

**DEPARTMENT OF TRANSPORTATION  
STATE OF GEORGIA**

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**INTERDEPARTMENT CORRESPONDENCE**

**FILE:** CSNHS-0006-00(043), Cherokee County      **OFFICE:** Engineering Services  
P.I. No.: 0006043  
I-575 @ Rope Mill Connector      **DATE:** February 17, 2009

**FROM:** Ronald E. Wishon, Acting Project Review Engineer *REW*

**TO:** Darryl D. VanMeter, P.E., Acting Innovative Program Delivery Administrator  
Attention: Greg Wiggins, Project Manager

**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 No.	Description	Savings PW & LCC	Implement	Comments
<b>ROADWAY (RD)</b>				
A-3	Adjust the Ridgewalk Parkway typical section for the roadway area between the new Interchange ramp intersections.	\$37,000	Yes	This should be done.
A-4	Evaluate/modify the relocated Old Rope Mill Road typical section.	\$607,000	Yes	This should be done.
A-4A	Reduce the urban shoulder width from 14 feet to 12 feet on relocated Old Rope Mill Rd.	\$139,000	No	Does not apply since A-4 will be implemented.
B-3	Eliminate the MSE wall(s) on relocated Old Rope Mill Road.	\$160,000	No	Fill slopes will conflict with residential lots at cul-de-sac.

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ALT No.	Description	Savings PW & LCC	Implement	Comments
<b>ROADWAY (RD)</b>				
B-6	Eliminate the 8-foot outward shift of the southbound interchange "on" and "off" Ramp Gore areas.	\$1,735,000	No	The current proposal does not preclude accommodating HOV in median. Since project is Design Build, it could still be implemented in the future.
E-2	Reduce the lane widths from 12 feet to 11 feet on relocated Old Rope Mill Road.	\$103,000	No	Per Gerald M. Ross based on truck traffic.
F-2	Use full depth asphalt shoulders in lieu of concrete shoulders on the ramps.	\$693,000	No	The cost savings realized through this alternative would ultimately be offset by the yearly maintenance costs. The GDOT Pavement Design Manual recommends using concrete pavement in shoulders next to concrete paved ramps.
F-1	Change the outside 10-foot concrete shoulders to 6.5-foot concrete shoulders on the ramps.	\$243,000	No	The originally proposed shoulder width on the ramps will remain at 4-feet inside and 10- feet outside for a total of 14-feet.
DS	Eliminate the truck climbing lane on I-575 southbound.	Design Suggestion	Yes	This should be done.

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ALT No.	Description	Savings PW & LCC	Implement	Comments
<b>BRIDGE (B)</b>				
D-3A	Change the bridge type for the new parallel structure and reduce the bridge span lengths by building MSE Wrap Around Walls.	Proposed= \$499,000  Actual= \$240,439	Yes	Alternate design to be done. Design firm's alternate still being reviewed by the Bridge Office.
D-3B	Change the bridge type for the new parallel structure but maintain the same span length as the existing bridge.	\$256,000	No	Savings already included in D-3A.
D-5	Install standard pedestrian fencing in lieu of standard bridge rail across the bridge.	\$25,000	Yes	This should be done.

A meeting was held on January 30, 2009 and Greg Wiggins, with Innovative Program Delivery and Erica Appleby, Rebecca Collins, Sam Deeb, Theodore Deligianniois, Gregory Teague, with the Design Consultants and Ron Wishon and Douglas Fadool with Engineering Services were in attendance. Additional information was provided by the Project Manager on February 5<sup>th</sup> & 17<sup>th</sup>, 2009.

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

Approved: *Gerald M. Ross* Date: 3/23/09  
Gerald M. Ross, P. E., Chief Engineer **Recommended for Approval**

*Richard Wayne Febra* 3/19/2009  
**DATE**

Approved: *Richard Wayne Febra* Date: 3/23/2009  
*for* Rodney Barry, P.E., FHWA Division Administrator

REW / DMF

Attachments

c: R. Wayne Fedora  
Christy Poon-Atkins  
Carolyn Penry  
Genetha Rice Singleton  
Darryl VanMeter  
Greg Wiggins  
Paul Liles  
Bill Ingalsbe  
Bill Duvall  
Vince Wilson  
Laura Rish  
James Magnus  
Patrick Bowers  
Kenny Beckworth  
Ken Werho  
Lisa Myers  
Rishee Shah  
Chad Skogsberg  
General Files

# Value Engineering Study Report RESPONSE

I-575 @ RIDGEWALK PARKWAY

Project No. CSNHS-0006-00(043) PI#0006043

Cherokee County

## GRADING (EMBANKMENT/EXCAVATION) (A)

### Alternative A-3

**Description:** *Adjust the Ridgewalk Parkway typical section for the roadway area between the new Interchange ramp intersections.*

The designed roadway typical section matches the typical section for the proposed combined new/old bridge. The proposed combination bridge typical section provides dual 10-foot sidewalks, dual 6-foot shoulders, two 12-foot travel lanes, and an 18-foot median.

It is recommended that the roadway typical section (between the Interchange ramp intersections) be change to a four-lane roadway to match the VE recommended new bridge typical section. Under the VE proposal, the new bridge typical section will be two 5 1/2 –foot sidewalks, two 2-foot shoulders on both sides of the longitudinal joint, a 4-foot raised median, and four 12-foot travel lanes. The approach roadway typical section must match the typical bridge section. Under all bridge scenarios, there is adequate room for a four-lane roadway.

**Cost Savings:** (\$37,000)

**Response:** Agree. This alternative will be further explored and implemented so long as it does not conflict with logical termini within the environmental document. Additional research will be performed to ensure this does not adversely affect the environmental process.

**The recommendation of the Office of Innovative Program Delivery is: To implement this request.**

### Alternative A-4

**Description:** *Evaluate/modify the relocated Old Rope Mill Road typical section.*

The proposed relocated Old Rope Mill Road roadway cross section includes two 12-foot travel lanes, a 14-foot center turn lane, and curb and gutter with 14-foot shoulders (including 5 foot sidewalks) on each side.

It is recommended that the center left turn lane be provided only at the Ridgewalk Parkway intersection and that it be deleted from the remainder of the side road's length. Existing Old Rope Mill Road is a two lane paved dead end road providing access to a small local park at the Little River. The existing road includes curb and gutter on one side and does not have any sidewalks. Deleting the center turn lane is warranted since the road will never be lengthened and there will be limited opportunity for opposing traffic to block left turn movements.

**Cost Savings:** \$607,000

**Response:** Agree. The 14-ft center left turn lane will be eliminated from Old Rope Mill Road however adequate turn lanes at the intersection of Ridgewalk Parkway will remain. This alternative will also reduce the Right of Way width on Old Rope Mill Road from 70-ft to 60-ft. The minimum required Right of Way width for a non-residential area is 60-ft per City of Woodstock standards.

**The recommendation of the Office of Innovative Program Delivery is: To implement this request.**

#### **Alternative A-4A**

**Description:** *Reduce the urban shoulder width from 14 feet to 12 feet on relocated Old Rope Mill Road.*

The proposed relocated Old Rope Mill Road roadway cross section includes two 12-foot travel lanes, a 14-foot center turn lane, and curb and gutter with 14-foot shoulders (including 5 foot sidewalks) on each side.

It is recommended that the 14-foot shoulder width be reduced to 12 feet. Reducing the shoulder width from 14 feet to 12 feet would reduce the amount of R/W requires to construct the project. A 12-foot wide shoulder would provide sufficient space for a sidewalk and open area between the sidewalk and curb and gutter section.

**Cost Savings:** \$139,000

**Response:** Following implementation of Alternative A-4, Right of Way on this road would already be reduced to 60-ft. The minimum required Right of Way width for a non-residential area is 60-ft per City of Woodstock standards. It is preferred that the Right of Way acquisition not be reduced any less than 60-ft.; therefore Right of Way cost savings would no longer apply. This reduction in shoulder width would also have an adverse impact on utilities for this currently zoned Commercial/ Industrial area.

**The recommendation of the Office of Innovative Program Delivery is: Not to implement this request.**

#### **MSE WALLS (B)**

#### **Alternative B-3**

**Description:** *Eliminate the MSE wall(s) on relocated Old Rope Mill Road.*

The original design provides for a narrow roadway embankment just north of its intersection with Ridgewalk Parkway by constructing MSE walls to reduce taking additional R/W.

It is recommended that the MSE walls be eliminated and that additional R/W be acquired to provide room to widen the embankment and construct standard cut/fill slopes. The relocation of Old Rope Mill Road will be constructed in an entirely new location. The purchase of the small amount of additional R/W and extra embankment would cost less than the cost of the MSE retaining walls.

**Cost Savings:** \$160,000

**Response:** We feel that the proposed savings predicted for this alternative do not factor in the recently constructed cul-de-sac and residential lots that are along the eastern proposed

right of way line. This alternative is proposing the placement of fill into existing residential lots. The placement of fill in the impacted lots would end up requiring additional parcel takes as a result of the remainder of these lots becoming unusable for residential purposes. This alternative would also require relocation of the cul-de-sac further back along the subdivision roadway, ultimately impacting or displacing additional residential lots. These impacts would require more Right of Way cost than what were estimated, therefore eliminating the potential cost savings.

The additional impact to residential parcels could also affect the environmental process, thereby delaying the project schedule.

**The recommendation of the Office of Innovative Program Delivery is: Not to implement this request.**

### **Alternative B-6**

**Description:** *Eliminate the 8-Foot Outward Shift of the Southbound Interchange On and Off Ramp Gore Areas.*

The current design shifts the ramp gores away from the main travel lane 8 feet to provide room for a future HOV lane concept in the median.

It is suggested that consideration be given to bringing the ramp gores in 8 feet toward the existing Interstate outside lane on the west of the Interstate. This concept would shift the west side ramps 8 feet closer to the edge of the mainline pavement and reduce/eliminate several MSE walls south of the Interchange bridge. It would also reduce some of the R/W required at the ball field and reduce the height of MSE wall.

**Cost Savings:** \$1,735,000

**Response:** We agree to conduct further research on the implementation of this alternative. The current layout was designed to eliminate any "throw-away" or reconstruction of the elements in this project due to the future interstate widening proposed in the Northwest Corridor Project. Throughout our design process, we have maintained close coordination between these two projects. Should the NW Corridor project go forward in its current design, the cost savings calculated for this alternative would be greatly exceeded by the removal and reconstruction of the offset walls and paving that would be required as part of that project. Although, as the NW Corridor project continues to develop, we will evaluate coordination of the two projects in order to maintain the maximum cost savings for both projects.

Implementation of this alternative will be subject to further coordination with the Northwest Corridor Project.

**The recommendation of the Office of Innovative Program Delivery is: Not to implement this request at this time.**

### **BRIDGE (D)**

#### **Alternative D-3A**

**Description:** *Change the bridge type for the new parallel structure and reduce the bridge span lengths by building MSE Wrap Around Walls.*

The original design concept is to widen the existing 35.25-foot by 328-foot post-tensioned concrete box bridge by building a 39.58-foot by 328-foot post-tensioned concrete box bridge adjacent to it and tying them together. The total 74.42-foot width would carry two 10-foot sidewalks, two 6-foot shoulders, two 12-foot lanes, a 16-foot median, and two 1.08-foot parapet walls.

It is recommended that a new 38.08-foot by 239-foot PSC Beam Bridge with wrap around MSE walls be built adjacent to existing bridge. The new bridge would be separated by a 1-inch longitudinal joint to control differential movement of the superstructures. This concept would accommodate two 5.5-foot sidewalks, two 2-foot shoulders on both sides of longitudinal joint, a 4-foot raised median, four 12-foot travel lanes, and two 1.08-foot parapet walls. It eliminates extensive falsework and vertical height restrictions that would be required to construct the concrete box bridge. It would reduce the bridge length, result in a shallower section, and provide additional vertical clearance allowing for future Interstate widened to the outside. It would also be easier and quicker to construct, and result in significant cost savings to the project.

Note: The \$114.09 / SF unit price estimate for the 328-foot long post tensioned concrete box bridge appears extremely low. Using a \$140.00 / SF unit price (similar to a plate girder bridge) would increase the cost of the concrete box bridge by \$365,000 resulting in even more savings for the VE concept.

**Cost Savings:** \$499,000

**Response:** Clear Zone: Per the AASHTO Roadside Design Guide, 3<sup>rd</sup> Edition 2006, I-575 clear zone under the bridge should be 30-ft from the edge of travel lane. This alternative reduces the Bridge length from 328-ft to 239-ft, which brings in the bridge ends by 44.5-ft on each side. Implementation of this alternative would create approximately 48-ft of clear zone on the west side and approximately 40-ft of clear zone on the east side of I-575 in the interstate's current lane configuration.

This idea preserves the use of the existing structure. It is expected that such cases that do not require removal of the existing structure would be generally more cost-effective. Money is not spent for removal of the bridge or new material where the old bridge used to be. However, there are several reasons that this VE idea is not structurally and aesthetically viable.

