Causing Displacements.**

Yes, we will implement the recommendation.

**20. Value Engineering Alternative No. R-18.0: Utilize Grassing at Roundabouts and Eliminate Landscaping.**

No, we will not implement the recommendation.

- Utilizing vertical landscape materials within the central island of the roundabout is important for providing drivers with visual cues of the approaching intersection. The vertical landscape elements create a "terminal vista" that helps drivers to recognize the roundabout and begin to slow down as they approach the intersection. It also may help with operational performance by focusing drivers attention on traffic to the left of their entry where they must yield rather than having uninterrupted views of vehicles on all approaches. This is further discussed in the landscaping chapter of NCHRP Report 672.
- A variety of different plant material options could be selected. These include slower growing varieties that require less frequent trimming and maintenance.



PRECONSTRUCTION STATUS REPORT FOR PI:0007692

SR 92 FM SR 120 TO CR 473/CEDARCREST ROAD - SEGMENT 3 & 4

MGMT LET DATE : 07/15/2017  
 MGMT ROW DATE : 05/15/2014  
 BASELINE LET DATE : 07/14/2017  
 SCHED LET DATE : 2/5/2018  
 WHO LETS? : GDOT Let  
 LET WITH :

PRIORITY CODE:  
 DOT DIST: 6, 7  
 CONG. DIST: 14, 11  
 BIKE: N  
 MEASURE: E  
 NEEDS SCORE: 6  
 BRIDGE SUFF:

PROJ ID : 0007692  
 COUNTY : Cobb, Paulding  
 LENGTH (MI) : 8.44  
 PROJ NO. : CSSTP-0007-00(692)  
 PROJ MGR : Busby, Jeremy  
 AOH Initials : AVS  
 OFFICE : Program Delivery  
 CONSULTANT : Consultant Design (DOT contract)  
 SPONSOR : GDOT  
 DESIGN FIRM : URS Corporation

BASE START	BASE FINISH	LATE START	LATE FINISH	TASKS	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS				Date Auth		
								Activity	Approved	Proposed	Cost		Fund	Status
10/7/2011	10/7/2011	5/31/2013	7/12/2013	Concept Development	2/12/2010		0	PE	2007	2007	1,763,330.64	L240	AUTHORIZED	5/16/2007
10/21/2011	10/21/2011	6/14/2013	6/14/2013	Concept Meeting			0	ROW	2015	2018	19,002,334.70	M240	PRECST	
10/24/2011	11/18/2011	6/17/2013	7/12/2013	PM Submit Concept Report			0	UTL	LRI	LRI	8,086,808.99	M240	PRECST	
11/18/2011	11/18/2011	7/12/2013	7/12/2013	Resective Preconstruction Concept Approval			0	CST	LRI	LRI	33,173,377.71	M240	PRECST	
8/15/2011	9/28/2011			Management Concept Approval Complete			100							
12/5/2011	12/5/2011	7/29/2013	3/25/2013	Value Engineering Study	10/18/2012	3/25/2013	100							
11/21/2011	11/8/2013	7/29/2013	3/21/2014	Public Information Open House Held	1/31/2011		10							
6/24/2013	8/16/2013	11/4/2013	12/27/2013	Environmental Approval	11/22/2010	4/29/2011	100							
1/9/2012	1/27/2012			Pub Hear Held/Comm Resp (EA/FONSI, GEPA)	1/27/2012	11/1/2012	100							
1/31/2012	3/5/2012			Mapping			100							
3/20/2012	1/21/2013	7/30/2013	6/2/2014	Field Surveys/SDE			0							
6/26/2012	1/14/2013	11/5/2013	5/26/2014	Preliminary Plans			0							
11/21/2011	3/30/2012	7/15/2013	11/22/2013	Preliminary Bridge Design			0							
2/10/2017	5/25/2017	9/4/2017	12/15/2017	Underground Storage Tanks			0							
12/9/2013	12/10/2013	7/1/2014	7/2/2014	404 Permit Obtainment			0							
12/11/2013	2/4/2014	7/3/2014	8/27/2014	FFPR Inspection			0							
2/5/2014	3/10/2014	8/28/2014	9/30/2014	R/W Plans Preparation			0							
1/30/2014	2/3/2014	8/22/2014	8/26/2014	R/W Plans Final Approval			0							
4/8/2014	5/5/2014	10/29/2014	11/25/2014	L & D Approval			0							
8/12/2014	8/25/2014	3/4/2015	3/17/2015	R/W Authorization			0							
3/20/2012	3/21/2013	7/30/2013	7/31/2014	Stake R/W			0							
1/15/2013	12/12/2013	5/27/2014	4/23/2015	Soil Survey			0							
2/4/2014	10/18/2016	8/27/2014	5/10/2017	Bridge Foundation Investigation			0							
3/8/2014	10/8/2015	4/24/2015	11/3/2016	Final Design			0							
2/8/2017	2/9/2017	8/31/2017	9/1/2017	Final Bridge Plans Preparation			0							
3/3/2017	3/23/2017	9/25/2017	10/13/2017	FFPR Inspection			0							
				Submit FFPR Responses (OES)			0							

Activity	Amount	Date	Activity	Cost	Fund	STIP AMOUNTS	
						Cost Estimate Amount	Activity
PE	\$1,763,330.64	10/3/2012	PE	0.00	L240		
ROW	\$17,211,000.00	10/3/2012	ROW	10,824,321.60	M240		
UTL	\$6,634,000.00	10/3/2012	UTL	0.00	M240		
CST	\$27,213,724.00	10/3/2012	CST	0.00	M240		

**Bridge:** BRIDGE REQUIRED (bridge culvert)  
**Design:** URS | TO#1 thru Concept | expires 5-10-13  
**EIS:** DEA \ Non-Appvd \ OnSchedule - ROW FY 2014 \ Morrell (08.30.12)  
**LGPA:** NOTIFICATION LETTER SENT TO COBB & PAULDING 9-12-06.  
**Programming:** #1 2-2012/#2 6-2012(CONFIRMED EXEMPT PER FHWA 9-7-2012)  
**Traffic Op:** In-House Concept  
**Utility:** SUE  
**EMG:** RECST/REHAB (WIDENING)  
**Engr Services:** VE Letter Approved 3/25/13.

**District Comments:**  
 Northern project limits shifted to south to Old Burnt Hickory Rd  
 Need to coord Log Ter on south end - SR120 not LT  
 Archeo studies at battlefield underway

[JTB 1-18-13] Need archeo to determine extent of realignment (trout streams, battlefield). Working on new schedule. Concept activities underway. VE scheduled. PAR & LT to be submitted in January.

Acquired by: DOT  
 Acquisition MGR:  
 R/W Cert Date:

Cond. Filed:  
 Relocations:  
 Acquired:

Total Parcel in ROW System: 222  
 Options - Pending:  
 Condemnations- Pend:

DEEDS CT: