

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: STP00-0157-01(009) Upson Talbot **OFFICE:** Engineering Services
 STP00-0000-00(929)
 P.I. Nos.: 333210 and 0000929
 SR 36 Passing Lanes & Bridge over Flint River **DATE:** May 26, 2009

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

TO: Thomas B. Howell, PE, District Engineer

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

The VE Study for the above project was held March 23-26, 2009. Responses were received on May 15, 2009. 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.

ALT #	Description	Potential Savings/LCC	Implement	Comments
ALIGNMENT (A) SITE #1 (Talbot County) & SITE #2 (Upson County)				
A-1	Realign SR 36 from the City of Roland through the <u>north</u> end of Seven Islands and lengthen the horizontal curve radius	(-\$5,455,861) cost increase	No	The VE Study only considers additional construction costs, and does not include the additional redesign costs. The NEPA document is approved for current alignment; due to the proximity to the Flint River, additional NEPA studies would take a long time.
A-2	Realign SR 36 from the City of Roland through the <u>south</u> end of Seven Islands	(-\$5,455,861) cost increase	No	The VE Study only considers additional construction costs, and does not include the additional redesign costs. The NEPA document is approved for current alignment; due to the proximity to the Flint River, additional NEPA studies would take a long time.
A-3	Shorten the alignment by increasing the radius of the curvature at Site #1	\$74,064	No	Additional redesign, survey, and environmental work would add approximately \$200,000 in redesign costs and would negate the proposed savings.

ALT #	Description	Potential Savings/LCC	Implement	Comments
A-4	Maintain the existing SR 36 alignment and add a 12 foot passing lane at Site #1	\$9,038,811	No	This area has substandard vertical and horizontal alignments and has had serious truck accidents. Simply adding passing lanes would not address these issues. The bridge in between the passing lanes cannot be built on the current alignment. The existing survey and environmental evaluation did not include the entire area along the existing roadway.
A-5	Provide a total of 6,000 LF of Passing Lanes in lieu of the proposed 16,652 LF	Proposed = \$3,057,870 Actual = \$10,268,443	Yes	D3 has expanded the VE recommendations and revised the alignment of the project, reduced the length by 1.76 miles, and eliminated 8,098 feet of passing lanes.
A-7	Eliminate the passing lane and construct only two 12-ft travel lanes on the new as-designed alignment	\$4,780,290	No	The need and purpose of the project is to add passing lanes. The roadway must be realigned to remove the substandard horizontal and vertical curve combination. Because steeper than recommended grades have been used to reduce earthwork and cost on the approaches to the bridge, passing lanes will be used to mitigate the steep grades.
A-8	Make outside lanes 11 feet wide; keep passing lanes 12 feet wide	\$398,316	No	Truck traffic is predominantly log trucks and liquid carriers. A reduction in the width of the outside lane, in conjunction with the higher speeds on this roadway would be undesirable. The speed design is 55 MPH.
A-9	Maintain the existing SR 36 alignment and add a 12 foot wide passing lane at Site #2	\$5,215,409	No	This area has substandard vertical and horizontal alignments and has had serious truck accidents. Simply adding passing lanes would not address these issues. The bridge in between the passing lanes cannot be built on the current alignment. The survey and environmental evaluation did not include the entire area along the existing roadway.

ALT #	Description	Potential Savings/LCC	Implement	Comments
A-10	Add 12 foot passing lanes on the existing SR 36 alignment	\$14,255,000	No	This area has substandard vertical and horizontal alignments and has had serious truck accidents. Simply adding passing lanes would not address these issues. The bridge in between the passing lanes cannot be built on the current alignment. The existing survey and environmental evaluation did not include the entire area along the existing roadway.
A-11	Realign only a portion of SR 36 at Site #1 (Talbot County)	\$8,076,817	No	This area has substandard vertical and horizontal alignments and has had serious truck accidents. Simply adding passing lanes would not address these issues. The bridge in between the passing lanes cannot be built on the current alignment. The existing survey and environmental evaluation did not include the entire area along the existing roadway.
A-12	Add a new 12 foot wide passing lane to SR 36 at Site #2 (Upson County) and correct alignment for a portion of SR 36	\$4,252,417	No	This area has substandard vertical and horizontal alignments and has had serious truck accidents. Simply adding passing lanes would not address these issues. The bridge in between the passing lanes cannot be built on the current alignment. The existing survey and environmental evaluation did not include the entire area along the existing roadway.
A-13	Combine Alternates A-11 and A-12 to provide two passing lanes with only selected portions of SR 36 realigned	\$12,333,000	No	D3 has revised the alignment of the project, reduced the length by 1.76 miles, and eliminated 8,098 feet of passing lanes. Savings are accounted for in A-5.
PROFILE (P)				
P-1	Adjust profile grade to minimize cut/fill volumes	\$427,350	Yes	This will be done and a Design Exception will be requested.

BRIDGE (B)				
ALT #	Description	Potential Savings/LCC	Implement	Comments
B-1	Reduce shoulder on one side of the bridge from 8 feet to 2 feet	\$165,169	No	The cost to redesign the bridge would negate the savings.
B-2	Increase beam spacing from 7' 3" to 9 feet and save one beam	\$41,965	No	The cost to redesign the bridge would negate the savings.
B-5A	Use Conspan type structure for the triple box culvert	\$17,441	No	Based on the most recent Pay Item index, the cost for this type of structure is considerably higher than what the VE Team estimated. There would be no savings.
B-5B	Use bottomless Conspan type structure for the triple box culvert (natural stream bed)	\$143,083	No	Based on the most recent Pay Item index, the cost for this type of structure is considerably higher than what the VE Team estimated. There would be no savings.
B-8	Change the project delivery from Design/Bid/Build to Design/Build	\$485,000	No	Changing delivery methods at this time is not practical and would be more costly. The environmental document and right of way plans are approved, and construction plans are 75% complete.

Additional information was provided on June 8, 1009

The Office of Engineering Services concurs with the Project Manager's responses.

Approved: Gerald M. Ross Date: 6/9/09
 Gerald M. Ross, PE, Chief Engineer

REW/LLM

Attachments

c: Genetha Rice Singleton
David Millen/Bill Rountree/Jeff Swiderski/Jason Mobley
Paul Liles/Bill Duvall/Bill Ingalsbe/Lyn Clements
Debra Pruitt
Tom Cleveland
Lamar Pruitt/Kevin Van Houten
Nabil Raad
Matt Sanders
Lisa Myers

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE STP00-0000-00(929)/BRST0-0157-01(009) Talbot/Upson OFFICE Thomaston
P.I. NO.0000929/333210
Passing Lanes on S.R. 36 and Bridge Replacement over
the Flint River

DATE May 5, 2009

FROM Thomas B. Howell, P.E., District Engineer

TO Ronald E. Wishon, Project Review Engineer
Attn: Lisa Myers

SUBJECT **Value Engineering Study Responses**

We have reviewed the Value Engineering Study. Please find attached our responses to the study findings.

After reviewing the various recommendations found in the report we utilize a portion of the current alignment. We will tie in the passing lanes at the beginning and the end of the project at different locations than in the original submittal to the study team. This will result in a new total project length of 2.20 miles. That is a reduction of 1.76 miles. We will also reduce the total length of passing lanes to 8,554 ft. This is a reduction of 8,098 ft. We will also reduce the earthwork quantities by adjusting the vertical alignment using a maximum grade of 9%. This will require an approved design exception.

If any additional information is needed please contact Bill Rountree, P.E., District Design Engineer, at (706)646-6990.

DBM:WJR:JWM:JMS

Attachment

0000929/333210 Talbot/Upson

VE Study Comment Responses

A-1: Realign the route from Road 28 to the city of Roland through the north end of Seven Islands and lengthen the horizontal curve radius.

Response: We do not concur.

This is not a viable option at this time because of the extra cost and time. If this was implemented it would be the same as starting the project from scratch. The costs provided in the report only seem to address the additional construction costs. There will be additional P.E. funds needed also to complete a total alignment shift. And additional \$5.5 million is low. We also have an approved NEPA document on the current alignment. Completely changing the alignment would result in the NEPA studies starting over. Because of the proximity to the Flint River these studies would take a long time.

A-2: Realign the route from Road 28 to the city of Roland through the south end of Seven Islands and lengthen the horizontal curve radius.

Response: We do not concur.

This is not a viable option at this time because of the extra cost and time. If this was implemented it would be the same as starting the project from scratch. The costs provided in the report only seem to address the additional construction costs. There will be additional P.E. funds needed also to complete a total alignment shift. And additional \$5.5 million is low. We also have an approved NEPA document on the current alignment. Completely changing the alignment would result in the NEPA studies starting over. Because of the proximity to the Flint River these studies would take a long time.

A-3: Shorten the Alignment by increasing the radius of the curvature at the site 1 (Talbot County) portion of route 36.

Response: We do not concur.

This option stands to save approximately \$74,064.00 in construction costs. This project would require much more than that in P.E. costs. The savings in construction would be eliminated by additional P.E. costs required for additional survey, Environmental, and for a total redesign of the project. This additional cost would be approximately \$200,000.00

A-4: Keep the existing S.R. 36 Alignment but add a 12 ft passing lane at Site 1.

Response: We do not concur.

This area of S.R. 36 has substandard vertical and horizontal alignments. Because of this substandard geometry there have been some serious big rig truck accidents, resulting in the truck over turning. Just providing passing lanes on the existing alignment would not address these issues. The bridge in between the passing lanes cannot be built on the current alignment. The roadway on either side of the bridge will need to be realigned to accommodate the bridge installation. Also the existing survey does not cover the entire area along the existing roadway. The environmental evaluation did not cover a project that would use the existing alignment. Therefore the additional costs and time required to redesign this project using the existing alignment would far outweigh any savings.

A-5: Provide a total of 6,000 lf of passing lanes in lieu of 16,652 lf.

Response: We concur.

We agree that the project length can be reduced. Based on the cost per foot of roadway and the alignment used in the V.E. Study the cost for the two passing lanes would be \$13,726,998.

$$\begin{array}{r} 14,908.8 \text{ ft} \times \$574.1/\text{ft} = \$ 8,559,738.43 \\ \underline{6,000 \text{ ft} \times \$861.21/\text{ft} = \$ 5,167,260.00} \\ \text{Total} \qquad \qquad \qquad = \$13,726,998.00 \end{array}$$

We have reviewed the project area and reduced the total project length. The cost for our new alignment based on the same unit costs as used in the VE Study is \$7,336,790.34.

$$8,554 \text{ ft} \times \$861.21/\text{ft} = \$7,336,790.34$$

Our proposed alignment has a savings of \$6,390,207.66 from the alignment proposed in the VE study, and a savings of \$10,268,442.66 from the original proposed alignment. This cost is reflected in a reduction of 1.76 miles in project length, and a reduction of 8,098 feet of passing lanes.

A-7: Eliminate the passing lane and construct only two 12-ft-wide travel lanes on the new as-designed alignment.

Response: We do not concur.

This original purpose of these projects was to add two passing lanes, one in each direction, and replace the bridge. The roadway is being realigned to remove the substandard horizontal and vertical curve combination in the project area. Not putting in the passing lanes would in fact not meet the need and purpose for the project. Because we will be using steeper than recommended grades to reduce earthwork volumes and cost on the approaches to the bridge the passing lanes will be used to mitigate the steep grades.

A-8: Make outside lanes 11 ft wide in lieu of 12 ft wide, but keep passing lanes 12 ft wide.

Response: We do not concur.

The truck traffic on this route is predominantly made up of log trucks, and liquid carriers. A reduction in the width of the outside lane by one foot, in conjunction with the higher speeds on this roadway, could lead to an undesirable condition on the roadway.

A-9: Keep the existing S.R. 36 Alignment but add a 12 ft passing lane at Site 2.

Response: We do not concur.

This area of S.R. 36 has substandard vertical and horizontal alignments. Because of this substandard geometry there have been some serious big rig truck accidents, resulting in the truck over turning. Just providing passing lanes on the existing alignment would not address these issues. The bridge in between the passing lanes cannot be built on the current alignment. The roadway on either side of the bridge will need to be realigned to accommodate the bridge installation. Also the existing survey does not cover the entire area along the existing roadway. The environmental evaluation did not cover a project that would use the existing alignment. Therefore the additional costs and time required to redesign this project using the existing alignment would far outweigh any savings.

A-10: Add 12 ft passing lanes on the existing S.R. 36 alignment.

Response: We do not concur.

This area of S.R. 36 has substandard vertical and horizontal alignments. Because of this substandard geometry there have been some serious big rig truck accidents, resulting in the truck over turning. Just providing passing lanes on the existing alignment would not address these issues. The bridge in between the passing lanes cannot be built on the current alignment. The roadway on either side of the bridge will need to be realigned to accommodate the bridge installation. Also the existing survey does not cover the entire area along the existing roadway. The environmental evaluation did not cover a project that would use the existing alignment. Therefore the additional costs and time required to redesign this project using the existing alignment would far outweigh any savings.

A-11: Realign only a portion of S.R. 36 site 1, Talbot County.

Response: We do not concur.

This area of S.R. 36 has substandard vertical and horizontal alignments. Because of this substandard geometry there have been some serious big rig truck accidents, resulting in the truck over turning. Just partially realigning the roadway and providing passing lanes would not address all of these issues. The bridge in between the passing lanes cannot be built on the current alignment because there is not a suitable detour in the area. The roadway on either side of the bridge will need to be realigned to accommodate the bridge installation. Also on the Upson county side of the project there are 41 accidents with 34 injuries from 2000 to 2008. Most of the accidents can be attributed to the substandard curvature on the roadway. (The accident history report is attached).

A-12: Add a new 12-ft-wide passing lane to S.R. 36 (Site 2) Upson County and correct a portion of S.R. 36.

Response: We do not concur.

This area of S.R. 36 has substandard vertical and horizontal alignments. Because of this substandard geometry there have been some serious big rig truck accidents, resulting in the truck over turning. Just partially realigning the roadway and providing passing lanes would not address all of these issues. The bridge in between the passing lanes cannot be built on the current alignment because there is not a suitable detour in the area. The bridge in between the passing lanes cannot be built on the current alignment. The roadway on either side of the bridge will need to be realigned to accommodate the bridge installation

A-13: Combine Alt. Nos. A-11 and A-12 to provide two passing lanes with only selected portions of S.R. 36 realigned.

Response: We concur.

We agree that the project length does need to be reduced. Taking everything into consideration we reviewed the project area. The length of project will be decreased from 3.96 miles to 2.20 miles. We shall provide 8,554 feet of passing lanes. Site one will have a passing lane with the length of 4,013 feet (0.76 miles). Site two will have a passing lane with a length of 4,541 feet (0.86 miles). This will provide a reduction in total project length of 1.76 miles, and a reduction in total passing length of 8,098 feet.

This area of S.R. 36 has substandard vertical and horizontal alignments. Because of this substandard geometry there have been some serious big rig truck accidents, resulting in the truck over turning. Just partially realigning the roadway and providing passing lanes would not address all of these issues. The bridge in between the passing lanes cannot be built on the current alignment. The roadway on either side of the bridge will need to be realigned to accommodate the bridge installation

P-1: Increase/Adjust profile grade to minimize cut/fill volumes.

Response: We concur.

According to the ASSHTO Green Book in this area the profile can be developed using a maximum of 7%. A design exception will be prepared asking to use a maximum of 9%. Using a maximum grade of 9% in conjunction with the smaller project length should reduce costs.

B-1 to B-5b are addressed by the Bridge Office. Please see attached responses..

B-8: Change the project delivery from Design/Bid/Build to Design/Build.

Response: We do not concur.

Changing the project from Design/Bid/Build to Design/Build this late in the project would be more costly rather than the cost savings and is not practical at this point in the process. We already have an approved environmental document and approved Right of Way plans. Final construction plans are approximately 75% complete. Also after reviewing the V.E. study there was not enough data given to support a cost savings of \$969,726.00.

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE STP00-0000-00(92)/BRST0-0157-01(009) OFFICE Atlanta, GA
TALBOT/UPSON COUNTIES
SR 36 Passing Lanes and Flint River Bridge Replacement
P.I. No. 0000929/333210 DATE April 23, 2009

FROM  Paul V. Liles, Jr., P.E., State Bridge Engineer

TO Thomas Howell, P.E., District Engineer, Thomaston

ATTENTION: David Millen (Bill Rountree)

SUBJECT VALUE ENGINEERING STUDY

B-1. Reduce the width of the shoulder on one side of the bridge from 8-ft to 2-ft wide.

As per the May 2008 value engineering study titled Bridge Width Policy as performed by Lewis and Zimmerman Associates, Inc., the VE team recommended changes in the minimum shoulder widths for roads with specified average daily traffic ranges to match AASHTO guidelines. The bridge width for highways having state route numbers other than interstates shall be the traveled way + 8-ft shoulder + 8-ft with ADT great than 2000.

Geometric design standards shall be in accordance with the AASHTO publication "A Policy on Geometric Design of Highways & Streets," Collector Roads and Streets, 2004, p. 426.

Minimum Bridge Widths - Rural section (2 lanes without curb)

Speed Design: All Speeds

Design Year ADT: Over 2000

Bridge Width Clear Distance: TW + 8ft + 8 ft (TW + 2.4 m + 2.4 m)

Design Live Loading: HS-20 (MS-18)*

The estimate for cost savings doesn't include the cost for redesign of the bridge plans. The original cost for design of the bridge was \$139,214 in 2002.

$$F = (F/P, 5\%, 7) P = (1.4071) \times \$139,214 = \$195,888$$

The reduction of the width of the shoulder on one side of the bridge therefore would cost the State \$195,888 - \$165,169 = \$30,719.

B-2. Increase the beam spacing on the bridge from 7'-3" to 9'-0" and use five pre-stressed concrete beams in lieu of six.

A 7'-3" beam spacing requires a beam strength of 8,000-psi. A 9'-0" beam spacing requires a beam strength of 10,000-psi. The cost of the beam would increase approximately \$10/CY due to the use of high performance concrete.

According to the value engineer report, no substructure changes are anticipated due to the elimination of one beam and the increased beam spacing. The superstructure would have to be redesigned, and an analysis would have to be performed on the substructure of the bridge. Assuming the consultant would charge the full price for a redesign and half price for an analysis, the price for the redesign/analysis would be 75 percent of the cost of redesign as listed above or \$146,916.

The elimination of one beam and the increased beam spacing would cost the State \$146,916 - \$41,965 = \$104,951. This figure doesn't include the additional cost of the beams due to the use of high performance concrete.

B-5a & 5b. Use CON/SPAN type of structure for the triple box culvert in lieu of the conventional CIP concrete box with base slab.

\$50/SF as used by the VE team for a three sided culvert covers only the cost of the CON/SPAN unit. This figure doesn't include the cost of the foundation for the three sided culvert. From the most recent pay item index (May 2008), a 3 sided culvert cost \$234/SF which includes the design, construction and pile footings. Using this figure, the cost of a three sided culvert would increase from \$180,000 as estimated by the VE team to \$842,400.

$$30\text{-ft} \times 120\text{-ft} \times \$50/\text{SF} = \$180,000$$

$$30\text{-ft} \times 120\text{-ft} \times \$234/\text{SF} = \$842,400$$

Three sided culvert would also require a sour analysis which would include an additional \$20,000 for a hydraulics report and \$8,000 for a CFI (culvert foundation report) per location.

$$\$842,400 + \$20,000 + \$8,000 = \$870,400$$

\$870,400 far exceeds the cost of \$403,241 for a traditional triple 9-ft cast-in-place box culvert.

More importantly 20-ft of fill would require the use of a Bebo Arch System instead of Con/Span Bridge System which would be an additional expense.

If you have any questions or comments, please contact Lyn Clements of the Bridge Office at (404) 631-1849.

PVL: DLC

cc: Bill DuVall, GA DOT, Assistant State Bridge Engineer, attn: Steve Wyche

**ACCIDENT RATE CALCULATION for year(s)
2000,2001,2002,2003,2004,2005,2006,2007,2008**

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2000	Talbot	1	003600	20.00	22.01	1,100	2.01	2,211
2000	Upson	1	003600	0.00	1.50	1,400	1.50	2,100

Total Vehicle Miles: 4,311	Total Accidents: 8	Accident Rate: 508
Average ADT: 1,228	Total Injuries: 5	Injury Rate: 318
Length in Miles: 3.51	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2001	Talbot	1	003600	20.00	22.01	1,000	2.01	2,010
2001	Upson	1	003600	0.00	1.50	1,300	1.50	1,950

Total Vehicle Miles: 3,960	Total Accidents: 4	Accident Rate: 277
Average ADT: 1,128	Total Injuries: 3	Injury Rate: 208
Length in Miles: 3.51	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2002	Talbot	1	003600	20.00	22.01	1,200	2.01	2,412
2002	Upson	1	003600	0.00	1.50	1,400	1.50	2,100

Total Vehicle Miles: 4,512	Total Accidents: 6	Accident Rate: 364
Average ADT: 1,285	Total Injuries: 6	Injury Rate: 364
Length in Miles: 3.51	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2003	Talbot	1	003600	20.00	22.25	1,200	2.25	2,700
2003	Upson	1	003600	0.00	1.50	1,400	1.50	2,100

Total Vehicle Miles: 4,800	Total Accidents: 6	Accident Rate: 342
Average ADT: 1,280	Total Injuries: 6	Injury Rate: 342
Length in Miles: 3.75	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2004	Talbot	1	003600	20.00	22.25	3,750	2.25	8,438
2004	Upson	1	003600	0.00	1.50	1,300	1.50	1,950

Total Vehicle Miles: 10,388	Total Accidents: 7	Accident Rate: 185
Average ADT: 2,770	Total Injuries: 5	Injury Rate: 132
Length in Miles: 3.75	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2005	Talbot	1	003600	20.00	22.25	1,070	2.25	2,408
2005	Upson	1	003600	0.00	1.50	1,970	1.50	2,955

Total Vehicle Miles: 5,363	Total Accidents: 5	Accident Rate: 255
Average ADT: 1,430	Total Injuries: 2	Injury Rate: 102
Length in Miles: 3.75	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2006	Talbot	1	003600	20.00	22.25	1,140	2.25	2,565
2006	Upson	1	003600	0.00	1.50	1,340	1.50	2,010

Total Vehicle Miles: 4,575	Total Accidents: 7	Accident Rate: 419
Average ADT: 1,220	Total Injuries: 4	Injury Rate: 240
Length in Miles: 3.75	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2007	Talbot	1	003600	20.00	22.25	1,000	2.25	2,250
2007	Upson	1	003600	0.00	1.50	1,340	1.50	2,010

Total Vehicle Miles: 4,260	Total Accidents: 9	Accident Rate: 579
Average ADT: 1,136	Total Injuries: 10	Injury Rate: 643
Length in Miles: 3.75	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

Year	County	Rt Type	Route Num	Low Milelog	High Milelog	ADT	Distance	Vehicle Miles
2008*	Talbot	State Route	003600	0	0	0	0.00	0
2008*	Upson	State Route	003600	0	0	0	0.00	0

Total Vehicle Miles: 0	Total Accidents: 1	Accident Rate: 0
Average ADT: 0	Total Injuries: 0	Injury Rate: 0
Length in Miles: 0.00	Total Fatalities: 0	Fatality Rate: 0.00

NOTE: Rates are per 100 Million Vehicle Miles

*2008 data is not complete

Total Accidents: 53 Total Vehicles: 57 Total Injuries: 41 Total Fatalities: 0

Accident Analysis Report 3

Accident Id	Date	Time	County	Route	Route No	Milelog	Intersecting Rt Type	Intersecting Route	Total Injuries	Total Fatalities	Harmful Event	Collision	Ramp
<u>00760464</u>	08/02/2000	04:24:PM	Talbot	State	003600	21.59			0	0	22-Highway Traffic	6-Not A Collision	
<u>02360740</u>	04/20/2000	04:40:PM	Upton	State	003600	.11	2	012600	0	0	11-Motor Vehicle in	1-Angle	
<u>00820771</u>	10/25/2000	07:43:AM	Upton	State	003600	.55	2	044200	1	0	29-Ditch	6-Not A Collision	
<u>02410410</u>	01/05/2000	05:41:AM	Upton	State	003600	.75			0	0	01-Overtum	6-Not A Collision	
<u>00860388</u>	11/21/2000	07:12:PM	Upton	State	003600	.86			1	0	33-Tree	6-Not A Collision	
<u>00630416</u>	04/30/2000	11:13:PM	Upton	State	003600	1.05			1	0	33-Tree	6-Not A Collision	
<u>00730055</u>	07/30/2000	12:30:AM	Upton	State	003600	1.06			1	0	30-Embankment	6-Not A Collision	
<u>02400720</u>	01/20/2000	04:30:AM	Upton	State	003600	1.36			1	0	01-Overtum	6-Not A Collision	
<u>13990433</u>	09/27/2001	07:45:AM	Talbot	State	003600	20.78			0	0	33-Tree	6-Not A Collision	
<u>11220016</u>	04/04/2001	06:05:AM	Talbot	State	003600	21.91			1	0	01-Overtum	6-Not A Collision	
<u>11210476</u>	04/22/2001	09:47:AM	Upton	State	003600	1.05			1	0	29-Ditch	6-Not A Collision	
<u>11090019</u>	07/13/2001	10:20:AM	Upton	State	003600	1.06			1	0	29-Ditch	6-Not A Collision	
<u>22280474</u>	04/09/2002	04:40:PM	Talbot	State	003600	21.91			2	0	11-Motor Vehicle in	5-Sideswipe - Opp	
<u>24210569</u>	11/07/2002	05:20:PM	Talbot	State	003600	22.00			0	0	11-Motor Vehicle in	3-Rear End	
<u>23800208</u>	08/14/2002	02:07:PM	Upton	State	003600	.86			1	0	01-Overtum	6-Not A Collision	
<u>23910301</u>	09/07/2002	03:08:PM	Upton	State	003600	1.06			2	0	01-Overtum	6-Not A Collision	
<u>23910302</u>	09/07/2002	03:08:PM	Upton	State	003600	1.06			1	0	01-Overtum	6-Not A Collision	
<u>22250069</u>	03/08/2002	10:30:PM	Upton	State	003600	1.16			0	0	30-Embankment	6-Not A Collision	
<u>32450298</u>	10/22/2003	03:59:PM	Upton	State	003600	.66			1	0	01-Overtum	6-Not A Collision	
<u>32450289</u>	10/17/2003	04:55:PM	Upton	State	003600	.76			1	0	33-Tree	6-Not A Collision	
<u>31620438</u>	08/04/2003	07:30:PM	Upton	State	003600	.76			1	0	33-Tree	6-Not A Collision	
<u>34300030</u>	12/24/2003	06:57:PM	Upton	State	003600	1.06			1	0	33-Tree	6-Not A Collision	
<u>30640182</u>	01/10/2003	05:09:PM	Upton	State	003600	1.16			0	0	30-Embankment	6-Not A Collision	
<u>31620467</u>	08/21/2003	01:54:AM	Upton	State	003600	1.26			2	0	01-Overtum	6-Not A Collision	
<u>42910504</u>	05/15/2004	02:49:PM	Talbot	State	003600	20.59			0	0	33-Tree	6-Not A Collision	
<u>44780812</u>	12/09/2004	07:30:PM	Talbot	State	003600	21.90			0	0	29-Ditch	6-Not A Collision	
<u>41060531</u>	01/09/2004	07:04:AM	Talbot	State	003600	22.00			2	0	30-	6-Not A	

Accident Analysis Report 3

Accident Id	Date	Time	County	Route	Route No	Milelog	Intersecting Rt Type	Intersecting Route	Total Injuries	Total Fatalities	Harmful Event	Collision	Ramp
											Embankment	Collision	
<u>44070017</u>	10/21/2004	12:50:AM	Upton	State	003600	.58			1	0	29-Ditch	6-Not A Collision	
<u>44430776</u>	11/20/2004	08:31:AM	Upton	State	003600	.96			1	0	30-Embankment	6-Not A Collision	
<u>41210008</u>	02/21/2004	10:36:PM	Upton	State	003600	1.06			0	0	29-Ditch	6-Not A Collision	
<u>41060167</u>	01/10/2004	01:11:AM	Upton	State	003600	1.06			1	0	01-Overtum	6-Not A Collision	
<u>54430245</u>	10/24/2005	10:25:PM	Talbot	State	003600	21.99			0	0	01-Overtum	6-Not A Collision	
<u>51180222</u>	03/31/2005	05:42:AM	Talbot	State	003600	21.99			1	0	30-Embankment	6-Not A Collision	
<u>53020511</u>	07/24/2005	12:13:AM	Upton	State	003600	.13			0	0	22-Highway Traffic	6-Not A Collision	
<u>52100603</u>	05/28/2005	10:00:AM	Upton	State	003600	.33			1	0	33-Tree	6-Not A Collision	
<u>54620526</u>	11/21/2005	12:51:PM	Upton	State	003600	1.06			0	0	33-Tree	6-Not A Collision	
<u>65250438</u>	12/31/2006	07:10:PM	Talbot	State	003600	21.98			1	0	01-Overtum	6-Not A Collision	
<u>64550119</u>	11/06/2006	02:19:PM	Talbot	State	003600	21.99			0	0	22-Highway Traffic	6-Not A Collision	
<u>63340606</u>	09/07/2006	10:36:AM	Talbot	State	003600	21.99			0	0	29-Ditch	6-Not A Collision	
<u>61370562</u>	04/19/2006	07:27:AM	Talbot	State	003600	21.99			1	0	01-Overtum	6-Not A Collision	
<u>61760548</u>	05/16/2006	10:06:AM	Upton	State	003600	.75			1	0	25-Utility Pole	6-Not A Collision	
<u>63140150</u>	08/21/2006	09:54:PM	Upton	State	003600	.76			0	0	29-Ditch	6-Not A Collision	
<u>60810290</u>	03/20/2006	07:08:AM	Upton	State	003600	1.36			1	0	30-Embankment	6-Not A Collision	
<u>71890447</u>	05/12/2007	03:55:PM	Talbot	State	003600	20.20			2	0	01-Overtum	6-Not A Collision	
<u>70680462</u>	03/05/2007	07:38:AM	Talbot	State	003600	21.99			0	0	14-Deer	6-Not A Collision	
<u>70750687</u>	02/24/2007	11:20:PM	Talbot	State	003600	22.02			0	0	22-Highway Traffic	6-Not A Collision	3
<u>73060272</u>	07/24/2007	04:58:AM	Upton	State	003600	.27			2	0	01-Overtum	6-Not A Collision	
<u>74360467</u>	10/07/2007	03:28:PM	Upton	State	003600	.95			1	0	29-Ditch	6-Not A Collision	
<u>73420289</u>	08/04/2007	04:06:PM	Upton	State	003600	1.35			2	0	01-Overtum	6-Not A Collision	
<u>72750321</u>	07/04/2007	10:00:AM	Upton	State	003600	1.46			1	0	33-Tree	6-Not A Collision	
<u>72240166</u>	06/02/2007	05:12:PM	Upton	State	003600	1.46			1	0	30-Embankment	6-Not A Collision	
<u>74530150</u>	10/14/2007	05:34:AM	Upton	State	003600	1.46			1	0	33-Tree	6-Not A Collision	
<u>84550392</u>	10/04/2008	12:26:AM	Talbot	State	003600	21.99			0	0	14-Deer	6-Not A Collision	

The existing roadway on S.R. 36 in Talbot and Upson Counties should not be used for the alignment for STP-0000-00(929). This road is classified as a Rural Minor Collector. The speed limit on this road is currently 55 mph. Using this information as guidance for this project we came up with the minimum and maximum values for the geometry of the roadway. The maximum allowable grade for this project was determined to be 6.00%. The minimum allowable radius of horizontal curvature was determined to be 1050 ft.

The first issue with the current alignment is the vertical geometry. The two passing lane sites are on either side of the Flint River. Site 1 is on the Talbot County side, and site 2 is on the Upson County side. Site 1 has a grade of 6.87% as it approaches the river. Site 2 has a grade of 7.5% as it approaches the river. Both of those grades exceed the maximum allowable of 6.00%. These steep grades cause platooning when multiple cars get behind a big rig on these steep uphill grades.

The second issue is with the horizontal geometry. This project has 7 horizontal curves less than 1050 ft. Sight distance becomes a major issue in those areas where the radius of curvature is less than 1050 ft. The existing alignment in Talbot County has many back to back S curves with less than desirable tangent distance between curves. Site 2 in Upson County has multiple broken back curves. Many of the curves with substandard radii are part of a broken back curve situation.

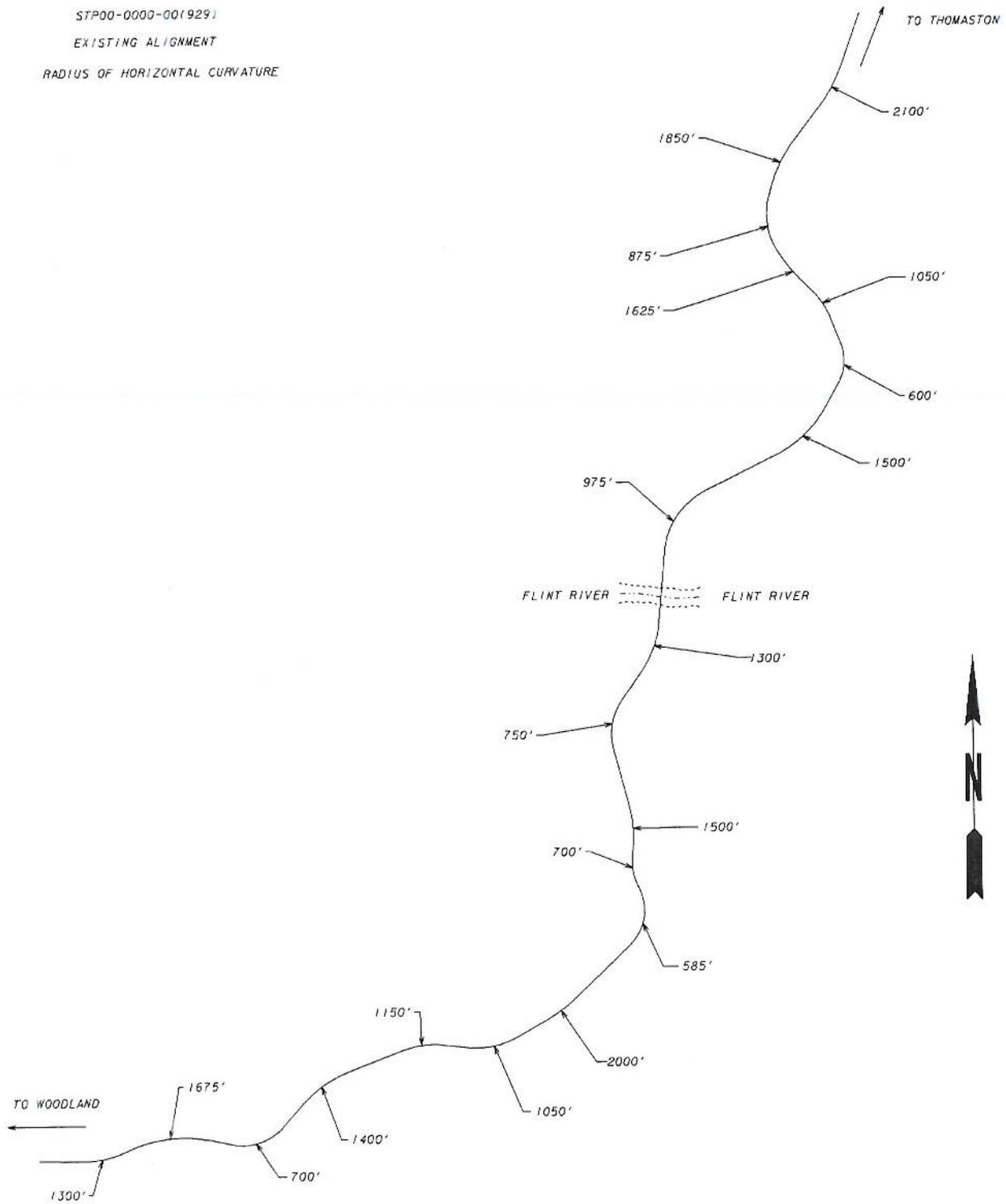
The combination of the substandard vertical and horizontal curvature on this section of the roadway has contributed to the accidents in this area. From the year 2000 through the year 2008 there have been 52 accidents recorded within the project limits. Of those accidents the majority have been accidents where the driver has lost control of the vehicle on the roadway in one of the bad curves, and leaving the roadway. There have also been at least 2 severe big rig accidents on the steep grade just south of the Flint River. The combination of the steep grade and substandard curvature caused the truck operators to experience load shift, and lose control of the vehicle. At least one of the truck accidents dumped a full load of aircraft grade fuel into the woods adjacent to the road and the river.