Idea D-3A requires a MSE wall wrapped around the widened section of the bridge. The problems associated with how the wall influences the existing bridge and end rolls are:

1. The turn backs of the MSE walls that are wrapped around the bridge will conflict with the existing wingwalls, endposts, and end bents, as the MSE walls taper at a 2:1 rate upward toward the end of the bridge.
  - a. Expected removal of these existing bridge components as well as potentially unexpected removal of other bridge components would add to the cost of the project as well as undermine the existing design of the end bents.
2. The piles at the exterior corners of the end bents are battered at 2.5:12 transversely. Since the distance from the edge of the existing deck to the proposed wall is only 5½" and the batter horizontal distance is approximately 2'-5" min. the MSE wall will conflict with the end bent pile. It will conflict with the battered piles since the pile batter is perpendicular to the wall. An existing End Bent Detail has been added to the appendix of this document.

This VE suggestion also implements two different types of superstructure in the bridge: a bulb-tee beam design tied to the existing box. In this case the deck would have to remain level and be separated by only a 1" joint. The differential deflections that would occur over time between the different structure types would cause a separation in the deck, such as a step, which is a serviceability concern.

Upon further review of the existing bridge design, the following items have been discovered concerning the use of the existing bridge in the roadway widening:

1. **Primarily, the existing bridge is designed for a lower load case.** All new structures are designed using LFD or LRFD and are rated for the HS-20 or HL-93 load cases, respectively. The existing bridge is underrated because it was designed for the HS-15 load case, which produces less live load on the bridge than the current design criteria for an interchange.
2. The existing bridge overhangs are designed to carry the standard Jersey barrier as an exterior dead load only. During construction, this barrier would be removed from both sides and replaced with a 10-ft sidewalk, parapet, and fence on one side. The existing bridge was not designed to hold the dead loads from these new components or the new sidewalk live load. The additional dead loads, pedestrian code loads, and the lower live loadings will definitely require the existing bridge to be drastically modified.

Although Idea D-3A is not recommended for the Ridgewalk Pkwy widening, it leads to a feasible new alternative suggestion, which is outlined below. A new, shorter bulb-tee beam bridge with removal of the existing bridge and use of MSE walls is the most reasonable cost-effective option for this project. It will require less construction time and avoid settlement and maintenance issues of joints and post tensioning. Therefore, this \$1,903,628 alternative is recommended for design.

#### **New Alternative**

Bridge type: Prestressed beam with MSE walls

Bridge removal: YES

Span 1 length: 110'-6"

Span 2 length: 110'-6"

Total length: 221'-0"

The existing post-tensioned box girder bridge is removed. A new bridge, 74'-5" wide, is constructed. The overall bridge length is significantly shorter because MSE walls are used to hold the soil in place at bents 1 and 3. The bridge consists of precast, prestressed bulb-tee beams. Both spans are constructed from *ten* 54" bulb-tees spaced at 7'-6" ft c-c. This alternative is similar to Idea D-3A. The difference is that in D-3A, only the widened portion of the bridge is built with bulb-tees and wrapped with MSE walls. In this alternative the existing bridge is removed and the entire new bridge is built with bulb-tees and wrapped with MSE walls. A preliminary layout has been provided in the appendix of this document.

New COST: \$1,686,998 (New Alternative Cost Estimate is provided in the Appendix)

New Cost Savings: \$282,002

**The recommendation of the Office of Innovative Program Delivery is: Further investigate the alternative design as a way to achieve cost savings and improve serviceability of the overall bridge structure.**

### **Alternative D-3B: Alternative to D-3A**

**Description:** *Change the bridge type for the new parallel structure but maintain the same span length as the existing bridge.*

The original design concept is to widen the existing 35.25-foot by 328-foot post-tensioned concrete box bridge by building a 39.58-foot by 328-foot post-tensioned concrete box adjacent to it and tying them together. The total 74.42-foot width would carry two 10-foot sidewalks, two 6-foot shoulders, two 12-foot lanes, a 16-foot median, and two 1.08-foot parapet walls.

It is recommended that a 38.08-foot by 328-foot plate girder bridge be built adjacent to existing concrete box bridge. Utilizing plate girders allows the new bridge to have the same span lengths as the existing concrete box bridge. The new bridge would be separated by a 1-inch longitudinal joint to control differential movement. The dual bridges would accommodate two 5.5-foot sidewalks, two 2-foot shoulders on both sides of longitudinal joint, a 4-foot raised median, four 12-foot travel lanes, and two 1.08-foot parapet walls. This concept eliminates extensive falsework and vertical height restrictions that would be required to construct the concrete box bridge. It maintains the same horizontal opening as the existing box bridge. The plate girder bridge would be easier and quicker to construct, and result in cost savings to the project.

Note: The \$114.09 / SF unit price estimate for the 328-foot long post tensioned concrete box bridge appears extremely low. Using a \$140.00 / SF unit price (similar to a plate girder bridge) would increase the cost of the concrete box bridge by \$365,000 resulting in a net savings for the VE concept.

**Cost Savings:** (\$256,000)

**Response:** This idea preserves the use of the existing structure. It is expected that such cases that do not require removal of the existing structure would be generally more cost-effective. Money is not spent for removal of the bridge or new material where the old bridge used to be. However, there are several reasons that this VE idea is not structurally and aesthetically viable.

This VE suggestion implements two different types of superstructure in the bridge: a plate girder design tied to the existing box. In this case the deck would have to remain level and be separated by only a 1" joint. The differential deflections that would occur over time between the different structure types would cause a separation in the deck, such as a step, which is a serviceability concern.

Upon further review of the existing bridge design, the following items have been discovered concerning the use of the existing bridge in the roadway widening:

1. **Primarily, the existing bridge is designed for a lower load case.** All new structures are designed using LFD or LRFD and are rated for the HS-20 or HL-93 load cases, respectively. The existing bridge is underrated because it was designed for the HS-15 load case, which produces less live load on the bridge than the current design criteria for an interchange.
2. The existing bridge overhangs are designed to carry the standard Jersey barrier as an exterior dead load only. During construction, this barrier would be removed from both sides and replaced with a 10-ft sidewalk, parapet, and fence on one side. The existing bridge was not designed to hold the dead loads from these new

components or the new sidewalk live load. The additional dead loads, pedestrian code loads, and the lower live loadings will definitely require the existing bridge to be drastically modified.

This viability of this alternative is also questioned by the added significance of higher cost due to the use of structural steel. The cost nearly doubles, even after adding only 39' -2" of bridge width, resulting in a net increase of bridge cost compared to the initial proposal.

Although Idea D-3B is not recommended for the Ridgewalk Pkwy widening, it leads to a feasible new alternative suggestion, which is outlined below. A new, shorter bulb-tee beam bridge with removal of the existing bridge and use of MSE walls is the most reasonable cost-effective option for this project. It will require less construction time and avoid settlement and maintenance issues of joints and post tensioning. Therefore, this \$1,903,628 alternative is recommended for design.

#### **New Alternative**

Bridge type: Prestressed beam with MSE walls

Bridge removal: YES

Span 1 length: 110'-6"

Span 2 length: 110'-6"

Total length: 221'-0"

The existing post-tensioned box girder bridge is removed. A new bridge, 74'-5" wide, is constructed. The overall bridge length is significantly shorter because MSE walls are used to hold the soil in place at bents 1 and 3. The bridge consists of precast, prestressed bulb-tee beams. Both spans are constructed from ten 54" bulb-tees spaced at 7' -6" ft c-c. This alternative is similar to Idea D-3A. The difference is that in D-3A, only the widened portion of the bridge is built with bulb-tees and wrapped with MSE walls. In this alternative the existing bridge is removed and the entire new bridge is built with bulb-tees and wrapped with MSE walls. A preliminary layout has been provided in the appendix of this document.

New COST: \$1,686,998 (New Alternative Cost Estimate is provided in the Appendix)

New Cost Savings: \$282,002

**The recommendation of the Office of Innovative Program Delivery is: Further investigate the alternative design as a way to achieve cost savings and improve serviceability of the overall bridge structure.**

#### **Alternative D-5**

##### **Description:**

*Install standard pedestrian fencing in-lieu-of standard bridge rail across the bridge.*

The existing bridge crossing I-575 does not have any bridge rail or fencing. The current design proposes to install a standard aluminum bridge rail across both the new and existing bridges.

It is recommended that a standard 6-foot 9-inch pedestrian fence be installed across the bridge in-lieu-of the proposed aluminum bridge rail. The bridges are being designed with sidewalks on both sides of the ultimate structure. Installing pedestrian fencing on these bridges will improve safety over that provided by standard bridge rail. The fencing will protect pedestrians walking on the bridge and the traveling public using the Interstate roadway below.

**Cost Savings:** \$25,000

**Response:** Agree. Standard pedestrian fencing will be proposed across the bridge in lieu of standard bridge rail.

**The recommendation of the Office of Innovative Program Delivery is: To implement this request.**

#### ASPHALT - SUPERPAVE (E)

##### Alternative E-2

**Description:** *Reduce the lane widths from 12 feet to 11 feet on relocated Old Rope Mill Road.*

The current design provides for 12-foot lanes throughout the length of Old Rope Mill Road.

It is recommended that the travel lane widths on relocated Old Rope Mill Road be reduced from 12 feet to 11 feet. Since the road is only three-quarters mile long and cannot be extended, traffic volumes and speeds will always be low and 11-foot lanes would be sufficient.

**Cost Savings:** \$103,000

**Response:** Agree. Although this area is currently zoned Commercial/Industrial, the truck percentage is very low (3%). Lane widths on relocated Old Rope Mill Road will be reduced from 12-ft to 11-ft.

**The recommendation of the Office of Innovative Program Delivery is: To implement this request.**

#### CONCRETE PAVEMENT (F)

##### Alternative F-2

**Description:** *Use full depth asphalt shoulders in-lieu-of concrete shoulders on the ramps.*

The original plans propose to use concrete shoulders on the Interchange ramps. The outside shoulder would be 10-foot wide and the inside shoulder would be 4-foot wide.

It is recommended that full depth asphalt shoulders be used in-lieu-of concrete shoulders on the ramps. It is further recommended that the width of the paved shoulders be 6 ½ feet on the outside and 4 feet on the inside. The use of full depth asphalt shoulders would be consistent with the existing section of Interstate through this area. Projected truck traffic on the Interstate is 10 percent and only 3 percent on the proposed Interchange ramps. This concept would be consistent with the standard dimensions for paved shoulders on other ramps in the area. It would reduce cost and simplify construction.

**Cost Savings:** \$693,000

**Response:** Disagree. We believe it is of greater overall value to maintain the currently designed concrete ramp shoulders with an inside width of 4 ft and an outside width of 10 ft. AASHTO Design Guide recommends that the width of the shoulder be 10 ft and preferable 12 ft wide for high speed highways (page 314 – See Appendix). For ramps AASHTO recommends that the total width of shoulder, left and right, sum to a total

width of 10 to 12 ft, with the right shoulder having a width of 8 to 10 ft (page 838 – See Appendix). The GDOT Design Policy Manual states that the paved shoulder width for a rural freeway is to be 12 ft (table 6.4 – See Appendix). The same manual addresses the width of ramp shoulders as “... should be a full-depth, full width paved shoulder.” (Section 6.2.2.). The GDOT Pavement Design Manual, Draft, addresses the type of pavement and width of shoulders as well. Pages 10-3, 11-41, 11-44, 11-45, & figure 11.8 of the Pavement Manual confirm that the typical section and type of pavement should be designed as originally proposed. Page 11-44 states:

“In the recent past the Office of Maintenance had taken the lead in reconstructing Interstate Ramps statewide excluding those in urban areas. Their focus was to address the continuing maintenance of ramps and ramp shoulders. The Interstate ramps were asphalt or concrete but all the shoulders were asphalt. Typically the ramp shoulders were 6 to 8 feet wide and 3 3-1/2 inches thick over GAB or cement treated base. These ramp shoulders were, over time subjected to repeated truck loadings on a regular basis. These shoulders deteriorated over time. It was obvious that these shoulders were not designed for repetitive truck loadings. The Maintenance Office has reconstructed a substantial percent of the Interstate ramps statewide. The Maintenance Office decided that reconstruction of the ramps as PCCP would minimize their continuing maintenance efforts on this part of the Interstate system. “

All referenced material can be found in the appendix of this report.

With respect to the current usage of reduced width shoulders, please refer to recently constructed ramps on Interstate 75 at Hwy 92 and Glade Road. The Glade Road ramps are 10 ft wide on the right and 6.5 ft wide on the left and constructed of Portland Concrete. They have been completed about 1 year and show no signs of rutting from shoulder usage for parking/travel way. However, the recently completed ramps on Highway 92 are of a reduced width of 6 ft on the right side of the ramp. Also the existing ramps at Wade Green Road have the same reduced width of right shoulder. As can be seen in the attached photos the shoulder of at both locations show ruts in the non-paved shoulder areas, as motorist use the shoulders for travel and parking. The use of full width shoulders should not be reduced. The reasons as presented in the Pavement Design Guide are still valid today and the recent installation of a reduced width shoulder at Highway 92 reinforce the reasons to continue the use of a full width paved shoulder. All referenced photography is included in the Appendix of this report.