Lastly the bridge over the Flint River will be replaced on new location downstream of the existing bridge. The two passing lanes on either side of the bridge will have to be realigned to tie into the new bridge. It was decided to construct the new bridge on new location because the cost of constructing, and removing an onsite detour bridge would exceed the cost of building the permanent structure on new location, and the lack of a suitable offsite detour.

Finally in the VE study they speak of total savings. We have proposed to reduce the total length of the project from 3.96 miles to 2.20 miles. We cut the total length of passing to 8, 554 feet (1.62 miles). That results in a cost savings of \$6,390,208.00. That is a forty seven percent decrease in cost. Any cost savings of using the existing roadway will be eliminated by the cost of safety related issues on the existing roadway such as fatalities, lawsuits, and property damage.

Therefore, we do not recommend maintaining the existing alignment if we proceed with this project.

STP00-0000-00(929)
EXISTING ALIGNMENT
RADIUS OF HORIZONTAL CURVATURE



PRECONSTRUCTION STATUS REPORT FOR PI:333210-,0000929

SR 36 PASSING LANES-WB MP 20.4-22.75 & EB MP .05-1.79 UPSON

MGMT LET DATE : 12/11/2009
 MGMT ROW DATE : 06/22/2007
 SCHED LET DATE : 8/2/2010
 WHO LETS?: Prepare Plans for Shelf
 LET WITH : 333210-

DOT DIST: 3
 CONG. DIST: 2, 3
 BIKE: N
 MEASURE: E
 NEEDS SCORE: 04
 BRIDGE SUFF:

MPO: Not Urban
 TIP #: 4.09
 MODEL YR: Passing Lanes
 TYPE WORK: PASSING LANES
 CONCEPT: Reconstruction/Rehabilitation
 PROG TYPE: N
 Prov. for ITS: N
 BOND PROJ :

PROJ ID : 0000929
 COUNTY : Talbot, Upson
 LENGTH (MI) : 4.09
 PROJ NO.: STP00-0000-00(929)
 PROJ MGR: Rountree, Bill
 OFFICE : District 3
 CONSULTANT: No Consultant, GDOT In-House Design
 SPONSOR : GDOT
 DESIGN FIRM:

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS				Date	Auth	
						Phase	Approved	Proposed	Cost			Fund
6/16/2009		Concept Development	3/3/2000	12/31/2002	100	ROW	2007	2007	2,358,190.00	L240	AUTHORIZED	7/3/2007
		Concept Meeting	12/17/1999	12/17/1999	100	CST	LR	LR	14,470,000.00	L240	PRECST	
		PM Submit Concept Report	3/22/2000	3/22/2000	100							
		Receive Preconstruction Concept Approval	5/8/2000	5/8/2000	100							
		Management Concept Approval Complete	12/19/2002	12/31/2002	100							
		Value Engineering Study	1/5/2009		82							
		Public Information Open House Held	7/25/2000	7/25/2000	100							
		Environmental Approval	10/1/2000	6/27/2007	100							
		Field Surveys/SDE	8/15/2001	9/11/2001	100							
		Preliminary Plans	9/1/2002	1/31/2007	100							
		Underground Storage Tanks	5/15/2006	6/16/2008	100							
6/5/2009	8/20/2009	404 Permit Obtainment	5/24/2007	5/24/2007	0							
		PFPR Inspection	4/24/2007	6/25/2007	100							
		R/W Plans Preparation	6/22/2007	6/28/2007	100							
		R/W Plans Final Approval	5/8/2000	5/8/2000	100							
		L & D Approval	6/1/2007		68							
		R/W Acquisition	1/1/2008	2/1/2008	100							
		Stake R/W	5/1/2003	10/21/2005	100							
		Soil Survey	6/29/2007		17							
5/10/2010	4/16/2010	Final Design			0							
5/25/2010	5/11/2010	FPFR Inspection			0							
	6/7/2010	Submit FPFR Responses (OES)			0							

STIP AMOUNTS		Phase	Cost	Fund
ROW Cost Est Amt:	Date: 5/7/2007	ROW	14,470,000.00	L240
CST Cost Est Amt:	Date: 6/12/2007	CST		L240

PDD: JUL00 NB: ASSIGNED DISTRICT 3. w/333210. Keep working and move in- Needed bridge. 2/24/04.