Mr. Willy Webb, GDOT Office of Maintenance, was contacted on 12/18/2008 regarding the use of Portland Concrete vs. Asphaltic Concrete for the ramps and the paved shoulders for the ramps. He is very aware that some people at GDOT are looking at reduced the width of the shoulders and the use of Asphalt for the shoulders. They have asked him to do research and study the use of narrower shoulder and the use of asphalt. He is/will be working on the research to confirm their current recommendations. It is still their recommendation that the ramps and shoulders should be full depth Portland Concrete and the shoulders should be 10 ft wide as recommended in the Pavement Design Guide.

We believe the cost savings realized through this alternative would ultimately be offset by the ongoing yearly maintenance costs incurred due to the reduced shoulder width and change in pavement section.

The recommendation of the Office of Innovative Program Delivery is: **Not to implement this request.**

**Alternative F-1: Alternative to F-1**

**Description:** *Change the outside 10-foot concrete shoulders to 6 ½-foot concrete shoulders.*

The original plans propose to use concrete shoulders on the Interchange ramps. The outside shoulder would be 10-foot wide and the inside shoulder would be 4-foot wide.

It is recommended that the outside 10-foot wide concrete shoulder be reduced to 6 and ½ feet. The standard outside paved shoulder width is 6 and ½ feet. This concept would reduce cost and simplify construction.

**Cost Savings:** \$243,000

**Response:** Disagree. The typical section should be designed as originally proposed. See response to Alternative F-2.

The recommendation of the Office of Innovative Program Delivery is: **Not to implement this request.**

**Design Suggestion**

**Description:** It is suggested that the existing truck climbing lane on I-575 SB be eliminated as part of this project. The truck lane north of the Interchange should be transitioned into the southbound off ramp. South of the Interchange, the truck lane should be transitioned into the new auxiliary lane with the southbound on ramp attaching to the new auxiliary lane from the outside. The truck lane should be stripped out through the Interchange proper to avoid drive confusion.

**Cost Savings:** N/A

**Response:** Agree. The truck climbing lane on I-575 SB will be eliminated as part of this project. The following research was performed to insure that elimination of the truck lane would be allowed by current standards:

1. **Verify that the additional lane is a Truck Climbing Lane:** The old plans for this portion of I-575 were dated plans completed 10-17-79, PI no. 62035, and the typical section (sheet 3) shows this portion of the roadway as “required truck climbing lanes (12’)”.
2. **Determine if an additional lane (aka truck climbing lane) would be required by current 2004 AASHTO guideline.** The current 2004 AASHTO book addresses the implementation of truck climbing lanes in chapter 3, Elements of Design, starting on page 240. It is important to read the justification for a TCL for a two lane roadway as its discussion gives insight as to the use of a TCL on a four lane roadways. Chapter 3 states, a TCL on a two lane roadway “should satisfy one of three criteria... to justify a climbing lane”, page 244. One of those criteria is critical length of up gradient length and slope that results in a 10 mph speed reduction for heavy trucks. The other criteria address traffic volumes and level of services. Page 245, two lane roadway, states if the critical length of grade justifies the TCL, no further evaluation is needed regarding level of service. However, the tone of discussion is very different for a Freeways and Multilane Highways. The implementation of a TCL on a multilane roadway is discussed in terms of “consideration of a climbing lane is warranted”: it does not use the tone of voice “satisfy to justify” as was used for a two lane roadway. The chapter continues further to discuss those level of service deficiencies which would allow a TCL to be considered. The general tone of

consideration is, if you can show a level of service that is poor enough to consider a TCL then, "an increase in the number of lanes throughout the highway section would represent a better investment than the provisions of climbing lanes.", page 249. It is our opinion that the 2004 guideline only requires consideration of a TCL, for multilane roadways, and not a requirement even if the volumes and level of service indicate it would be beneficial; and if it is beneficial, it is most likely better to add additional lanes.

3. **Determine what justifications/warrants/ were in effect at the time the original truck climbing lanes were designed for the construction in the original design of I-575.** It is assumed the 1979 I-575 plans were designed under the 1973 AASHO guidelines; if not, they would have surely been designed under the 1965 guidelines. Both the 1965 and 1973 guidelines use similar charts to determine critical lengths of grades for evaluating TCL. Both of the charts are based on truck power ratios of 400lb per horse power, (note the 2004 guide is based on 200 lb per horse power) The 1975 guide indicated a speed reduction of 15mph is considered the point of general design guide, whereas the 1965 guide was concerned with maintaining a speed of 20 to 35 mph. The 1973 guideline refers to the 1965 guideline for multilane roadways. Page 284 to 290 of the 1965 guide addresses the implementation of TCL on multilane roadways. General summary is that TCL are not warranted for volumes under 1,000 DDHV.... or on volumes greater than 1700 VPH...additional lanes should be considered. All of the above being stated, the truck climbing lane was most likely not required in strict design guidelines of that time; also little was known concerning the use of TCL on 70mph roadways as most of the warrants at the time were based on 45 to 50 mph speeds.
4. **Recommendation on allowing the Truck Climbing Lane to be eliminated for the a TCL and to allow its use as ramp lanes:** It is our determination that the continued use of the existing additional lane, as a truck climbing lane, is not warranted, nor is it in the interest of additional safety or capacity along this portion of the roadway. The underlying purpose of the TCL is to allow the general motoring public to have a safer roadway by allowing slower trucks to move to the right and allow normal traffic to continue at the normal rate of speed. Based on the 2004 guidelines, this section of roadway would only marginally meet the "critical length of grade" criteria for consideration of a TCL. An additional consideration that was investigated was whether the lane is currently being used as a TCL or as an additional through lane. Based on field observations, this section of TCL is being used as a passing lane on the right side of vehicles, and not as a lane that is needed by trucks in order to avoid delays to the normal motoring public. The trucks either do not need the climbing lane (note the critical length was marginal) or the volume of traffic is so high that the trucks do not wish to move out of the flow of traffic for fear of not being able to merge back into the flow of traffic. **It is our determination that the existing TCL is not required by the current design standards for this roadway.**

## Wishon, Ron

---

**From:** Rebecca Collins [rcollins@croyengineering.com]  
**Sent:** Tuesday, February 17, 2009 3:03 PM  
**To:** Fadool, Douglas; Wiggins, Greg; 'Greg Teague'  
**Cc:** Wishon, Ron; Myers, Lisa  
**Subject:** RE: I-575 @ Rope Mill Connector, PI #0006043  
**Attachments:** VE F-2 Revised Cost Worksheet.doc

Doug,

Attached is the revised cost savings worksheet. The estimated cost savings would be \$405,700.

Thanks,  
Rebecca

---

**From:** Fadool, Douglas [mailto:dfadool@dot.ga.gov]  
**Sent:** Tuesday, February 17, 2009 11:43 AM  
**To:** Rebecca Collins; Wiggins, Greg; 'Greg Teague'  
**Cc:** Wishon, Ron; Myers, Lisa  
**Subject:** RE: I-575 @ Rope Mill Connector, PI #0006043

Rebecca,

Thank you for your responses. Could you please supply an estimated cost savings for reducing the shoulder with from 14 feet to 12 feet and for the use of Roller-compacted concrete in lieu of standard concrete.

Thank you.

Douglas Fadool, AVS  
Value Specialist  
404-631-1764

---

**From:** Rebecca Collins [mailto:rcollins@croyengineering.com]  
**Sent:** Tuesday, February 17, 2009 11:32 AM  
**To:** Fadool, Douglas; Wiggins, Greg; 'Greg Teague'  
**Cc:** Wishon, Ron; Myers, Lisa  
**Subject:** RE: I-575 @ Rope Mill Connector, PI #0006043

Doug,

I have been on the phone with Greg Wiggins discussing this VE Study. He was not yet able to get in touch with David Crim, but spoke with Terry Rutledge, GDOT Maintenance Liaison for the North Georgia area. He reiterated that they are trying to completely get away from asphalt shoulders due to the maintenance problems involved and is working up a Life-Cycle Cost analysis as well as providing information and photos from projects constructed in the last 3-5 years. Hopefully we will have additional information on this to you shortly. An alternative that came out of this discussion was that we would be open to use of Roller-compacted concrete on the outside shoulder, which is a cost savings from standard concrete. This would only be available for use on shoulders at least 10 foot wide. The inside shoulder would remain standard concrete.

We also discussed the total width of the shoulders and would like to recommend reducing the inside shoulder from 4 ft to 2 ft. This was not part of the VE recommendation but we feel that it is warranted based on the continued use of the 10 foot outside shoulder. This will provide an overall width of 12 foot for the combined shoulders.

Please let me know if you have any questions.

Thank you,  
Rebecca

**Rebecca M. Collins, P.E.**  
Project Manager

**Croy Engineering, LLC**  
Engineers/Planners/Surveyors  
200 North Cobb Parkway  
Building 400, Suite 413  
Marietta, Georgia 30062

770-971-5407 voice  
770-971-0620 fax  
[rcollins@croyengineering.com](mailto:rcollins@croyengineering.com)

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**From:** Fadool, Douglas [mailto:dfadool@dot.ga.gov]  
**Sent:** Tuesday, February 17, 2009 7:39 AM  
**To:** Rebecca Collins; Wiggins, Greg; 'Greg Teague'  
**Cc:** Wishon, Ron; Myers, Lisa  
**Subject:** RE: I-575 @ Rope Mill Connector, PI #0006043

Rebecca / Greg,

We have provided comments to all the VE recommendations including F-2 regarding the ramp shoulder pavement section and the Implementation Report is ready to be sent to Mr. Ross for approval. The only question we still need an answer to is : why is the total ramp shoulder width greater than what AASHTO recommends? AASHTO recommends a total inside and outside shoulder width of 10-12 feet and this project is proposing a 4 foot inside and a 10 foot outside shoulder for a total shoulder width of 14 feet.

Please supply justification or change the total width to 10-12 feet. A prompt response will be appreciated.  
Thank you.

Douglas Fadool, AVS  
Value Specialist  
404-631-1764

---

**From:** Rebecca Collins [mailto:rcollins@croyengineering.com]  
**Sent:** Thursday, February 05, 2009 11:28 AM  
**To:** Fadool, Douglas  
**Cc:** 'Greg Teague'; Wishon, Ron; Myers, Lisa  
**Subject:** RE: I-575 @ Rope Mill Connector, PI #0006043

Doug,

We are still working on contacting maintenance and getting a response to this inquiry. We will let you know as soon as we hear something.

Thanks,  
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**From:** Fadool, Douglas [mailto:dfadool@dot.ga.gov]

**Sent:** Wednesday, February 04, 2009 10:20 AM

**To:** Rebecca Collins

**Cc:** Robinson, Merishia; 'Greg Teague'; Wishon, Ron; Myers, Lisa

**Subject:** I-575 @ Rope Mill Connector, PI #0006043

Rebecca,

Regarding recommendation F-2, any luck with the LCCA and any information on future maintenance costs?

Thank you.

Douglas Fadool, AVS

Value Specialist

404-631-1764

---

Help GDOT serve you better. Visit <http://www.howmyservice.dot.ga.gov> and rate the service you received from Team GDOT.

## Value Engineering Study Report RESPONSE

I-575 @ RIDGEWALK PARKWAY

Project No. CSNHS-0006-00(043) PI#0006043

Cherokee County

### CONCRETE PAVEMENT (F)

#### Alternative F-2

Revised Cost Worksheet:

CONSTRUCTION ITEM		ORIGINAL ESTIMATE			PROPOSED ESTIMATE		
ITEM	UNITS	NO. OF UNITS	COST/UNIT	TOTAL	NO. OF UNITS	COST/UNIT	TOTAL
<b>12" Concrete Shoulders:</b>							
Ramp A 1,050 feet	SY	1,634	\$99.50	\$162,583	233	\$99.50	\$23,184
Ramp B 1,200 feet	SY	1,866	\$99.50	\$185,667	267	\$99.50	\$26,567
Ramp A 800 feet	SY	1,245	\$99.50	\$123,877	178	\$99.50	\$17,711
Ramp A 1,240 feet	SY	1,929	\$99.50	\$191,935	276	\$99.50	\$27,462
<b>12" Aggregate Base:</b>							
Ramp A 1,050 feet	SY	1,634	\$12.92	\$21,111	1,400	\$12.92	\$18,088
Ramp B 1,200 feet	SY	1,866	\$12.92	\$24,109	1,600	\$12.92	\$20,672
Ramp A 800 feet	SY	1,245	\$12.92	\$16,085	1,067	\$12.92	\$13,786
Ramp A 1,240 feet	SY	1,929	\$12.92	\$24,923	1,653	\$12.92	\$21,357
<b>19mm Asphalt Inner-layer:</b>							
Ramp A 1,050 feet	SY	1,634	\$7.20	\$11,765	1,400	\$7.20	\$10,080
Ramp B 1,200 feet	SY	1,866	\$7.20	\$13,435	1,600	\$7.20	\$11,520
Ramp A 800 feet	SY	1,245	\$7.20	\$8,964	1,067	\$7.20	\$7,682
Ramp A 1,240 feet	SY	1,929	\$7.20	\$13,889	1,653	\$7.20	\$11,902
<b>12" Roller Compacted Concrete Shoulders:</b>							
Ramp A 1,050 feet	SY	0		\$0	1,167	\$54.00	\$63,018
Ramp B 1,200 feet	SY	0		\$0	1,333	\$54.00	\$71,982
Ramp A 800 feet	SY	0		\$0	889	\$54.00	\$48,006
Ramp A 1,240 feet	SY	0		\$0	1,378	\$54.00	\$74,412
<b>Sub-total</b>				<b>\$798,343</b>			<b>\$467,429</b>
<b>Mark-up at 22.6%</b>				<b>\$180,425</b>			<b>\$105,639</b>
<b>TOTAL</b>				<b>\$978,768</b>			<b>\$573,068</b>
Estimated Savings:							\$405,700

## Fadool, Douglas

---

**From:** Wiggins, Greg  
**Sent:** Tuesday, February 17, 2009 3:56 PM  
**To:** 'Rebecca Collins'; Fadool, Douglas; 'Greg Teague'  
**Cc:** Wishon, Ron; Myers, Lisa; VanMeter, Darryl  
**Subject:** RE: I-575 @ Rope Mill Connector, PI #0006043

I spoke with Darryl VanMeter about the 2' concrete inside shoulder and the 10' roller compacted outside shoulder and he said he liked it and that was the way we should go.

Please let me know if this can be done?

GW

---

**From:** Rebecca Collins [mailto:rcollins@croyengineering.com]  
**Sent:** Tuesday, February 17, 2009 3:03 PM  
**To:** Fadool, Douglas; Wiggins, Greg; 'Greg Teague'  
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---

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# DEPARTMENT OF TRANSPORTATION STATE OF GEORGIA

## PLAN AND PROFILE OF PROPOSED RIDGEWALK PARKWAY OVER I-575 CHEROKEE COUNTY

FEDERAL AID PROJECT  
CSNHS-0006-001(043)

FEDERAL ROUTE • I-575  
STATE ROUTE • 5  
P.J.NO. 0006043

**LOCATION SKETCH**

**TRAFFIC DESIGN DATA**

TRAFFIC ADT (MP/D)	I-575	RIDGEWALK PKWY.
TRAFFIC ADT (MP/D)	85500 (2000)	11300 (200)
TRAFFIC ADT (MP/D)	56500 (2000)	1900 (200)
TRAFFIC DIV. (MP/D)	7900 (200)	1400 (200)
DIRECTIONAL DIV.	50%	60%
Z TRUCKS	0	3
24 HR TRUCKS X	7	3
SPEED DESIGN (MPH)	75	45

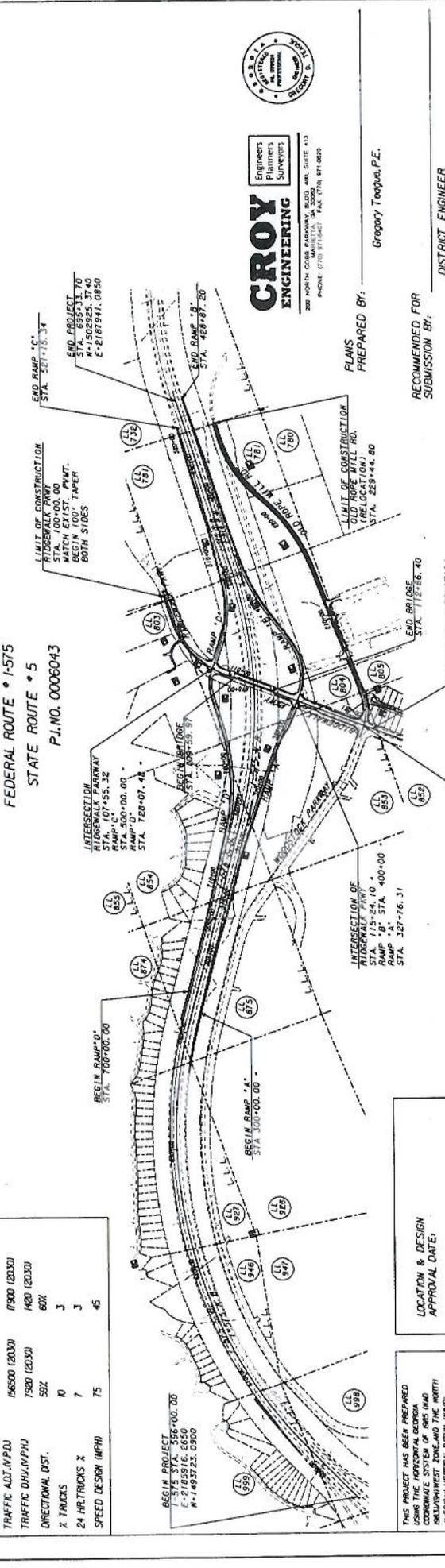
**NOTE:** ALL REFERENCES IN THIS DOCUMENT WHICH INCLUDES ALL PAPERS, WRITINGS, DOCUMENTS, DRAWINGS, OR PHOTOGRAPHS USED OR TO BE USED IN CONNECTION WITH THIS DOCUMENT TO STATE HIGHWAY DEPARTMENT OF TRANSPORTATION, CHEROKEE COUNTY, GEORGIA, OR THE STATE HIGHWAY DEPARTMENT OF TRANSPORTATION, CHEROKEE COUNTY, GEORGIA, SHALL BE DEEMED TO MEAN THE DEPARTMENT OF TRANSPORTATION.



**CROY ENGINEERING**  
Engineers  
Planners  
Surveyors  
200 NORTH CHINA PARKWAY, SUITE 100, SUITE 113  
PHOENIX, ARIZONA 85016-1133  
PHONE: (602) 971-8800 FAX: (602) 971-8800

PLANS PREPARED BY: Gregory Teague, P.E.  
RECOMMENDED FOR SUBMISSION BY: DISTRICT ENGINEER

DATE	CHIEF ENGINEER
PLANS COMPLETED	
REVISIONS	



COUNTY NO.	PROJECT NO.	LENGTH OF PROJECT	MILES
007	CSNHS-0006-001(043)		176
		NET LENGTH OF ROADWAY	0
		NET LENGTH OF BRIDGES	176
		NET LENGTH OF EXCEPTIONS	0
		CROSS LENGTH OF PROJECT	176

LOCATION & DESIGN APPROVAL DATE:  
FUNCTIONAL CLASS: PRINCIPAL ARTERIAL FREEWAY  
THIS PROJECT IS 100% IN CHEROKEE COUNTY AND IS 100% IN CONG. DIST. NO. 6.  
PROJECT DESIGNATION: FULL OVERSIGHT  
DESIGNED IN ENGLISH UNITS.

THIS PROJECT HAS BEEN PREPARED USING THE BEST AVAILABLE DATA AND COORDINATE SYSTEM OF 83MS AND 83M/100 FEET ZONE AND THE NORTH AMERICAN VERTICAL DATUM (NAVD) OF 1988.

MID-POINT COORDINATES  
STATION: 64+66.90  
N: 14903363.670  
E: 20833065.330

SCALE IN FEET  
0 400 800

THE DATA TOGETHER WITH ALL OTHER INFORMATION SHOWN ON THESE PLANS OR IN ANYWAY INCORPORATED THEREIN, ARE BELIEVED TO BE INDICATIVE OF ACTUAL CONDITIONS. HOWEVER, THE SAME ARE SHOWN AS INFORMATION ONLY, ARE NOT GUARANTEED AND DO NOT BIND THE DEPARTMENT OF TRANSPORTATION IN ANY WAY. THE ATTENTION OF BIDDERS IS SPECIFICALLY DIRECTED TO SUBSECTIONS 602A, 602C, AND 602D OF THE SPECIFICATIONS.

**PRECONSTRUCTION STATUS REPORT FOR PI:0006043**

**PROJ ID:** 0006043  
**COUNTY:** Cherokee  
**LENGTH (MI):** 1.67  
**PROJ NO.:** CSNHS-0006-00(043)  
**PROJ MGR:** Wiggins, Greg  
**OFFICE:** Innovative Prog. Delivery  
**CONSULTANT:** Turnkey Consultant, (Contract with GDOT)  
**SPONSOR:** Cherokee County

**I-575 @ ROPE MILL CONNECTOR/RIDGEWALK PKWY - NEW INTERCHANGE**  
**MPO:** Atlanta TMA  
**TIP #:** CH-AR-225  
**MODEL YR:** 2020  
**TYPE WORK:** Interchange  
**CONCEPT:** INTERCHANGE  
**PROG TYPE:** Reconstruction/Rehabilitation  
**BOND PROJ:**

**MGMT LET DATE:** 03/15/2010  
**MGMT ROW DATE:** 10/17/2008  
**SCHED LET DATE:** 11/5/2012  
**WHO LETS?:** GDOT Let  
**LET WITH:**

SCHED		ACTIVITY	ACTUAL		%	PROGRAMMED FUNDS				Date		
START	FINISH		START	FINISH		Phase	Approved	Proposed	Cost		Fund	Status
3/24/2009		Concept Development	7/10/2006	5/15/2008	100	PE	2007	2007	1,545,000.00	L050	AUTHORIZED	8/16/2006
		Concept Meeting	10/11/2006	10/11/2006	100	ROW	L.O.C.L.	L.O.C.L.	3,100,000.00	L050	PRECST	
		PM Submit Concept Report	8/24/2007	10/25/2007	100	CST	2009	2010	21,055,545.00	L050	PRECST	
		Receive Preconstruction Concept Approval	12/4/2007	12/18/2007	100							
		Management Concept Approval Complete	12/18/2007	5/15/2008	100							
		Value Engineering Study	11/28/2007		83							
		Public Information Open House Held	4/13/2006	4/13/2006	100							
		Environmental Approval	10/16/2006		85							
		Pub Hear Held/Comm Resp (EA/FONSI, GEPA)	9/30/2008	12/23/2008	50							
		Mapping	10/17/2007	5/14/2008	100							
		Field Surveys/SDE	10/17/2007	5/15/2008	100							
		Preliminary Plans	10/17/2007		31							
3/13/2009	9/4/2009	Preliminary Bridge Design			0							
3/13/2009	7/23/2009	Underground Storage Tanks			0							
6/25/2009	3/13/2009	404 Permit Obtainment			0							
6/2/2010	6/3/2010	FFPR Inspection			0							
9/23/2010	9/23/2010	R/W Plans Preparation			0							
9/24/2010	10/27/2010	R/W Plans Final Approval			0							
10/28/2010	7/12/2010	L & D Approval			0							
3/22/2011	4/4/2011	R/W Acquisition			0							
3/13/2009	3/16/2010	Stake R/W			0							
9/7/2009	8/4/2010	Soil Survey			0							
7/15/2010	8/12/2011	Bridge Foundation Investigation			0							
9/7/2010	6/13/2011	Final Design			0							
9/5/2011	9/6/2011	Final Bridge Plans Preparation			0							
9/20/2011	10/3/2011	FFPR Inspection			0							
		Submit FFPR Responses (OES)			0							
<b>PDD:</b> JUN03 L.R. Assigned to Road Design. 10/20/03. Project assigned to Urban Design.												
<b>Bridge:</b> BRIDGE REQUIRED (PROPOSED DESIGN/BUILD)												
<b>Design:</b> Croy working on R/W Plans[NGW 02-13-09]												
<b>EIS:</b> EA/R-14-08[NeedFONSI]NotOnSchedRWRisk(12-5-08)												
<b>LGPA:</b> PFA SGN (L) WOODSTOCK DO ROW 12-14-07.												
<b>Planning:</b> IJR approved by FHWA 11/05/05 CLV												
<b>Prog. Develop:</b> PE to 07 Chief Eng for Board member req by Van Dyke												
<b>Programming:</b> 9/07 Per Commissioner, AC CST, locals only pay ROW. Convert 2012. 7/07 received email from Planning that on 5/07 ARC was asked to move R/W, CST fm L.R. in and the locals would fund per Commissioner.To be paid in 12 & 13 ACing. DESIGN BUILD												
<b>EMG:</b> RECSTR/REHAB (INTERCHANGE); TURNKEY												

Phase	Approved	Proposed	Cost	Fund	Status	Date Auth
PE	2007	2007	1,545,000.00	L050	AUTHORIZED	8/16/2006
ROW	L.O.C.L.	L.O.C.L.	3,100,000.00	L050	PRECST	
CST	2009	2010	21,055,545.00	L050	PRECST	

Phase	Cost	Fund
PE	3,100,000.00	L050
ROW	19,098,000.00	L050
CST	12,196,000.00	L050

**District Comments:** Project is Design Build R/W (20 parcels) is being acquired by locals @ their cost. PCE pending approval by FHWA and should occur early March[NGW 02-13-2009]

**Acquired by:** LOC  
**Acquisition MGR:** Digsby, Pam  
**R/W Cert Date:**

**Cond. Filed:**  
**Relocations:**  
**Acquired:**

**Prel. Parcel CT:** 13  
**Total Parcel in ROW System:**  
**Options - Pending:**  
**Condemnations- Pend:**