Bridge: NO BRIDGE REQUIRED

Design: JWM [5-4-09] RE-DESIGNING DUE TO VE STUDY

EIS: JM CE 6-27-07 | OnSchedCS/T/Pruitt (3-10-09)

LGPA: UPSON REF UTIL. 12-22-98/TALBOT REF UTIL.3-1-99. SEE 332900-

Programming: TEMP SR 1093 & 1093TA-1093TH#1 2-08

ROW: Pre-Acq D Baggett, Lening (CC) Appraisal Contracts Pending; 9/8/08 ROW ACTIVITIES SUSPENDED

Traffic Op: clb-PFPR sent 5/23/07 w/r NO ACTIVITY [06/09]

Utility: Need 2nd sub plans 02/02/09

EMG: RECST/REHAB (PASSING LANES)

Prel. Parcel CT: 33	Total Parcel in ROW System: 33	Cond. Filled: 0	Acquired by: DOT	DEEDS CT: 0
Under Review: 0	Options - Pending: 0	Relocations: 2	Acquisition MGR: Buckley, Art (Consultant Mgr)	
Released: 0	Condemnations- Pend: 0	Acquired: 0	RAW Cert Date:	

PRECONSTRUCTION STATUS REPORT FOR PI:333210-0000929

PROJ ID : 333210-
COUNTY : Talbot, Upson
LENGTH (MI) : 0.20
PROJ NO.: BRST0-0157-01(009)
PROJ MGR: Rountree, Bill
OFFICE : District 3
CONSULTANT: No Consultant, GDOT In-House Design
SPONSOR : GDOT
DESIGN FIRM:

MGMT LET DATE : 12/11/2009
MGMT ROW DATE : 06/22/2007
SCHED LET DATE : 8/17/2010
WHO LETS? : Prepare Plans for Shelf
LET WITH : 0000929

DOT DIST: 3
CONG. DIST: 3, 2
BIKE: N
MEASURE: E
NEEDS SCORE: 06
BRIDGE SUFF: 40.28

MPO: Not Urban
TIP #:
MODEL YR :
TYPE WORK: Bridges
CONCEPT: BR REPL
PROG TYPE: Replacement
Prov. for ITS: N
BOND PROJ :

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACTUAL FINISH	%	PROGRAMMED FUNDS						
						Phase	Approved	Proposed	Cost	Fund	Status	Date Auth
6/16/2009		Concept Development	2/4/2000	12/18/2002	100	PE	2000	2000	429,214.00	Q10	AUTHORIZED	10/25/1999
		Concept Meeting	5/15/2000	5/15/2000	100	CST	L.R.	L.R.	2,809,000.00	L1C0	PRECST	
		PM Submit Concept Report	4/10/2000	5/15/2000	100							
		Receive Preconstruction Concept Approval	5/5/2000	5/18/2000	100							
		Management Concept Approval Complete	12/6/2002	12/18/2002	100							
		Value Engineering Study	1/5/2009		82							
		Public Information Open House Held	7/25/2000	7/25/2000	100							
		Environmental Approval	1/17/2001	6/27/2007	100							
		Field Surveys/SDE	5/17/2000	4/25/2005	100							
		Preliminary Plans	9/17/2002	6/11/2003	100							
		Preliminary Bridge Design	9/10/2002	9/16/2002	100							
		Underground Storage Tanks	5/15/2006	5/15/2006	100							
		404 Permit Obtainment	5/24/2007	5/24/2007	100							
		FFPR Inspection	4/24/2007	6/25/2007	100							
		R/W Plans Preparation	6/22/2007	6/28/2007	100							
		R/W Plans Final Approval	6/5/2000	6/22/2000	100							
		L & D Approval	5/1/2003	5/1/2003	100							
		Soil Survey	5/1/2003	2/13/2008	100							
		Bridge Foundation Investigation	6/29/2007	10/18/2007	28							
4/20/2010		Final Design	6/29/2007		100							
5/5/2010		Final Bridge Plans Preparation	6/29/2007		0							
		FFPR Inspection			0							
		Submit FFPR Responses (OES)			0							

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACTUAL FINISH	%	STIP AMOUNTS						
						Phase	Cost	Fund	Date Auth			
6/5/2009	10/22/2009	404 Permit Obtainment	5/15/2006	5/15/2006	100	PE	2,809,000.00	2,809,000.00	5/7/2007	Q10		
4/20/2010	4/21/2010	Final Design	6/29/2007		100	CST				L1C0		
5/5/2010	5/18/2010	Final Bridge Plans Preparation	6/29/2007		0							

PDD: w/0000929, Needed bridge - w/PPL for approaches, 2/24/04.
Bridge: WEI 06/02/08 - CONSUL - URS (FINAL PLANS SENT 05/29/08)
Design: JWM [5-4-09] RE-DESIGNING DUE TO VE STUDY
EIS: JM CE 6-27-07 / OnshedCST1 Pruitt (9-10-09)
L.GPA: TALBOT REF UTL 10-29-99/UPSON SGN DO UTL 2-24-01/RESCISSON LETTER SENT TO TALBOT & UPSON 6-8-05.
Programming: #1 7-02/#2 4-03/TEMP SR 1093 & 1093TA-1093TF
ROW: Combined with PH/0000929 Pre-Acq. J&G VL (CC), 9/8/08 ROW ACTIVITIES SUSPENDED
Traffic Op: BR REPL PRJCT W/0000929/TALBOT CO/S&M PLNS NR/030601\$
Utility: Need 2nd sub plans 02/02/09
EMC: BRIDGE REPLACEMENT

Acquired by: N/R
Acquisition MGR: Buckley, Art (Consultant Mgr)
RAW Cert Date:

DEEDS CT: